PHILIPPINE SCIENCE & TECHNOLOGY ABSTRACTS



SCIENCE AND TECHNOLOGY INFORMATION INSTITUTE INFORMATION RESOURCES AND ANALYSIS DIVISION

> Department of Science and Technology Bicutan, Taguig City, Metro Manila Philippines

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Information Resources and Analysis Division SCIENCE AND TECHNOLOGY INFORMATION INSTITUTE Department of Science and Technology Bicutan, Taguig City, Metro Manila Philippines

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Information Resources and Analysis Division SCIENCE AND TECHNOLOGY INFORMATION INSTITUTE Bicutan, Taguig, Metro Manila Philippines

AGRICULTURE

Biomass composition and sugar content of sweet sorghum (Sorghum bicolor (L.) Moench) at different developmental stages

Calica, Dane Mikhael S., Bitanga, Glory S., Balagso, Jezzica R., Domingo, Marachel Grace, Agrupis, Shirley C.

Sweet sorghum is a water-use efficient crop that has great potential as feedstock for bioethanol and pulp production. As a bio-based crop, it is important to determine the best growth stage of the plant to harvest the biomass for optimum yield in sugar and structural carbohydrates. This study was conducted to determine the sugar content and biomass constituents of the stalk juice at different developmental stages. Stalks of sweet sorghum v. ICSR 93034 were collected from the MMSU Sweet Sorghum project. Samples were collected from vegetative (before panicle formation), reproductive (during grain formation) and post-reproductive stages (after grain harvest). Fresh juice was extracted to analyze the brix value before they were dried, cut, and ground to 40 mesh. Analyses of the biomass constituents; cellulose, hemicellulose, and lignin, of the extractive-free stalks was carried out following the TAPPI standard procedures. Brix value (°Bx) was lowest at vegetative stage (5), followed by post-reproductive (11.5), then reproductive (14.5). The structural carbohydrates increased with the sweet sorghum plant's growth maturity. The variety under study contains more hemicellulose then cellulose. Cellulose, which contains a long chain glucose sugar, was lowest at vegetative stage, 29.69% while 32.27% was determined in reproductive and post reproductive stalk samples. Hemicellulose, which is a polymer of glucose and pentoses (e.g. xylose), was found highest during the vegetative stage, 44.5%, while 39.44% in both the reproductive and post-reproductive stages. Lignin, the complex binding material for the structural sugars, was found to be present in the following order: vegetative < reproductive and post-reproductive. (Author's abstract)

Keywords: Agriculture, Sweet sorghum, Structural carbohydrates, Bioethanol, Pulp, Sugar feedstock

Transactions of the National Academy of Science and Technology, Volume No. 34 Issue No. 1, 29 2008, (Filipiniana Analytics) Fil(S) Q149.P5 N25 34/1 2012

0002

Comprehensive suitability map for oil palm growing in North Cotabato, Mindanao, Philippines Ascaño, Tomasito C., Taban, Cristina A., Rosete, Irish Joy D., Ali, Gypsy A

The study on $\hat{a} \in \mathbb{C}$ Comprehensive Suitability Map for Oil Palm in North Cotabato $\hat{a} \in \mathbb{C}$ was conducted to make a suitability map for oil palm in North Cotabato. Specifically, this study was conducted to determine the areas highly suitable, moderately suitable, and not suitable for oil palm production in the province of North Cotabato and evaluate the accuracy of the map.

GIS software was used to make the suitability maps. These maps were based on the eight parameters that affect the growth of oil palm: soil type, elevation, depth of the water table, topography, rainfall, temperature, climate, and sunshine. Thematic clippings from the themes of each individual parameter were used to determine the suitability of the areas according to the parameters used. Then, according to the number of parameters present in the area, a highly, moderately, and not suitable map were created.

Ground truthing with a modified set of questionnaire was done to evaluate the areas found on the map. This was accomplished by visiting the different areas on the map and evaluating the farms found on these areas by letting the

farmers answer the questionnaires p	answer	the	questionnaires	prepared
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The results showed that 66% of the areas in North Cotabato are highly suitable, 16% are moderately suitable and 18% are not suitable for growing oil palm. The map was also found highly significant with moderate relationship and 63.4% accurate. (Authors' abstract)

Keywords: Agriculture, Climate, Weather, Elevation, GIS, GPS, Plantation crop, Soil type, Topography

USM R&D Journal, Volume No. 16 Issue No. 1, 17-22 2008, (Filipiniana Analytics) NP

0003

Considering farmers' preferences in breeding and dissemination of white corn varieties as staple food

Labios, Romeo V., Labios, Jocelyn D., Manguiat, Proceso , Malayang, Dona Bae, Cia, Bernabe, Tamisin, Leonardo L., Rosales, Avelita, Mangaya-ay, Teresita, Lumbao, Jessie

Farmers' evaluation, through participatory approaches, of the performance of improved open-pollinated white corn varieties was conducted in wet season 2011 in selected municipalities of Isabela, Quezon, Bohol, and North Cotabato. Eleven improved open pollinated white corn varieties and farmers' variety, as local check, were included in participatory varietal selection (PVS) trials. The study aims to increase productivity, yield and income of farmers utilizing the PVS approach and technology innovation systems. Using the PVS trials, preference analysis (PA) involving male and female farmers was conducted at physiological maturity. Based on visual evaluation, the following characteristics were mostly preferred: resistance to pests and diseases, plant height, ear size and weight, grain quality, and good root anchorage. PA further revealed that both male and female farmers strongly agreed on their preferences for the best performing varieties (r=0.635; r=0.141). In addition to PVS, sensory evaluation (SE) was also conducted to solicit farmers' opinion on the eating quality of the different white corn varieties. This process of selecting the most preferred varieties involving farmers facilitates varietal improvement, adoption, and dissemination. Findings from this study also reveal that PVS approach requires an understanding of the biophysical, socio-cultural, and economic circumstances of white-corn farming communities. This could contribute to addressing food security and nutrition, as well as providing farmers with suitable varieties in their locality. **(Author's abstract)**

Keywords: Agriculture, White corn, Participatory varietal selection, Preference analysis, Sensory evaluation

Transactions of the National Academy of Science and Technology, Volume No. 34 Issue No. 1, page 159 2008, (Filipiniana Analytics) Fil(S) Q149.P5 N25 34/1 2012

0004

Detection of rice tungro viruses by conventional reverse transcriptase polymerase chain reaction (RT-PCR)

Madayag, Clarence M., Fernando, Trinidad C., Galang, Rosellie L., Romero, Gabriel O.

Tungro is the most destructive viral disease of rice. The disease shows chlorotic leaf and dwarfing symptoms that dramatically reduce yield. Tungro is primarily caused by rice tango spherical virus (RTSV) interacting with rice tungro bacilliform virus (RTBV). RTSV has a ribonucleic acid (RNA) genome while RTBV has a deoxyribonucleic acid (DNA) genome. Accurate detection of viral infection is imperative in screening for resistance in breeding materials. RTBV infection is amenable to detection by polymerase chain reaction (PCR), which can amplify *in-vitro* parts of its DNA genome. Through the use of reverse transcriptase (RT), parts of the RTSV RNA genome can be converted to cDNA, which then becomes amplifiable by PCR. Multiplexing or adding virus-specific primers in the same reaction - called multiplex or mRT-PCR - makes it possible to detect both viruses simultaneously. Furthermore, unlike the serological method Enzyme Linked Immunosorbent Assay (ELISA), RT-PCR has great advantage when it comes to procedure, time and efficiency. Our laboratory has succeeded in mRT-PCR detection of RTBV and RTSV in infected samples using commercial kits. This study now demonstrates that conventional RT-PCR with separate reagents can also efficiently amplify RTBV and RTSV genomic fragments from infected samples. CP1F1/R1 is the most suitable primer for RTBV detection, producing the virus-specific 0.62 kb band in infected samples. On the other hand, CP3F1/R1 was the most consistent pair in producing the RTSV-specific 0.55 kb band in infected samples. The best annealing temperature was 56°C for both RTBV and RTSV primers. Based on Kappa value analysis, RT-PCR is comparable to ELISA for RTBV detection, but it is superior to ELISA for RTSV detection. Therefore, the use of conventional, separate PCR reagents proved effective in screening for the tungro viruses, thus rendering RT-PCR more affordable. The optimal procedure can now be applied to routine tungro screening of breeding materials. (Author's abstract)

Keywords: Agriculture, ELISA, RTBV, RTSV, Multiplex PCR

Transactions of the National Academy of Science and Technology, Volume No. 31 Issue No. 1, 9-10 2008, (Filipiniana Analytics) Fil(S) Q149 P5N25 31/1 2009

0005

Development of a computer vision system for brown rice quality analysis Tuates, Jr., Andres M., Ligisan, Aileen R., Bulaong, Manolito C.

Conventional brown rice analysis is done by visually inspecting each grain and classifying according to their respective categories. This method is subjective and tedious leading to errors in analysis. Computer vision could be used to analyze brown rice quality by developing models that correlate shape and color features with various classification. The objective of the study was to develop a computer vision system (CVS) for predicting quality parameters of brown rice. Brown rice training samples were collected in Nueva Vizcaya, NFA Binalonan, Pangasinan, and SM supermarket. An ordinary flat bed scanner was used as image acquisition device coupled to a laptop computer equipped with image processing and analysis software developed at PHilMech. The CVS set-up was tested using samples collected at the regional NFA warehouses. The performance of the CVS was compared to human inspection based on their capability to classify brown rice samples. An artificial neural network using probabilistic neural network (PNN) model was developed. Sensitivity analysis revealed a true positive proportion ranging from 0.8792 to 1.00. Likewise, a weight prediction model based on the projected area was made using linear regression. The developed equation is y = 0.00148A - 0.00018 with a R² of 0.854. The results of performance testing revealed that the CVS could predict the weight of brown rice and detect color-related quality of brown rice such as: sound, damaged, chalky/immature, vellow fermented, red and paddy. Processing time for classification using the developed CVS has an average of 18.53 minutes and sixty percent of its time (equivalent to 11.24 minutes) was consumed in the manual arranging of grain samples. If a digital separation could be developed, the total time can be reduced to 7.11 minutes compared to 40.07 minutes of manual assessment. Moreover, CVS classification is more accurate compared with the human inspection. (Author's abstract)

Keywords: Agriculture, Brown rice, Computer vision system, Human inspection, Accuracy, Repeatability

Transactions of the National Academy of Science and Technology, Volume No. 34 Issue No. 1, page 142 2008, (Filipiniana Analytics) Fil(S) Q149.P5 N25 34/1 2012

Development of high yielding and bunchy top virus resistant abaca (*Musa textilis* Nee.) cultivars

Lalusin, Antonio G., Manguiat, Proceso H., del Rosario, Edwin E., Dizon, Teodora O., Laurena, Antonio C., Mendoza, Evelyn Mae T.

Abaca (Musa textilis Nee.), a plant endemic to the Philippines, is the source of fiber known internationally as Manil hemp. It is often used as raw material for cordage, clothing, various handicrafts, specialty papers such as currency notes, filter papers, stencil papers, tea bags among others. The abaca industry is a major dollar earner of the country. Due to the current concern for biodegradable products and forest conservation, it is expected that the abaca industry will continue to flourish in both domestic and international markets. With the advent of new uses of abaca, the crop will be extensively utilized for more industrial applications because ii is a natural and superior material. However, the abaca industry is still relying solely on traditional varieties for its survival. One reason for the decline in the abaca industry is the limited attention devoted to varietal improvement. The old abaca varieties have become susceptible to bunchy top virus disease. This study aims to develop abaca varieties with high fiber quality and resistance to abaca bunchv top virus through conventional breeding.

In 1981, the Institute of Plant Breeding (IPB), resumed work on the abaca breeding program started at the Division of Plant Breeding in the late 1950's. Crosses between abaca and its wild relatives were produced. In 1986, six F1 hybrids between Pacol and abaca were released. These hybrids have resistance to bunchy top virus but of inferior fiber quality. To recover the superior finer qualities of abaca, several backcross (BC1) lines were generated but crossing work was ended due to unavailability of funds. It was only in 2006, that the breeding work was continued although to a limited extent, and several BC1 crosses were evaluated. BC2 progenies, produced from cross-pollinating four promising backcross lines (BC1) and two abaca varieties as recurrent parents were established in the field for screening of virus disease resistance and evaluation of finer quality. Four BC2 populations were generated from the following crosses: 'BC1-19 X Abuab' 'BC1-20 X Abuab', 'BC1-21 X Abuab' and 'BC1-19 X Musa tex 51'. One hundred sixty six (166) inoculated seedlings (12 from BC1-19 X Abuab; 132 from BC1-20 X Abuab', and 22 from 'BC1-19 X Musa tex 51) were selected for field planting based on bunchy-top virus resistance, plant vigour and resemblance of morphological characters to true abaca. Characterization of agro-morphological traits was initiated on mature BC2 plants. The BC2 progenies were compared to the abaca parent on the following traits: plant height, plant diameter, fresh weight of stem, number of leaf sheaths and dry weight of fiber. Other visible traits indicative of resemblance to the true abaca were also observed. Abaca fiber samples were collected from each of the characterized BC2 plants and processed for determination of finer quality. Data on finer length, fiber recovery and fiber breaking load of BC2 selections were gathered. Superior BC2 sergeants exhibitingngood finer qualities and desirable afro-morphological traits were selected for multi-location testing and clonal propagation. (Author's abstract)

Keywords: Agriculture, Abaca (Musa textilis Nee), Abaca bunchy top virus, Abaca fibers, BC1-first backcross progeny, BC2-second backcross progeny

Transactions of the National Academy of Science and Technology, Volume No. 31 Issue No. 1, 14-15 2008, (Filipiniana Analytics) Fil(S) Q149 P5N25 31/1 2009

Development of improved varieties of mungbean (NSIC Mg14 and NSIC Mg15) Jarilla, Flora A., Buctuanon, Eugenia M., Alonzo, Ma. Anna M.

Mungbean is one of the popular and important 4crops in the Philippines. It can be processed into noodles, "togue", delicacies, novelty products etc. Its importance in agriculture and industry becomes the basis to conduct varietal development at BPI-LBNCRDC.

Promising lines of mungbean were field evaluated under the Preliminary Yield Trial (PYT) in 1996 to 2000 and General Yield Trial (GYT) in 1997 to 2004. Potential varieties from the GYT were further screened in different regions of the country under the National Cooperative Trial (NCT) in 2002 to 2006. Evaluation was conducted to screen and develop varieties with high been yield, early and uniform maturity, resistant to lodging/shattering and resistant to natural occurrence of pests.

Based on the outstanding performance on-station/across locations, two (2) varieties were approved and released by the National Seed Industry Council (NSIC) in 2004 and 2007 as seedboard varieties for commercial production. Lines EGM 93-266 was approved in 2004 as NSIC Mg14 with local name "Kulabo" and EGM 93-293 as NSIC Mg15 locally named as "Kinang" in 2007.

A total of 217.45 kg breeder and foundation seeds of NSIC Mg14 and NSIC Mg15 were distributed by BPI-LBNCRDC in different regions of the country. Bulk of the distribution amounting to 168.95 kg was recorded in Region 4 particularly in Los Baños, Laguna. (Author's abstract)

Keywords: Agriculture, Preliminary yield trial, General yield trial, National cooperative trial, National seed industry council, Varietal improvement

Transactions of the National Academy of Science and Technology, Volume No. 31 Issue No. 1, 15-16 2008, (Filipiniana Analytics) Fil(S) Q149 P5N25 31/1 2009

0008

Diseases of passion fruit (*Passiflora edulis f. flavicarpa* Deg.) in three municipalities of North and South Cotabato, Philippines *Tangonan, Naomi G.*, *Ramos, Mar*

This study aimed to document the incidence of various diseases of passion fruit in the two municipalities of North Cotabato (Kabacan and Magpet) and one municipality of South Cotabato (Tupi). Results of pathogenicity tests revealed ten fungal pathogens attacking passion fruit causing five diseases, namely: *Rhizoctonia solani, Pythium debaryanum, Fusarium solani,* and *Cylindrocarpon candidum* causing damping-off; *Curvularia lunata* and *Lasiodiplodia* theobromae causing dieback; *Colletotrichum truncatum* causing leaf spot and fruit rot; *Aspergillus flavus* and *Sclerotium rolfsii* causing fruit rot and a species of *Ascochyta sp.* causing fruit spot. Two viral pathogens causing diseases identified based on leaf and shoot

were mosaic virus and shoestring virus. Eight genera of nematodes were found associated with passion fruit plants, namely: Helicotylenchus, Xiphinema, Pratylenchus, Criconemella, Hoplolaimus, Meloidogyne, Radopholus, and

Tylenchorhynchus. All above pathogens are heretofore reported for the first time as causing diseases of passion fruit in the Philippines. (Author's abstract)

Keywords: Agriculture, Foliar, Fruit, Fruit crops, Stem diseases (fungal, viral, nematodes)

USM R&D Journal, Volume No. 17 Issue No. 1, 123-129 2009, (Filipiniana Analytics) NP

0009

Effects of substrate volume on the growth of cabbage (*Brassica oleracea* L.) plug transplants *Valdez, Manolo T. , Cuaresma, Joe*

The study was conducted to evaluate the growth performance of cabbage plug transplants using different substrate volumes; and to determine the optimum volume of substrates for cabbage plug transplant production.

The study consisted of six experimental set-ups, each was laid out in a simple Completely Randomized Design (CRD). Each treatment replicated three times. was The experimental set-ups were the following: Set-up A - 100% garden soil (GS), Set-up B - 100% rice straw compost (RSC), Set-up C - 100% biogas sludge (BS), Set-up D - 50%GS:50% RSC, Set-up E - 50% GS:50% BS, 50% F BS:50% and Set-up RSC.

Using 100% garden soil as plug substrate, 150cc and 200cc – grown seedlings were taller, with more leaves, heavier shoots, fresh and dry weights, and larger leaf area. Two-hundred cc volume significantly influenced stem diameter.

Using 100% rice straw compost, seedling height was comparable in both 150 cc and 200 cc volumes. Twohundred cc – grown seedlings had more leaves, bigger stems, heavier fresh shoots than those in 150 cc and 100 cc, respectively. Plug transplants in 200 cc and 150 cc had higher shoot dry weights and total leaf area compared to those in 100 cc.

Using 100% biogas sludge, shoot fresh and dry weights were greater in 200 cc and 150 cc than those in 100 cc volumes.

Using 50% GS:50% RSC, 200 cc – grown seedlings had more leaves, bigger stems, heavier shoot fresh and dry biomass, and total leaf area compared to those in 150 cc and 100 cc.

Using 50% GS:50% BS, heavier shoot fresh and dry weights, and larger total leaf area were noted in 200 cc than those in 100 cc.

Using 50% BS:50% RSC, taller seedlings, bigger stems, more leaves, and heavier shoot fresh and dry biomass were significantly noted in 200 cc compared to 100 cc and 150 cc. Total leaf area was largest in 200 cc - grown seedlings. (Authors' abstract)

Keywords: Agriculture, Cabbage, Containerized planting, Plug, Soil substrate, Substrate, Transplant, Vegetable gardening

USM R&D Journal, Volume No. 17 Issue No. 2, 171-177 2009, (Filipiniana Analytics) NP

Genetic diversity analysis using SSR markers of varieties of rice (*Oryza sativa* L.) from Indonesia and Arakan, Cotabato, Philippines in relation to resistance to rice blast pathogen (*Magnaporthe grisea*) races found in the Philippines Bartolata, Francia C., Vera Cruz, Casiana M., Manuel, Ma. Carmina C.

Genetic diversity of the traditional and improved traditional varieties of rice (*Oryza sativa* L.) from Indonesia, as well as varieties from Arakan, Cotabato, Philippines was screened using Simple Sequence Repeat (SSR) markers. A total of 30 SSR markers were used for the Indonesian rice varieties, and 33 markers were used for the Arakan rice varieties. The polymorphic information content (PIC) value of the markers ranged from 0 to 0.855 for Indonesia varieties, while the PIC value range in the Arakan varieties was from 0 (RM504) to 0.814 (RM507). A phenotypic tree plot was constructed based on diseased leaf area response (DLA) to nine rice blast races in the Philippines using the Numerical Taxonomy System (NTSYS) software. The phenotypic similarity within Indonesian varieties ranged from 0.08 to 1, while the Arakan estimate for phenotypic similarity ranged from 0.09 to 0.89. Based on the genetic tree plot constructed, the estimate for genetic similarity ranged from 0.24 to 0.91 (between Sirendah 7A and Sirendah 7B) and 0.21 to 0.94 (between Dinorado 35 and Dinorado 36) for Indonesian and Arakan varieties, respectively. These figures suggest that both germplasm are phenotypically and genetically diverse. Using the Statistical Analysis System (SAS) software, the stepwise regression analysis between the SSR markers and phenotypic response for each rice blast race was calculated. The data showed that 59 alleles in the Indonesian rice germplasm, and 91 alleles in the Arakan rice varieties amplified by the SSR markers were significantly correlated to rice blast resistance at 5% level of significance. **(Author's abstract)**

Keywords: Agriculture, Oryza sativa L., Genetic diversity, SSR markers, Rice blast resistance, Phenotypic similarity, Genetic tree plot

Transactions of the National Academy of Science and Technology, Volume No. 31 Issue No. 1, 8-9 2008, (Filipiniana Analytics) Fil(S) Q149 P5N25 31/1 2009

Genetic mapping of tungro resistance and introgression into new rice varieties Romero, Gabriel O., Fernando, Trinidad C., Ordonio, Reynante L., Revita Melanie I., Adeva, Cheryl C., Uera, Raynato B., Messing, Joachim

Many of the new rice varieties, while high-yielding and often of acceptable grain and eating qualities, succumb to tungro, a devastating viral disease of rice causing staggering if not complete yield loss. Incorporating tungro resistance is an appropriate breeding target to secure farmers' yields with these varieties especially in tungro hotspot areas. The tungro resistance found in the Indian landrace, ARC11554, was localized on chromosome 4 flanked by markers RM8213 and RM3471 through quantitative trait loci (QTL) analysis. Marker-assisted breeding was carried out by crossing four varieties with ARC11554, followed by backcrossing with the recurrent parents to produce BC_1F_1 seeds. Two BC_1F_1 plants from ARC11554 x PJ25, three from ARC11554 x RC15, three from ARC11554 x

RC130 and 1 from ARC11554 xPJ7 were heterozýgous for RM8213 and RM8213 and RM3471 and further advanced to BC_2F_1 . Genotyping was again performed and a few hetorozygous plants were selected. Their BC_2F_2 families were screened for tungro reaction and characterized for important morpho-argronomic traits. A number of tungro resitant near-isogenic lines (NIL) were obtained with either strong or poor morpho-agronomic resemblance to the respective original recurrent parents. This indicates that the resistance gene in ARC11554 was transmitted through marker selection. Based on morpho-agronomic evaluation, the selected lines of PJ7, PJ25 and Rc15 denotes high similarity with the recurrent parent in number of days of heading and maturity, plant height, culm length, total tillers, unproductive tillers and productive tillers. With the Rc130-derived progeny, there were lines closely comparable to Rc130 while some were still dissimilar. These results demonstrate the successful application of molecular markers in transferring genes to outstanding varieties with minimal, deferred phenotyping, which is especially useful for traits with tedious screening procedures such as tungro reaction. Future varieties that are susceptible to tungro can be similarly conferred by such resistance through marker-aided strategy. (Author's abstract)

Keywords: Agriculture, MAS, QTL, ARC11554, Backcrossing

Transactions of the National Academy of Science and Technology, Volume No. 31 Issue No. 1, 4 2008, (Filipiniana Analytics) Fil(S) Q149 P5N25 31/1 2009

0012

Groundwater irrigation and production risks of rice farming in Cotabato Province, Philippines Rola, Agnes C., Gomez, No

A stochastic production function specification was used to assess the variability in yield of rainfed lowland rice areas by farmers using shallow tube wells (STWs). The study was done in the Province of Cotabato. Using survey data, this study first estimated the mean rice yield function along with the cost of pumping which considered well depth and water availability, pumping was used as alternate water supply variable.

The results of the estimated mean yield function showed that costs of machinery, pesticides, and pumping were the most important determinants of yield of rice grown during wet season cropping. The mean yield function revealed a diminishing marginal productivity for the cost of pumping.

Nitrogen fertilizer was found to be positively related to yield during the dry season cropping in the sample study area.

Evidence supported the argument that cost of pumping reduced rice yield variability in the wet season cropping. That is, risk averse rainfed lowland rice farmers in order to reduce risks, hence income variability, availed of groundwater as alternate source of irrigation. The study proposes, though subject to further verification, that the use of shallow tube well stabilizes rice yield in rainfed lowland irrigation agriculture. The welfare loss associated with increased pumping cost could shed some light on the lower bound estimate or valuation of raw water fees for irrigation agriculture that use groundwater. (Authors' abstract)

Keywords: Agriculture, Cost of pumping, Groundwater recharge, Production risk, Rice farmers, Shallow tube well

USM R&D Journal, Volume No. 17 Issue No. 2, 137-146 2009, (Filipiniana Analytics) NP

d its vield evaression in three-way cross mai

Inheritance of glyphosate resistance trait and its yield expression in three-way cross maize hybrids Magulama, Ef

The study aimed to determine the inheritance of glyphosate resistance trait in maize and evaluate the yield performance of three-way cross hybrids when incorporated with glyphosate resistance gene, and to assess the response of the same hybrids to glyphosate application. Inheritance study revealed that among the six phenotypic ratios tested, the glyphosate resistance trait followed in a 3:1 Mendelian ratio. This observation was noted in both types of population tested (F2 derived random mating population and S1 population) with respective chi-square values of 0.30 and 0.07 having P-values of 0.58 and 0.79. This suggests that the glyphosate resistance trait is controlled by single dominant gene. Among the 14 three-way cross hybrids evaluated, five hybrids outyielded the two check hybrids. These five hybrids had yields ranging from 6.30 to 8.66 t/ha with an average yield advantage of 17% over the mean yield of the two check hybrids. It was further noted that reciprocal crosses (6.54 t/ha) had greater yield than the F1 crosses (5.72 t/ha), which occured when the roundup ready (RR) F1 hybrid was used as pollinator. Interestingly, a higher percentage of plant survival against glyphosate application was obtained from reciprocal crosses than the F1 crosses. About 40% plant survival percentage (SP) was noted in reciprocal crosses and only 4% SP in F1 crosses. (Author's abstract)

Keywords: Agriculture, Dominant gene, Glyphosate,, Glyphosate resistance, Maize hybrids, Plant survival percentage

USM R&D Journal, Volume No. 17 Issue No. 1, 39-43 2009, (Filipiniana Analytics) NP

0014

Insect fauna in Mt. Apo, Mindanao, Philippines Cahatian, Purificacion O., Butardo, Elaine Geneviv

Insects collected in the area comprised 81 families belonging to 14 orders. Order Coleoptera (beetles and weevils) were the most abundant, represented by 17 families. Order Lepidoptera (butterflies, moths and skippers) came close represented by 15 families. The third largest order was Order Homoptera (hoppers) represented by 13 families. This was followed by Order Hymenoptera (bees and wasps) with 8 families. Orders Diptera and Hemiptera were both represented by 7 families each. Order Odonata was represented by 5 families, Order Orthoptera was represented by 4 families and Order Dermaptera was represented by 2 families. Orders Mantodea, Neuroptera, Collembola, Phasmatodea and Blattodea was represented by 1 family each. (Author's abstract)

Keywords: Agriculture, Forest, Fountain, Coleoptera, Lepidoptera

USM R&D Journal, Volume No. 17 Issue No. 1, 113-121 2009, (Filipiniana Analytics) NP

Land cover change and water yield of Silang-Santa Rosa River subwatershed, Laguna, Philippines

Magcale-Macandog, Damasa B., Engay, Kathreena G.

Patterns of land cover changes in the Silang-Santa Rosa River Subwatershed were documented through conduct of Participatory Rural Appraisal approaches and GIS mapping. 1993 and 2008 Land cover maps were generated from classified satellite images using ArcGIS with four identified cover classes that include perennials and coconut, cultivated or tilled areas, fallow and grassland, and built-up. Land cover patterns in the subwatershed begun from perennials to grassland to built-up and from farmlands to idle lands then to built-up. A GIS-based water balance model of the subwatershed that predicts water discharge was derived from PCRaster's DISCHARGE MODEL with component parameters including rainfall, evapotranspiration, cover coefficient, and soil field capacity. Results of sensitivity analysis showed that the volume of water discharge changes with varying land cover coefficients. The model can be used to simulate various scenarios of land cover change and its impact to water yield. Simulation results show that increase in built-up areas resulted to increase in water yield implying reduction in groundwater recharge. (Author's abstract)

Keywords: Agriculture, Silang-Santa Rosa Subwatershed, Participatory Rural Appraisal, Land cover change, Land cover patterns, Water balance model

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0016

Leafspot of *Hevea brasiliensis* caused by *Corynespora cassiicola* in the Philippines: 1st report Pecho, Jasmin A., Butardo, Elaine Genevive G., Tangonan, Na

This is the first report of the incidence or occurrence of a leafspot or leaf fall disease caused by *Corynespora* cassiicola (Berk. and Curt.) Wei affecting rubber (*Hevea brasiliensis*) in this country. The disease was first observed by the author researchers in RRIM 600 rubber seedlings and young trees at USMARC nurseries and plantations sometime in October 2008. Standard laboratory procedures were done: fresh specimens of infected rubber leaves were collected, thin sections of the infected tissues made, and direct examinations on slide mounts observed under a compound microscope. Morphocultural characteristics of the fungus were noted through microscopy and the fungal growth observed on various culture media. Pathogenicity tests were confirmed by inoculating healthy Hevea seedlings. Identity was confirmed through literatures. (Author's abstract)

Keywords: Agriculture, Leaf fall or target leafspot disease of rubber, RRIM 600 clone, Southern Philippines (Mindanao)

USM R&D Journal, Volume No. 17 Issue No. 1, 45-48 2009,

(Filipiniana Analytics) NP

Mapping of the *Rf* gene of a cytoplasmic male sterile line of rice (*Oryza saliva* L.) developed from a mutagenized source

Agdaca, Cheryl D., Mendioro, Merlyn S., Nas, Tamerlane Mark S., Singh, Rakesh K.

The cytoplasmic-genetic male sterility (CMS) and fertility restoration system has proven to be the most effective method in hybrid rice breeding. CMS system is controlled by the interaction of cytoplasmic genes and Rf gene in the nucleus. The inheritance and location of the Rf gene governing the pollen fertility restoration of IR73328A, a CMS-WA line with a mutagenized cytoplasm source, were determined in this study. The BC1 population from a IR73328A/IR73330-83-1-2R/IR73328A cross consisting of 202 individuals were evaluated for both pollen and spikelet fertility. The segregation for pollen fertility of the population followed the 1 sterile: 3 fertile ratio expected for duplicate gene action in a backcross population. Bulked sergeant analysis was performed to screen for polymorphic SSR markers to be utilized in the construction of the molecular map of the two Rf genes. The DNA of 20 completely sterile individuals (0-1% pollen fertility) and 20 fully fertile individuals (80-100%) from the population were pooled together to constitute the sterile and fertile bulks, respectively. The data from polymorphic markers along with the pollen fertility data were used to construct a linkage map with Mapmaker/Exp Ver. 3. Subsequent interval mapping done with Mapmaker/QTL revealed that one of the genes, Rf-4, is on the long arm of chromosome 10. It was determined to be flanked by SSR markers, RM6132 and RM171, in chromosome 10. It was detected to be 3.0 cM from RM6132 and 1.5 cM from RM171 (LOD = 13.08). The other Rf gene could not detected by the set of polymorphic markers used in this study. It was also confirmed that the STS marker S10019/BstUI was reliable for identifying a restorer line possessing the Rf-4 gene. Results of this study indicate that the genetic mechanism of fertility restoration in the mutagenized CMS-WA line, IR73328A, does not differ from that observed in other CMS-WA lines. (Author's abstract)

Keywords: Agriculture, Cytoplasmic male sterility, Fertility restorer, Duplicate gene action, Interval mapping, Linkage map, Bulked segregant analysis

Transactions of the National Academy of Science and Technology, Volume No. 31 Issue No. 1, 3 2008, (Filipiniana Analytics) Fil(S) Q149 P5N25 31/1 2009

0018

Mapping quantitative trait loci associated with resistance to pre harvest sprouting in wheat *Rigor, Alex T., Anderson, James A.*

Preharvest sprouting (PHS) is the precocious germination of the grains in the spike following physiological maturity. In wheat, the main problem associated with PHS is reduction in end-product quality. White wheats are the most susceptible class of wheat to PHS whereas the red wheats have high levels of resistance due to the pleiotropic effect of the red colour genes with dormancy. However, recent studies reported that several sources of resistance to PHS are available in white wheat germplasm. Our objective was to map quantitative trait loci (QTL) associated with PHS resistance in a recombinant inbred population of 94 lines from a cross between Grandin*5/ND614-A, an elite hard white spring wheat susceptible to PHS and NY6432-18/Clark's Cream 40-1, a soft white winter wheat selected for its high level of PHS resistance. Multiple intervals mapping analysis revealed seven QTL for PHS based on the

combined data across eight environments over three years (2005-2007). The QTL on chromosomes 2D, 5A and 7A had LOD score ≥ 2.5 and were not associated with QTL for plant height and heading date. These three QTL jointly explained 39.4% of the phenotypic variation for PHS. Other QTL were found on chromosomes 1B, 4B, 6A and 6D that explained 2.1% to 14.2% of the phenotypic variation. A significant QTL x QTL interaction was found between the chromosomal regions in 1B and 2D that explained 5.5% of the phenotypic variation. Some of the QTL found in this study may aid in marker-assisted breeding for improvement of PHS resistance in wheat. (Author's abstract)

Keywords: Agriculture, Preharvest sprouting, MAS, Marker-aided selection, Wheat, SSR

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0019

Marker-assisted introgression of *opaque 2 gene* into elite maize inbred lines Sales, Emma K., Magulama, Ef

Marker assisted backcrossing can greatly accelerate the introgression of modified opaque2 gene into elite inbred lines. This study aimed to transfer opaque 2 gene into elite maize inbred lines using SSR markers. Two backcross maize (white and yellow) populations were developed by crossing quality protein (QP) line with non-QP lines and subsequently backcrossed to non-QP lines until BC3 generation. Among the three SSR markers (phi 057, umc 1066, and used for opaque2 phi 112gene selection, only SSR phi 057 marker was employed in segregating populations owing to its good discriminatory power in the survey of parental polymorphism. Using marker assisted selection, we transferred opaque 2 gene into USM elite breeding (16 lines. Of the 26 converted QPM lines white, 10 yellow) selected from the BC_3F_3 populations, seven lines (4 white, 3 yellow) were finally selected as quality protein inbred lines, having satisfied the minimum standard criteria for protein quality. These converted QPM lines could be used as parent lines in the development of OPM varieties (Author's abstract)

Keywords: Agriculture, Backcrossing, Corn breeding, Elite inbred lines, QPM lines (quality protein maize), Simple sequence repeats (SSR) markers

USM R&D Journal, Volume No. 17 Issue No. 2, 131-135 2009, (Filipiniana Analytics) NP

0020

Meloidogyne spp. and other plant-parasitic nematode survey of Taiwan and Penghu Islands *Ruelo, Julita S.*

Successful utilization of cultural practices such as crop rotation, multiple cropping and resistant cultivars to control plant-parasitic nematodes requires the identification of pathogen "biotypes" and information on their distribution. The present survey study intends to do just that.

Meloidogyne spp. survey of the AVRDC (Asian Vegetable Research and Development Center) experimental farm and differential host study of the collected soils found *Meloidogyne incognita* existing in 84.1% of the farm; *M. javanica* in 17.1%; 14% of the fields supported both root-knot species. *M. incognita* race 1 comprised 48.6% of the area, race 2, 32.7%, race 4, 1.9%. Race 3 was not identified from the samples.

A *Meloidogyne* spp. survey was extended to the vegetable crops of Taiwan and economic crops of Penghu islands, collecting root-knot infected plant roots or soil from plant rhizospheres whenever infested roots could not be gathered. Of the 597 samples collected M. incognita comprised 72%, *M. javanica* 19.6%, *M. hapla* 2.9% and *M. arenaria* 3.4%. Records from differential host studies revealed that *M. incognita* race 1 comprised 26.3% of the root/soil samples; race 2, 25.1%; race 4, 0.3%. Race 3 was not found. *M. Arenaria* race 1 was found in 0.3% of the collection, race 2 in 1.7%. Although differential host studies of 21.3% of the samples did not come out successful still it is evident that *M. incognita* is widely spread in different areas of Taiwan. In this survey the crops investigated belong to 19 families, 41 genera and 60 species. *M. incognita* was found associated with all plant families, 37 genera, and 55 species; *M. javanica* with 15 families, 30 genera and 40 species; *M. hapla* with 6 families, 11 genera and 11 species; *M. Arenaria* with 4 families, 5 genera and 6 species. Geographically *M. incognita* was found in all 19 towns surveyed, *M. javanica* in 15, *M. hapla* in 9 and *M. arenaria* in 10 towns.

A plant-parasitic nematode survey of Penghu islands recorded 11 plant parasitic nematode genera (including *Meloidogyne*) associated with the economic crops of the area. From 132 samples collected *Rotylenchulus* was found in 106 samples, *Aphelenchus* in 40, *Pratylenchus* in 28, *Meloidogyne* in 17, *Helicotylenchus, Tylenchorhynchus, Ditylenchus,* and *Aphelenchoides* in 7 to 10 samples. All the rest in 1 to 2 samples. Of the 8 plant families investigated, 20 genera and 22 species *Rotylenchulus* was found associated with all families, 19 genera and 21 species. This gave evidence of its widespread distribution in Penghu islands. Except for muskmelon, millet and carrot where each was associated with one parasitic nematode, all the rest of the plant species were seen associated with 2 to 9 different nematodes.

In Penghu 106.% of the total soil samples harbored from 103 to 1104 *Rotylenchulus* per 150 gm soil. For comparison three AVRDC fields (No. 6, 7 and 113 were investigated for the presence of *Rotylenchulus*. Records reveal 22 (61%) of the 36 soil samples collected from fields no. 6 and 7 nematode counts ranging from 119 to 6554; from fields No. 113, 11 (68.8%) out of the 16 samples nematode counts ranged from 119 to 1032. Root study of the mungbean plants growing in this field showed heavy and double infestation by *Rotylenchulus* and *Meloidogyne*. Perhaps the mungbean problem experienced at AVRDC for several years may be attributed to the interaction of these two nematodes, but this needs further study.

The present investigation points out the need to give the *Meloidogyne* problem at AVRDC and Taiwan at large due consideration. (Author's abstract)

Keywords: Agriculture, Meloidogyne spp., Meloidogyne incognita, M. javanica, M. hapla, M. arenaria, Helicotylenchus, Aphelenchus

The Philippine Scientist, Volume No. Issue No. , 88-104 2008, (Filipiniana Analytics) Fil(S) Q1 J95 v31 1994

0021

Molecular and phenotypic studies of resistance genes introgressed from wild tomato (Lycopericon chilense) to cultivated tomato (Lycopersicon esculentum) against tomato leaf curl virus isolate from the Philippines Tongson, Eden Jane U., Galvez, Hayde F., Hautea, Desiree M. The *Tomato leaf curl* virus disease caused by the whitefly-transmitted geminivirus (WTG) seriously affects production and cultivation of tomato worldwide. Since no cultivar of tomato ever displayed resistance to leaf curl diseases, breeding efforts towards resistance were focused on utilizing wild tomato genetic resources. However, progress in breeding for resistance is slow because of the complex genetics of resistance and its variable expression to different isolates of the virus from different geographical areas.

Mapping for resistance genes against WTG and marker development have been done for marker-assisted breeding for ToLCV resistance. Three introgression regions in tomato line FLA456-4 derived from wild relative Lycopersicon chilense were associated for resistance against WTG in Indonesia. The regions are putatively located in chromosomes 3, 6, and 11. The effectivity of these genetic factors was evaluated against Tomato leaf curl virus Philippines strain (ToLCPV), specifically with Los Banos isolate. By phenotypic characterisation of the F3 introgression families of FLA456-4 x CLN1466J cross, these regions were validated; with emphasis in chromosomes 3 and 11. Introgression lines that carry combinations of the three L. chilense-derived genomic segments from FLA456-4 are represented in these F3 families.

A (FLA456-4 x Super Apollo)F2 population was also used for molecular characterization of the resistance genes against ToLCPV. In this mapping population, the introgressed regions in chromosome 3 and 6 were validated based on strong association (Likelihood Ratio 19.0 at P<0.001) between the molecular markers that tag the *L. chilense* segments and the disease response of the population expressed as area under the disease progress curve (AUDPC) against ToLCPV-Los Baños isolate. By composite interval mapping, three quantitative trait loci (QTL) for resistance gene, RGA marker TO-32. The QTL with the largest effect (71.9%) was mapped in chromosome 6. Results of this study validate the whitefly transmitted geminivirus (WTG) resistance in tomato derived from *L. chilense*, in particular, the introgressed segments in chromosome 3 and 6 against ToLCPV-Los Baños isolates. **(Author's abstract)**

Keywords: Agriculture, Tomato, Tomato leaf curl virus, Resistance, Mapping, Molecular marker

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0022

Production performance of yaks (*Poephagus grunniens* L.) and their Calves given vitamin E and selenium during late gestation *Bam, Joken , Deori, Sourabh, Paul, V*

Yak (Poephagusgrunniens L.) is an important animal of the highlands distributed throughout the harsh environment of the Himalayan mountain range. However, the animal often exhibits poor productivity and calf viability. Vitamin E and selenium are important antioxidants and play an important role in udder immunity and calf viability. Therefore, a study was designed to determine the efficacy of parenterally administered vitamin E and selenium during the late gestation period on certain productive characteristics of yaks and their calves. Altogether 21 yak cows were randomly divided into three groups with seven animals per group. Treatment 1 received no drug and served as the Control. Treatments 2 and 3 received a commercial preparation containing DL-alpha tocopheryl acetate equivalent to tocopherol (Vitamin E) 50 mg/ml and sodium selenite 1.5 mg/ml administered intramuscularly twice at 7 days interval 30-40 days prior to expected calving at the rate of 5 ml and 10 ml for Treatments 2 and 3, respectively. The results showed that intramuscular administration of 10 ml of Vitamin E and selenium preparation to yak cows during late gestation can significantly (P<0.05) increase milk yield and lactation length and improve calf viability. **(Author's abstract)**

Keywords: Agriculture, Calf viability, Productivity, Selenium, Vitamin E, Yak

Philippine Journal of Veterinary Medicine, Volume No. 52 Issue No. 2, 121-124 2015, (Filipiniana Analytics) NP

0023

Profitability of intercropping corn with mungbean and peanut Arakama, Nurs

The experiment was conducted in Mindanao State University-Sulu Capitol Site, Jolo, Sulu from June to December 2003. The main purpose of this study was to evaluate the profitability of intercropping corn with different legumes. Specifically, this study aimed to identify which legume intercrop had beneficial effects to on corn plants; to determine which legume intercrop yielded more profit; and to determine any significant effect of intercropping corn with different legumes.

Five treatments with four replication were evaluated in this study. Land Equivalent Ratio was used to determine the productivity and profitability of the intercropping system.

Significant differences were observed on the agronomic characters and yield components of corn between cropping systems; the introduction of intercrop and the methods used influenced the performance of com (OPV-10). Com yield was reduced due to lower population in the intercropping system; however, it was compensated by the yield of the intercrop.

The land equivalent ratio showed a 9%-19% productivity advantage of intercropping system over sole corn.

Costs and returns analysis further showed that highest net income of P 29,980.00 was derived from corn + peanut intercrop while sole corn had a net income of PhP 21,740.00 per hectare. The lowest net income among the five treatments was from sole mungbean with PhP 21, 070.00 per hectare. (Authors' abstract)

Keywords: Agriculture, Agronomic characters, Legumes field, Field components

0024

Quantitative resistance loci (QRL) against bacterial blight (*Xanthomonas oryza pv. oryzae*) and leaf blast (*Pyricularia orazae* Sacc.) and quantitative trait loci (QTL) for grain qualities in rice (*Oryza sativa* L.)

Rey, Jessica D., Mendioro, Merlyn S., Vera Cruz, Casiana M., Xu, Jianlong, Gao, Yongming, Li, Zhikang

A total of 174 BC2 introgression lines (ILs) originally selected for drought tolerance and grain quality traits, derived from crosses IR64/Binam and Teqing/Binam were used to map quantitative resistance loci (QRL) against

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bacterial blight, Xanthomonas oryzae pv. oryzae (Xoo) and leaf blast, Pyricularia oryzae. Artificial inoculation was done under screenhouse conditions using Xoo races 6 and 9 and P. Orvzae isolates M64-1-3-9-1 and P06-6. Polymorphic SSR (simple sequence repeats) markers (182) were used for genotypic analysis. Three ILs from IR64/Binam populations exhibited complete resistance (CR) to race 6, which was associated with six markers. Genotypic data indicated that the presence of donor alleles at all 6b loci is required for resistance, suggesting a strong epistasis between or among alleles at 6 loci. Twenty-eight ILs from IR64/Binam population exhibited CR to race 9. In the Teging/Binam population, partial resistance (PR) to race 6 was associated with four markers and 73 showed CR to race 9. One ORL for CR and two ORL for susceptibility to race 9 were identified. Two ORL from IR64 x Binam and one QRL from Teqing x Binam population were identified as new QRL against M64-1-3-9-1. Three QRL from IR64 x Binam and one QRL from Teqing x Binam population against P06-6 were identified. Quantitative trait loci (QTL) for grain quality traits (GQ) were mapped as well. Sixteen new QTL were associated with grain elongation. Aroma and gelatinization temperature were contributed by Binam with 60 and 21 putative QTL identified, respectively. Six marker loci were associated with GQ traits and BB QRL for both race 6 and 9. More in depth exploration on the effect of all diseases to GO traits can be done to identify which specific ORL and QTL are interacting. This can be achieved by backcrossing the selected ILs to the recurrent parent or ultimately by cloning the QRL. (Author's abstract)

Keywords: Agriculture, Quantitative trait loci, Quantitative resistance loci, Bacterial blight, Leaf blast, Grain quality

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0025

Quantitative trait loci (QTL) analysis for iron toxicity tolerance in rice (*Oryza sativa* L.) Elec, Venus H., Quimio, Celsa A., Mendoza, Rhulyx, Sajise, Andy G., Beebout, Sarah J., Gregorio, Glenn B., Singh, Rakesh Kumar

Iron toxicity is a major problem of the coastal areas in the tropics and also some specific regions like lowland areas of western Africa. As much as 60% of the lowland rice area in West and Central Africa are at risk with iron toxicity and could result to an average yield loss of 50%. In severe cases, it could contribute up to 90-100% yiled reduction depending on the intensity of the toxicity and tolerance level of the rice cultivar. Understanding the genetic basis of iron toxicity tolerance in rice is a fundamental task for breeders and molecular biologists to develop new rice varieties with more iron toxicity tolerance characters. The study aims to investigate genetic factors controlling tolerance to Fe2+ toxicity through investigation of the iron toxicity tolerance in rice. A set of 350 F2 individuals derived from a cross between Suakoko 8 (tolerant) and Bao Thai (sensitive) comprised the mapping population. The population was screened and evaluated for iron toxicity tolerance in the Phytotron at IRRI using six descriptive traits. A total of 720 simple sequence repeat markers covering the whole genome were used for the parental survey. Ninety-three markers (15%) were found to be polymorphic between the 2 parents and were used to screen the F2 progenies. Twelve putative OTLs for iron toxicity tolerance were detected through single marker analysis and interval mapping. The identified markers located in chromosomes 3, 4, 5, 8 and 10 explain a small percentage of the total phenotypic variation as exhibited by the low individual LOD scores (2.512-4.48). The identification of 12 OTLs could help provide greater understanding of the genetic basis contributing to iron toxicity. (Author's abstract)

Keywords: Agriculture, Rice, Iron toxicity, Mapping population, QTL, Markers

Transactions of the National Academy of Science and Technology, Volume No. 31 Issue No. 1, 5-6 2008,

Reaction of wild and cultivated *Musa* species to major banana virus diseases Dela Cueva, Fe M., Dinglasan, Eric G., Damasco, Olivia P., Herradura, Lorna E.

Philippine *Musa* germplasm collection at IPB-UPLB and BPI Davao City holds a wide array of wild and cultivated banana cultivars. The germplasm provides wide gene pool as sources of desirable traits for breeding programmes like resistance to pests and diseases. Major banana viruses which include Banana bract mosaic virus (BBrWV), Banana bunchy top virus (BBTV), and Cucumber mosaic virus (CMV), as well as detection of Banana streak virus (BSV) has been observed in the *Musa* germplasm collection. Information on the reaction of these cultivars against these viruses is very little, hence this study. *In vitro* derived plantlets were evaluated for resistance against BBrMV, BBTV, and CMV under greenhouse condition. A total of 57 banana cultivars were evaluated. At 3-7 weeks after insect transmission, symptoms of BBTV appeared as marginal chlorosis and leaf narrowing. Low BBTV incidence (<50%) was recorded on some cultivars ranging from 0-44%. ELISA reading from asymptomatic plants ranged from 0.140 - 0.657, in which some cultivars were detected to be BBTV-positive. This indicates that BBTV is still present even in a symptomatic condition. For CMV, symptoms appeared 3 - 4 weeks after inoculation only in 1 cultivar. ELISA also detected CMV infection on some cultivars, which ranged from 0.143 - 0.940, even in asymptomatic condition. For BBrMV, all plants showed no diagnostic symptoms but ELISA also detected virus infection on some cultivars. ELISA values ranged from 0.140 - 0.913. (Author's abstract)

Keywords: Agriculture, Musa germplasm, ELISA, Banana bunchy top virus (BBTV), Banana bract mosaic virus (BBrMV), Cucumber mosaic virus (CMV)

Transactions of the National Academy of Science and Technology, Volume No. 34 Issue No. 1, 28 2008, (Filipiniana Analytics) Fil(S) Q149.P5 N25 34/1 2012

0027

Towards establishment of mutant tomato germplasm

Galvez, Hayde F., Canama, Alma O., Tongson, Eden Jane U., Quilloy, Reynaldo B., Colle, Marivi G., Hautea, Desiree M.

Tomato (*Lycopersicon esculentum* L.) is one of the popular and important vegetable crops grown worldwide. It is the most important crop in the fresh and processed vegetable market. Current Breeding efforts are geared towards the incorporation of disease resistance genes, enhanced quality traits and other important traits required by the tomato crop to sustain productivity under biotic and abiotic limiting conditions. As sources for genetic stocks, breeding materials are resourced from within the *Lycopersicon* and wild relatives.

Large M1 populations of tomato H7996 were established using physical (Cobalt 60 gamma ray) and chemical (ethylmethane sulfonate, EMS) mutagens. The mutant germplasm will be used as a rich source of genetic materials to intensify crop improvement and genetic studies in tomato.

From 5000 mutagenized seeds each using gamma ray (600 Gy) and EMS (1%), a total of 465 - Gy and 1012 - EMS M1 seedlings had been transplanted. Only 380-Gy and 633-EMS M1 plants produced fruits. Three (3) fruits

from different normal branches and three (3) fruits from visible mutant branch were separately sampled to derive the M2 generation of tomato mutants. Visible mutants were identified in 67-Gy and 146-EMS M1 plants. However, only 16-Gy and 60-EMS M1 plants produced fruits. The most common dominant and visible mutations observed in the M_1 screening were monopodial, compact, short internodes, multi-branch plant type, light yellow and ghost leaf coloration, tiny and long pedicel leaf morphology and small or short plant size. Morphological characterization of the M2 mutant families is on-going. (Author's abstract)

Keywords: Agriculture, Tomato mutant, Gamma ray irradiation, EMS

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0028

Transgenic rice plants over expressing host transcription factors Rf2 and Rf2B are tolerant to tungro disease

Alfonso, Antonio A., Duque, Ulysses G., Babb, Gina M., Miranda, Ronalyn T., Duque, Johna C., dela Cruz, Arlen A., Tiongco, Emmanuel R., Rivera, Tolentino, Dai, Shunhong, Beachy, Roger N.

Rice tungro disease (RTD) causes tremendous losses in the Philippines and other rice growing countries. Recent molecular studies have revealed interactions between specific regions of the rice tungro bacilliform virus (RTBV) promoter and host proteins resulting in the development of disease symptoms. One plausible explanation for this observation is that the endogenous transcription factors, called RF2a and RF2b, become sequestered by the viruses during infection and their limiting status disrupts plant development. To test this hypothesis, four Taipei 309-derived transgenic rice lines over-expressing RF2a or RF2b together with wild type Taipei 309, resistant check Matatag 6 and susceptible check TN1 were infected with viruliferous green leafhopper 25 days after sowing. Symptom development and ELISA indices for the two viruses were monitored daily until the eight day and subsequently at 5day intervals up to 55 days after inoculation (DAI). Matatag 6 maintained a steady almost undetectable RTBV titer up to 55 DAI. For all the other entries, a generally increasing trend in the RTBV titer that peaked at 30-45 DAI was observed. At 55 DAI, RTBV titers were comparable to the 10 DAI levels. For RTSV, titers were also barely detectable in Matatag 6 but there was a slow upward trend for all the other entries. In terms of disease incidence, both TN1 and wild type Taipei 309 exhibited severe symptoms. The transgenic lines exhibited less severe symptoms and at certain points some lines were comparable to Matatag 6. Most of the transgenic plants recovered from tungro damage at 30 DAI. Among the four transgenic lines, RbMT6 had the highest number of healthy plants at 34.6% as opposed to 26.1% in Matatag 6, the resistant check. The improved resistance of transgenic lines suggests that over expressing RF2a and RF2b transcription factors in the plant may reduce the symptoms associated with RTD. (Author's abstract)

Keywords: Agriculture, Rice tungro disease, ELISA, Transcription factors, Transgenic rice, Gene overexpression

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BIOLOGY

A 10% cream preparation from the crude ethanolic extract of the dried seeds of tonkin (*Ipomoea muricata*): formulation and its quality control

Angeles, Mary Rose S., Camina, Jessica Rei N., Castillo, Agatha Christie T., Diaz, Romielhyne Z., Murillo, Nico S., Quibael, Liana Aira V., Sy, Sandra C.

Ipomoea muricata (L.) Jacq. (Convolvulaceae) has been proven to possess antimicrobial activity against Staphylococcus aureus. The study aimed to formulate a topical cream from the dried seeds of the plant. The crude ethanolic extract was subjected to drug-excipient compatibility testing using a ratio of 1:1 and stored at 40°C for four weeks. The excipients that are compatible with the crude ethanolic extract were used in the formulation of cream. S. aureus was tested for its susceptibility against the formulated cream preparation using Disk Diffusion Method. The formulated cream that produced the biggest zone of inhibition was chosen to be the best formulation and was also subjected to quality control tests. The quality control tests include the organoleptic characteristics, pH, and viscosity and antimicrobial activity. The extract was found to be compatible with acacia, glycerin, sodium lauryl sulfate, methyl paraben, propylene glycol, stearyl alcohol, white petrolatum and not compatible with benzalkonium chloride and yellow soft paraffin. The excipients were used in the formulation of three cream preparations. Using ttest at p < 0.05, formulation 3, which is a creamy white, tamarind-like odor cream with a pH of 6.45, viscosity of 57,000 cp and zone of inhibition of 23.5 mm, exhibited the best antimicrobial activity Based on ANOVA, there is no significant difference in the quality control parameters of two batches of Formulation 3. The cream should be stored at a temperature not exceeding 40°C because changes in pH, viscosity and antimicrobial activity are temperature dependent. The antimicrobial activity of the formulated cream is comparable to the commercially available Fucidin cream. The cream of *I. muricata* can be manufactured in large scale so as to provide the nation with another source of antibacterial drug. (Author's abstract)

Keywords: Biology, Ipomoea muricata, Tonkin, Cream, Quality control, Formulation

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0030

Abiotic stresses to enhance bioactive potential of peanut kernels Masiglat-Sales, Jocelyn D., Resurreccion, Anna V.A.

Polyphenolic compounds, including resveratrol, were recognized for their antioxidant properties, great abundance in our diet, and prevention of various diseases associated with oxidative stress such as cancer, cardiovascular and neurodegenerative diseases. Peanuts contain resveratrol in amounts next to red wines and grapes, among food sources. Abiotic stresses increased the levels of polyphenols in certain plants. This study aims to apply abiotic stresses such as wounding, exposure to ultraviolet light (UV), ultrasound (US), and combined US-UV to enhance the bioactive potential of peanuts. Raw peanuts were washed, sanitized, imbibed, sliced to about 7 mm, exposed to UV, US, and combined US-UV, and incubated at 25°C for 24-48 hours. Results showed that slicing increased resveratrol by 19-fold from 0.02 microgram (mcg)/g in controls to 0.37 mcg/g in sliced peanuts. UV increased resveratrol of sliced peanuts by 9-fold or 3.3 mcg/g whereas US resulted in 17-fold increase or 6.35 mcg/g indicating that US is more effective than UV in enhancing resveratrol synthesis. Chopped peanuts after exposing to US achieved lower resveratrol of 2.88 mcg/g whereas whole US-treated peanuts had the lowest at 0.99 mcg/g indicating that moderate wounding of peanuts by slicing is necessary for enhanced resveratrol synthesis. Exposure of US-treated sliced peanuts to UV further increased resveratrol to 7.1 mcg/g. Wounding, UV, US and combined US-UV also increased total phenolics, antioxidant capacities expressed as trolox equivalent antioxidant capacity (TEAC) and oxygen radical absorbance capacity (ORAC), and other beneficial phenolic compounds including piceid, and coumaric, caffeic, and ferulic acids. Application of abiotic stresses in peanuts increased its bioactive potential which can provide health benefits to consumers and value-added products to food manufacturers. (Author's abstract)

Keywords: Biology, Peanuts, Abiotic stress, Wounding, UV light, Ultrasound, Resveratrol, Polyphenolic compounds, Antioxidant

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0031

Accumulation and elimination of radioactive phosphorus (³²P) in some organs of the *Tilapia Nilotica Banico, Ma Pia Tan*

The rate of accumulation and elimination of ³²P was measured in five organs, i.e., brain, bone heart, muscle and small intestines of the *Tilapia nilotica* at 19°C or 28°C. There was a faster rate of uptake at 28°C, with the small intestines having the highest concentration of radioactive material. Elimination rates, however, indicate that bone retains ³²P longest. (Author's abstract)

Keywords: Biology, Tilapia nilotica, Radioactive phosphorus, Geiger-Muller

The Nucleus: Official Journal of the Radioisotope Society of the Philippines, Inc, Volume No. Issue No., 71-76 2008, (Filipiniana Analytics) Fil(S) QC173 N88 v27 1989

0032

Activation of endogenous banana streak badnavirus (eBSV) in *Musa* genotypes under drought condition

Dinglasan, Eric G., Dela Cueva, Fe M., Delfin, Evelyn F., Laurena, Antonio C., Natural, Marina P.

Banana streak badnavirus (BSV) is the most serious virus threat in *Musa* breeding program and germplasm movement. Viral sequences naturally integrated into the banana genome, called endogenous BSV (eBSV), can be activated into episomal BSV which are infectious and causes the destructive banana leaf streak disease. Factors that triggered activation include tissue-culture. In a changing climate scenario, abiotic stress specifically drought condition continuously affects crop productivity and susceptibility to diseases, hence it is deemed necessary to determine if drought condition in terms of water stress can trigger the activation of eBSV into infectious episomal form. Two treatments were put-up under glasshouse condition: drought imposed (water-stressed) and well-watered (control). Using BSV F1/R2 primers, IC-PCR detected 8 out of 18 banana cultivars with episomal BSV at 3 weeks after drought imposition (WADI). At 3 WADI, BSV incidence per genotype ranged from 5.56 – 33.33%. In addition, episomal BSV was expressed on 'Pelipia' at 8 WADI but not on 3 WADI. Statistical analysis indicated that activation of BSV, as influenced by water stress condition, occurs only in specific *Musa* cultivars, whether they have

the A, AB, or B genome. However, under glasshouse condition, drought did not contribute to symptom expression of BSV infection even on episomal BSV-infected plants at 3 and 8 WADI. (Author's abstract)

Keywords: Biology, Banana streak badnavirus, Immunocapture-PCR, Musa germplasm, Endogenous, Episomal

Transactions of the National Academy of Science and Technology, Volume No. 34 Issue No. 1, page 108 2008, (Filipiniana Analytics) Fil(S) Q149.P5 N25 34/1 2012

0033

Allergenicity of parvalbumin and muscle protein extracts from *Decapterus macarellus*, *Chanos chanos* and *Oreochromis niloticus Urbina, Jerome, Alambra, Jennifer R., DeVelez, Noel, Mariano, Crystal Gale, Ramos, John Donnie A.*

Fish species such as galunggong (Decapterus macarellus, Dm), bangus (Chanos chano, Cc) and tilapia (Oreochromis niloticus, On) are highly consumed by most Filipinos. Unfortunately, fish consumption is often coupled with allergic reactions, a common immune disorder not properly documented in the Philippines. The specific IgE profiles of 120 Filipino subjects to allergens from the muscle extracts of three fish species and recombinant parvalbumin, a common fish allergen, were investigated in this study through Enzyme-linked Immunosorbent Assay (ELISA) and Western Blot Analysis. An average of ~54 mg total protein was isolated separately using 5 g (wet weight) of muscles from the three fish species. Multiple bands ranging from 10-250 kDa were observed in the muscle extract preparation under a 15% polyacrylamide gel. IgE reactivity of the 60 allergic sera showed that 46.67%, 58.33%, and 20 are sensitized with allergens from Dm, Cc and On, respectively. Of the 28, 35, and 12 positive reactions in Dm, Cc, and On, 16, 14, and 6 respectively, registered high IgE levels equal to or above 100 IU/mL. Recombinant parvalbumin registered positive IgE reactivity in 63.33% of the allergic subjects. A highly significant difference in the mean IgE reactivity was observed between the allergic and non-allergic sera against the allergen from Dm (p<0.0001), Cc (P<0.0001), On (p<0.0001), and Parvalbumin (p<0.0001). Common IgE binding proteins with molecular weights of ~100 kDa were observed in the 3 muscle protein extracts. Results presented in this study have shown that Parvalbumin, a muscle protein present in fish species, is a highly reactive allergen causing sensitization in the majority of allergic Filipino patients tested. These findings provide a basis for novel forms of diagnosis of parvalbumin- and fish-induced allergic reactions. (Author's abstract)

Keywords: Biology, Bangus, Decapterus macarellus, Parvalbumin

Transactions of the National Academy of Science and Technology, Volume No. 32 Issue No. 1, 64 2008, (Filipiniana Analytics) Fil(S) Q149.P5 N25 32/1 2010

0034

Annotated checklist of eels in Bago River, Negros Occidental, Philippines Menes, Carmen C., Bucol, Ab

The eels occurring in Bago River, Negros Occidental, Philippines are briefly annotated. Order Synbranchiformes is represented by the swamp eel *Ophisternon bengalense* while Anguilliformes (or true-eels) consist of 10 species belonging to four families. Snake-eels (Ophichthidae) consist of seven species while Freshwater Eels (Anguillidae),

Spaghetti Eels (Moringuidae), Moray Eels (Muraenidae) are represented by a single species each. (Author's abstract)

Keywords: Biology, Eels, River, Brackish water, Freshwater, Negros Occidental

Asian Journal of Biodiversity, Volume No. 1 Issue No. 1, 126-138 2010, (Filipiniana Analytics) NP

0035

Anti-immunosuppressive effects of *Chromolaena odorata* (Lf.) king & robinson (*Asteraceae*) leaf extract in cyclophosphamide-injected Balb/C mice *Nudo, Leonora P., Catap, Elena S.*

Chromolaena odorata (Lf.) King & Robinson leaf extract was evaluated for its immunomodulating activity in Balb/C mice by employing a number of immune response assays namely macrophage phagocytic activity, splenocyte proliferation, production of reactive oxygen species (ROS), and plasma lysozyme levels. The optimum concentration of *C. odorata* was determined to be 100μ g/mL through *in vitro* assays. Subsequently, three (3) groups of 12 mice each were used in *in vivo* experiments, namely: (1) cyclophosphamide-induced (30mg/kg body weight) immunosuppressed mice (Cy- injected or positive control); (2) *C. odorata* extract + Cy-treated mice (C group); and (3) phosphate-buffered saline (PBS)-injected mice as the negative control group. When compared with PBS-treated mice, the Cy-treated mice showed significantly lower phagocytic activity, cellular proliferation, production of reactive oxygen species (ROS), and plasma lysozyme levels. Significant improvement in macrophage phagocytic activity and cellular proliferation was exhibited by the plant extract-treated mice when compared with Cy-injected mice only. The extract from *C. odorata* also improved superoxide production and plasma lysozyme activity compared with the Cy-injected mice. These results demonstrated the immunopotentialing activities of the *C. odorata* leaf extract on the innate immunity of Balb/C mice. Also, the extract could potentially reverse a drug-induced immunosuppression as confirmed through *in vivo* experiments. Indeed, there is a great potential of the plants to be utilized as source of biologically active products and metabolites for drug development. (Author's abstract)

Keywords: Biology, Balb/C mice, Chromolaena odorata, Cyclophosphamide, Immunomodulation, In vivo, Immunosuppresion

Philippine Journal of Science, Volume No. 141 Issue No. 1, 35-43 2008, (Filipiniana Analytics) Fil(S) Q1 P55 141/1 2012

0036

Arthropod community structure during the early stages of leaf litter decomposition Barrion-Dupo, Aimee Lynn A., Perez, Juveneil Eis

Arthropods constituting 51 families of 13 orders were collected from leaf litter during the early stages of decomposition. These groups were classified into their respective trophic categories based on mouthpart inference. These categories are as follows: chewing detritivores (15 families) > chewing predators (6 families) > chewing

herbivores and sucking herbivores (5 families) > sucking predators (3 families) > chewing parasites and chewing omnivores (2 families). A simplified food web of the arthropods in leaf litter is also presented. (Author's abstract)

Keywords: Biology, Arthropod community, Foodweb, Leaf litter, Trophic categories

Asian Journal of Biodiversity, Volume No. 4 Issue No. 1, 84-98 2013, (Filipiniana Analytics) NP

0037

Assessment of biodiversity and water quality in association with land use in the Alanib River, Mt. Kitanglad Range Park, Philippines

Forten, Ronald Regan, Labadan, Abigail, Bruno, Angela Grace, Acma, Florfe M., Galan, Gloria L., Leaño, Emmanuel P., Quimpang, Victoria T., Opiso, Einstene M., Coritico, Fulgent P., Amoroso, Victor B., Opiso, Einstene M., Coquilla, Kate Luce

Inventory and assessment of aquatic biodiversity were conducted in Alanib River in Mt. Kitanglad, Bukidnon, which is one of the Long Term Ecological Research (LTER) sites in Mindanao. The species richness and abundance of fishes, macroinvertebrates, plankton and also vascular plants in the riparian vegetation were evaluated in relation to the influence of land use, water quality and elevation. The results of this study revealed that there were 2 species of fishes, 6 orders of macro-invertebrates 14 species of plankton and 237 species of vascular plants were identified. The surrounding land uses and human activities along the river were found to have significant impact on the overall water quality and biodiversity of the aquatic biota and riparian vegetation of Alanib River. The increasing human population and agricultural intensification at the lower section of the river contributed to the relatively lower water quality, presence of pollution tolerant phytoplankton and macro-invertebrate groups as well as invasive species of vascular plants. Hence, the overall results of this study revealed that the integrity of Alanib River in terms of its biophysical and chemical condition is severely threatened especially in the downstream section due to various anthropogenic activities which can degrade its overall environmental quality. **(Author's abstract)**

Keywords: Biology, Assessment, Stream health, River, Biodiversity, Composition, Mindanao

Asian Journal of Biodiversity, Volume No. 5 Issue No. 1, 54-77 2014, (Filipiniana Analytics) NP

0038

Assessment of carbon monoxide (CO) and hydrocarbon (HC) emissions of motor vehicles in Laoag City Domingo, Doreen D., Calantoc, Florence R.

Republic Act 8749 (The Clean Air Act) provides a comprehensive air pollution control policy requiring compliance of all motor vehicle owners to undergo emission testing for carbon monoxide (CO) and hydrocarbon (HC) before registration. Laoag City has become a center of development leading to the establishment of new commercial and industrial institutions. This has brought about the influx of people and the expansion of transport

facilities from all other neighboring municipalities, leading to CO and HC emissions - air pollutants that are detrimental to the health of the people. Levels of CO and HC emissions of motor vehicles derived from the documents (200 emission records) of the Land Transportation office (LTO) and Emission Testing Centers (ETC) in Laoag City were compared with the acceptable standard values set by the Clean Air Act. Determination of the level of awareness and extent of implementation of the Act by motor vehicle owners and policy enforcers were also considered and evaluated using a structured questionnaire. Results revealed that wagon type vehicles had the highest CO (4.46%; std. 4.5%) and HC (711 ppm; std 800ppm) emissions while motorcycles had the least CO (1.09%; std. 4.5%) and HC (412ppm; std.800ppm) among the various types of vehicles considered in the assessment. All types of vehicles showed an overall emission value of CO (2.37%) and HC (463ppm) which is still low compared to the standard emission values of CO (4.5%) and HC (800ppm). A significant negative correlation (r= -0.2999) was obtained between the level of awareness (mean value = 3.54) and extent of implementation (mean value = 2.19) by motor vehicle owners. On the other hand, a positive correlation (r = 0.2386) was noted between the level of awareness (mean value =3.27) and extent of implementation (mean value =4.16) by policy enforcers of the Act. Based on the above findings, emission testing should not only be conducted before registration or renewal of franchise of vehicles, but awareness and strict implementation of such a provision of the Clean Air Act should be seriously considered and attended to. (Author's abstract)

Keywords: Biology, Carbon monoxide, Clean air act, Emission test, Hydrocarbon, Vehicular emissions

Transactions of the National Academy of Science and Technology, Volume No. 32 Issue No. 1, 56-57 2008, (Filipiniana Analytics) Fil(S) Q149.P5 N25 32/1 2010

0039

Association of blood coagulation and humoralbiodefense genes: evidence from crustaceans Maningas, Mary Beth B., Kondo, Hidehiro, Aoki, Takashi, Hirono, Ikuo

Blood coagulation is a conserved defense mechanism among invertebrates and it has been well studied in the horseshoe crab (chelicerate) and the freshwater crayfish (crustacean) but is not well defined in shrimp. Here, we demonstrate *in vivo* the functional involvement of transglutaminase (TGase) and clotting protein (CP) in the shrimp blood coagulation system using RNA interference, and their influence in the mRNA expression of antimicrobial peptides and genes involved in the prophenoloxidase system. Expression of TGase mRNA was inhibited in gills, heart, hemocyte, hepatopancreas, intestine and lymphoid organ, while the CP gene was suppressed only in gills and heart tissues on day-1 post injection, with 1 µg and 10 µg of TGase- and CP-dsRNA, respectively. However, at day-7 post injection, systemic gene silencing was observed for both genes and dosages as shown by mRNA expression, blood coagulation and protein data. A challenge test with white spot virus and Vibrio penaecida revealed the critical function of TGase and CP in the immune system of shrimp. Suppression of antimicrobial peptides and genes involved in the prophenoloxidase system following TGase and CP silencing demonstrates as association between blood coagulation and humoral biodefenses in shrimp. This finding suggests a possible alternative mechanism in the activation of antimicrobial peptides and genes involved in the prophenoloxidase system following the prophenoloxidase system in chelicerates and crustaceans. **(Author's abstract)**

Keywords: Biology, Blood coagulation, Clotting protein, Crustacea, Prophenoloxidase RNA interference, Transglutaminase

Biodiversity and status of butterflies in the vicinity of Mountain View College, Mt. Nebo, Valencia City

Sumagaysay, Charity Joy B., Sumagaysay, Ja

To establish a local data base on butterfly composition and richness, biodiversity of species were determined at the Agriculture Garden, Balambangan Area, Hydro II Mini-forest and Malingon Mini-forest sites of Mountain View College using 40 m line transect sampling. BIOPRO software version 2 was used in the analyses. Survey showed 49 species, 33 genera, and 5 families of butterflies. One species (2.0%) was very common, 22 species (44.9%) were common, 10 species (20.4%) were rare, and 16 species (32.7%) were undetermined. From highest to lowest, diversity indices were Malingon Mini-forest (H=1.519), Hydro 2 Mini-forest (H=1.415), Agriculture Garden (H=1.176), and Balambangan Area (H=1.146). Bray-Curtis analysis revealed 2 clusters of habitats. Cluster 1 (81% similarity) at Malingon and Hydro II Mini-forests had dense trees, river systems, and nectar sources which probably favoured the presence of rare and endemic species. Cluster II (73% similarity) at Agriculture Garden and Balambangan Area had human settlements, sparse tree distribution and inhabited by the common species. These results suggest that the highest diversity which includes rare and endemic 143 species could be found in dense forest habitat with presence of water sources and minimal human disturbance. Continued monitoring will establish population and species richness trends and inform ecological measures to preserve endemic and rare species. **(Author's abstract)**

Keywords: Biology, Biodiversity, Butterflies, Lepidoptera

Asian Journal of Biodiversity, Volume No. 3 Issue No. 1, 142-155 2012, (Filipiniana Analytics) NP

0041

Biodiversity assessment of Mt. Banahaw de Dolores, Philippines Faller, Wilfredo C., Beltran, Francisco N., Garcia, Ronald O., Gascon, Cecilia N., Agudilla, Mary An

A study was conducted to assess the diversity of biological communities at Mt. Banahaw de Dolores in Sitio Kinabuhayan, Sta Lucia, Dolores, Quezon; the area was characterized by identifying the forest trees present, species richness and diversity, and dominance. This was after a 5 year moratorium visitation in the national park. The forest inventory used the quadrat sampling method. Wildlife inventory and insect collection were conducted within 700 masl to the peak of Mt. Banahaw de Dolores. Result revealed a total of 455 trees belonging to 92 species and representing 37 families. A total of 16 families of birds represented by 30 species, 5 species of bats, 3 species of amphibians and 2 reptiles were recorded. Similarly, a total of 285 insects representating more than 104 families and 17 orders were identified. Result also showed high values for Shannon-Weiner index (H) and species richness (d). Species were evenly distributed among areas sampled as reflected by high values of Eveness index. These values indicate high species variation and diversity. (Author's abstract)

Keywords: Biology, Mt. Banahaw de Dolores, Biodiversity, Philippines, Species richness, Shannon-Weiner index

Asian Journal of Biodiversity, Volume No. 4 Issue No. 1, 23-45 2013, (Filipiniana Analytics) NP

Biodiversity conservation and sustainable development in Mindanao Protected Areas, Philippines Bacud, Donnie C., Mirasol, Joy M., Mirasol, Jr., Fe

The paper examines the Protected Area Management Systems (PAMS) on Biodiversity Conservation and Sustainable Development (BCSD) of 28 protected areas (PAs) in Mindanao, Philippines, focusing on the contexts, inputs, processes and outcomes. Of the nineteen variables, eight were found to be significantly correlated to BCSD of the PAs. Path analysis was used to determine direct, indirect and net effects of the variables to BCSD. The study concluded that placement of optimal PA staffing and resource management implementation are both crucial in achieving BCSD. It necessitates critical and positive collaboration with Protected Area Management Board (PAMB), resource generation contributing to the operation of the PA and community participation in management. The longer the PA under protection, the better is its contribution to BCSD. Policy recommendations were formulated in the areas of institutional, economic, technical, community participation and PAMB operations. (Author's abstract)

Keywords: Biology, Biodiversity conservation, Sustainable development, Protected areas, Path analysis

Asian Journal of Biodiversity, Volume No. 4 Issue No. 1, 204-222 2013, (Filipiniana Analytics) NP

0043

Biogenic amines in some natural and processed cheeses sold in Laguna Province, Philippines Vallejos, Ma. Jannine M., Pham, Laura J., Barraquio, Virginia L.

Natural and processed cheese samples from the different supermarkets around Laguna Province in the Philippines were analyzed for the presence and quantity of biogenic amines using thin layer chromatography with BiosoftTM Quantiscan program. The histamine concentrations were 113.4 ± 1.8 ppm, 217.9 ± 1.0 ppm, and 49.9 ± 3.6 ppm in Blue, Cheddar, and Edam cheese, respectively. The histamine limit in cheese is 100 mg/kg, hence the level found in Cheddar cheese needs to be looked into. The tyramine contents were 2269.3 ± 3.6 ppm, 571.3 ± 2.0 ppm and 199.7 ± 1.9 ppm in Blue, Cheddar, and Edam cheese, respectively. Because the limit for tyramine in cheese is 200 mg/kg, the levels found in Blue and Cheddar cheese are of serious concern. Brie, processed cheese and white soft cheese (kesong puti) were negative for both histamine and tyramine. All cheeses were negative for cadaverine. High levels of histamine and tyramine found in the cheese samples analyzed indicate the need to expand sampling to other natural cheese varieties sold in the province. Then, actual or anticipated human exposure risk to BAs in cheese can be determined to ascertain the necessity for the Food and Drug Administration and other government agencies concerned with food safety to take action. (Author's abstract)

Keywords: Biology, Biogenic amines, Cheese, Histamine, Tyramine

Philippine Journal of Science, Volume No. 141 Issue No. 1, 111-115 2008, (Filipiniana Analytics) Fil(S) Q1 P55 141/1 2012

Bioinformatics tools for identifying hepatitis C virus subtypes Baclig, Michael O., Gopez-Cervantes, Juliet, Natividad, Filipinas F.

With the development of freeware bioinformatics software as well as the availability of web-based software, it is now possible to use various bioinformatics tools to identify viral subtypes such as hepatitis C virus (HCV). This study aimed to demonstrate the role of bioinformatics tools in identifying HCV subtypes and to compare the accuracy of HCV-1 subtyping by 5'UTR PCR-RFLP analysis and DNA sequencing. From a clinical viewpoint, accurate genotype and subtype identification of HCV are important because this may be used as guide for deciding which therapy is appropriate to use for a particular patient. From 2005 up to 2008, we had a total of 30 HCV genotype 1 (HCV-1) positive samples. HCV-1 subtypes were identified by an in-house PCR-RFLP analysis and through direct nucleic acid sequencing using nested primers specific to the 5'UTR and non-structural 5B (NS5B) region. Bioinformatics tools play an important role in identifying HCV-1 subtypes by predicting the size of the amplicon; determining the specific restriction enzyme to cut a given nucleic acid sequence; viewing and editing the electropherogram; aligning nucleotide sequences with prototypes; searching for identical sequences; and understanding the evolution and relationship of various subtypes. The HCV nucleotide sequences reported in this study have been deposited to GenBank. Overall, this information can be utilized to generate molecular diagnostic tests in the future. **(Author's abstract)**

Keywords: Biology, 5' untranslated region, Bioinformatics tools, Hepatitis C virus subtypes, Non-structural 5B region

Philippine Journal of Science, Volume No. 141 Issue No. 1, 25-34 2008, (Filipiniana Analytics) Fil(S) Q1 P55 141/1 2012

0045

Birds of Malagos watershed, Southeastern Philippines del Rosario, Bernadette I., Ibanez, Jayson C., Alviola, Geonyzl L., Otadoy, Juli

Mindanao is considered one of the richest islands in the Philippines, due to high avifaunal biodiversity. Birds play a vital role in determining the condition of certain areas. The study is a morphological assessment of birds in Malagos watershed, Baguio District, Davao City. It sought to identify and classify the birds species; determine the distribution and compare the taxonomic listing of birds with previous avian surveys in the area. Using point count and mist netting effort, 54 species were identified belonging to 27 families. Three (3) new families were added to the list of previous studies. It included twelve Philippine endemic species, seven Mindanao endemic species, 32 resident species and four species of birds assessed as vulnerable and endangered. The area was also considered disturbed because most of the observed birds were usually found in open and cultivated areas. A comparative study of three other avian surveys showed a steady increase in the population from 1994 to 2002 but a decline in the number of

avian species was observed in the present study, a negative trend which is associated with habitat destruction and anthropogenic activities. (Author's abstract)

Keywords: Biology, Biodiversity, Birds, Malagos watershed, Avifaunal

Asian Journal of Biodiversity, Volume No. 1 Issue No. 1, 36-48 2010, (Filipiniana Analytics) NP

0046

Carotenoid content of canistel or tiesa (*Pouteria campachiana* (HB.K) Baehni) Capistrano, Elmira P., Francisco, Ma. Leonora dL.

Extraction and isolation of carotenoids from biological sources is of current interest to researchers. Canistel is an underutilized crop that is rich in carotenoids. This study was done to investigate the carotenoid content of canistel at various maturity stages. Different maturity stages of canistel were obtained based on peel color. Samples were immediately analyzed for firmness, flesh color, soluble solids and pH. Total carotenoid concentration was estimated by comparing the sample absorbance to a standard curve of β -carotene at 476 nm. Firmness decreased from 1.33 to 178mm as the canistel increased in maturity. Firmness of overripe canistel decreased almost three times compared to the ripe canistel. No significant differences (P>0.05) were observed between immature and half-mature canistel. Lightness (L*) of the sample were not significantly different (P>0.05) for the first three stages of maturity (L* 57 to 60). Significant (P<0.05) change was observed when the fruit became overripe (L^* 53). The redness (a^*) of the sample on the other hand increased as the fruit reached senescence (a* 7 to 14) while the yellowness (b*) had its maximum value (b* 61) during the ripe stage. Soluble solids increased as the fruit develops while no significant difference (P>0.05) in pH was observed across all samples. Carotenoid concentration was its maximum during the immature stage and decreased as the fruit reached senescence (180 to 54 ppm). Carotenoids partially identified were a mixture of hydrocarbons and xanthophylls. Ten carotenoids were identified based on spectral maxima that include neoxanthin, violaxanthin, α -carotene, ε -carotene, neurosporene, lutein, α -zeacarotene, cis-luteoxanthin, β zeacarotene and ß-carotene-5,6,5',6'-diepoxide. Increased utilization of canistel as natural source of carotenoids should be explored as possible substitute for synthetic food colorants to meet consumer's desire for natural carotenoids. (Author's abstract)

Keywords: Biology, Carotenoids, Canistel, Maturity, Firmness, Color

Transactions of the National Academy of Science and Technology, Volume No. 34 Issue No. 1, 89 2008, (Filipiniana Analytics) Fil(S) Q149.P5 N25 34/1 2012

0047

Changing the ecological niche of coprinus comatus from a weed fungus to a nutriceutical and biocleansing agent

Dulay, Rich Milton, Parungao IV, Alfonso G., Kalaw, Sofronio P., Reyes, Renato G.

Coprinus comatus is an edible fungus that normally inhabits cellulosic substrates like rice straw with appreciable amount of nitrogen. This is considered as a weed fungus by the rural-based Volvariella growers in the country due to

its rapid growth on mushroom beds. This mushroom is producing small fruiting bodies that easily open and become inky within 12 hours. Thus, despite of its edibility, this mushroom is often times ignored in the mushroom industry. Our research team initiated a study to harness the economic potential of this edible mushroom. The growth performance of Coprinus comatus on different pulp and paper waste formulation was evaluated. Observations were based on the best substrate having shortest incubation period, initiation of primordia and development of fruiting bodies. The ability of C. comatus as biocleanser of Pb -contaminated pulp and paper waste was also highlighted. The chemical components of the different pulp and paper waste were determined before and after cultivation under aseptic condition. Among the six pulp and paper waste-based formulations, only brown pulp contains Pb with 48 ppm. This Pb - contaminated substrate was used in evaluating the ability of this mushroom to uptake this heavy metal. Our investigation revealed that 16.15 ppm was only detected on the dried fruiting bodies of C. comatus after it was grown on Pb - contaminated substrate. The remaining 3 formulations were used as substrates for the production of the fruiting bodies of C. comatus in a miniaturized glass container under aseptic condition. Results of the evaluation disclosed that C. comatus cultured on fine gray pulp with 50% rice straw and 10% rice bran and coarse pulp with 50% rice straw and 10% rice bran registered the shortest incubation period with the same mean of 11 days. The longest incubation period was recorded in light blue pulp with 50% rice straw and 10% rice bran with a mean of 17 days. Moreover, light blue pulp with 50% rice straw and 10% rice bran produced the heaviest fruiting bodies with a mean of 8.85 g. (Author's abstract)

Keywords: Biology, C. comatus, Pulp, Lead contaminated

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0048

Chemical and biological investigations of the pelagic system of the Hilutangan Channel (Cebu, Philippines)

von Bodungen, Bodo, Balzer, Wolfgang, Bolter, Manfred, Graf, Gerhard, Liebezeit, Gerd, Pollehne, Falk

Measurements of inorganic nutrients, carbohydrates, phytoplankton, bacterial production and biomass, and total respiration by the ETS-method have been carried out in the Hilutangan Channel on three occasions during March/April 1981. Moreover, the flow of particulate and dissolved matter between the reef flats and the Channel was studied over a 24 hour period. Further, the effect of nutrient enrichment on phototrophic and heterotrophic organisms of samples placed in small bags was examined.

The chemical and biological properties of the water column in the Channel were within the typical range reported for oligotrophic tropical oceans. There was a considerable flux of particulate and dissolved matter from the reef flats into the Channel. However, transfer of the essential elements, phosphorus and nitrogen, from one system to the other was not detectable.

In the euphotic zone of the water column primary carbon production was closely matched by carbon consumption, wherein bacteria seemed to play a negligible role. Variations in carbon production and biomass were considerable over time. Occasional nutrient inputs as a possible reason for these variations and seasonal changes in the pelagic system are discussed. (Author's abstract)

Keywords: Biology, Inorganic nutrients, Carbohydrates, Phytoplankton, Bacterial production, Biomass

The Philippine Scientist, Volume No. Issue No. , 4-24 2008, (Filipiniana Analytics)

Compositional analysis of banana stalks degraded by *Pleurotus ostreatus* under solid state fermentation

Birginias, Ma. Concepcion, Agrupis, Shirley C.

Fungal bioprocessing of lignocellulosic biomass is an important agent responsible for the environmental carbon circulation. Higher fungi like basidiomycetes (e.g. Pleurotus ostreatus) have unique oxidative systems which together with ligninolytic enzymes are responsible to decompose cellulose, hemicellulose, and lignin to lower molecule components. Hence, an environment-friendly pre-treatment process for lignocellulose residues. Biodegraded products from the biomass can be refined to bioethanol and other biobased materials like fiber and biochemicals. Banana stalk was inoculated with P. ostreatus under solid state fermentation (SSF) at ambient conditions for 45 days. Dried banana stalks ground to 40 mesh was wetted at 6:1 water to biomass ratio. The biodegradation activity of the fungi was compared in substrates with or without sugar additive. Sugar composition was determined by HPLC, Acid soluble (ASL) by UV Spectrophotometer, and acid insoluble lignin (AIL) by gravimetric method, following standard protocols. P. ostreatus grew progressively in the substrates with time until the whitish hyphae covered the whole biomass in 45 days. Addition of sugar in the biomass did not show a distinct advantage over the substrate with no sugar in terms of growth and activity of the fungi. Dry solid yields were increased by 9% from the original weight due to fungal hyphae biomass. ASL and AIL were significantly decreased by about 50% compared to the original lignin of the material (11.55%). The ash content of the fungal-treated biomass was higher (0.9039-1.75%) than the untreated sample (0.6217%). Glucose (33.75-34.17%) and Xylose (20.67-22.30%) contents of the fungal-treated samples were lower compared to the control at 44.37% and 30.67% glucose and xylose contents, respectively. Mannose sugar (4.89-5.45%) was comparable with the untreated biomass. Sugar composition of the washings of the fungal-treated banana stalks should be analyzed to account the sugar released from the biomass during the biodegradation process. (Author's abstract)

Keywords: Biology, Bioprocessing, Bioethanol, Ligninolytic enzyme, SSF, Biodegrdation

Transactions of the National Academy of Science and Technology, Volume No. 34 Issue No. 1, 87 2008, (Filipiniana Analytics) Fil(S) Q149.P5 N25 34/1 2012

Contributing to the Philippines' biodiversity: establishment of two Philippine rubiaceae genera based on plastid and nuclear DNA including their conservation status Arriola, Axel H., Alejandro, Grecebio Jonathan D.

The Philippine Vanguerieae is represented only by two genera: *Canthium* (20 spp.) and *Psydrax* (monotypic). Recent molecular and morphological treatments of the tribe showed that most of its representatives do not form a monophyletic assemblage. For instance, *Canthium* was restricted to plants having supraaxillary spines. This raises questions on the position of the Philippine *Canthium* as members are without spines. In this first molecular study of two Philippine *Canthium* (*C. monstrosum* and *C. ramosii*), trnL-F and ITS regions were sequenced, assembled and aligned manually using Se-A1 v2.0 and subsequently analyzed using MrBayes 3.1.2. Interestingly, the majority-rule consensus tree revealed that the two Philippine species were nested in two different clades with high support; *C. monstrosum* within the *Keetia* clade (PP= 0.98) while *C. ramosii* grouped with the *Pyrostria* clade (PP= 1.00).

Therefore, we proposed two new combinations, the *Keetia monstrosa* (A.Rich) Arriola & Alejandro and *Pyrostria ramosii* (Merr.) Arriola & Alejandro. This study establishes for the first time the two genera (*Keetia* and *Pyrostria*) in the Philippines. The IUCN Red List declared that conservation status of *Keetia* and *Pyrostria* were from vulnerable to critically endangered. Hence, sustainable conservation is urged which requires further studies on its reproductive biology, biogeography, and economic importance. (Author's abstract)

Keywords: Biology, Canthium, ITS (nrDNA), Keetia, Philippine Endemic, Pyrostria, trnL-F (cpDNA)

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0051

Coral growth history revealed by X-radiographic studies Patzold, Jurgen

The methods for determination of coral growth rate are briefly reviewed. The growth history of three coral heads of *Porites lobata* found off Mactan Island (Cebu, Philippines) was reconstructed by means of X-radiographic techniques. The corals contained a continuous lifespan record of up to 150 years. Growth rates were between 0.9 and 1.3 cm/year. (Author's abstract)

Keywords: Biology, Porites lobata, X-radiographic, Montastrea annularis

The Philippine Scientist, Volume No. Issue No. , 67-77 2008, (Filipiniana Analytics) Fil(S) Q1 J95 v22 1985

0052

Correlation of fruit variables to the physico-chemical and biochemical attributes of the coconut (*Cocos nucifera* L.) liquid endosperm *Deocaris, Chester C., Masa, Dina B.*

A correlation study was conducted to show the relationships of the variables concerning the coconut fruit and its liquid endosperm. Variables in this study were: fruit maturity; longitudinal and transverse circumferences; gross weight and; weight of the liquid endosperm. Fruit maturities were estimated by counting the number of inflorescence starting from sampled bunch up to the bunch with fertilized pistilate flowers. This count is multiplied by 21 or 31 days, the established flowering rates of dwarf and tall coconuts respectively. Electrolytes (K⁺¹, Na⁺¹, Ca⁺², Mg⁺² and Cl⁻¹), glucose, protein, pH, specific gravity, and soluble solids were the physico-chemical and biochemical attributes measured. Aromatic Dwarf (AROD), Catigan Dwarf (CATD) and Laguna Tall (LAGT) varieties were included in the study. Fruit maturity showed positive correlations (Pearson's coefficient) with sodium content (0.49-0.84) and pH (0.37-0.80). The weight of the fruit (0.44-0.88) also had positive correlations to fruit transverse circumference. Potassium levels of coconut water increase with maturity for AROD (0.407) and LAGT (0.430). The reverse is observed with CATD (-0.639). The differences in the correlations of the three varieties suggest the biochemical "uniqueness" and significance of each variety in new beverage formulation. This could also suggest physiological and nutritional differences of the trees in general. **(Author's abstract)**

Keywords: Biology, Heatmap, Correlation, Coconut water, Electrolyte, Biochemical profiles

Transactions of the National Academy of Science and Technology, Volume No. 34 Issue No. 1, 95 2008, (Filipiniana Analytics) Fil(S) Q149.P5 N25 34/1 2012

0053

Cyanobacterial diversity from mangrove sediment of South East Coast of India Sakthivel, Kollimalai, Kathiresan, Kanda

Cyanobacterial diversity was studied in three different mangrove environments of Pichavaram (Lat.11°27' N; Long. 79°47' E), Porto Novo (Lat. 11°29' N; Long. 79°47' E), and Mudasal Odai (Lat. 11°28' N and Long. 79°46' E) in the southeast coast of India. Totally 68 species belonging to 28 genera and 10 families were recorded. The number of species was higher in Pichavaram than the other two-study areas. In Pichavaram, 63 species, 28 genera and 10 families were isolated. In Porto Novo, 53 species, 26 genera and 10 families were obtained. In Mudasal Odai, 40 species, 20 genera and 9 families were registered. Totally 58 species of non-heterocystous and 10 species of heterocystous cyanobacteria were observed. The family Oscillatoriaceae was dominant, represented with 34 species (75.8%). Out of 28 genera, Oscillatoria (14 *spp*.) was the dominant. Thirteen species were found common to all the three mangrove areas. Dominant species were four in Pichavaram, six in Porto Novo and four in Mudasal Odai. Abundant species were seven in Pichavaram, 11 in Porto Novo and five in Mudasal Odai. Co-abundant species were 18 in all the study areas. (Author's abstract)

Keywords: Biology, Cyanobacteria, Diversity, Mangroves, Sediment, Benthic forms

Asian Journal of Biodiversity, Volume No. 4 Issue No. 1, 190-203 2013, (Filipiniana Analytics) NP

0054

Distribution of anuran species in Loboc Watershed of Bohol Island, Philippines. Jose, Re

The Philippines is rich in biodiversity and Bohol Island is among the many places in the country requiring attention for conservation efforts. For this reason, a survey o f anurans was conducted in Loboc Watershed, the forest reserve in the island. Different sampling techniques were used. Three transect lines was established and were positioned perpendicular to water bodies parallel to the existing trails. A 10x10 meter quadrat size was established along each transect line. A visual encounter technique was used along each established quadrat and identification was done using a field guide. Fifteen species of anurans were recorded. One species belongs to families Bufonidae (*Bufo marinus*) and Megophryidae (*Megophryis stejnegeri*); two to family Microhylidae (*Kalophrynus pleurostigma* and *Kaluola picta*); six family Ranidae (*Fejervarya cancrivora, Limnonectes leytensis, Limnonectes magnus, Platymantis guentheri, Playmantis corrugatus,* and *Rana grandocula*) and five Rhacophorus appendiculatus and *Rhacoporus pardalis*). The disturbed nature of the area still recorded endemic and threatened species. This suggests that forests and critical habitats in the area need to be protected and conserved. (Author's abstract)

Keywords: Biology, anuran species, Bufonidae, Megophryidae, Microhylidae, Ranidae, Rhacophoridae

Asian Journal of Biodiversity, Volume No. 3 Issue No. 1, 126-141 2012, (Filipiniana Analytics) NP

0055

Diversity and status of butterflies across vegetation types of Mt. Hamiguitan, Davao Oriental, Philippines *Treadaway, Colin G. , Mohagan, A*

An inventory was conducted to determine the diversity and status of butterflies of Mt. Hamiguitan Wildlife Sanctuary, Davao Oriental, using quadrat method in five vegetation types, namely; agroecosystem (10-400 masl), dipterocarp (500-900 masl), montane (900-1400 masl), mossy (1400-1500 masl) and pygmy (1500-1675 masl). Two 20m x 20m plots were established per vegetation type. These inventory techniques revealed 142 species of butterflies plus one new subspecies described and illustrated. Diversity assessment using Shannon-Weiner index showed high level (4.1) in the Montane forest as compared to other vegetation types. Bray-Curtis similarity index showed low species similarity in pygmy, mossy and agro-montane forests (< 40 %). Furthermore, this study revealed 7 possible new species, 44 endemics: 2 eastern Mindanao endemic (very rare), 4 Mt. Hamiguitan endemic (very rare), 16 Mindanao endemic and 22 Philippine endemic. Seven species are new records in Mindanao. Mt. Hamiguitan Wildlife Sanctuary is the home of diverse and endemic butterfly species. (Author's abstract)

Keywords: Biology, Butterflies, Species richness, Pygmy vegetation types, Mt. Hamiguitan

Asian Journal of Biodiversity, Volume No. 1 Issue No. 1, 1-24 2010, (Filipiniana Analytics) NP

0056

Diversity and status of butterflies in Maitum Village, Tandag, Surigao del Sur, Philippines Ramirez, Ray Kristoffer Casio, Mohagan, Al

Diversity and assessment of butterflies of Maitum, Tandag, Surigaodel Sur were conducted to provide information on the species composition, diversity and status of butterflies in dipterocarp forest and agro ecosystems. A total of 104 species of butterflies belonging to 68 genera and 5 families were documented. Species richness of the butterflies was higher in the dipterocarp forest (89) than the agro ecosystem (51). The dipterocarp forest had greater mean individual (4.173) than the agro ecosystem (3.712). The diversity level was fair in dipterocarp forest (H²= 1.638) as compared to the agroecosystem area with low level of diversity (H²= 1.369). Dendrogram for similarity of species composition showed a fairly low species between the two study stations, this suggests the importance of the two habitats for the conservation of butterflies in Maitum Village, Tandag, Surigao del Sur. Assessment of status showed that 57 species (54.8 %), were common 16 (15. 3%) were rare, 12 (11.5%) were rare Philippine endemics, 6 (5.7%) 75 were common Philippine endemics, 2 (1.9%) common Mindanao endemics, 1 (.96%) rare Mindanao endemic, and 9 (8.6%) were undetermined. These results suggest that
Maitum, Tandag, Surigao del Sur is the home of 104 species of butterflies and the dipterocarp forest is the home of diverse and endemic species of butterflies for conservation. (Author's abstract)

Keywords: Biology, Diversity, Status, Conservation, Butterflies, Maitum Village

Asian Journal of Biodiversity, Volume No. 3 Issue No. 1, 74-112 2012, (Filipiniana Analytics) NP

0057

Diversity and status of odonata across vegetation types in Mt. Hamiguitan Wildlife Sanctuary, Davao Oriental Mohagan, Alma B., Villanueva, Joseph

Diversity and status of odonata in Mt. Hamiguitan Wildlife Sanctuary was determined after a year of sampling in five vegetation types: agroecosystem (400 masl), dipterocarp (900 masl), montane (1200 masl), mossy (1400 masl) and pygmy (1600 masl) using 2-Km transect walk sampling to provide information on species richness trend and ecological status of odonata. Study showed 31 species with 94% endemism for damselflies and 33.3% for dragonflies. Species richness and endemism were low in agroecosystem H'=0.631 and 1 endemic; high and increasing in the dipterocarp H'=2.298 and 4 endemic to dense montane forest with H'= 3.056 and 18 endemic; decreasing in mossy H'=2.036 and pygmy H'=1.846. The effects of disturbance on diversity showed highest in agroecosystem (d=83%), mossy and pygmy had intermediate value d=27% and d=24%. Low disturbance was observed in Montane d=10%, dipterocarp d=18.5%. Bray-curtis similarity index for species composition showed four discernible clusters of habitats. Results suggest that odonata has preference for dense forest, undisturbed vegetation, optimum temperature and presence of aquatic habitat. (Author's abstract)

Keywords: Biology, Status of odonata, Dragonflies, Damselflies, Mt. Hamiguitan Wildlife Sanctuary

Asian Journal of Biodiversity, Volume No. 1 Issue No. 1, 25-35 2010, (Filipiniana Analytics) NP

0058

Diversity of butterflies in the selected key biodiversity areas of Mindanao, Philippines at the eminent climate change Tambuli, Antonio E., Mohagan, Dave P., Mohagan, A

Butterflies are important for pollination of many farm crops and forest species, biomass converter, agent of controlling weeds, source of drugs and genetic material for the development of new breeds. The study provided information on the species level-diversity, status and similarity of butterfly species composition in 4 selected Key Biodiversity areas of Mindanao at the eminent climate change. Data can be used for species monitoring, distribution, biogeography and conservation of butterflies in Mindanao, Philippines as climate change progresses. Belt transect, time constraint and transect walk sampling were employed in the study from February 2010 to April 2011. We captured a total of 247 identified butterfly species. Species diversity level using Shannon-Weiner index showed fair

level in most of the sampling sites. Highest species richness was observed in Mt. Kitanglad H'1.959 (148 species), followed by Mt. Apo H'=1.755 (104 species), Mt. Timpoong H'=1.579 (79 species) lowest in Mt. Musuan H'=. Mt. Apo had the highest species endemism (42 0r 42 %). Endemism is higher in forest habitats in higher elevations. Bray- Curtis analysis showed that all study sites are unique habitats for butterflies. The results suggest further monitoring to carefully analyze the diversity and status of butterflies. (Author's abstract)

Keywords: Biology, Butterfly, Diversity, Key biodiversity areas

Asian Journal of Biodiversity, Volume No. 2 Issue No. 1, 123-150 2011, (Filipiniana Analytics) NP

0059

Diversity pattern of butterfly communities (Lepidoptera) at Mangrol Region of Kathiawar Peninsula, India

Bhadja, Poonam, Vaghela, Ashokkumar, Trivedi, Va

Butterflies (Lepidoptera) being potent pollinators and ecological indicators are examined in the present study. The diversity of butterfly communities of the Kathiawar Peninsula (*tropical and subtropical region*) was studied at Mangrol region of Kathiawar Peninsula. The pollard walk method was followed for observing butterflies. A total 348 specimens belonging to 27 species, 21 genera and 4 families were recorded in the study sites. Among the butterfly species maximum populations were recorded of Family Nymphalidae (55.56%) followed by Pieridae (22.22%), Papilionidae (14.81%) and Lycaenidae (7.41%). Evaluation of quantitative and qualitative community structure in relation to four study sites of the Butterfly species density (29.00) and relative density (26.96) were highest in sampling Site Mangrol where as species diversity index (H') were also highest (04.14). (Author's abstract)

Keywords: Biology, Butterfly diversity, Community, Habitat type, Kathiawar Peninsula, Tropical region, Subtropical region

Asian Journal of Biodiversity, Volume No. 4 Issue No. 1, 99-118 2013, (Filipiniana Analytics) NP

0060

DNA barcoding of birds in the University of the Philippines Diliman Campus, with emphasis on striated grassbirds, *Megalurus palustris Luczon, Adrian U., Torres, Andrew F., Quilang, Jonas P., Ong, Perry S., Fontanilla, Ian Kendrich C.*

DNA barcoding is increasingly being used by researchers across the globe to aid in the identification of species. Using this taxonomic tool on bird species in an urban green space within manila, i.e. the University of the Philippines Diliman campus, Luzon, Philippines, DNA barcodes of eleven species were generated. Different haplotypes for some of the species were observed. Using BLAST, the cytochrome oxidase subunit 1 (COI) sequence of every species from this study was correctly matched with the corresponding species having a COI record in

Genbank, with the exception of the Striated Grassbird *Megalurus palustris*, which is a new COI record. The three distinct haplotypes for *M. palustris* were then compared with COI sequences from other members of the sylviid "Old World Warblers" to determine the effectiveness of the DNA barcode in discriminating it with other species. Results show that COI was successful in placing *M. palustris* as a distinct taxon. (Author's abstract)

Keywords: Biology, Cytochrome oxidase 1 gene, DNA barcoding, Locustellidae, Megalurus, Philippines

Philippine Journal of Science, Volume No. 142 Issue No. 1, 1-11 2008, (Filipiniana Analytics) Fil(S) Q1 P55 142/1 2013

0061

Ectoparasites of cave-dwelling bats in Marinduque Island, Philippines Amarga, Ace Kevin S., Alviola, Phillip A., Yap, Sheryl A., Lit, Jr., Ireneo L., Verdida, Jr., Rodolfo

This paper constitutes the first ectoparasite faunal survey of bats for Marinduque Island, Philippines. From June 1 to 12, 2010, 150 individual bats comprising of eleven species were captured in eleven caves in Marinduque Island. Each bat was sampled for ectoparasitic arthropods, and a total of 587 individuals representing twenty two species and belonging to five families (Argasidae, Spinturnicidae, Nycteribiidae, Streblidae, and Ischnopsyllidae) were collected. A total of twenty five new country host records for ten ectoparasitic arthropods were documented. The degree of the host specificity of the ectoparasitic arthropods on bats in this island ranges from monoxeny (as seen in *Brachytarsina megadermae* which infests *Megaderma spasma*) up to varying extent of oligoxeny (as exhibited by genus *Nycteribia* infesting the genera *Hipposideros, Megaderma, Rhinolophus* and *Miniopterus*). (Author's abstract)

Keywords: Biology, Cave, Bats, Ectoparasites, Ectoparasites of cave dwelling bats

Transactions of the National Academy of Science and Technology, Volume No. 34 Issue No. 1, page 110 2008, (Filipiniana Analytics) Fil(S) Q149.P5 N25 34/1 2012

0062

Effect of arbuscular mycorrhizal fungi inoculation on growth and Cu uptake and toxicity of Desmodium cinereum (Kunth) D.C.

Adiova, Joden M., Pampolina, Nelson M., Aggangan, Nelly S.

The effect of arbuscular mycorrhizal fungi (AMF) inoculation on copper (Cu) uptake and toxicity of *Desmodium cinereum* (Kunth) D.C. was studied. This legume produces large amount of biomass that can serve as buffer in areas with high concentration of Cu. Pre-germinated seeds of *D. cinereum* inoculated and non-inoculated with AMF were grown in sand-soil mixture treated with increasing Cu concentration (0, 400, 800, 1200, 1600ppm Cu). Increasing Cu concentration gave a corresponding reduction on height, diameter, leaf area, and biomass of the plants. Root growth and nodule formation at 1200 and 1600ppm Cu level were inhibited (p<0.05 and p<0.01, respectively). Mycorrhizal inoculation increased plant height, biomass, and stem diameter at lower Cu level. Inoculation enhanced nodulation and also improved phosphorus concentration in the leaves, stem and roots at 0 and 400ppm Cu level. Increasing Cu concentration resulted to a greater Cu accumulation in the roots while Cu concentration on stem and

leaves remained at a normal level. Inoculation with AMF increased Cu uptake of roots and stem at 800, 1200, and 1600ppm Cu levels. The ability of mycorrhizal fungi improve Cu uptake, increase plant growth, increase phosphorus uptake, and promote growth of other beneficial microorganisms such as nitrogen fixing bacteria (as exemplified by the nodulation in the roots) for *D. cinereum*, make it an ideal tool for phytoremediation of Cu contaminated sites. (Author's abstract)

Keywords: Biology, Alleviate, Arbuscular mycorrhizal fungi, Copper, Desmodium cinereum, Phytoremediation, Toxicity

Philippine Journal of Science, Volume No. 142 Issue No. 1, 87-96 2008, (Filipiniana Analytics) Fil(S) Q1 P55 142/1 2013

0063

Effects of tritiated water on the digestive tract of Pila luzonica embryos *Cruz-Ramos, Bess, Cariño, Virgina S.*

The effects of tritiated water on the development of *P. Luzonica* were determined in terms of the histology of 5 veliger stages using 3 different tritium concentrations, namely, 3.7 Bq/ml, $3.7 \times 10^2 \text{ Bq/ml}$ and $3.7 \times 10^4 \text{ Bq/ml}$.

An HTO concentration of at least 3.7×10^2 Bq/ml brought about histological abnormalities in the digestive tract in the 5 veliger stages. The structure in the veliger most affected by HTO is the larval stomach. To a lesser degree, differences were found in the larval intestine and stomodaeum. (Author's abstract)

Keywords: Biology, Pila luzonica, Tilapia nilotica, Aquatic organisms

The Nucleus: Official Journal of the Radioisotope Society of the Philippines, Inc, Volume No. Issue No., 63-70 2008, (Filipiniana Analytics) Fil(S) QC173 N88 v27 1989

0064

Evaluation of polyethylenimine/carrageenan multi-layer for antibacterial activity of pathogenic bacteria Briones, Annabelle V., Sato, Toshinori, Bigol, Urcila G.

The purpose of this study is to investigate the antibacterial activity of multi-layer of polyethylenimine (PEI) and carrageenan (κ , ι , λ) for potential use as coating on biomaterial surface. The multi-layer of PEI/carrageenan was formed using the layer-by-layer assembly absorption technique and was monitored by atomic force microscopy (AFM) and biomolecular interaction analysis. All samples were prepared in phosphate buffer solution and applied to mica disk alternately. The micrographs showed the formation of bi-layer of polyethylenimine and carrageenan (κ , ι , λ) as observed in the change of height of the layer and surface morphology. The bimolecular binding of carrageenan with polyethylenimine was also investigated using a biosensor. The sensorgram showed that PEI interacted molecularly with carrageenan. Results were: 1,916.08 pg/nm² for $\kappa appa$ type; 1,844.1 pg/nm² for ιat type and 6,074.24 pg/nm² for *lambda* type. The multi-layer showed antibacterial activity against *Enterobacter cloaceae*, *Staphylococcus aureus* and enterococcal strains (*Enterococcus faecalis* (EF) 29212 and 29505). (Author's abstract)

Keywords: Biology, Carrageenan, Polyethylenimine, Atomic force microscopy, Anti-bacterial, Multi-layer

Transactions of the National Academy of Science and Technology, Volume No. 34 Issue No. 1, 93 2008, (Filipiniana Analytics) Fil(S) Q149.P5 N25 34/1 2012

0065

Four new species of *Nepenthes* in two mountain ecosystems in Southern Philippines *Amoroso, Victor B., Coritico, Fulgent P.*

Plants of *Nepenthes* are carnivorous which form specialized pitcher leaves that attract, capture, kill and digest insects and other small animals. Thus far, 23 species were reported in the Philippines, of which 23 are endemic to the country. A survey conducted in Mt. Kiamo, Kibalabag, Bukidnon and Mt. Hamiguitan, Davao Oriental revealed four species of *Nepenthes* new to science. With these 4 new species, the Philippines will now have 27 species of *Nepenthes* making the Philippines third with the greatest number of species worldwide. The new species of *Nepenthes* include: *N. ceciliae*, *N. pulchra*, *N. micramphora* and *N. hamiguitanensis*. *N. ceciliae* and *N. pulchra* are presently known only from Mount Kiamo where these grow terrestrially on ultramafic soils at altitudes from 1300-1800m. On the other hand *N. hamiguitanensis* and *N. micramphora* were found in Mount Hamiguitan in southern Mindanao, where these occur from approximately 1000-1635 m altitude. Of the four new species, *N. micramphora* and *N. hamiguitanensis* are critically endangered while *N. pulchra* and *N. ceciliae* are endangered and vulnerable status, respectively. (Author's abstract)

Keywords: Biology, Pitcher plants, Threatened, Mt. Kiamo, Mt. Hamiguitan, Mindanao

Transactions of the National Academy of Science and Technology, Volume No. 34 Issue No. 1, 98 2008, (Filipiniana Analytics) Fil(S) Q149.P5 N25 34/1 2012

0066

Frogs in abaca-dominated farms of San Miguel, Catanduanes, Luzon Masagca, Jimmy T., Tribiana, Estrella T., Vargas, Brandy R.

The significance of frogs as bio-indicator of pollution, their economic importance, as well as their threatening status in the Philippines archipelago motivated the researchers to carry out this study on the diversity of frogs in San Miguel, Catanduanes Island, Luzon. Distribution, relative abundance and assessment of the over-all habitat of the frog species were determined in this investigation. Ten quadrats were made on the 10 square kilometer-study site in San Marcos, San Miguel each representing a particular type of habitat about 400 square meters and with an interval of 500m from each quadrat. Based on the 8-month survey in 2002 and another 2 months survey last 2005, there were 6 species that were identified and another 2 unidentified collections were noted. These frogs species were: *Rana erythreae* (Ranidae), *R. limnocaris*(Ranidae), *Racophorus pardalis* (Racophoridae), *Polypedates leocomystax*, *Occidozyga laevis* and *Kaloula kokacci* (Microhylidae). The other unidentified collections belong to the genera; *Racophorus* and *Kaloula. K.kokacci* is an endemic species of the island while *R. pardalis* was found to be rare. Data show that *R. limnocharis, K. kokacci* and *P. leucomystax* were found to be abundant in the study site. *O.laevis* was seen on a specific habitat only in the abaca areas, while *R. pardalis* was hard to find. However, the dominance index

value of 1.001 shows that no particular species gained advantage over the others. Moreover, the computed Shannon index value of 0.7026 show that frog species diversity is high in San Marcos, San Miguel. ANOVA of the frequency distribution of frog species present in the study site during the months of April and December obtained a computed value of 1.61 that is relatively lower than the tabular value of F at α =5.05 level significance. This indicates that there is no significant difference in the distribution and diversity of frogs during the wet and dry months of the year. Follow-up studies are now underway so that the identity of the 2 frogs species will be confirmed as well as the further investigation of the endemic microhylid *K.kokacii* as to its habitat and other ecological characteristics. Of recent, Masagca (2009) noted decline of this endemic frog and other vanishing species of the Gray's Monitor lizard, *V.olivaceous* in the environs of Solong Falls in the town of San Miguel due to various developmental activities. (Author's abstract)

Keywords: Biology, Frogs, Diversity, Catanduanes, Kaloula kokacci, Solong Falls

Transactions of the National Academy of Science and Technology, Volume No. 32 Issue No. 1, 58-59 2008, (Filipiniana Analytics) Fil(S) Q149.P5 N25 32/1 2010

0067

Fungi of Taal Volcano Protected Landscape, Southern Luzon, Philippines Tadiosa, Edwin R., Briones, Romme

Fungal species collection was conducted at Taal Volcano Protected Landscape (TVPL) at Talisay area, Batangas, Southern Luzon, Philippines (13.662550N, 121.247970E) from the months of March to August 2012. TVPL has an elevation of 600 meters above sea level. This Protected Area is being considered as one of the most diverse forest ecosystems in CALABARZON region, thereby indicating the need for conservation and protection. This paper aims to document the fungal species in the area. Using transect line (TL) method, four transect lines were established from the baseline (200 masl) toward the peak (600 masl) with 20 m x 30 m quadrat sampling. All in all, 12 quadrats were laid out. The fungal species within the quadrats along the TLs were identified and recorded. Simpson's Index was the Diversity indices used as parameters in assessing fungal species in TVPL Talisay. Opportunistic sampling method was also used during the survey. Field sampling of fungi has resulted to the collection and identification of 75 species belonging to 36 genera and 23 families. There is relatively high fungal species diversity in Taal Volcano Protected Landscape, Talisay as compared with those in other ecosystems in the region. This is the first report of fungi present in TVPL. (Author's abstract)

Keywords: Biology, Biodiversity, Field survey, Forest ecosystem, Fungi, Taal Volcano Protected Landscape

Asian Journal of Biodiversity, Volume No. 4 Issue No. 1, 46-64 2013, (Filipiniana Analytics) NP

0068

Genetic analysis of the Seagrass *Halodule* in Central Visayas, Philippines Calumpong, Hilconida P., Wagey, Bi

Genetic variation of seagrass species *H. uninervis* and *H. pinifolia* with varying leaf width, from different sites, density and exposure in the Central Visayas were assessed using plastid *rbcL* marker specific for *Halodule*. The genetic structures of the rbcL sequences analyzed from 83 specimens of *Halodule uninervis* and *H.pinifolia* were 671 base-pairs (bp) long (with a difference of 2 base pairs (bp) substitutes of A in *uninervis* to C and G *in pinifolia*). All specimens of *Halodule* from three different sites in Central Visayas were clustered only into clades: *H. pinifolia* and *H. uninervis*, maintaining that despite significant morphological variation in leaf width due to different sites, density and exposure, the two are still separate species. (Author's abstract)

Keywords: Biology, Seagrass, DNA, rbcL marker

Asian Journal of Biodiversity, Volume No. 4 Issue No. 1, 223-237 2013, (Filipiniana Analytics) NP

0069

Genetic identification of selected lactic acid bacteria and structural gene elucidation of their bacteriocins

Elegado, Francisco B., Perez, Maria Teresa M., Zendo, Takeshi, Sonomoto, Kenji

In our continuing search for probiotic microorganisms that produce bioactive compounds, we have isolated nine (9) bacteriocinogenic lactic acid bacteria from various sources in the Philippines. Their identities and bacteriocin genes were elucidated through 16S rRNA gene and bacteriocin gene sequencing, respectively, followed by NCBI-BLAST homology search. Four (4) isolates were identified as *Pediococcus acidilactici*, three (3) *Lactobacillus plantarum*, one (1) *Enterococcus durans* and one (1) *Enterococcus faecium*. PCR-based screening using primers for the structural genes of Pediocin AcH or PA-1; Plantaricins A, 423 and NC8 and Enterocins A and B were done. All four *P. acidilactici* isolates were positive for the Pediocin gene while only one *L. plantarum* was positive for the Plantaricin A gene. The bacteriocins generated were at least 98% homologous to the nearest nucleotide sequence of similar bacteriocin in the NCBI-BLAST database. The culture supernatants of *P. acidilactici* 3G8 and 3G3, assayed against standard indicator strains, showed strong antilisterial activities. (Author's abstract)

Keywords: Biology, Lactic acid bacteria, 16S rDNA sequencing, Bacteriocin, Pediococcus acidilactici, Lactobacillus plantarum, Enterococcus durans, Enterococcus faecium

Transactions of the National Academy of Science and Technology, Volume No. 34 Issue No. 1, page 104 2008, (Filipiniana Analytics) Fil(S) Q149.P5 N25 34/1 2012

0070

Genomic sequence identity of *Haematonectria haematococca* causing twig blight disease of citrus in the Philippines *Yago, Jonar I., Chung, Kuang-Ren*

The nucleotide sequence of phytopathogenic fungus *Haematonectria haematoccoca* was identified using the internal transcribed spacer region of the ribosomal RNA gene (rDNA-ITS). The cultured fungus produced 1-celled

microconidia and multiple, canoe-shaped macroconidia highly resembling *Fusarium spp*. The inoculated plants kept in a screenhouse started showing the initial twig dieback symptoms in all inoculated branches at 37 days post inoculation (dpi). The appearance of pink perithecia of *H. Haematoccoca* was observed at 45 dpi, similar to those observed in the field. No symptoms were observed on branches treated with water only. *H. haematoccoca* was reisolated from the symptomatic twigs and displayed similar characteristics as the original strain. There were about 710 bases were identified and sequence analysis of the 5.8S and partial 18S internal transcribed spacers of rDNA amplified with ITS1 and ITS4 primers was deposited at National Center for Biotechnology Information (NCBI) and coded as GenBank Accession No. HQ696788.1 displayed a strong similarity to Fusarium solani (Mart.) Sacc. (Teleomorph: *Haematonectria haematoccoca*). This is the first identification and confirmation of *H. Haematoccoca* causing citrus twig blight in the Philippines. (Author's abstract)

Keywords: Biology, Genomic sequence, Teleomorph, Haematonevtria haematococca, Fusarium solani, Twig blight disease

Transactions of the National Academy of Science and Technology, Volume No. 34 Issue No. 1, page 105 2008, (Filipiniana Analytics) Fil(S) Q149.P5 N25 34/1 2012

0071

Geographic variation in vegetative and flower morphometry among populations of Lilium philippinense Baker (Liliaceae), an endemic species in the Philippines Balangcod, Kryssa D., Cuevas, Virginia C., Balangcod, Teodora D.

Lilium philippinense is an endemic species with a narrow geographic distribution along the southwestern part of the Cordillera Central Range, Luzon, Philippines. Recently, its population is decreasing due to over collection and habitat loss. This study aims to establish if the population of this species represents a single population. Morphometric analyses of vegetative and floral characteristics were studied in 23 populations of *L. philippinense*. Morphometric features of the vegetative and floral organs were measured from five plants that were randomly collected from each of the 23 populations. Correlation analysis reveals that most morphometric traits are correlated among the 23 populations. This is supported by principal component analysis suggesting that there is morphometric association among the populations. Elevation significantly correlates with corolla diameter. Using analysis of variance with post hoc tests on the four clusters showed that the populations significantly differ only in corolla diameter and leaf length. Generally, statistical analyses suggest that the 23 *L. philippinense* populations are closely associated with each other and probably represent a single population. The variation in leaf width and corolla diameter can be considered as a start of differentiation among the populations possibly implying selection on these two traits. (Author's abstract)

Keywords: Biology, Cordillera Central Range, Geographic variation, Morphometry, Luzon, Philippines, Lilium philippinense

Transactions of the National Academy of Science and Technology, Volume No. 34 Issue No. 1, 84 2008, (Filipiniana Analytics) Fil(S) Q149.P5 N25 34/1 2012

Geometric morphometric analysis of *Arius manillensis* and *Arius dispar* (Siluriformes:Ariidae) populations in Laguna de Bay, Philippines *Santos, Brian S., Quilang, Jonas P.*

Geometric morphometrics has become a widely used tool in studying shape variation in fish population. In this study, geometric morphometrics was used to examine shape variation in the sea catfishes *Arius manillensis* and *A. dispar*. The endemic species *A. manillensis* and the native species *A. dispar* constitute major fishery resources in Laguna de Bay. Thus, they are economically important species. The two species look very similar externally, but they can be distinguished by examining the tooth patch morphology on the palate. However, within each species, there are variants of tooth patch morphology. Shape differences between *A. manillensis* and *A. dispar*, between populations, and between variants within each species, were determined. samples were obtained from Binangonan, Tanay, and Calamba areas of Laguna de Bay. Shape differences between species, between morphs within species, and among specimens of different sites were significant, but the groups were difficult to differentiate due to high overlaps in Canonical Variate Analysis (CVA) plots and low Mahalanobis distance-based correct classification percentages. This was attributed to possible introgression between *A. manillensis* and *A. dispar*. (Author's abstract)

Keywords: Biology, Arius dispar, Arius manillensis, Geometric morphometrics, Kanduli, Laguna de Bay, Siluriformes

Philippine Journal of Science, Volume No. 141 Issue No. 1, 1-11 2008, (Filipiniana Analytics) Fil(S) Q1 P55 141/1 2012

0073

Geometric morphometric analysis of the head capsule of the rice bug, *Leptocorisa oratorius* Fabricius (hemiptera: Alydidae)

Torres, Mark Anthony J., Lomansoc, Jade Kenneth, Demayo, Cesar G.

The rice bug *Leptocorisa oratorius* Fabricius is an insect pest of rice that feeds on developing rice grains reducing the yield and quality of rice. Identification of this pest has been vague owing to variability in its external morphological characteristics. It has been referred to as *L. acuta* (Thunb.) and *L. varicornis in some literature*. In this study, the shapes of the head capsule were compared in populations of the rice bug using a landmark-based geometric morphometric method, and analysis of relative warp scores. Samples were collected from three different localities of which 83 were from Alubijid, Misamis Oriental; 19 from Maigo, Lanao del Norte; and 82 from Buug, Zamboanga Sibugay. Of the 184 individuals, 116 were classified as males and 68 were classified as females. Images of the dissected head capsule were acquired with the use of MacronCam and Leica ES2 microscope. Landmark analyses was done on the x- and y- coordinates of the head outline which totalled to 35 landmark points. The results showed variability within and among populations of the rice bugs in the regions at the labrum, vertex, and the outline of the compound eye insertion. This variability may represent unique genotypes and this geographic variation may have an important effect on expanding population sizes in following years which should be considered in control methods. **(Author's abstract)**

Keywords: Biology, Canonical variate analysis, Discriminant function analysis, Geometric morphometrics, Leptocorisa oratorius (Fabricius), Relative warps analysis

Grass pollen-specific IgE levels of selected allergic patients in Bayombong, Nueva Vizcaya *Cabauatan, Clarissa R., Ramos, John Donnie A.*

Allergy is a major health problem and its proportion in all populations is steadily increasing. Of the potential allergen sources, pollen grains affect 40% of allergic individuals and significantly, 86.5% of them are specific to grass pollen grains. To investigate the inadequate pollen allergy data in the Philippines, the effects of grass pollen grains on allergic patients were studied. Allergic patients (n=141) having the allergic symptoms associated with asthma, dermatitis, rhinitis, and conjunctivitis and non-allergic subjects (n=141) were recruited in Bayombong, Nueva Vizcaya. The study area has 60% grassland and 17% agricultural land where pollen grains from common grasses such Cynodon dactylon, Axonopus compressus, Saccharum spontaneum, Sporobolus indicus, Chloris barbata, Orvza sativa, Zea mays, and Eleusine indica were collected. This collection was simultaneously done during blood sampling of the subjects. The total IgE and pollen-specific IgE levels between allergic and non-allergic subjects using the enzyme-linked immunosorbent assay (ELISA) revealed a significant difference (P<0.0001) between the two groups. IgE reactivity (%) of the studied grass pollen allergens were 23.40, 13.48, 57.45, 89.36, 90.78, 100, 98.58, 100, 49.65, and 9.29 respectively. Among the pollen allergens, specific IgE levels of the patients showed a significant correlation (P<0.001). Western blot analysis presented reactive proteins from all the aqueous pollen extracts. Apparently, S. indicus and C. barbata can now be added to the list of potential grass pollen grains allergen. The profiling of allergic patients and characterization of grass pollen allergens can contribute to the baseline information for allergy researches and can contribute to more accurate and specific diagnostic and therapeutic protocols. (Author's abstract)

Keywords: Biology, Allergy, Grass pollen allergens, Total IgE level, Pollen-specific IgE level

Transactions of the National Academy of Science and Technology, Volume No. 32 Issue No. 1, 63 2008, (Filipiniana Analytics) Fil(S) Q149.P5 N25 32/1 2010

0075

Growth response of Bago (*Gnetum gnemon*) cuttings to various rooting agents Bullecer, Gladys Hope C., Bullecer, Rum

Domestication of forest-based floral resources like Gnetum gnemon, with young leaves and immature flowers are popularly eaten, promote ex-situ conservation of the species. G. gnemon is an excellent source of Vitamins A and C. However, the species remain largely forest-based and unresponsive to natural cutting propagation. The seeds remain dormant for 5 months to 1 year. This study determined the growth response of bago cuttings soaked for an hour in the following rooting agents : ANAA (1 tbsp/li of water);IBA (500 ppm); pure coconut water and plain tap water. Results showed T-2 (ANAA) and T4 seedlings (control) had the highest survival of 75% and 67% respectively. On leaf production, T4 (control) was significantly higher than the other treatments. Treatment 1 (IBA) produced the highest average number of roots. The study concluded that bago or Gnetum gnemon can be successfully propagated through cuttings with the use of rooting enhancers. However, care should be taken in the selection of the cuttings. Highest survival was observed with the greenish cuttings containing only a few brownish pigmentation and containing two nodes. Mortality was higher in the more mature or too young cuttings and those with one node only. **(Author's abstract)**

Keywords: Biology, Growth, Gnetum gnemon, Rooting agents, Cuttings

Asian Journal of Biodiversity, Volume No. 2 Issue No. 1, 172-183 2011, (Filipiniana Analytics) NP

0076

Heavy metals in bivalves of the harbor area of Cebu City (Philippines) Theede, Hans, Aliño, Porfirio M., Rosito, Ruby M.

This preliminary report shows that the heavy metal content (Cu, Cd, Pb) of marine bivalves from shallow parts around Cebu City Harbor area varies strongly among species and independently of each other. Highest concentrations of copper (up to 20 and 50 μ g g⁻¹ dry weight), and lead (8 μ g g⁻¹) in the harbor area, and of cadmium (up to 20 μ g g⁻¹) near Cordova, point to moderate heavy metal pollution in these areas. More detailed observations are necessary in order to monitor the heavy metal content in species utilized as human food. (Author's abstract)

Keywords: Biology, Copper, Cadmium, Lead

The Philippine Scientist, Volume No. Issue No. , 63-66 2008, (Filipiniana Analytics) Fil(S) Q1 J95 v22 1985

0077

Identification of *Chryseobacterium indologenes* from salt using the analytical profile index API 20E *Franco, Prima Fe R., Gaoat, Cecile A., Acosta, Rowena*

Salt is one of the most important seasonings of Filipino cuisines whether eaten as cooked or as raw food. Some of the available salt in the market are produced locally while others are manufactured and packaged carefully. This study is focused on the determination of microbial load of salt sampled from various sources and on the identification of the isolate using API 20E Identification System. The samples were inoculated into sterile Sea Water Complex Medium and incubated overnight at ambient temperature. Results show that only one type of bacterium was able to grow and survive in the medium used. The isolate is a halophile that could tolerate up to 39% salt concentration. It is a Gram negative rod with its colony form as circular, elevation as pulvinate and margin as entire. Its slant growth type is echinulate. The isolate is identified as *Chryseobacterium indologenes* using API 20E. Surprisingly, this is a pathogen associated with Urinary Tract Infection (UTI) as well as non-catheter related bacteremia. It is a very rare pathogen. Results indicate the possibility of salt samples as sources on infection of humans from the food that they eat either cooked or raw with salt as seasoning. **(Author's abstract)**

Keywords: Biology, API, Salt, Halophile, Chryseobacterium

Transactions of the National Academy of Science and Technology, Volume No. 34 Issue No. 1, page 106 2008, (Filipiniana Analytics)

The identity and morphology of the three species of *Drynaria* (Polypodiaceae) in Bukidnon, Philippines

Amoroso, Victor B., Lubos, Les

The objective of the study was to compare the morpho-anatomical characters of the species of *Drynaria* found in Bukidnon, Philippines. The species identified were *Drynaria quercifolia* (Linn) Sm., *D. sparsisora* (Desv.) and Moore, *D. rigidula* (Sw.) Bedd. Morpho-anatomical comparisons of the three species of *Drynaria* showed some similarities such as long creeping and branched rhizome, mature fertile fronds green and sterile fronds brown, leathery and with shiny upper surface and exindusiate sori. On the other hand, differences were observed in the plant height, type of lamina, presence or absence of groove in the stipe, costa and rachis, length and width, margin, fertile and sterile fronds attachment to the rhizome, base, apex, paleae, hair shape and sori arrangement. Anatomically, the five species also differed in the attachment of paleae to the rhizomes, length, width, number and shape of vascular bundles in the stipe, costa and rachis, presence and absence of hypodermis, type of stomata, length, width, number of subsidiary cells, walls of epidermal cells, the cortical arrangement of the tissues in the costa and midvein of the pinna. Based on their morpho-anatomical differences, a taxonomic key was constructed to identify the three species of *Drynaria*. (Author's abstract)

Keywords: Biology, Morphology, Anatomy, Systematic, Drynaria, Bukidnon

Asian Journal of Biodiversity, Volume No. 2 Issue No. 1, 15-51 2011, (Filipiniana Analytics) NP

0079

Immunohistochemical detection of S100 in the kidney of the Philippine Swamp Buffalo (Bubalus bubalis carabanensis Castillo, 1998) (Artiodactyla: Bovidae) Vitor, II, Rodel Jonathan S., Estacio, Maria Amelita C., De Ocampo, Grace D., Cena, Roh

The presence of S100 protein in the kidney of Philippine swamp buffalo (*Bubalus bubalis carabanensis*) was detected using immunohistochemistry. The Avidin-Biotin Peroxidase complex method was carried out with a polyclonal antibody against S100 protein. S100 immunoreactivity was present in the thin loop of Henle, collecting ducts and tubules. Positive immunoreaction was also detected in erythrocytes and endothelial lining cells of arcuate artery and vein, interlobular artery and vein, venules, glomerular and peritubular capillaries. This is the first report of the detection and distribution of S100 protein in the swamp buffalo kidney. This study confirms that S100 can be found extraneurally and can be a useful marker for anatomic pathology. (Author's abstract)

Keywords: Biology, Bubalus bubalis carabanensis, Buffalo, Immunohistochemistry, Kidney, S 100

Immunohistochemical detection of serotonin in the small and large intestines of the domestic cat (*Felis catus* L.) (Carnivora: Felidae)

Atienza, Melanie Anne M., Labadan, Rizza Mae L., Vitor II, Rodel Jonathan S., Dimayuga, Juan Car

Immunohistochemical detection of serotonin was performed in the small (duodenum, jejunum, ileum) and large intestines (cecum, colon and rectum) of 20 (10 male and 10 female) 2-year old domestic cats (*Felis catus* L.). In both organs, serotonin was observed to be reactive in the lining epithelium, enterochromaffin cells in the crypts of Lieburkuhn, smooth muscle fibers in the lamina propria, lamina muscularis mucosae and tunica muscularis, blood vessels in the lamina propria, tunica submucosa and serosa, Brunner's glands in the duodenum, Meissner's plexus in the tunica submucosa, myenteric plexus in the tunica muscularis and the lining epithelium of the tunica serosa. One main difference that has been observed is the absence of serotonin reactivity in the goblet cells. Presence of serotonin in the different segments of the intestines suggests that it can modulate the physiological processes of the intestines by exerting its effort on the different target cells. (Author's abstract)

Keywords: Biology, 5-hydroxytryptamine, Cat, Felis catus, Immunohistochemistry, Large intestine, Serotonin, Small intestine

Philippine Journal of Veterinary Medicine, Volume No. 52 Issue No. 1, 1-10 2015, (Filipiniana Analytics) NP

0081

Immunohistochemical detection of serotonin in the stomach of domestic cat (*Felis catus* L.) (Carnivora: Felidae)

Dimayuga, Juan Carlos C., Atienza, Melanie Anne M., Vitor, II, Rodel Jonathan S., Labadan, Rizza

Serotonin reactivity in the cardiac, fundic and pyloric regions of the stomach of 20 (ten male and ten female) 2year old domestic cats (*Felis catus* L.) was detected by immunohistochemistry. Serotonin immunoreactivity was observed in the epithelium, basement membrane, parietal cells, smooth muscle fibers of the lamina muscularis mucosae and lamina propria, blood vessels in the lamina propria and tunica submucosa, myenteric plexus in the tunica sucmucosa, inner circular and outer longitudinal layers of the tunica muscularis, and blood vessels in the tunica serosa. Serotonin immunoreactive cells were distributed in the apical lining of the fundus but were observed in the basal lining of the surfave epithelium in the cardia and pylorus. Blood vessel reactivity suggests that serotonin can travel by blood to reach its target organs. Serotonin immunoreactivity in the different structures of the stomach suggests its role in regulating gastric secretions and motility. (Author's abstract)

Keywords: Biology, 5-hydroxytryptamine, Cat, Felis catus, Immunohistochemistry, Serotonin, Stomach

Inflorescence and leaf morphology of some wild gingers (*Zingiberaceae*) recorded from Eastern Mindanao, Philippines

Acma, Florfe M., Gruezo, William Sm., Buot, Jr., Inocencio E., Dalisay, Teresita U., Florece, Leonardo M.

The family Zingiberaceae is the largest family of the Order Zingiberales and is composed of important ornamental as well as medicinal species which are utilized by the local people. However, the family is poorly taxonomically known. The inflorescences and leaves of some gingers were studied morphologically. Further, leaf epidermal features were described using clearing technique to expose the anatomical details. These were supplemented with botanical field studies to Mt. Hamiguitan, Davao Oriental, Bislig Experimental Forest, Surigao del Sur and Hinatuan logged-over forest, Surigao del Sur. Herbarium studies to UPLB Herbarium, Philippine National Herbarium and Singapore Botanical Gardens Herbarium were done to identify the species using herbarium materials and the protologues. Results of the study showed the presence of *Amonum microchiela* (Ridl.) Merr., *A. muricarpum* Elm., *Etlingera dalican* (Elm.) Poulsen, *E. philippinensis* (Ridl.) R.M. Smith, *Geocharis fusiformis* (Ridl.) R.M. Smith and *Hornstedtia conoidea* Ridl. The important characters which were diagnostic in the identification of the species were the texture and size of floral bracts, characteristic of the labellum and calyx and shape of the inflorescence. The shape, texture and length of ligule, length of petiole of leaves were also useful in the delineation of species. Results of this study support the taxonomic transfer of these Philippine species from genus *Amonum* to the present generic placements. (Author's abstract)

Keywords: Biology, Zingiberaceae, Inflorescence, Amomum, Etlingera, Hornstedtia, Bracts, Labellum

Transactions of the National Academy of Science and Technology, Volume No. 34 Issue No. 1, 96 2008, (Filipiniana Analytics) Fil(S) Q149.P5 N25 34/1 2012

0083

The iron-sulfur cluster in the homoaconitase protein is a nanosensor involved in lysine biosynthetic pathway regulation *Teves, Franco G.*

The cubane structure of the iron-sulfur cluster present in the homoaconitase protein of *Penicillium chrysogenum* is important in the catalytic conversion of homocitrate to homoisocitrate. The effect of disruption of the cubane structure on the regulation of the lysine biosynthetic pathway was investigated in this study. A mutant strain of *P. chrysogenum* auxotrophic for lysine was used as a source of the non-functional homoaconitase gene with a point mutation within the iron-sulfur cluster. Iron loading and chelation experiments were conducted to determine the effect of iron availability on homoaconitase function in the wild type *P. chrysogenum*. Expression levels of other genes in the pathway, namely, homocitrate synthase and alpha-aminoadipate reductase were monitored in the mutant and wild type strains by standard northern hybridization. Results show that the point mutation (A^{1465}/C^{1465}) within the iron sulfur cluster of the homoaconitase gene led to loss of its catalytic activity and to constitutive positive regulation of homocitrate synthase and alpha-aminoadipate reductase. Iron chelation in the wild type strain also led to loss of catalytic activity of homoaconitase and acquisition of regulatory functions leading to upregulation of the two other genes. The cubane structure in the homoaconitase protein therefore serves as a

nanosensor for the availability of iron in the cell, and is most probably subject to global iron metabolism. The observation that iron availability also affects beta-lactam production in *P. chrysogenum* can now be better understood since both lysine and beta-lactam production branch out from the same alpha-aminoadipate pathway. Because the redox level in the cell observably affects the formation of the cubane cluster, an additional nanosensor function of the cluster is possibly that for sensing the intracellular oxygen levels leading to up- or down-regulation of the entire pathway. (Author's abstract)

Keywords: Biology, Alpha-aminoadipate reductase, Homoaconitase, Homocitrate

Transactions of the National Academy of Science and Technology, Volume No. 32 Issue No. 1, 55-56 2008, (Filipiniana Analytics) Fil(S) Q149.P5 N25 32/1 2010

0084

Lawn culture of *Schizophyllum commune* fr. on selected tropical fruit substrates *de La Cruz, Liezel F., Reyes, Renato G., Kalaw, Sofronio P.*

Schizophyllum commune Fr. is a wild edible mushroom that usually grows in decomposing logs during rainy season. This mushroom is known to produce an extracellular polysaccharide called schizophyllan which has been proven to have several pharmaceutical properties. Mycelial production of this mushroom is coupled with the production of schizophyllan. In our desire to produce the mycelia and schizophyllan we evaluated the mycelial performance of three strains of *S. commune* on coconut water and selected tropical fruit extract such as pineapple, watermelon, tomato, papaya and mango juice in lawn culture. Lawn culture is a technique in which the growth of mycelia is on the surface of the medium which leads to the formation of mycelial mat in lawn form. Regardless of fruit extract used, wild strain 1 recorded the shortest number of days to total mycelial ramification with a mean of 7 days, while ATCC 38548 strain had the longest number of days with a mean of 13 days. No significant differences in mycelial weight, volume loss of the fruit extract, final pH and total soluble solids (TSS) were noted. Among the different fruit extracts evaluated, watermelon extract produced the heaviest mycelial weight (67.58 mg), highest final pH (7.85) and the highest TSS loss (3.83 % Brix). Moreover, statistical analysis revealed that the volume loss of the fruit extract was comparable with each other. **(Author's abstract)**

Keywords: Tropical fruits, Schizophyllum commune, Schizophyllan, Broth culture, Mycelia, Biology

Transactions of the National Academy of Science and Technology, Volume No. 34 Issue No. 1, 88 2008, (Filipiniana Analytics) Fil(S) Q149.P5 N25 34/1 2012

0085

Medically important mosquitoes (Diptera: Culicidae) identified in rural barangay Binubusan, Lian, Batangas Province, Philippines Santiago, Anna Theresa A., Claveria, Florencia G.

Larval mosquito collection was performed in Barangay Binubusan, Lian Municipality, Batangas Province during the last quarter of 2008 from October to December to determine the mosquito populations present in the area. Mosquito larvae were collected from various habitats, namely: rice paddy, sunny pond, open residential canal,

shaded pond, and abandoned tire. A dichotomous key was devised for the identification of local mosquito fauna. A total of 1,128 mosquito larvae were collected during the study period, comprising 958 (84.93%) *Culex*, 125 (11.08%) *Aedes*, and 45 (3.99%) *Anopheles*. The highest larval collection was recorded in November consisting of 100% *Culex* spp. Five *Culex* species were identified: *Culex quinquefasciatus* (51.86%), *Culex vishnui* (14.0%), *Culex tritaeniorhynchus* (9.84%), *Culex whitmorei* (8.78%) and the first reported presence of *Culex mimeticus* (0.53%) in the country. *Aedes* species were represented by *Aedes vexans* (5.94%), *Aedes aegypti* (4.34%), and *Aedes niveus* (0.80%). Anopheline mosquitoes were represented only by *Anopheles flavoristris* (3.99%). Of the species identified, only *Ae. aegypti* and *An. flavirostris* have been documented of public health importance in the country. **(Author's abstract)**

Keywords: Biology, Aedes aegypti, Anopheles flavirostris, Culex quimquefasciatus, Dichotomous key

Philippine Journal of Science, Volume No. 141 Issue No. 1, 103-109 2008, (Filipiniana Analytics) Fil(S) Q1 P55 141/1 2012

0086

Some medicinal bryophytes species, their ethnobotanical uses, and morphological adaptations in Bukidnon Natural Parks, Philippines: a literature review Pabualan, Melanie P., Sariana, Lalaine G., Azuelo, And

Medicinal bryophytes and their morphology features and ethnic uses was examined and documented. Field collections of bryophytes were made through transect walks or floristic survey along the two mountain sites of Bukidnon, namely: Mt. Kalatungan and Mt. Kitanglad. The number of taxa currently determined with medicinal properties was based from the collected species. The species with medicinal uses was generated from a pool of resources, literature review and scientific journals. Description on their morphology characters was made using microscopy examinations. Taxonomic treatment include leaf orientation, stem structure, sporophyte characters and their habit were used to identify into families, genera and species. Species composition between study sites was also compared. Visual habitat as to substrate preference and identification for each species was employed.

Results of the study highlights the difference in the morphological features among species of medicinal bryophytes, their ethnic uses, and adaptations within the forested area. Results showed that Mt. Kitanglad exhibited a total of seventeen (17) species of medicinal bryophytes. Of these, eleven (11) are mosses belonging to seven (7) families in eleven (11) genera and six (6) liverworts belonging to five (5) families in six (6) genera; while Mt. Kalatungan exhibited a total of fourteen (14) species of medicinal bryophytes. Of these, eight (8) are mosses belonging to six (6) families in eight (8) genera and six (6) liverworts belonging to five (5) families in six (6) genera. The moss species with medicinal properties belongs to the genus *Sphagnum, Polytrichum, Rhodobryum, Fissidens, Bryum, Mnium, Dawsonia, Philonotis, Pogonatum, Barbula* and *Plagiomnium*. The liverworts species include *Marchantia, Pallavicinia, Herbertus, Riccardia, Dumortiera* and *Plagiochila*. The species under study exhibited antimicrobial activity, anti-tumor, anticancer, antileukemic activity and healing effects based from documented analysis. (Authors' abstract)

Keywords: Biology, Ethnobotany, Morphology, Bryophytes, Taxonomic treatment, Floristic, Ethnic uses

Asian Journal of Biodiversity, Volume No. 2 Issue No. 1, 52-82 2011, (Filipiniana Analytics) NP

Mineralogy and component distribution of recent carbonate sediments of the Olango reef flat, Camotes Sea, Philippines *Lidicky, Rolf, Futterer, Dieter*

The recent shallow water carbonate sediments were studied on the Olango reef flat. Twenty-six surface samples were taken for mineralogical studies by X-ray diffraction techniques, grain size analysis, and component analysis supplemented by a microscope. Three types of carbonate associations were distinguished showing the depositional structure of the reef flat. (Author's abstract)

Keywords: Biology, Shallow water, X-ray diffraction, Grain size analysis

The Philippine Scientist, Volume No. Issue No. , 119-132 2008, (Filipiniana Analytics) Fil(S) Q1 J95 v22 1985

0088

Molecular detection and classification of a new *Theileria* species in the Philippines Belotindos, Lawrence P., Lazaro, Jonathan V., Villanueva, Marvin A., Mingala, Claro N.

Theileriosis is a tick-borne disease of domestic and wild animals that cause devastating economic loss in livestock all over the world. Theileriosis is not yet documented in the Philippines as compared to babesiosis and anaplasmosis which are considered major tick-borne diseases that infect livestock in the country and contribute major losses to the livestock industry. The study was aimed to detect *Theileria sp.* at genus level in blood samples of cattle using polymerase chain reaction (PCR) assay. Specifically, it determined the phylogenetic relationship of *Theileria* species affecting cattle in the Philippines to other *Theileria* species registered in the GenBank. A total of 292 blood samples of cattle that were previously collected from Laguna (147 samples), Pangasinan (40 samples), Cebu (77 samples), and Bohol (28 samples) were used. *Theileria sp.* was detected in 43/292 from the cattle blood samples using PCR assay targeting the major piroplasm surface protein (MPSP) gene. DNA sequence showed high similarity (90-99%) among the reported *Theileria sp.* isolates in the GenBank and the Philippine *Theileria* isolates. Phylogenetic tree construction using nucleotide sequence classified the Philippine *Theileria* isolate as benign. However, nucleotide polymorphism was observed in the new isolate based on nucleotide sequence alignment. It revealed that the new isolate can be a new species of *Theileria* that also possessed nucleotides similar to virulent strain of *Theileria* species. The findings suggest that there is high possibility of mutation events turning this new species into a virulent strain. **(Author's abstract)**

Keywords: Biology, Theileria sp., , Cattle, PCR, MPSP, Philippines

Transactions of the National Academy of Science and Technology, Volume No. 34 Issue No. 1, 100 2008, (Filipiniana Analytics) Fil(S) Q149.P5 N25 34/1 2012

Monsoonal winds influence the baywide spatial extent of net phytoplankton assemblages in Panguil Bay, Northern Mindanao, Philippine *Canini, Nelfa D., Metillo, Ephrime B.*

Changes in community structure of net phytoplankton in Panguil Bay in Northern Mindanao were investigated in November 2008 and February 2009 (northeast monsoon months), August 2009 (southwest monsoon months), May 2009 (transitional monsoon month). Samples were collected from 21 stations across the bay by vertically towing a 20 m conical plankton net. Phytoplankton abundance was estimated following the Utermohl method. Community structure was analyzed using the PRIMER multivariate analysis software. Distinct outer and inner bay phytoplankton assemblages were defined, and the spatial extent occupied by these assemblages oscillated with monsoonal wind patterns. Northeasterly winds increased by 100% the spatial extent of the outer phytoplankton species rich assemblages inwards up to the middle portion of the bay while the southeasterly winds contracted this assemblage back to its original spatial coverage at the same time expanded by 100% the spatial coverage of phytoplankton abundant inner waters of the bay towards the mouth. These findings have very important implications to the spatial structural patterns of primary productivity, and ultimately the trophic ecology during different monsoonal periods in one of the most important fishery priority bays in the Philippines. **(Author's abstract)**

Keywords: Biology, Ecology, Monsoons, Northern Mindanao, Panguil Bay, Phytoplankton

Transactions of the National Academy of Science and Technology, Volume No. 32 Issue No. 1, 54 2008, (Filipiniana Analytics) Fil(S) Q149.P5 N25 32/1 2010

0090

Morphometric analysis and DNA barcoding of fruit flies *Bactroceraoccipitalis* (Bezzi) and *B. philippinensis* drew and hancock (Diptera : Tephritidae) from Cavite and Davao del Norte

Delomen, Michael Leonardo C., Mendioro, Merlyn S., Diaz, Ma. Genaleen Q.

Morphometric analysis and DNA barcoding using the 5' region of the mitochondrial cytochrome c oxidase subunit 1 (mtCO1) gene were carried out to distinguish the fruit flies Bactrocera occipitalis (Bezzi) and B. philippinensis Drew and Hancock. Adult flies and larvae were collected from Cavite and Davao del Norte, Philippines. The larvae were reared to adulthood at the Insect Ecology laboratory, University of the Philippines Los Baños; adults were then identified along with field collected adult specimens. Each specimen was assigned with a numerical rating from zero to six through morphological examination, using the diagnostic key originally described by White and Hancock in 1997. For morphometric analysis, rating zero and six were used for B. occipitalis and B. philippinensis, respectively. The following structures were analyzed: lengths of abdominal tergites/sternites, femora, tibiae, and metatarsals; as well as wing length and width. Morphometric results showed significant differences (via t-test at $\hat{l} \pm = 0.05\%$) in tergite III, mid-femur, and the metatarsals of the 2nd and 3rd leg pairs. For DNA barcoding, genomic DNA was extracted from specimens assigned with every rating (0-2 = B. occipitalis, 3 =intermediate/hybrid, 4-6 = B. philippinensis). Using customized primers, mtCO1 was amplified, sequenced, and analyzed. A phylogenetic tree was constructed using the Neighbor Joining method. mtCOI clustering did not support morphological ratings, with B. occipitalis, hybrid, and B. philippinensis samples grouped together. Low bootstrap values at certain branches suggested the lack of phylogenetic differentiation among morphological species delineations. Pairwise distances of consensus sequences ranged from zero to 0.033, which were lower than the standard threshold of 0.5% utilized for species delineation in fruit flies. Therefore DNA barcoding failed to delineate B. occipitalis and B. philippinensis. (Author's abstract)

Keywords: Biology, Dacinae, Mitochondrial cytochrome c oxidase I gene, Neighbor joining, Tephritidae

Philippine Journal of Science, Volume No. 142 Issue No. 1, 69-76 2008, (Filipiniana Analytics) Fil(S) Q1 P55 142/1 2013

A novel endemic Philippine species of *Bikkia* Reinw. (*Rubiaceae*) inferred from multiple DNA sequencing data, with implication on its conservation status and biological activities *Alejandro, Grecebio Jonathan D., Santos, Lorenzo Angelo R., Hsu, Hao Wei C., Mejillano, Michelle Samantha S., Santor, Propa Joy R., Paragas, Ericson M.*

Based on molecular data, the genus *Bikkia* Reinw. (coffee family) was formerly subdivided into two groups with contrasting habitat and corolla shape. Subsequently, one group was transferred to a genus of its own the *Thiollierea* (inland forest) leaving the Bikkia (coastal species) with 10 species worldwide. In the Philippines, only one Bikkia species (B. philippinensis) is known found in the coastal areas of Siargao Island. Recent observation of herbarium specimens at Central Mindanao University revealed a diverging Bikkia species collected in the inland forest of Mt. Redondo, Dinagat Island. This raises questions on the identity of this Bikkia as well as its contradicting habitat. Comparative evaluation was conducted using morphology and molecular data from nuclear rDNA (ITS region) and cpDNA (rps 16 & trnL-F regions). Genomic DNA from two isolates of B. philippinensis and four isolates of Bikkia sp. (Mt. Redondo) was sequenced and analyzed. Eighteen sequences of Philippine Bikkia from the three molecular markers are newly generated in this study. Suprisingly, the separate and combined parsimonious trees showed that the inland forest Bikkia sp. is nested within the purely coastal species of Bikkia (BS=90%) but did not group with the B. philippinensis. This molecular results is supported by morphology as they differ mainly in the size and shape of calyces and fruits. Therefore, we proposed a new species of Philippine Bikkia (B. redondoensis). B. redondoensis is critically endangered due to its restricted distribution and < 250 mature individual population size. The first phytochemical screening of this new species including the Microplate Alamar Blue Assay is here reported. (Author's abstract)

Keywords: Biology, Bikkia, Conservation, cpDNA, nrDNA, Philippine endemic

Transactions of the National Academy of Science and Technology, Volume No. 34 Issue No. 1, 97 2008, (Filipiniana Analytics) Fil(S) Q149.P5 N25 34/1 2012

0092

Occurrence and diversity of Myxomycetes (*Plasmodial slime molds*) along the Northern Slope of Mt. Makulot, Cuenca, Batangas, Philippines

Pascua, Gerald Ceasar P., Adora, Jaira Michelle V., Campos, Monica L., Yu, Kate Nicole T., Cheng, Christian Bernard T., Pangilinan, Maria Victoria B., Buaya, Anthony T., Dela Cruz, Thomas Ediso

Lowland forests in the Philippines are ideal study sites for myxomycetes due to its cool climate and rich vegetation. Thus, our research study aims to determine the myxomycete assemblages present in Mt. Makulot, Cuenca, Batangas. Aerial and ground leaf litter and twigs were collected and placed in moist chambers for 8 weeks under diffused light. Myxomycetes from the moist chambers and field collections were identified based on sporocarp and spore morphologies. A total of 21 species from 10 genera were collected from Mt. Makulot, with a

high number of myxomycetes, i.e. 10-11 species, collected from aerial leaf litter and twigs. Only six species were obtained from ground leaf litter. Species diversity was also observed to be high on twigs. The myxomycetes collected were identified as *Arcyria afroalpina*, *A. cinerea*, *A. denudata*, *Collaria sp.*, *Diachea bulbilosa*, *D. splendens*, *Diderma effusum*, *D. hemisphaericum*, *Didymium nigripes*, *D. squamulosum*, *Hemitrichia calyculata*, *Lycogala sp.*, *Perichaena chrysosperma*, *P. pedata*, *Physarum compressum*, *P. globuliferum*, *P. melleum*, *Physarum sp.*, *Stemonitis sp.*, *S. fusca*, and *S. herbatica*. Among the collected species, A. cinerea was recorded to be the most abundant. Ten species were noted as rare. This is the first report of myxomycetes in Mt. Makulot, Cuenca, Batangas. (Author's abstract)

Keywords: Biology, Lowland forests, Myxomycetes, Species abundance, Species distribution, Species diversity

Asian Journal of Biodiversity, Volume No. 4 Issue No. 1, 65-83 2013, (Filipiniana Analytics) NP

Pediculicidal activity of a shampoo formulated from the crude ethanolic extract of *Tinospora rumphii* Boerl (menispermaceae) stems

Mamaril, Tracy V., Manlusoc, Joanne Katherine T., Marcelo, Amabelle Lou C., Mendoza, Mark Christian C., Naga, Maria Vicroria D., Ng Sinco, Justin W., Perez, Tanya Angela P., Castillo, Agnes L.

This study involves the formulation of a pediculicidal shampoo from the *Tinospora rumphii* Boerl ethanolic extract using compatible excipients and the determination of its activity using Permethrin (Kwell) as positive control. Stems of the plant T. rumphii Boerl was percolated with 80% ethanol and was formulated together with a base to determine its pediculocidal effect. No apparent irritation was noted after 72 hours of application on rabbits. In vitro study was also conducted to determine its lice-killing activity. Preliminary clinical studies were also employed to five (5) respondents to test for the possibility of hypersensitivity and to further test its effectivity on human subjects. Single-Factor ANOVA showed a significant difference between the mean killing time of the adult lice using the *Tinospora* shampoo, Permethrin and the shampoo base (p<0.001). Human patch test result in thirty (30) subjects showed no significant irritation with the *Tinospora* shampoo. ANOVA for Repeated Measures showed no significant interaction effect between the treatment used and the duration it was applied – amount of adult lice (p = 0.077), nits (p=0.580) and pruritus (0.519). Also, there was no significant difference on the number of adult lice (p=0.233) and nits (0.580) killed but a significant difference in pruritus (p<0.001) in regards to the treatment. However, in regards to the duration of treatment, there was no significant difference on the decrease of the number of adult lice (p<0.001) and pruritus (p=0.071) but a significant difference on the nits killed (0=0.02). Therefore, the shampoo formulated with the crude ethanolic extract from T. rumphii has equal efficacy as that of the commercially available positive control (Permethrin). (Author's abstract)

Keywords: Biology, Tinospora, Pediculocide, Excipients, Formulation, Permethrin

Transactions of the National Academy of Science and Technology, Volume No. 34 Issue No. 1, 90 2008, (Filipiniana Analytics) Fil(S) Q149.P5 N25 34/1 2012

Philippine-endemic and Mindanao-endemic bird communities on Canticol and Mt. Hilonghilong, Philippines

Gale, George A., Mallari, Neil Aldrin D., Ngoprasert, Dusit, Nuñeza, Olga M., Paz, Sher

The study assessed the Philippine-endemic and Mindanao-endemic bird communities of two mountains in Agusan del Norte – Canticol, Tubay and Mt. Hilong-hilong, Remedios T. Romualdes (RTR) from September to November, 2008 using eight-minute fixed-radius point counts. Habitat variables included vegetation structure, elevation, slope and incidence of anthropogenic disturbance. Non-linear regression analysis and AICc model selection were used to determine the habitat variables that influence the richness and abundance of endemics in the two sites. Canticol had lower mean density of large and medium trees and higher degree of anthropogenic disturbance than Mt. Hilong-hilong. There were 31 Philippine-endemic birds (four threatened) and three Mindanao-endemics (one threatened) on Canticol while there were 39 Philippine-endemics (seven threatened) and six Mindanao-endemics (three threatened) on Mt. Hilong-hilong. The diversity of endemics was significantly higher on Mt. Hilong-hilong (H'=2.31). The study suggests that the two sites need conservation attention to prevent forest loss and endangerment of the threatened endemics. Vegetation structure and elevation had the greatest influence on the endemic bird communities in the two sites. Adequate regeneration of the disturbed sites in the region must also be prioritized as part of a long-term management strategy. (Author's abstract)

Keywords: Biology, Richness, Abundance, Habitat, Threatened, Avian communities

Asian Journal of Biodiversity, Volume No. 4 Issue No. 1, 135-168 2013, (Filipiniana Analytics) NP

Photocatalytic degradation of aqueous C.I. reactive violet 5 using bulk zinc oxide (ZnO) slurry

Dumelod, Jesus C., Cabansag, Jeannie Lynn J., Alfaro, John Cyrus O., Arsenal, John D., Sambot, Jolivette C., Enerva, Lorna T., Leaño, Jr., Julius L.

The degradation of aqueous C.I. Reactive violet 5 dye under UV light with bulk zinc oxide (ZnO) slurry as the photocatalyst was studied. The effects of varying amounts of zinc oxide, dye concentration, exposure time, pH, temperature and lamp intensity on degradation were evaluated. UV irradiation was found to enhance dye degradation by about 90% immediately after 30 minutes of exposure time, for low dye concentration of 2×10^{-5} M. The rate of dye degradation increased as the amount of zinc oxide increased until optimum loading was achieved . At 3840 ppm ZnO concentration, 5×10^{-5} M (40 ppm) dye is degraded by 74% after 30 min of irradiation and was nearly 100% degraded after 90 min at pH 7 and temperature of 30° C. The degradation rate follows a first order kinetics with respect to dye concentration, with the rate of RV5 degradation is determined at 9.3 x 10^{-5} M/h using 3840 ppm ZnO under neutral pH, temperature of 30° C and 20W lamp intensity. Increased pH, temperature and lamp intensity further accelerate dye degradation by about 38.0%, 53.3%, and 43.2% respectively. The use of zinc oxide provides a simple and efficient method for photocatalytic degradation of azo dyes in wastewater. (Author's abstract)

Keywords: Biology, Degradation, Photocatalysis, Reactive violet 5, Zinc oxide

Phytochemical studies on two Philippine endemic rubiaceae species - Gardenia merrelli and Villaria odorata

Tan, Mario A., Concepcion, Christian Nicolo Ll., Villacorta, Raychel Ann P., Alejandro, Grecebio Jonathan D.

The family Rubiaceae is the fourth largest flora which is distributed worldwide. Phytochemical studies on Rubiaceae species have elaborated the presence of various classes of natural products with interesting biological activities. In our interest of identifyingbiologically-active secondary metabolites from the endemic Philippine Rubiaceae plants, this research aims to isolate, purify and elucidate the exudates from the leaves of Gardenia merrelli and Villaria odorata. The crude extracts of the two plant species obtained from the air-dried leaves were subjected respectively to polarity partitioning. The obtained semi-polar CHC1₃ sub-extracts were further purified by several chromatographic techniques (TLC, gravity column chromatography, vacuum liquid chromatography). From the leaves of G. merrelli, three ¹H-NMR pure compounds (GmD-1, GmD-2, GmD-3) were isolated. GmD-1 was identified as p-hydroxybenzaldehyde based on ¹H- and ¹³C-NMR and in comparison with the literature. Structure analyses of GmD-2 and GmD-3 is currently in progress. The leaves of V. odorata vielded six ¹H-NMR pure compounds, namely, Vo-1 to Vo-6. Vo-1 was identified as vomifoliol by extensive 1D and 2D NMR and MS analyses and comparison with the literature. The biological evaluation of the pure compounds is underway. The structure elucidation of compounds Vo-2 to Vo-6 is currently in progress. This study represents the first phytochemical work on the endemic species G. merrelli and V. odorata. Moreover, this is the first isolation of vomifoliol from the genus Villaria and the first isolation of *p*-hydroxybenzaldehyde from the genus Gardenia. (Author's abstract)

Keywords: Biology, Rubiaceae, Gardenia, Villaria, Vomifoliol, p-hydroxybenzaldehyde

Transactions of the National Academy of Science and Technology, Volume No. 34 Issue No. 1, 92 2008, (Filipiniana Analytics) Fil(S) Q149.P5 N25 34/1 2012

0097

Plankton diversity in ballast water of an inter-island passenger-cargo ship calling the Philippine Ports

Tirazona, Danny B., Baria, Lovell O., Gellada, Lorna D., Magramo, Melchor M., Sarinas, Brian Gil S., Sorio, Lynbelle Rose D., Tornalejo, Jilla

Numerous studies have been conducted on ballast water species composition and diversity in other countries but not in the Philippines. Thus, this study aimed to provide baseline information on the plankton diversity in ballast water of the inter-island passenger-cargo vessel calling the ports of Iloilo-Bacolod-Manila- Cagayan de Oro, Philippines and vice-versa. Specifically, this study aimed to determine the presence of phytoplankton and zooplankton diversity and species density of this plankton measured in cells/ml using the haemacytometer technique. Composite sampling was employed having one liter of ballast water used per ballast tank. A total number of 15 genera of phytoplankton (diatom) and one genus of zooplankton were recorded. *Chroococcus, Nannochloris* and *Protococcus* had the highest cells/ml while *Ankistrodesmus, Micromonas* and *Synedra* had the lowest cells/ml. The most common phytoplankton observed in ballast tanks were *Nannochloris* and *Protococcus. Neocalanus* (copepod) was present in all ballast tanks except in ballast tank 1 (fore-peak). The phytoplankton and zooplankton

composition was found to be non-invasive in nature showing its ubiquity in the marine environment. This study provides an initial assessment or preliminary list of phytoplankton and zooplankton diversity from the ballast water of a passenger-cargo vessel calling the Philippine ports. (Author's abstract)

Keywords: Biology, Phytoplankton, Zooplankton, Diatom, Ballast tanks, Ballast water, Iloilo-Bacolod-Manila-Cagayan de Oro, Philippine ports

Asian Journal of Biodiversity, Volume No. 5 Issue No. 1, 78-91 2014, (Filipiniana Analytics) NP

0098

Preference of the Philippines green mussel, (*Perna viridis* L.) for abaca as substrate for larvel settlement *Alarcon, Nora I., Masagca, Jimmy T.*

Among the bivalve mollusks, the search for a place to settle involves a set of behaviors loosely referred to as he reproductive behavior. This behavior may also be termed as the reproductive strategy of larvae of bivalves found in the marine environment. In the period of settling, the larva tests the substrate for its physical properties such as texture, color, exposure to light and spatial disposition. Studies indicate that the settling process is related to the nature of the substance and the hydrological conditions. It is still unclear whether settling proceeds better in water bodies with low or flowing rate. Compared to the settling of larvae on hard substrates, settling on soft substrates has been little studied so far, thus this study was carried out in the green mussel ("tahong"), P. viridis to determine the effects of hydrodynamics (i.e. turbulence) and nature of substrate on its settlement using improvised substrates. Improvised substrates made of nylon, abaca and bamboo were hung in three different placements/levels (upper,middle,bottom) in two outdoor rectangular cemented tanks (one was equipped with a submersible pump to stimulate a recirculating /flowing system while the other was only aerated to stimulate a non-recirculating or still water system). The split-split plot design replicated three times (experimental runs or trials) was used as an experimental design in the study. A total of 200 P. viridis larvae were stocked in the tanks during the experimental runs over a 72-hour observation period. Results show that the type of substrate most preferred was abaca (p>0.05). The mean value of the larvae that settled in the nylon material was almost the same as the bamboo substrates (6.56), while the abaca material (9.22) was much greater. This result implies that the abaca is the most preferred material for larval settlement compared to nylon and bamboo. There exists an interaction between the hydrodynamics and recirculating system. In general, water turbulence process could have influenced the larval settlement process in P. viridis and can proceed better in flowing water rather than still water bodies under outdoor conditions. The nature of material of the substrates alone had the main effect during the experiment. The larvae significantly preferred abaca substrates compared to the others. Whether the improvised substrates were place from the upper level or to the bottom level of the tanks, larval settlement was not influenced or affected so far. The study concluded that P. viridis larvae preferred the abaca substrate during its settlement under outdoor tank experiments both in recirculating and non-recirculating system. (Author's abstract)

Keywords: Biology, Reproductive strategy, Larval settlement, Green mussel, Perna viridis, Abaca fiber substrate

Transactions of the National Academy of Science and Technology, Volume No. 32 Issue No. 1, 59-60 2008, (Filipiniana Analytics) Fil(S) Q149.P5 N25 32/1 2010

A preliminary assessment of the Chiropteran fauna of the Oro River, Cagayan de Oro City, Philippines

Japos, Genaro V., Lobite, Neil Jun S., Lubos, Lesley

Bats are integral components of the environment serving an indispensable role in maintaining the health of different ecosystem ranging from forested areas up to riparian zones. Rivers and riparian areas provide an important habitat for bat fauna by providing direct valuable resources. The bat fauna along the Cagayan de Oro river had never been assessed and the current study was the first. Bat survey was conducted in different relevant locations along the river communities through mist netting designed to provide baseline ecological information and initial data on species composition and biometrics of bat species present in the Cagayan river zone. Eight bat species – five Pteropodids, two Vespertilionids and one Emballonurid – were recorded representing 15% of the bats of Mindanao faunal region and over 10% of the total Philippine bat fauna. Two species were Philippine endemics though with stable population status but are considered of conservation priority. Further studies along more complete portions of Cagayan de Oro river would likely add essential information on bat species composition and distribution in the area and would give a clearer overview regarding the bat fauna along the Cagayan de Oro river. (Author's abstract)

Keywords: Biology, Chiroptera, Bat diversity, Philippine bat fauna, Cagayan de Oro river, Riparian, Cagayan de Oro City, Philippines

Asian Journal of Biodiversity, Volume No. 4 Issue No. 1, 119-134 2013, (Filipiniana Analytics) NP

Preliminary study on the macrofungi of Bazal-Baubo Watershed, Aurora Province, Central Luzon, Philippines Agbavani, Efren S., Tadiosa, Edwin R., Agustin, Nesto

A preliminary study on the macroscopic fungi was conducted at the watershed of Aurora Province. Four transect lines were established from 50m to 1040 m asl with 20m x 50m quadrat sampling each transect line (TL) and with an interval of 200m between quadrats. The fungal species within the quadrats along the TL's were collected, identified and recorded. Opportunistic sampling method was also used during the survey. Field sampling of fungi resulted to the identification of 38 families, 68 genera, and 107 species with a total of 684 individuals. Of which 91 are basidiomycetes, 14 are ascomycetes, and two are myxomycetes. Among the significant findings include *Aseroe rubra* Labill., *Lycoperdon echinatum* Pers., *Macrolepiota rhacodes* (Vittadini) Singer, and *Cookeina tricholoma* (Mont.) Kuntze, as the new record fungal species in Aurora, and one possible new species of the genus *Hexagonia*. Further field surveys of the watershed is anticipated to uncover a rich and diverse fungal flora in the area. Although generally well protected, the watershed is currently experiencing some degree of anthropogenic disturbances such as carabao logging, minor forest products gathering, and *kaingin* making or slash-and-burn farming. Fungal diversity research efforts need to be encouraged to evaluate the effects of these human disruptions on the ecology of the watershed. (Author's abstract)

Keywords: Biology, Macrofungi, Bazal-Baubo watershed, Field survey, Diversity, Ecology

Asian Journal of Biodiversity, Volume No. 2 Issue No. 1, 151-171 2011, (Filipiniana Analytics)

Prevalence of CTX-M extended spectrum ß-lactamase-producing enterobacteriaceae at a private tertiary hospital in Southern Philippines *Lucena, Mary Ann H., Metillo, Ephrime B., Oclarit, Jose M.*

The emergence of extended spectrum ß-lactamase (ESBL)-producing Enterobacteriaceae is one of the growing healthcare concerns worldwide. ESBLs are plasmid encoded enzymes that confer resistance to broad-spectrum cephalosporins and monobactams. Plasmids that carry genes that code for ESBLs often carry other resistance determinants and because of these, infections caused by ESBL-producing Enterobacteriaceae are difficult to treat contributing to the problem of nosocomial infection. To evaluate the prevalence of ESBL-producing Enterobacteria coli, *Klebsiella* species, and *Enterobacter* species isolated from clinical samples, were screened and confirmed for the presence of ESBLs. Specific primers for CTX-M, TEM and SHV ESBL enzymes were used. From a total of 583 isolates collected from September 2005 to September 2008, thirty (5.1%) were confirmed as ESBL-procedures; the majority (60%) of which produce CTX-M type ESBLs. Most (89%) ESBL procedures co-express resistance to quinolones, 61% are susceptible to aminoglycosides and all remained susceptible to carbapenems. (Author's abstract)

Keywords: Biology, CTX-M ß-lactamase, Enterobacteriaceae, ESBL, Prevalence, Resistance

Philippine Journal of Science, Volume No. 141 Issue No. 1, 117-121 2008,(Filipiniana Analytics)Fil(S) Q1 P55 141/1 2012

0102

A proposed regulatory mechanism of ontogenetically expressed DITAA-containing coconut transcripts *Cueno, Marni E., Laude, Rita P.*

Accumulation of medium-chain oils into the coconut endosperm has been shown to follow a temporal pattern of fatty acid gene expression. The mechanism by which these genes are regulated, however, has not been explored. Using 3' RACE, we identified two coconut DITAA-containing transcripts (DCTs), appropriately labeled DCT1 and DCT2, and found both transcripts in the 5-6 and 6-7 month old (mo) coconut endosperms following an ontogenetic pattern. Comparison of both amplified transcripts from the 5-6 and 6-7 mo endosperms show 100% homology between DCT2 transcripts. Interestingly, 52 nt downstream of the DCT1 sequences prior to the poly(A) tail are missing in the DCT1-6mo transcript. Visual inspection for potential motifs shows the presence of CCGCC-like (DCT1-5mo and DCT1-6mo) and TGTG-like (DCT1-6mo only) motifs. Both motifs have been published to be known regulatory motifs in other species suggesting a probable similar function in coconut. (Author's abstract)

Keywords: Biology, 3' RACE, Coconut endosperm, Cocos nucifera, Ontogenetic expression, Regulation

Philippine Journal of Science, Volume No. 142 Issue No. 1, 39-44 2008, (Filipiniana Analytics)

Proteus species identified using the analytical profile index API 20E: potential biological control from borer infesting sweet sorghum *Gaoat, Cecile A., Franco, Prima Fe R., Franco, Samuel S., Layaoen, Heraldo L.*

Previous studies on sweet sorghum production in the Philippines show that it is affected by insect pests like borer. This insect attacks both the leaves and the stalks of the plant thus causing a decrease in juice yield for ethanol production. It is also observed that some larvae of borer attacking sweet sorghum varieties die prior to pupation even without the application of insecticides. This phenomenon is postulated to be due to bacterial harbored by the larvae in their gut. Bacterial isolates then from the gut of the larvae of the borer were obtained and charactrized. They were identified using API 20E. Results show that borer attacking both leave and stalks harbor the same bacteria. They both have *Proteus vulgaris* and *P. mirabilis*. Both isolates are positive in the protease and hemolysin indication of their being pathogens. They employ protease and hemolysin as virulence factors. The characterized and identified flora of the gut of borers must have the potential as biological control of insects attacking sweet sorghum. (Author's abstract)

Keywords: Biology, Proteus, Borer, Sweet sorghum, API

Transactions of the National Academy of Science and Technology, Volume No. 34 Issue No. 1, page 107 2008, (Filipiniana Analytics) Fil(S) Q149.P5 N25 34/1 2012

0104

New record of potential cyanobacteria from indian region falling indo-burma biodiversity hotspots (North-East Region of India) and partial characterization for value additions Singh K, Ojit, Oinam, Gunapati, ON, Tiwari

Cyanobacteria are prokaryotic organisms capable of oxygenic photosynthesis. They appeared to be a rich source for many useful products and are known to produce a number of bioactive compounds. The North-east region of India is a genetic treasure house of plant, animal, and microbial resources. In this study, two-hundred sixty (260) unialgal cyanobacterial isolates from Indian region falling Indo-Burma biodiversity hotspots were characterized and primarily screened. Ten (10) isolates from six genera viz-a-viz, *Anabaena* (03), *Nostoc* (01), *Phormidium* (03), *Plectonema* (01), *Lyngbya* (01), and *Microchaete* (01) were found to be useful for industrial application. Study show that in the present investigation, *Phormidium tenue* (Menegh.) Gomont (NEMN138) have showed ammonia content and can be used as biofertilizers. *Anabaena fuellebornii* Schmidle (NEMN125), *Phormidium bohneri* Schmidle (NEMN183), *Nostoc spongiaeforme* Agardh ex Born. et Flah (NEMN131) were found to be useful for production of phycobiliproteins from cyanobacterial and microalgal repository of IBSD, Imphal, Manipur, India (National facility created by Department of Biotechnology, Government of India, in 2009 with reference No. BT/PR 11323/PBD/26/171/2008 dated 31-03-2009) after obtaining accession number. (Author's abstract)

Keywords: Biology, Biodiversity hot spots, Cyanobacteria, Indo-Burma, North-East India, Respiratory, Value addition

Philippine Journal of Science, Volume No. 141 Issue No. 1, 57-66 2008, (Filipiniana Analytics) Fil(S) Q1 P55 141/1 2012

Salinity tolerance of introduced South American Sailfin Catfishes (Loricariidae:Pterygoplichthys GILL 1858) Brion, Marco Alberto, Guilermo, jR., jOSE Gil Uy, Cheston, Chavez, Joel, Carandang, Iv, Jose Santos Philipine Journal of Science, 2013 June, 142(1)

Brion, Marco Alberto, Guillermo, Jr., Jose Gil, Uy, Cheston, Chavez, Joel, Carandang, IV, Jose Santos

The ecological distribution of species is limited by its physiological tolerances towards natural physical barriers. The experimental LC_{50} of salinity to an introduced freshwater fish was determined as it implies to its dispersal and distribution. South American sailfin catfishes belong to a freshwater fish family but introduced specimens have been collected in brackish waters of the Pasig River in the Philippines. Tolerance to salinity of this introduced fish could mean increased potential to expand its range into or via marine waters. Juvenile South American sailfin catfishes were purchased from local petshops and were subjected to a 96-hour toxicity test for salinity in the laboratory. Replicated tests using various salinity concentrations were performed. Mortality and survival of test samples were tabulated to determine LC_{50} . The LC_{50} of salinity was calculated to be 10.6 g/L. Survival analysis of the data gives an estimate that at 10 g/L concentration over 50% of the samples have strong chance of survival beyong 85 hours of exposure to saline water. Post mortem identification of samples confirms they belong to genus *Pterygoplichthys*. We discuss the implications of the LC_{50} results on the migration and dispersal of this introduced freshwater fish, and the application of taxonomic data in the study of invasions. (Author's abstract)

Keywords: Biology, Janitor fish, Pasig River, Pterygoplichthys, Salinity tolerance

Philippine Journal of Science, Volume No. 142 Issue No. 1, 13-19 2008, (Filipiniana Analytics) Fil(S) Q1 P55 142/1 2013

Sea turtles of Macajalar and Gingoog Bays Mindanao, Philippines Quimpo, Fra-And T

There are 4 species of sea turtles recorded in Macajalar and Gingoog Bays in Northern Mindanao. The hawksbill and the green turtle have the highest occurrence while casual and accidental occurrences are recorded for the olive ridley and leatherback turtle. Sea turtles are recorded in 22 barangays (the smallest geopolitical unit in the Philippines) of 11 municipalities in both bays, but only the hawksbill and green turtles are observed in in-water and boat surveys. Only the hawksbill turtle is confirmed to nest in 9 barangays of 5 municipalities. Nesting is all year round with peaks during the 1st quarter of the year. 22% of the nests have not reached hatching due to poaching (14%) and natural causes (8%). Nesting activity is within the range recorded for the species. Sea turtle-human interactions are generally positive with majority of accidental captured turtles released although poaching of eggs and deaths of sea turtles directly or indirectly manmade are still documented. (Author's abstract)

Keywords: Biology, Sea turtles, Hawksbill turtle, Green sea turtle, Olive ridley turtle, Leatherback turtle, Conservation

Asian Journal of Biodiversity, Volume No. 4 Issue No. 1, 169-189 2013, (Filipiniana Analytics) NP

0107

A short review on nutrient enhancement and its probable detrimental effects on tropical reefs Dy, Danilo T.

A short review on the detrimental effects of nutrient enhancement in coral reefs is presented. Two concerns are expressed in the paper: the possible effect on the reef if fertilization is applied in the seaweed cultivation and the long term effect on the physical structure of the fringing reef if beach resort operators decide to dump sewage into the sea. Ideas and recommendations are presented and discussed to stimulate research efforts towards monitoring nutrient levels in coral reefs. (Author's abstract)

Keywords: Biology, Eutrophication, Chronic stresses, Acute stresses

The Philippine Scientist, Volume No. Issue No., 67-78 2008, (Filipiniana Analytics) Fil(S) Q1 J95 v31 1994

0108

Status of plant biodiversity in Mt. Malarayat Arcega, Christie Victoria S., Lunar, Berna

The study determined the vegetative structure, assessed the current status of plant biodiversity in Mt. Malepunyo, one of its peaks. Herbarium of its floristic composition served as the baseline for future monitoring and scientific undertakings in the area. The quadrat technique was used to determine the vegetative structure and ecological dynamics of the forest of Mt. Malarayat- Malepunyo. The size of the quadrat was 100 square meters each (10x10 m). A total of 20 quadrats used were situated more or less along the trail to the peak. The study recorded a total of at least 104 species under 60 families; of which 46 species are indigenous or native to the Philippines; 27 species are introduced; 23 species endemic to Mt. Malarayat; while 9 species were unclassified. Eleven (11) were threatened species included in the conservation priority areas. The flora is composed of 67% trees, mostly from families Moraceae, Euphorbiaceae, Lauraceae, Meliaceae and Rubiaceae. The undergrowth layer includes shrubs (13%), vines (11%) herbs (5%) and ferns (4%). Its potential threats and anthropogenic disturbances include presence of invasive species, impacts of unregulated tourism activities, small scale timber poaching, hunting and land conversion. **(Author's abstract)**

Keywords: Biology, Status, Plant biodiversity, Mt. Malarayat, Species richness

Asian Journal of Biodiversity, Volume No. 2 Issue No. 1, 1-14 2011, (Filipiniana Analytics) NP

Structural and ultrastructural characteristics of the testes of the invasive suckermouth sailfin catfish *Pterygoplichthys spp.* Gill 1858 (Siluriformes: Loricariidae) from the Marikina River system, Philippines *Jumawan, Joycelyn, Herrera, Annabelle*

The suckermouth sailfin catfish (*Pterygoplichthys pardalis*) is one of the many loricariid species regarded as highly invasive posing serious threat to many freshwater systems worldwide. Although several loricariid features had been described to contribute to its invasive spread potential, studies on its early development has yet to be described. In this study, mature female *P. pardalis* were subjected to spawning induction using human chorionic gonadotropin (HCG) to study the developmental stages from fertilization until yolk resorption. Females subjected to a single exposure by HCG responded positively to treatment (97%) with higher fertilization success (88.33%) compared to the untreated females (20.89%). Nonetheless, HCG-induced fertilized eggs had a low hatching success (48.56%). From the free-living embryos successfully hatched, a high number (90.44%) had survive to become juveniles. Embryonic development in *P. pardalis* was completed 168 h and 30 min after fertilization with total yolk resorption completed on the 8th day post hatching during which the suckermouth gradually shifts from rostral to ventral position to commence the loricariid algae-scraping feeding mode. *P. pardalis* has the propensity to thrive in hardy water and does not undergo true larval metamorphosis between the free swimming embryo and the juvenile stage, hence, a definitive adult phenotype develop directly. These results provide essential information of the early developmental features of this invasive species whose spawning and early developmental strategies were difficult to observe in the field. **(Author's abstract)**

Keywords: Biology, Janitor fish, Invasive fish species, Loricariids, Development

Transactions of the National Academy of Science and Technology, Volume No. 34 Issue No. 1, page 109 2008, (Filipiniana Analytics) Fil(S) Q149.P5 N25 34/1 2012

0110

Substrate dependent production and isolation of an extracellular biosurfactant from Saccharomyces cerevisiae 2031 Alcantara, Virgie A., Pajares, Irene G., Simbahan, Jessica F., Rubio, Ma. Leah D.

Improvements of both biomass yield and emulsification activity are important criteria for profitable biosurfactant production. In this study, *Saccharomyces cerevisiae* 2031 gave the highest emulsification activity ($E_{24} = 58\%$) by using Cooper and Paddock's basal medium, containing glucose and waste cooking oil as carbon sources. Glucose and waste cooking oil were found to be essential for high biomass and emulsification activity. Emulsification activity of the biosurfactant increased to 76% after optimization of fermentation conditions. The optimum carbon source concentration for both glucose and waste cooking oil was 5% Optimum pH for high biomass production was pH 5.0 – 8.0. Isolation of the biosurfactant by heat treatment of the *S. cerevisiae* 2031 cells effectively solubilised the extracellular biosurfactant. (Author's abstract)

Keywords: Biology, Emulsion, Emulsification activity, Emulsification index, Extracellular, Substrate

Philippine Journal of Science, Volume No. 141 Issue No. 1, 13-24 2008, (Filipiniana Analytics) Fil(S) Q1 P55 141/1 2012

0111

Taxonomic and ecological study of microalgae in Lake Buhi, Camarines Sur *Elazegui, Erwin P.*

A plankton study of Lake Buhi, Camarines Sur was conducted for classification and identification purposes. Three stations were established and were based on the presence and distribution of sinarapan (*Mistichthys luzonensis*), the world's smallest fish that can only be found in the lake. Plankton collection was done vertically and collected water samples were placed in a container preserved with 5% formalin. Plankton species were analyzed using the Sedgewick Rafter Counting Chamber and a binocular microscope. Photographs were also taken for verification. The study obtained 4 divisions of microalgae that include Cyanophyta, Chlorophyta, Chrysophyta and Euglenophyta. There are 11 Orders of phytoplanktons observed: Centrales, Chlorococcales, Chroococcales, Charales, Cladophorales, Dinophyceae, Eulenales, Oscillatoriales, Pennales, Tetraporales, Zygnematales. Eighteen families, 20 genera and 24 species of phytoplanktons were also noted. *Synedra acus, Synechocystis aquatilis* and *Synedra tabulata* were the three most abundant species. It belongs to Family Fragilariaceae and Family Chroococcaceae. Physico-chemical parameters such as temperature, pH, and turbidity were recorded and correlated with the number of planktons counted. (Author's abstract)

Keywords: Biology, Lake Buhi, Phytoplanktons, Sinarapan, Taxonomic

Transactions of the National Academy of Science and Technology, Volume No. 34 Issue No. 1, page 102 2008, (Filipiniana Analytics) Fil(S) Q149.P5 N25 34/1 2012

0112

A taxonomic study of wood-rotting basidiomycetes at the Molave forest of San Fernando City, La Union Province, Philippines Arsenio, Jethro S., Tadiosa, Ed

A taxonomic study of the wood-rotting basidiomycetes was conducted at the Molave Forest of San Fernando City, La Union, Northern Luzon, Philippines. This mountainous forest located in the eastern boundaries of the City is being considered as one of the most important forest ecosystems in Ilocos Region, thereby indicating the need for conservation and protection. This paper attempts to document all the macroscopic fungal basidiomycetous species in the area by preparing taxonomic accounts based on an extensive systematic collection and by facilitating the identification or recognition of each fungal species. As there has been no comprehensive work done on the diversity of macroscopic fungi in this area, hence this study was conducted. Using transect line (TL) method, four transect lines were established from the baseline (100m asl) toward the peak (300m asl) with 10m x 25m quadrat sampling each transect line and an interval of 50 meters between quadrats. All in all 20 quadrats were laid out. The fungal species within the quadrats along the TLs were identified and recorded. This study of wood-rotting basidiomycetes

in the molave forest of La Union documented fifty one species. Each species is described including substrata/hosts, synonymies, and habitat. Some of these species, being the most destructive fungi are largely responsible for the decay of living trees. We found out that fungal species richness decreased if the condition of the area is relatively dry. (Author's abstract)

Keywords: Biology, Basidiomycetes, Molave forest, Field survey, Microfungi, Taxonomic study, Species richness, Wood-rotting, Fernando City, Philippines

Asian Journal of Biodiversity, Volume No. 5 Issue No. 1, 92-108 2014, (Filipiniana Analytics) NP

0113

Taxonomy of the genus Sargassum (Sargassaceae, Phaeophyta) from Camotes Island, Cebu Santiañez, Wilfred John E., Trono, Jr., Gavino C.

The taxonomy of the genus Sargassum in the country is poorly known and studied owing largely to its complex and highly variable morphology. In fact, the most recent treatment on the genus Sargassum in the country was done by Trono (1992) more than a decade ago. We attempt herein to add to the body of knowledge on the taxonomy and distribution of the genus by examining Sargassum specimens collected from Camotes Island, Cebu. Morphological characteristics of fertile specimens, primarily the nature of holdfast, shape and nature of branches, vesicles, leaves, and nature and form of receptacles, were studied . Specimens were identified, whenever possible, to species level using the key by Trono (1992). Three species were recognized, namely, *S. polycystum* C.A. Agardh, *S. siliquosum* J. Agardh and *S. paniculatum* J. Agardh. (Author's abstract)

Keywords: Biology, Sargassum, Seaweeds, Taxonomy, Cebu, Philippines

Transactions of the National Academy of Science and Technology, Volume No. 34 Issue No. 1, page 103 2008, (Filipiniana Analytics) Fil(S) Q149.P5 N25 34/1 2012

Some ultrastructural observations on *Tubiluchus philippinensis* (Priapulida): a new faunal element of Philippine coastal waters Storch, Volker, Alberti, Gerd, Rosito, Ruby M., Sotto, Filipina B.

A new species of an interstitial priapulid, *Tubiluchus philippinensis* van der Land, 1985, was found in the coarse, silty sand of the reef flat off Sabang Island, Mactan, Cebu. The genus *Tubiluchus* contains four described species, three of which were described in the eighties. Before the opportunity arose to study *Tubiluchus philippinensis*, now the best known species among the tropical meiobenthic Priapulida, there was a complete lack of cytological information about this group. Our aim in this paper is to summarize the knowledge on *Tubiluchus philippinensis*. (Author's abstract)

Keywords: Biology, Tubiluchus philippinensis, Tubiluchus corallicola, Maccabeus tentaculatus, Chaetostephanus praeposterius, Meiopriapulus fijiensis, Tubiluchus australensis

The Philippine Scientist, Volume No. Issue No., 144-156 2008, (Filipiniana Analytics) Fil(S) Q1 J95 v22 1985

Vascular flora of the tropical montane forests in Balbalasang-Balbalan National Park, Kalinga Province, Northern Luzon, Philippines *Malabrigo, Jr., Pas*

This paper provides a preliminary report on the different types of habitats including ecology and species diversity of Balbalasang-Balbalan National Park (BBNP) based on the Rapid Site Assessment (RSA) conducted along various microhabitat gradients in 2009. A total of 84 families, 206 genera and 319 taxa were recorded, including a new species of *Rafflesia*, a very rare parasitic plant. There are 106 Philippine endemics reported, 38 of which are Luzon endemics. 18 taxa were listed under either the Philippine Red List (Fernando et al., 2008) or on the IUCN Red List of Threatened Species (IUCN 2010). Result of the RSA conforms with previous studies revealing high, yet poorly understood biological diversity in this part of Cordillera. It further implies that BBNP support a large percentage of the country's threatened, endemic, and unknown flora. A more comprehensive biodiversity assessment is therefore necessary to better account for the floral diversity of BBNP. (Author's abstract)

Keywords: Biology, Balbalasang-Balbalan National Park, Rapid site assessment, Rafflesia, Philippine endemics

Asian Journal of Biodiversity, Volume No. 4 Issue No. 1, 1-22 2013, (Filipiniana Analytics) NP

0116

Web architecture of the garden spider *Argiope aemula*, (Walckenaer, 1841) (Araneae: Araneidae, Argiopinae)

Adamat, Liza A., Torres, Mark Anthony J., Gorospe, Jessie S., Barrion-Dupo, Aimee Lynn A., Barrion, Adelina A., Demayo, Cesar G.

This study was conducted to investigate the effect of the presence and ansence of potential prey on web decoration frequency, web size, web capture area (portion of the web with sticky or capture spirals) and mesh height (distance between sticky spirals) of the orb webs constructed by *Argiope aemula*. Thirty (30) spiders were given two sequential feeding regimes. For the first three consecutive days, spiders were given one medium size grasshopper (with prey regime) and fasted for five days (no prey regime). For the purpose of comparison, spiders with no prey and with prey feeding regimes are categorized as starved and well-fed respectively. Our laboratory results show that the presence of prey has a significant influence on stabilimentum (web decoration) building in *A. aemula* spiders. Well-fed spiders included stabilimenta on their webs more often than hungrier spiders which agrees with the predictions of the predator defense hypothesis but does not support those of the prey attraction hypothesis. These spiders can increase or decrease the sizes of web, capture area (portion of the web with sticky or capture spirals), and mesh height (distance between sticky spirals) in response to prey density. Starved spiders constructed significantly larger webs than well-fed spiders. In the absence of potential prey, spiders not only increased the web size but also the capture area. Furthermore, in the absence of potential prey, spiders significantly constructed very

narrow- meshed webs or tightly spaced capture spirals than in the presence of potential prey. The present study may demonstrate that spiders can manipulate their web architecture in response to different prey densities. (Author's abstract)

Keywords: Biology, Argiope aemula (Walckenaer, 1841), Stabilimentum, Web size, Web capture area, Web mesh height

Transactions of the National Academy of Science and Technology, Volume No. 32 Issue No. 1, 51-52 2008, (Filipiniana Analytics) Fil(S) Q149.P5 N25 32/1 2010

0117

Why new hats are better: two new endemic species of Philippine Gynochthodes Blume and molecular support on the re-classification of Morinda elliptifolia Quisumb. & Merr. (Morindeae-Rubiaceae)

Chavez, Jayson G., Salvacion, Joshua Johnedel P., Contreras, Gerson C., Hung, Wei Yi D.C., Ramos, Fernan Macrin C., Ysaac, Diana Grace B., Alejandro, Grecebio Jonathan D.

Recent phylogenetic works on the systematic of Morindeae (Rubiaceae) have proposed new generic delimitations of the tribe and the adoption of a narrow circumscription of the nutriceutical genus *Morinda* known as "noni". The proposed transfer of all lianescent *Morinda* species including the Philippine endemic *M. elliptifolia* to its conglomerate *Gynochthodes* have raised the question whether this taxonomic amendment is supported by molecular dataset. To address this, samples of *M. elliptifolia* and two *Gynochthodes* cf. specimens were collected in the island of Palawan. A total of 53 trnT-F (cpDNA) sequences was utilized for cladistic analysis. Bayesian inference (BI) of the plastidial data supports the generic transfer of *M. elliptifolia* to *Gynochthodes* proposed by Razafimandimbison & Bremer with strong posterior probabilities (PP=1.00). *Gynochthodes* is united by marginal hairs along stipules and bracts; axillary, racemose or cymose inflorescences with white and shortly pedunculate flowers; recurved calyx tubes; and corollas with long hairs within the tubes and on the adaxial side of the lobes. Furthermore, the two sampled *Gynochthodes* cf. nestled on the basal polytomy of *Gynochthodes* subclade proving their generic affinity (PP=1.00). Comparisons between the Malesian *Gynochthodes* and these specimens have shed light to the proposal of two new endemic *Gynochthodes* species. In relation to these taxonomic breakthroughs; implications on Philippine biodiversity, and the industrial and medicinal applications of *Gynochthodes* are presented. **(Author's abstract)**

Keywords: Biology, Biodiversity, cpDNA, Gynochthodes, Morinda, Philippines

Transactions of the National Academy of Science and Technology, Volume No. 34 Issue No. 1, 101 2008, (Filipiniana Analytics) Fil(S) Q149.P5 N25 34/1 2012

BOTANY

Ethnobotanical inventory and assessment of medically-important plant roots in Cebu Island, Philippines

Alonso, Charly Ann G., Picardal, Jay P., Miano, Rommel S., Reuyan, Deral

An ethnobotanical study on medicallyimportant plant roots was conducted in Argao, Naga, San Fernando, San Remigio of Cebu Island, Philippines. A total of 25 informants from each study sites were interviewed (*bisaya'ng mananambal*). The study recorded 18, 22, 16, 21 different species of plants claimed to have medicinal uses. The most common ailment cited by the *traditional healers* is 'relapse', which has the highest number of cited plants used for treatment. The modes of preparation are either concocted or decocted root/s as needed and until the ailments get well. The effectiveness of the medicinal plants used by the traditional healers vary from each study site according to perceived effectiveness of each plant used. The medically-important plant roots cited by the traditional healers from the four municipalities reported to be very effective in treating ailments/diseases are the mandalusangputi [*Justiciasp*] in Argao, mangagaw [*Euphorbia hirta* Linn] in Naga, kapayas nga laki [male *Carica papaya*] in San Fernando), and wachichao [*Orthosiphonaristatus*] in *San Remigio*. (Author's abstract)

Keywords: Botany, Medicinal plants, Cebu Island, Herbal medicine, Ethnobotany, Plant roots, Plants

Asian Journal of Biodiversity, Volume No. 2 Issue No. 1, 83-104 2011, (Filipiniana Analytics) NP

0119

Hybridization and genetic improvement of mulberry varieties Gapuz, Cristeta F., Supsup, Roel D., Tabafunda, Menirva J., Ancheta, Lilia A., Dacayanan, Merlita A., Damasco, Cresti

This research focused on the evaluation of Open Pollinated Varieties (OPVs) for sproutingand rooting characters growth, yield and quality for effective utilization in crop improvement for sustained mulberry biodiversity. The OPVs Alf-004, Alf018, Alf- 028, S61-019, S54-019 and the Batac variety were set up in Randomized Complete Block Design with three replications. The four year pooled data were analyzed using the Analysis of Variance across season and DMRT for further test of significance. Correlation Analysis was used to determine the association among yield related characters. Number of branches per plant (NoB), length of longest shoot (LLS), plant height (PH), moisture content (MC) and moisture retention capacity (MRC). Propagation characters as to sprouting percentage (s), rooting percent ®, fresh weight of roots (FWR), fresh weight of shoots (FWS), length of roots (LR), length of shoots (LS), root to shoot ratio by weight (RSR wt), root to shoot ratio by length (RSR L) and number of root (NoR) were considered. Results revealed that the best performing mulberry OPVs based on growth, yield, quality and propagation traits are Alf-004, S61-019, S54-019, S61-011 and Alf-025. These varieties are expected to contribute towards a sustained quality mulberry leaf production and biodiversity for the silk industry's growth and development. (Author's abstract)

Keywords: Botany, Hybridization, Genetic improvement, Mulberry

Asian Journal of Biodiversity, Volume No. 2 Issue No. 1, 184-209 2011, (Filipiniana Analytics) NP

Plant species diversity and endemism at Dihang Dibang Biosphere Reserve and its surroundings, Eastern himalaya biodiversity hotspot Singh, Sarnam, Singh, Ta

An attempt has been made to give assessment of plant species diversity of primary and secondary forest vegetation types in Dihang Dibang Biosphere Reserve (DDBR), a single biosphere reserve in Eastern Himalaya. It is excellent example of continuous unbroken forest of the Himalaya from subtropics to mountain tundra while surrounding area of southern part cover tropics. In the present study we have analysed seventy three sample plots in different forest types and species diversity indices were calculated, Shannon-Wiener's H¢ species richness, evenness, dominant species, dominant verses species richness, and important value index of Biosphere. The species richness in Subtropical evergreen II forest was found highest 7.21 with 350 numbers of species. Owing to the variation of microenvironment, Asian Journal of Biodiversity 2 diversity values within the same vegetation type vary between the samples from different patches. The study would be a great assistance for biodiversity conservation and planning of newly constructed DDBR and its surroundings. (Author's abstract)

Keywords: Botany, Species diversity, Endemism, Biosphere reserve, Eastern himalaya

Asian Journal of Biodiversity, Volume No. 3 Issue No. 1, 1-22 2012, (Filipiniana Analytics) NP

Species richness, distribution, and status of mosses in selected mountains in Mindanao, Philippines Lubos, Les

The paper determined the species richness, distribution, and status of mosses in selected mountains in Mindanao, Philippines. Field collections of mosses were conducted in Mt. Kalatungan, Bukidnon Province ,Mt. Matutum, South Cotabato Province, and Mt. Malambo, Davao Province at 10 meters on each side of the trails using alphataxonomy method. The mosses were collected, classified, and identified. Its status were also assessed. The study revealed 137 species, 87 genera and 33 families of mosses. Of the 137 species, 109 were found in Mt. Kalatungan, 59 in Mt, Matutum, and 20 in Mt, Malambo, Assessment of status of the species revealed 7 species as Philippine record, 37 new to Mindanao, 1 collected only twice, 29 widespread, 12 rare species, and all species collected were new record in terms of locality. Mt. Kalatungan had the highest species richness, followed by Mt. Matutum, and Mt. Malambo had the least number of species. Based on the findings, with the alarming rate of degradation of the mountains which is basically caused by human activities such as land clearing, slash and burn method for expanding crop plantation, urbanization, firewood consumption, over collection of moss plant materials of horticulture, landscaping and other commercial purposes. Some species are epiphytes on tree trunks or branches of live trees while others are on rotten logs, rock surfaces, moist stones along the stream banks and some grow well on soil. Hence, the identified habitats of new records in the Philippines, new to Mindanao, new in terms of locality, widespread, and rare species of mosses should be protected through a strict implementation of the forest laws by concerned authorities. (Author's abstract)

Keywords: Botany, Mosses, Species richness, Distribution, Status, Mindanao Island, Philippines

Asian Journal of Biodiversity, Volume No. 1 Issue No. 1, 72-90 2010, (Filipiniana Analytics) NP

The true mangroves along San Remigio Bay, Cebu, Philippines *Buot, Jr., I.E.*

True mangroves in San Remigio, Cebu, Philippines were surveyed and studied. Nineteen species belonging to 12 genera and 10 families were identified. *Ceriops tagal, Rhizophora apiculata, Rhizophora mucronata* and *Avicennia officinalis* were found to be dominant after a quantitative vegetation study. Voucher specimens were prepared and deposited at the Cebu State College of Science and Technology College of Agriculture Herbarium (CSCS) at Lahug, Cebu City, Philippines. (Author's abstract)

Keywords: Botany, Ceriops tagal, Rhizophora apiculata, Rhizophora mucronata, Avicennia officinalis

The Philippine Scientist, Volume No. Issue No., 105-120 2008, (Filipiniana Analytics) Fil(S) Q1 J95 v31 1994

CHEMISTRY

0123

Benthic degradation of organic matter and regeneration of nutrients in shallow water sediments off Mactan, Philippines Balzer, Wolfgang, von Bodungen, Bodo, Pollehne, Falk

In carbonaceous shallow water sediments of Maribago, Mactan, Philippines benthic metabolic activity and pore water nutrient chemistry were investigated. Bell jar experiments with plain sediment yielded a dark respiration rate of 1000-2000 ml $O_2 m^{-2} d^{-1}$ which was matched by a similar rate of photosynthetic O_2 production during the day. Sediment covered by sea grass or coral communities showed consumption rates several times higher. While silicate was released in large amounts in all systems there was no or only little release of nitrogen and phosphate. Near-surface pore water profiles of silicate, ammonia and phosphate of sediments from Maribago and the double reeds off Bohol were determined with an *in situ* sampler; both localities showed a low intensity of decomposition within the sediment. The benthic system exhibits a very high and efficient metabolism near the sediment surface, leaving little organic matter to be degraded in deeper sediment layers; in the same way the benthic community is very efficient in retaining inorganic products from organic matter degradation. (Author's abstract)

Keywords: Chemistry, Shallow water, Pore water nutrient, Nitrogen, Phosphate

The Philippine Scientist, Volume No. Issue No. , 30-41 2008, (Filipiniana Analytics) Fil(S) Q1 J95 v22 1985
Custom synthesis of isotope-labelled *Apis meliifera* pheromone Conanan, Aida P., Cortes, Nicole Marie A., Daguno, Cristel Lyn R., Templonuevo, Jose Angelo A., Sucgang,

Raymond J.

The object of this study is to determine the optimum conditions for the synthesis of isotope-labelled isopentyl acetate. Isopentyl acetate is widely used as a raw material in industries, in syntheses, and is utilized as a sex attractant (pheromone) by the bee species, *Apis mellifera*. The isotope labelling of isopentyl acetate will allow tracking of the fate and movement of the isopentyl acetate in the environment, in chemical transformations, and in biological systems. Esterification by alcoholysis of acetic acid was optimized for the preparation of Carbon - 14 (¹⁴C)-labelled isopentyl acetate from ¹⁴C- labelled acetic acid and isoamyl alcohol. The different conditions studied were: (1) The effects of acid catalysis and or reflux on the amount of yield of the product. (2) The effects of acid catalysis and/or reflux on the incorporation and retention of the isotope label on the product. The efficiency of label incorporation and retention was determined through the beta radioactivity of Carbon 14 in each of the synthetic constructs. Determination of the beta radioactivity concentration of ¹⁴C in the isopentyl acetate product was done using low level liquid scintillation spectrometry. Each of the synthetic products was mixed with UltimaGold scintillation cocktail in a low potassium glass scintillation vial, and analysed in a low level Wallac 1414 scintillation counter. The application of catalysis without reflux resulted in the highest yield (35%). The same condition also resulted in the highest abundance of carbon isotope label with 2.40 Bequerels per cubic centimetre, Bq/cc (measurement unit for radioactivity). **(Author's abstract)**

Keywords: Chemistry, Liquid scintillation, Radiolabelling, Carbon 14, Isotope, Isopentyl acetate

Transactions of the National Academy of Science and Technology, Volume No. 34 Issue No. 1, page 118 2008, (Filipiniana Analytics) Fil(S) Q149.P5 N25 34/1 2012

0125

Development of lyophilized coconut water for isotonic beverages Torres, Rosalinda C., Manalo, Carmelita O., Bonifacio, Teresita S., Manongsong, Evelyn B., Arrogante, Elvira L., Lanto, Eduardo A., Estrella, Romulo R.

Lyophilized coconut water from both young and mature coconuts was developed by ultra low freezing followed by freeze-drying. Lyophilized product with 25% maltodextrin was found to conform with specifications of the commercial product. Likewise, it remained stable up to six months or more after processing as long as it is stored in freezing temperature. Developed product will be used as isotonic beverage or sports drink. Physico-chemical properties of coconut water from young and mature coconuts were characterized and compared. Likewise, microbial evaluation was conducted. Mineral content was further analyzed and compared with sports drink. Results of the analysis showed that mineral contents such as sodium, potassium, calcium, magnesium, iron, copper and phosphorus were found higher in mature coconut water than in young coconut water. There were slight differences in the physico-chemical properties but microbial evaluation showed higher contamination (total plate count and mold & yeast count) in mature coconut water than young coconut water. However, these results including *Pseudomonas & Salmonella* counts were found within required limits. Results for *E. coli* and *S. aureus* counts fall slightly below the required limits. Mineral content from both sources was found higher than sports drink in terms of potassium and magnesium content. (Author's abstract)

Keywords: Chemistry, Lyophilized coconut water, Isotonic beverages, Mineral content, Microbial evaluation

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0126

Effect-directed analysis of potential endocrine disruptors from the extracts and fractions of sediments from Laguna Lake, Philippines using the lyes-assay *Hallare, Arnold V., Schonlau, Christine, Streck, Georg, Brack, Werner, Hollert, Henner*

Sediments of aquatic systems serve both as sink and secondary sources of contaminants. Previous studies reported that sediments from Laguna Lake, one of the largest aquatic resources in the Philippines, contain a complex mixture of substances. A large range of these chemicals have shown to act as endocrine-disrupting compounds. The present study, was conducted to further investigate the level of contamination of sediment samples from the lake. The LYES-Assay (Yeast estrogenic screen assay assisted by enzymatic digestion with Lyticase) was performed to screen for estrogenic active fractions in sediment samples from Laguna Lake. Sediment samples from two preselected sites within the lake were obtained and subjected to fractionation and effect-directed analysis: Central Bay and East Bay. The sediment samples were extracted using an accelerated solvent extraction method whereas the fractionation of extracts was carried out using the recently-developed automated online multistep fractionation method. Each fraction was tested in seven different dilution steps. Only 5 out of 38 sediment samples showed endocrine activities. In the sediment samples from East Bay four fractions showed a significant endocrine effectiveness at the one fold concentration (fraction 11,15,16, 18). The estrogenic activity ranged from 8.43 ± 4.37 ng/L at fraction 18 to 10.79 ± 5.28 ng/L at fraction 15. Only fraction 18 indicated a significant endocrine potential from Central Bay. However, it already showed significant endocrine effectiveness even at the 1/8 fold concentration of 8.80 ± 2.29 ng/L and up to 27.32 ± 18.39 ng/L at the one fold concentration. Overall, the sediment samples did not reveal a very high estrogenic impact when compared with sediments from some European sites. Characterization of fractions exhibiting endocrine activities through further chemical analyses is underway. (Author's abstract)

Keywords: Chemistry, Effect-directed analysis, Sediment, Endocrine activities, Laguna Lake, LYES assay

Transactions of the National Academy of Science and Technology, Volume No. 34 Issue No. 1, page 121 2008, (Filipiniana Analytics) Fil(S) Q149.P5 N25 34/1 2012

0127

Gold nanoparticles in silica sol-gel matrix: preparation, characterization, and application Estacion, Blessa Bianca C., Salcedo, Alan Rodelle M.

Gold nanoparticles are attracting much attention in the field of analytical chemistry. In recent years, many attempts have been made to successfully immobilize gold nano particles for applications in sensors such as electrochemical and optical sensors. In this study, the feasibility of immobilizing gold nanoparticles in glass substrates using sol-gel method were investigated. The organosilanes: methyltrimethoxysilane (MTMOS) and (3-mercaptopropy1)-trimethoxysilane (MPTMS) were used for the preparation of sol-gel. MTMOS sol-gel was

prepared using the solvent system EtOH:MTMOS:0.1MHC1 (7.5:3.75:1.0,v/v) and for MPTMS sol-gel, the solvent systems 1%MPTMS in toluene and MPTMS:MeOH:0.1MHC1 (1:3:3, molar ratio) were utilized. Spin-coating and dipping techniques were also evaluated for the application of the sol-gel onto the glass substrate prior to the immobilization of AuNPs. The immobilized AuNPs were then characterized using UV-Vis spectroscopy. Spectra of the immobilized AuNPs using MTMOS sol-gel showed no absorbance peaks both in dipping and spin-coating methods indicating the unsuccessful immobilization of the AuNPs. Using MPTMS sol-gel, the dipping technique produced an immobilized AuNPs with absorbance peaks at 565nm and 560nm for MPTMS:MeOH:0.1M HC1 and 1%MPTMS in toluene solvent systems, respectively. While the spin-coating technique produced an immobilized AuNPs with an absorbance peak of 580nm only for the MPTMS:MeOH:0.1MHC1 solvent system. The potential application for metal ion sensing was demonstrated by exposing the immobilized AuNPs were observed after exposure to these metal ions. (Author's abstract)

Keywords: Chemistry, Gold nanoparticles, Spin-coating method, Methyltrimethoxysilane sol-gel, (3mercaptopropyl)-trimethoxysilane sol-gel, UV-Vis spectroscopy

Transactions of the National Academy of Science and Technology, Volume No. 34 Issue No. 1, page 116 2008, (Filipiniana Analytics) Fil(S) Q149.P5 N25 34/1 2012

0128

Molecular assembly and electropolymerization of 3,4-ethylenedioxythiophene on Au(100) single crystal electrode using in-situ electrochemical scanning tunneling microscopy *Garcia, Jonyl L., Tongol, Bernard John V., Yau, Shueh-Lin*

Electrochemical scanning tunneling microscopy (EC-STM) is a powerful technique that can provide molecularlevel information regarding electrode surface processes in-situ in electrolyte solvent under ambient conditions. In this study, the adsorption and electropolymerization of an industrially important conducting polymer precursor, 3,4ethylenedioxythiophene (EDOT), on Au(100) single crystal was probed using EC-STM. The Au(100) single crystal electrode substrate used for this study was fabricated using the well-known Clavilier's flame melting procedure. Cyclic voltammetry (CV) was used along with EC-STM to characterize the bare, EDOT-modified, and poly(EDOT)-modified Au(100) single crystal electrode. Time-dependent EC-STM imaging at 0.550 V showed the formation of an EDOT self-assembled monolayer through 2-D surface diffusion. The resulting EDOT molecular assembly on Au(100) single crystal electrode was found to fit in a $4\sqrt{2} \times 3\sqrt{2}$ unit cell. Difference in apparent corrugation between molecular rows was attributed to different angular orientation with respect to the substrate. The electropolymerization of EDOT on Au(100) single crystal electrode was done by potentiostatic and potentiodynamic methods. Both methods suggested a solution-process mechanism for EDOT electropolymerization. (Author's abstract)

Keywords: Chemistry, Conducting polymers, Electrochemical scanning tunneling microscopy, Cyclic voltammetry, Molecular self-assembly, Electropolymerization

Transactions of the National Academy of Science and Technology, Volume No. 34 Issue No. 1, page 113 2008, (Filipiniana Analytics) Fil(S) Q149.P5 N25 34/1 2012

Potentiometric sensor for melamine using electropolymerized polyaniline membrane Fernandez, Dasha A., Biñas, Francis G., Sevilla, III, Fortunato B.

A simple, rapid, and inexpensive way of quantifying melamine was devised using a potentiometric sensor based on the molecularly imprinted- polymer (MIP). Polyaniline (PAni) membrane was electrodeposited on a graphite/epoxy composite electrode using potentiostatic polymerization. Melamine, which served as the template molecule, was extracted from the polymer membrane. Several parameters were optimized such as the applied potential, polymerization time, melamine and aniline molar concentration ratio, conditioning time and pH. The linear range for melamine determination was $1.0 \times 10^{-10} - 1.0 \times 10^{-2}$ M in buffered solution with a sensitivity of 0.5380 mV / decade, linearity of 0.9990 (n= 3) and a limit of detection of 2.5×10^{-15} M. The sensor response was found to be repeatable. The morphology of the polymer was probed by scanning electron microscopy (SEM). (Author's abstract)

Keywords: Chemistry, Potentiometry, Graphite/epoxy composite, Electropolymerization, Polyaniline, Molecular imprinting

Transactions of the National Academy of Science and Technology, Volume No. 34 Issue No. 1, page 120 2008, (Filipiniana Analytics) Fil(S) Q149.P5 N25 34/1 2012

0130

Preparation and characterization of carbon-supported PTSN electrocatalysts for ethanol oxidation: possible application for inkjet ink formulations *Tongol, Bernard John V., Hsu, Hao Yuhn C.*

The study aimed to utilized inkjet printing technique as a possible fabrication method for developing new Ptbased anode systems with enhanced electrocatalytic behavior towards ethanol oxidation, while reducing the cost of preparation. Carbon-supported Pt and PtSn catalysts of different atomic ratios (90:10, 80:20, 70:30, 60:40 and 50:50) were synthesized by using a modified polyol method. X-ray diffraction (XRD) data revealed that the estimated particle sizes of all synthesized catalysts were approximately 2.0-3.0 nm. Cyclic voltammetry (CV) was used to evaluate the catalytic activity of the synthesized catalysts towards ethanol oxidation. CV data showed that Pt₈₀Sn₂₀ exhibited the highest activity with current density of 88.192 mA·cm⁻². Chronoamperometry (CA) data confirmed that Pt₇₀Sn₃₀ was the most stable among the prepared catalysts with long-term poisoning rate of 4.25 x 10⁻³ (% per s), which was 4 times lower than Pt (1.70×10^{-2}). The catalyst with the optimum performance was used as the ink pigment of the inkjet ink formulations. It was seen that the addition of dispersant to the formulations affects the stability and catalytic performance of the ink catalysts. The ink formulations are being characterized by its dispersion stability, preservation stability, drying characteristic and clogging tendency. (Author's abstract)

Keywords: Chemistry, PtSn catalyst, Polyol method, Cyclicvoltammetry, Ethanol oxidation, Inkjet printing technique, Ink formulation

Transactions of the National Academy of Science and Technology, Volume No. 34 Issue No. 1, page 114 2008, (Filipiniana Analytics) Fil(S) Q149.P5 N25 34/1 2012

Preparation and characterization of dye-sensitized solar cell based on PT nanoparticles/poly(3,4-ethylenedioxythiophene)-poly(styrenesulfonate) on fluorine-doped tin oxide as counter electrode electrocatalyst Morenos, Lei Angeli S., Tongol, Bernard John V., Mitsuke, Koichiro

Dye-sensitized solar cells (DSSCs) have attracted an increasing interest as an alternative source of energy because of its low cost, easy production, relatively high efficiency, potential transparency and flexibility. In this study, a simple and fast fabrication of DSSC counter electrode was demostrated based on electrodeposition of Pt nanoparticles on Poly(3,4-ethylenedioxythiophene) poly(styrenesulfonate) (PEDOT:PSS)-modified Fluorine-doped Tin Oxide (FTO) glass substrate. Cyclic Voltammetry (CV) shows that the electrocatalytic activity towards triiodide/iodide redox reaction of the electrodeposited Pt/PEDOT:PSS on FTO ($I_{pc} = -2.07\mu A/cm^2$) is more superior as compared to the spin-coated Pt/PEDOT:PSS electrocatalyst ($I_{pc} = -1.47 \mu A/cm^2$). It was also found that the electrocatalytic activity of the Pt particles was enhanced when PEDOT:PSS was used as a support matrix for the Pt particles. Similarly, an increase in the conversion efficiency of DSSC, prepared using Pt nanoparticles-based counter electrodes, was obtained when these nanoparticles were electrochemically deposited on PEDOT:PSS support matrix (6.6%) rather than on bare FTO substrate (6.2%). This efficiency is comparable to the DSSC fabricated using commercial Pt paste (~6.9%) counter electrode. Meanwhile, Field Emission Scanning Electron Microscopy (FESEM) revealed the dispersion and approximate size of Pt particles (~5 nm) on the FTO glass substrate. **(Author's abstract)**

Keywords: Chemistry, Dye-sensitized solar cells, Counter electrode, Platinum nanoparticles, PEDOT:PSS, CV, FESEM

Transactions of the National Academy of Science and Technology, Volume No. 34 Issue No. 1, page115 2008, (Filipiniana Analytics) Fil(S) Q149.P5 N25 34/1 2012

0132

Secondary metabolites from the leaves of *Psychotria gitingensis* Elmer *Eusebio, Jameson A., Tan, Mario A.*

Phytochemical studies involving the genus *Psychotria* (Rubiaceae) have been conducted and it has been established that many species under this genus contain interesting chemical constituents, mostly comprised of alkaloid-type metabolites. This research intends to isolate and identify the secondary metabolites from the crude foliar extract of *P. gitingensis* Elmer, a plant species endemic to the Philippines. The crude methanolic extract was subjected to acid-base partitioning which gave the crude base extract. Initial normal phase gravity column chromatography (silica gel 60) of the crude base extract afforded nine major fractions (PgC-A to PgC-I) and PgC-F and PgC-G have light orange spots in TLC using Dragendorff's reagent, which may be indicative of the presence of alkaloids. Further normal phase gravity column chromatographic purification of PgC-F and PgC-G both led to the isolation of vomifoliol, a sesquiterpenoid whose structure was elucidated based on extensive spectroscopic analyses (1D and 2D NMR, and MS) and comparison with reported literature. Vomifoliol was also tested for its antimicrobial activity using the agar diffusion paper-disc method and it showed moderate activity towards *Klebsiella oxytoca* at 0.5 mg/mL. Structure identification and antibacterial evaluation of the other isolated constituents are in progress. The results of this study present an implication on the chemotaxonomic relationship of *P. gitingensis* with other members of genus *Psychotria*. This study represents the first phytochemical work on Philippine *Psychotria*, particularly on *P. gitingensis*, and the first isolation of vomifoliol from the genus *Psychotria*. (Author's abstract)

Keywords: Chemistry, Psychotria gitingensis, Rubiaceae, Secondary metabolites, Vomifoliol, Dragendorff's reagent

Transactions of the National Academy of Science and Technology, Volume No. 34 Issue No. 1, page 117 2008, (Filipiniana Analytics) Fil(S) Q149.P5 N25 34/1 2012

0133

A silver ion potentiometric sensor based on a synthesized 1,3-Benzocrown macrocyclic diamide as neutral carrier

del Mundo, Florian R., Capangpangan, Rey Y., Arco, Susan D., Solis, Jose S., Obena, Rofeamor P.

A synthesized benzo-crown macrocycle, 1,15-diaza-3,4;12,13-dibenzo-5,8,11-trioxacyclooctadecane-2,14-dione (1,3-MDA), was employed as an ionophore in the fabrication of polymeric ion-selective electrodes (ISE) for silver ion. The electrode membrane ingredients consisting of PVC/Plasticizer (*o*-NPOE) ratio of 0.94 and ionophore/additive ratio of 2.0 exhibited near Nernstian response of 57.75 mV/decade activity of Ag⁺ over a linear concentration range of $10^{-6} M$ to $10^{-3} M$ (R2 = 0.9921). The dynamic response time of this electrode was ~2 min at pH range of 3-9. The sensor has a limit of detection (LOD) of 6.32 x $10^{-7} M$, and was stable for at least one month. Initial investigation on the applicability of this new ISE for the detection of silver ions in photographic wastewater sample and comparison of its performance with conventional method (Atomic Absorption Spectroscopy) were also reported. **(Author's abstract)**

Keywords: Chemistry, Ionophore, Macrocyclic diamide, Potentiometry, PVC electrode, Silver ion-selective electrode

Philippine Journal of Science, Volume No. 141 Issue No. 1, 45-55 2008, (Filipiniana Analytics) Fil(S) Q1 P55 141/1 2012

0134

Synthesis and grafting of monochlorotriazinyl-β-cyclodextrin (MCT-β-CD) on knitted cotton and cotton-polyester fabrics Gomez, Gilbert V., dela Rosa, Francis M., Cariño, Argentina T., Leaño, Jr., Julius L.

Monochlorotriazinyl-β-cyclodextrin (MCT-β-CD), **4** was synthesized from cyanuric chloride, **1** and βcyclodetxrin, **3**. The synthesized MCT-β-CD was applied to cotton and cotton-polyester (50/50 and 65/35) by paddry-cure method. Subsequent characterization of the grafted fabrics through Fourier Transform Infrared-Attenuated Total Reflectance (FTIR-ATR) Analysis revealed the successful grafting of MCT-β-CD, **4** into cotton and cottonpolyester fabrics with the appearance of characteristic peaks at 1489 cm⁻¹ and 1404 cm⁻¹. Further, the grafted fabrics through Energy Dispersive Spectroscopic (EDS) Analysis revealed the presence of Nitrogen, indicative of the presence of the synthesized MCT-β-CD, **4** on the surface of cotton and cotton-polyester fabrics. Durability test revealed that MCT-β-CD-grafted cotton and cotton-polyester fabrics can withstand at least one washing cycle. (Author's abstract) **Keywords:** Energy dispersive spectroscopic, Chemistry, Cyanuric chloride, Monochlorotriazinyl-ß-cyclodextrin (MCT-ß-CD), Nitrogen

PTRI Samay Bulletin, Volume No. Issue No. , 23-30 2008, (Filipiniana Analytics) Fil(S) TS1300 S42 v.13 2013

0135

Total phenolic content and textile dye performance of dried Coffea robusta (coffee) mesocarp

 $Lea \tilde{A} \pm o$, Jr., Julius L., Tadeo, Neil Jhon G., Manalang, Evangeline Flor P.

The total phenolic content (TPC) of the Robusta coffee (*Coffea robusta*) pulp was successfully determined using Folin-Ciocalteu assay. Different factors, such as extraction methods, sample to solvent ratio, solvent system, temperature, rate, and duration, affect the amount of TPC extracted. Based on the results, refluxing with 50:50 EtOH-H₂O is the best extraction solvent-system and approach. The crude coffee pulp extracts were freeze dried and was found to have the highest powder yield of 54.6% from extraction by boiling in water. The powdered extract was characterized using FTIR-DRS and UV-Vis Spectroscopy. FTIR spectrum showed the presence of peaks corresponding to alcoholic O-H, alkyl C-H and aromatic C=C vibrations. UV-Vis spectrum showed a maximum peak at 312 nm corresponding to the electronic transitions of $_{TT}$ electrons in the benzene ring of the polyphenolic compounds. Results confirmed the presence of polyphenolic compounds as earlier detected by Folin-Ciocalteu assay. Dye potential of the coffee pulp powder was investigated and was found to impart light brown color to pineapple (*Ananas comosus*), abaca (*Musa textilis*), silk (*Bombyx mori*) and pineapple-silk) fabrics. Results further revealed that the dyed fabrics, whether pre-mordanted or not, showed satisfactory performance to colorfastness laundering and perspiration tests and these colorfastness properties proved that *C. robusta* mesocarp is a promising textile dye source. (Author's abstract)

Keywords: Chemistry, Coffea robusta, Folin-ciocalteu assay, FTIR-DRS

PTRI Samay Bulletin, Volume No. Issue No. , 31-48 2008, (Filipiniana Analytics) Fil(S) TS1300 S42 v.13 2013

COMPUTER SCIENCE

0136

Synchronizing *p* timepieces in $\theta(\log_2 p)$ steps *Pabico, Jaderick P.*

In response to Department of Science and Technology's (DOST) "Juan Time, On Time" program, which aims to encourage Filipinos to use the Philippine Standard Time, we take it further by providing a log (p) broadcast and reduction protocol for automatic synchronization of p timepieces that are connected through some communication media (e.g. Wi-Fi, LAN, etc), where the current Berkeley protocol uses p steps. Given p timepieces displaying different time readings T_1 , T_2 , ..., T_p , respectively, the purpose of the communication schemes is to :

1. Perform a many-to-one reduction with $\log(p)$ steps of T_{i} , for all i's, to a designated master timepiece p_1 , incorporating the time-delay due to reduction propagation r_i to each T_i at the *i*th reduction step. 2. The master timepiece p_1 performs an average T' of the $T_i + r_i$, and then updates its own time by T'' = T' + C(T'), the where C(x)is the time cost performing mathematical operation of x. 3. The master then initiates a $\log(p)$ -step one-to-many broadcast of T" where at the *i*th step of the broadcast, the time-delay b_i due to broadcast propagation is recorded, and the timepieces involved in the broadcast step updates its T''. clock by b_i own At the end of the reduction and broadcast, all P timepieces will display the same $b_{logp} + T''$ time, which can be done in exactly $\theta(\log p)$. (Author's abstract)

Keywords: Computer science, Clock synchronization, Berkeley algorithm, Broadcast, Reduction, Î. (log2p) steps

Transactions of the National Academy of Science and Technology, Volume No. 34 Issue No. 1, page 125 2008, (Filipiniana Analytics) Fil(S) Q149.P5 N25 34/1 2012

ECOLOGY

0137

Autotrophic and heterotrophic carbon production by larger foraminifera from the shallow water area off Cebu, Philippines Bolter, Manfred, Graf, Gerhard, Wefer, Gerold

The larger benthic Foraminifera *Marginopora vertebralis, Heterostegina depressa* and several species of the genera *Amphistegina* and *Calcarina* were investigated with respect to their carbon contribution to a tropical shallow water ecosystem. These foraminiferans harbor algal symbionts.

The incorporation of dissolved organic compounds, such as glucose, fructose, mannose, glutamic acid and amino acids, seemed to be of minor importance for the biomass production of the foraminiferans, and no preference for a specific substrate was detectable. The production based on the uptake of these dissolved organic compounds, however, is in the same range as the primary production of the endosymbiotic algae. This is especially true during the night as the production rates are 5 to 15 times higher during the dark phase as compared to the light period. The part of incorporated dissolved organic matter that is respired is also significantly increased during night hours, while the carbonate production turned out to be independent of light.

Primary production of *Marginopora vertebralis* by endosymbionts was in the range of 14.4-17.06 x $10^{-6} \mu g C h^{-1} mg^{-1}$ dry weight indicating a turnover of the organic biomass of the tests of 17-20 days. Only 15% of the carbon fixed by photosynthesis was incorporated into carbonates.

Marginopora vertebralis belonging to the suborder Milliolina showed a significantly decreased ratio of ATPbiomass versus ETS-activity when compared to the other investigated foraminiferans from the suborder Rotalina. In the sediments of a *Sargassum* area 107,000 individuals per m² of the genus *Amphistegina* were found. The accounted for more than 50% of the ATP-content of the top sediment layer and for 7% of the observed ETS-activity (Author's summary)

Keywords: Ecology, Foraminifera marginopora vertebralis, Heterostegina depressa, Amphistegina, Calcarina, Glutamic acid, Amino acid, Glucose, Fructose

The Philippine Scientist, Volume No. Issue No. , 51-52 2008, (Filipiniana Analytics) Fil(S) Q1 J95 v22 1985

Diversity and ecological status of bryophytes in Mt. Kitanglad, Bukidnon Sariana, Lalaine G., Azuelo, Andrea G., Pabualan, Melanie

The study inventoried and assessed the diversity and ecological status of bryophytes in Mt. Kitanglad Natural Park. Results of the study revealed 428 species of bryophytes. Of these, 70 genera and 29 families are for mosses, while 98 species, 16 genera and 11 families for liverworts. There are 4 species, 2 genera and 1 family for hornworts. The lower montane forest exhibited high diversity and species richness followed by mossy and upper montane forest. However, the mossy forest exhibited the highest bryophyte cover. The species were confined in specific habitats either as epiphytic on tree trunks, soils, thick litters and on rock surfaces. Local assessment revealed 9 endemic species, 8 for mosses and 1 for liverworts; 2 species, *Ectropothecium ferrugenium* (C. Mull.) Jaeg. and *Thuidium benguetense* Broth ex. Bartr. were found endemic to the Philippines. Some 46 species might be possibly new. Of these, 43 are for mosses and 3 for liverworts; and 4 possibly endangered belonging to the genus of *Dawsonia sp.* and *Breutelia sp.*, 141 species were found to be rare and others are widespread. Some 11 medicinal species for mosses and 6 species for the liverworts were recorded. Field guides, checklist and IEC materials were produced as a result of the research investigation. The bryophyte status showed that the variation in structural forms and the niche preferences attributed to their specific and extreme micro habitats such as those dominated by mosses as epiphytic on trunks, decayed logs, and various substrates indicate high in terms of species richness, as such, has provided a taxonomic, ecological and economic importance. **(Author's abstract)**

Keywords: Ecology, Diversity, Ecological, Bryophytes, Mt. Kitanglad, Hornworts, Liverworts, Mosses

Asian Journal of Biodiversity, Volume No. 1 Issue No. 1, 49-71 2010, (Filipiniana Analytics) NP

0139

Diversity and status of plants in three mountain ecosystems in Southern Mindanao, Philippines

CoriticoFulgent P., Amoroso, Cecilia B., Amoroso, Vic

This paper presents the diversity and status of plants conservation initiatives in the three mountain ecosystems in Mindanao, Philippines. Representative specimen were pressed, dried, poisoned and mounted as herbarium vouchers. To determine the index of general diversity for trees, 20x20 m sampling plots were established per vegetation type, and in each sampling plot, a 5x5 m sub-plot was laid to determine the species diversity for preridophytes. Transect walk and sampling plots in 3 mountain ecosystems revealed several vegetation types with Mt. Malindang having 9 types, Mt. Hamiguitan with 5 types and Mt. Kitanglad with 3 types. Species richness was highest in Mt. Malindang (1,164 spp.), followed by Mt. Hamiguitan (878 spp.) and the lowest in Mt. Kitanglad (661 spp.) Regardless of the mountain ecosystem and plant groups, the montane vegetation had high species richness and diversity values than the dipterocarp and mossy forests. Mt. Kitanglad had the highest number of threatened species (92 spp.) while Mt. Malindang and Mt. Hamiguitan had 34 and 35 threatened species each, respectively. As to endemism, it showed that

Mt. Hamiguitan had high endemism (34 %) than Mt. Kitanglad (21%) and Mt, Malindang (16%). Furthermore, the three mountain 51 ecosystems showed 64 species as new record in Mindanao and 21 species in the Philippines while two species of *Nepenthes* are new to science. (Author's abstract)

Keywords: Ecology, Diversity, Species richness, Assessment, Plants, Conservation, Protected areas, Mindanao

Asian Journal of Biodiversity, Volume No. 3 Issue No. 1, 50-73 2012, (Filipiniana Analytics) NP

0140

Practices, behaviors, and action on climate change and environmental protection and conservation of settlers along the Banks of Oro River, Northern Mindanao, Philippines *Lubos, Lesley C. , Japos, Gen*

Rivers are considered to be one of the ecosystems which are sensitive to climate change. It also experiences warming of the earth's atmosphere like any other ecosystems. This study aims to (1). determine the Cagayan de Oro residents'socio-economic activities on the Cagayan de Oro river; (2). determine the values, attitude and beliefs on climate change and environmental protection and conservation; (3). describe the practices, behaviors and action on climate change and environmental protection/conservation. The study used the descriptive survey design involving a purposive sample for 300 household heads living at least 5 years and staying within 100 meters from the river banks and located in the downstream, midstream, upstream sections of the Cagayan de Oro river. The settlers along the river banks have taken permanent residence in the area. They have limited access to social services like light and safe drinking water, disposal of household and human wastes. Due to their proximity to the river and their lack of access to social services they have contributed to the rivers' contamination through their unhygienic behaviors. A formal River Conservation Education Program should be designed in response to the need for a formal structure to train community residents and further enhance their awareness, and a policy review is needed to evaluate the implementation of national and local policies on river conservation. (Author's abstract)

Keywords: Ecology, Climate change, River conservation, Purposive sampling, Cagayan de Oro River, Philippines

Asian Journal of Biodiversity, Volume No. 5 Issue No. 1, 109-135 2014, (Filipiniana Analytics) NP

0141

Sedimentation of organic matter in Hilutangan Channel as affected by vertical fluxes and transport processes from adjacent areas *Pollehne, Falk, Balzer, Wolfgang, von Bodungen, Bodo*

Sediment trap experiments were conducted at Mactan Island, Philippines to monitor the transport rates of organic matter from a reef system into an adjacent deep channel (Hilutangan Channel) and the subsequent loss of particles from its surface layer. The results showed a more constant flux of organic particles through both boundaries as

compared to inorganic ones. Phosphorus and nitrogen as essential elements are retained by both systems so that mainly carbon compound-enriched material is lost from the euphotic cycles. (Author's abstract)

Keywords: Ecology, Sedimentation, Organic particles, Phosphorus, Nitrogen

The Philippine Scientist, Volume No. Issue No. , 25-29 2008, (Filipiniana Analytics) Fil(S) Q1 J95 v22 1985

0142

The use of a Kernel ecological system in a multi species predator-prey model and climate change impact on biodiversity *Padua, Roberto N. , Ontov, Dex*

The interaction of multiple species of animals in an ecological system is modeled by first reducing the ecological system to a kernel ecological system consisting of keystone species and top predators in the environment through Graph Theory. From the reduced kernel ecological system of keystone species, a system of Lotka-Volterra differential equations is used to describe the predator-prey relationships that exist. The equations for the number of organism per species were derived and additive environmental stochasticity or noise is added to each equation. The noise is assumed to come from an extreme value distribution or Gumbel distribution to reflect the impact of extreme weather conditions on the population dynamics of the entire ecological system. Results reveal a rich dynamical behavior for the system which otherwise would not have been revealed by straight application of deterministic predator-prey models. (Author's abstract)

Keywords: Ecology, Predator, Prey, Graph theory, Lotka-volterra, Multi species model, Stochastic model

Asian Journal of Biodiversity, Volume No. 1 Issue No. 1, 165-2010, (Filipiniana Analytics) NP

0143

Vulnerability of Philippine amphibians to climate change Alcala, Angel C., Bucol, Abner A., Diesmos, Arvin C., Brown, Rafe M.

There are currently recognized 107 species of Philippine amphibians. In addition, several possible new species await formal taxonomic description. Most of them occupy microhabitats in moist or wet tropical rainforests. Based primarily on their known reproductive modes and microhabitats (including altitudinal distributions), the vulnerability of each amphibian species was assessed. The results of our assessment indicate that 26 species (24.30%) are Highly Vulnerable, 48 species (44.86%) are Moderately Vulnerable, 27 species (25.23%) are Vulnerable, and 6 species (5.61%) are Least Vulnerable to climate change. However, this preliminary assessment is tentative and requires verification through field studies using other sets of indicators. Additionally, virtually all new species currently awaiting description are known from forested mountain habitats. These species are deemed disproportionately susceptible to climate change. Thus, the percentages of vulnerable taxa are expected to climb sharply with ongoing taxonomic and ecological studies. (Author's abstract)

Keywords: Ecology, Amphibians, Climate change, Montane, Moisture-dependent, Philippines, Vulnerability

Philippine Journal of Science, Volume No. 141 Issue No. 1, 77-87 2008, (Filipiniana Analytics) Fil(S) Q1 P55 141/1 2012

0144

Wing ecomorphology and flight performance of bats in Pisan Caves, Kabacan, North Cotabato, Philippines

Bretaña, Bryan Lloyd P., Casim, Lothy F., Tanalgo, Krizler C., Achondo, Marion John Michael M., Tabora, Arie

This research was conducted to study the functional morphology of the wings and flight performance of bats from Pisan caves, Kabacan, Cotabato, Philippines. This was carried out using mist netting method and measurements of mass (M) and basic wing components that include wing span (B), wing area (S). Flight parameters such as aspect ratio and wing loading were computed from the values of wing component and predictions were made using aerodynamic principles. A total of 48 individuals representing eight species were studied. Results showed that *Emballonura alecto, Myotis hors fieldii*, and *Pipistrellus javanicus* have an average wing loading and low aspect ratio that indicate an intermediate speed in flight and exceptional maneuverability that is appropriate for catching moving prey in a cluttered environment. High wing loading and low aspect ratio were noted in *Cynopterus brachyotis, Eonycteriss pelaea, Hipposideros diadema, Rhinolophu sarcuatus* and *Rousettus amplexicaudatus*. Asian Journal of Biodiversity 114 These values indicate that these bats though fast flyers, have poor maneuverability in terms of flight performance. The study suggests that wing morphology of bats affects flight performance and habitat selection which implies that maintenance of the habitat leads to the stability of the species population. (Authors' abstract)

Keywords: Ecology, Bats, Pisan Caves, Wing morphology, Flight parameters, Habitat selection

Asian Journal of Biodiversity, Volume No. 3 Issue No. 1, 113-125 2012, (Filipiniana Analytics) NP

EDUCATION

0145

The community-based participatory extension management (CBPEM) model: a key approach towards people empowerment Cardenas, Virginia R., Sulabo, Evangeline C., Domingo, Lorna P., Tan, Francisc

CBPEM is a knowledge product that has been evolved over years of action-research. It has undergone verification under various settings: health and nutrition, local governance, education and agricultural extension particularly under the corn commodity. CBPEM time has come to be institutionalized. Peers in the academe have recognized that this is the way to relevant extension program management. It is seen as the key approach towards people empowerment, which

enhances the effective and efficient management of devolved extension services because it involves capabilitybuilding of LGUs to undertake devolved extension functions, improved access to information, social inclusion and stakeholders' participation in extension service management, program ownership, and local accountability. It provides opportunities for local participation in the different phases of extension management, namely: communitybased action planning utilizing participatory tools and techniques, implementation of identified and need-based action plans, capacity building, establishment of institutional support linkages, and participatory monitoring and evaluation.

A proof to the University constituent's recognition of the CBPEM Approach was the award given by the University as Outstanding Extension Methodology in 2002. More importantly, the CBPEM approach was chosen by the University as its recommendation to the national government for an adoption to revitalize a "sleeping giant" to push agricultural development and in the Philippines.

The most significant act of institutionalization being undertaken now is the transfer of this technology from UPLB research to the Agricultural Training Institute of the Department of Agriculture which has the national mandate to train extension workers and farmers at the local government units. This is in fulfillment of UPLB's role as a trailblazer in CBPEM technology.

The contributions of the CBPEM approach could be categorized into four major areas, namely: 1) community empowerment, 2) sustainability and increased control and participation in research, extension and communication activities, 3) development of holistic (systems) perspective in agricultural production, and 4) networking and linkage development. (Authors' abstract)

Keywords: Education, Community-based, Extension management, Extension services, Participatory approach, People empowerment, Planning methods, Sustainable agriculture

USM R&D Journal, Volume No. 17 Issue No. 1, 81-87 2009, (Filipiniana Analytics) NP

0146

Determinants of performance of graduates in the medical technologist licensure examination

Pasia, Jasmen S., Garzon, Marilyn U., Bauyot, Marleonie

The public gauges the quality of academic programs of a school from the results of licensure examinations. School leaders use the examination basis for intervention programs to upgrade quality. This study aims to find the factors of performance of San Pedro College graduates in the Medical Technologist Licensure Examination (MTLE). Mixed – methods research design was utilized in describing the predictors of the graduates' performance in the MTLE. A total of 304 graduates distributed according to the year of graduation from 2005-2009 who took the MTLE on September of the same year they graduated were subjects of this investigation. Results of this study demonstrated that all independent variables were correlated with the performance of the graduates in the MTLE, with clinical internship WPA having the highest coefficient of correlation of .540. Further analysis using stepwise regression model revealed that clinical internship WPA is the best predictor for passing the MTLE. This may suggest that a strengthened internship program would help improve the graduates' performance in the MTLE. Thus, it is recommended that consultations from students, alumni, and faculty be done to draw out suggestions on how to improve the existing practices of the internship program. The results also demonstrated that there is a low negative correlation between DAT and MTLE. This may mean that higher DAT is not a guarantee that the graduate will perform in the MTLE. **(Author's abstract)**

Keywords: Education, Board examination, Internship program, Clinical internship, Medical technology

Asian Journal of Health, Volume No. 2 Issue No. 1, 16-38 2012, (Filipiniana Analytics) NP

0147

Evidences of participatory research: lessons learned from community-based monitoring system implemented in selected rural and urban communities *Quimbo, Maria*

Selected rural and urban research sites have successfully implemented and utilized the Community-Based Monitoring System (CBMS) as a poverty monitoring tool for informed decision-making and sustained community development. Community members served as partners in identifying and prioritizing their most immediate needs and concerns using a set of social and economic indicators. The indicator system provided objective basis in conducting local level planning and brought confidence toward good governance in the community. Cross comparison of various facilitating and hindering factors (only at initial stages) in the adoption of CBMS in rural and urban communities were also highlighted. Suggestions for improvement and sustainability of the system were likewise discussed in the paper. (Author's abstract)

Keywords: Local government units, Participatory research, Policy development, Poverty monitoring tool, Social and economic indicators, Education

USM R&D Journal, Volume No. 17 Issue No. 2, 179-184 2009, (Filipiniana Analytics) NP

0148

Factors associated with the performance of USM College of Education graduates in the 2007 Licensure Examination for Teachers Soriano, Hazel

The study was conducted to determine the factors that affected the performance of USM College of Education graduates in the 2007 Licensure Examination for Teachers (LET).

Of 306 LET examinees, 153 respondents were drawn to constitute the samples of the study. The study utilized data from the Professional Regulation Commission (PRC) and from the Admission and Records office, University Test Development Center, and the Management Information System Office for the cognitive and non-cognitive records of the respondents, respectively.

Majority (87.6%) of the respondents belonged to the 20-22 years old group; mostly females at 73.3%. With regards to USMICET GSA score, total mean scores of the respondents fell in the bracket of 380-424 or below average performance.

Multiple regression analysis was employed in relating the cognitive and non-cognitive variables. Results revealed that General Education GPA, USMICET GSA score, course, and sex of the respondents' best predicted the LET performance of the respondents. The LET performance of the respondents in all components was best predicted by the Gen Ed GPA. Students who obtained higher grades in Gen Ed courses had better chance of passing the LET. USMICET GSA score positively predicted LET performance, meaning the higher the entrance test scores, the higher the chance in passing the LET. With regards to course, BEED respondents performed better than BSE. On the other hand, male respondents performed better than female counterparts.

A t-test for independent sample was utilized in determining whether there existed a significant difference between BSE and BEED rating in general and professional education. It was found that BEED performed better than BSE in terms of test scores but BSE respondents had higher passing percentage compared to BEED respondents. However, BEED and BSE respondents did not perform significantly higher than the General Education respondents, Professional Education, and LET Overall rating in terms of passing percentage.

Analysis of variance (ANOVA) was used to compare the BSE performance by major. Results showed that there was no significant difference among BSE takers when grouped according to their field of specialization and that BSE FS pilot respondents did not perform significantly higher than the non-FS pilot respondents. (Authors' abstract)

Keywords: Education, Predictors for LET performance, Cognitive factors, Non-cognitive factors, BEED performance, BSE performance

USM R&D Journal, Volume No. 17 Issue No. 2, 151-159 2009, (Filipiniana Analytics) NP

0149

Insights from practice teaching experiences of student teachers Bumatay, Ernesto Laforteza, Sulabo, Evangeline C., Domingo, Lorna P., Tan, Francisca

Practice teaching provided the student-teachers with variety of factors that affected their teaching behavior or overall teaching performance during the actual classroom sessions. These factors could be categorized into remarkable and challenges. The remarkable factors are those eliciting positive influence including small class size, effective visuals, competent mentors, subject familiarity, cooperative learning and motivation, while challenges are those producing negative impact such as large class size, retention power, absence of laboratory room, and learner's readiness.

The practice teaching experiences of the student-teachers under EDUC 200a of UPLB provided gainful insights to enhance the effectiveness of the teaching performance of teachers. The need to assess the level of ability of the students is

very critical in determining the appropriate pacing, level of instruction, teaching strategies, instructional materials, and the kind of motivation to be employed. (Authors' abstract)

Keywords: Education, Teaching, Practice teaching, Student teachers, Teaching strategy

USM R&D Journal, Volume No. 17 Issue No. 1, 59-64 2009, (Filipiniana Analytics) NP

Learning styles and academic performance among radiologic technology students of Liceo de Cagayan University

Arcadio, Mark Leonard R., Ambat, Charlie L., Amandoron, Raquel Lea M., Orong, Denise O., Argayoso, Jed Aliso

Each student has a preference in learning. The success of every student is not on how high the grades they are getting but on how much they have learned. Determining the learning styles of the student is important in order for the teacher to know if their teaching style matches with how students learn. The study was conducted to determine the learning styles and the level of academic performance among first year, second year, and third year students of Radiologic Technology students of Liceo de Cagayan University, S.Y. 2009-2010. A descriptive correlational method of research was used in this study. The researchers used the stratified random sampling by grouping the students by year level. The data were computed and analyzed using weighted mean, frequency and percentage, and multiple regression analysis as their statistical treatment. The study revealed the following findings: Among the learning styles, students are more on visual/verbal. Among the teaching styles, the faculty members are more on verbal. In the level of academic performance, students fall in the below average level. There is no significant relationship between the learning styles and academic performance of the Radiologic Technology students. It is also concluded that the teaching style does not affect the learning styles and academic performance of the student except for their kinesthetic. (Author's abstract)

Keywords: Education

Advancing Radiologic Technology Research, Volume No. 1 Issue No. 1, 2013, (Filipiniana Analytics) NP

0151

A strategic leadership framework for educational change Bumatay, Ernesto Laf

The paper develops a strategic leadership (SL) framework for internal and external educational reforms for higher learning institutions. It attempts to understand the best strategic variables for leadership from the perspectives of selected university presidents locally and in the Asian region. The proposed SL framework has four mutually exclusive quadrants: Q1 - the "educational leader" (higher education leader), Q2 - the "entrepreneurial perspectives and environment" (creative and innovative environment), Q3 - the "paradoxical leadership"(strategic leadership) and Q4 - the "Strategic perspectives and results"(strategic thinking and process perspectives). (Author's abstract)

Keywords: Education, Quality performance, University leadership reforms, Strategic leadership framework, Educational change

USM R&D Journal, Volume No. 17 Issue No. 1, 49-57 2009, (Filipiniana Analytics) NP

ENGINEERING

Adaptive channel linear equalization using simulink *Sybingco*,

This paper will help DLSU-ECE students taking-up COMLAB2 visualize the concept of adaptive filter of Simulink applied to digital communication specifically m the area of channel equalization. The results of the simulation similar to the convergence of adaptive filter coefficients and constellation diagram of the received signal with and without the adaptive filter are presented in this paper, as well as the frequency response of adaptive filter, channel, and the resulting frequency response of combined channel and adaptive filter. The results of the simulation proved that the adaptive filter coefficients converged to the desired response. (Author's abstract)

Keywords: Engineering

DLSU Engineering Journal, Volume No. 18 Issue No. 1, 2006, (Filipiniana Analytics) NP

Assessment of chemical and biological contaminants and improvement of air quality in airconditioned urban buses

Azarcon, J.T., Austria, M.S., Belino, Manuel C., Caguioa, R.C., Reyes,

The study assessed the quality of air in-airconditioned urban buses in Metro Manila and recommended interventions on how to improve it Specifically, the study assessed the concentration of air contaminants in air-conditioned urban buses. The air contaminants assessed included airborne bacteria, carbon monoxide, sulfur dioxide, nitrogen dioxide and total volatile organic compounds. A survey of frequently contracted sicknesses and illnesses due to exposure to poor air quality in urban air-conditioned buses. It was found that measured contaminants are within acceptable limits of ASHRAE indoor air quality standards and DOLE standards. (Author's abstract)

Keywords: Engineering

DLSU Engineering Journal, Volume No. 18 Issue No. 1, 2006, (Filipiniana Analytics) NP

Benchmarking of productivity performance across Cebu-based costume jewelry companies using data envelopment analysis (DEA) *Kabiling, Wilfrido D. , Beng Hui, Den*

The costume jewelry industry in the Philippines is made up of small and medium size enterprises (SMEs) according to the Department of Trade and Industry (DTI) and the Canadian-funded Private Enterprise Accelerated Resource Linkage program (PEARL2). Each of these companies, mostly having started as small family enterprises, evolved into major exporters of Philippine products through their own unique manufacturing set-up engaging in various indigenous designs. Benchmarking analysis on manufacturing performances across these companies is difficult to perform because of the lack and/or non-standard manufacturing measures being used among the industry players and because of the differences in manufacturing practices, organization, product types, and labor, to name a few. (Author's abstract)

Keywords: Engineering, Benchmarking, Data envelopment analysis (DEA), Costume jewelry

DLSU Engineering Journal, Volume No. 18 Issue No. 1, 2006, (Filipiniana Analytics) NP

0155

A data tagging algorithm for expert system rule creation Co, Celso B., Africa, Aaron

Expert Systems are knowledge-based systems which help to answer various questions in certain problem domains. One predicament is these systems are static working on the assumption that the knowledge base had to be a fixed repository of information. No account is taken of the change of the knowledge due to various external and internal reasons. One solution for this is to keep its database updated. However, whenever new information is inputted, new rules in its knowledge base must sometimes be added. Doing this manually can be a tedious task. This paper defines a data tagging algorithm for Expert System rule creation. A new technique to input, tag, and properly structure these technical data are presented so they can be converted into the rules of an Expert System. This paper also proposes a theorem on the nominality of a rule that was obtained in an Information System. Formal Proof of the theorem is provided and its correctness verified with actual data. (Author's abstract)

Keywords: Engineering, Computing systems, Expert systems, Real time systems, Database engineering, Information management, Rough set theory

USM R&D Journal, Volume No. 17 Issue No. 2, 185-190 2009, (Filipiniana Analytics) NP

0156

Design, fabrication, and test of a prototype automated tiling machine for granite and marble

Su, Charles Tyrone J., Palomares, Henzi Chester M., Manalili, Mark Wilson D., Go, Jasmin Lizette G., Bernardino, Cado Felicito B., Chua, Al

This study presents the implementation of a prototype automated tiling machine for granite and marble geared towards providing a tiling equipment with increased efficiency for the local marble and granite industry. The design of the system consists of the mechanical, electronic and software components. The mechanical set-up utilizes a gear-rack assembly for the positioning of the cutting line, screw-type assembly coupled with a typical marble cutter for the cutting axis, a rack-screw type for up and down motion of the cutter and clamping, and a gear reduction rotating bed design for rotation of the material. The electronic component consists of stepper and DC motors, together with their corresponding interfacing devices, are connected to the mechanical parts and to the software component via the parallel port. The software component includes manipulation of AutoCAD drawings to G-code text files with a manipulation program that controls the movement of the automated machine. The results showed that combining the different components led to a workable automated tiling machine. (Author's abstract)

Keywords: Engineering

DLSU Engineering Journal, Volume No. 18 Issue No. 1, 2006, (Filipiniana Analytics) NP

0157

Design, fabrication, and testing of flexible noodle separator in pouch noodle packaging Garcia, Karlo Roman C., Chua, Al

The project was to create a Flexible Noodle Separator (FNS) that could transform into a position to equally separate and distribute the noodles from noodle making to the packaging process during normal operation (four packaging lines are running) and when one of the four lines is down. The designed mechanical linkages have the ability to be managed on a desired position depending on which packaging line is down. It can change to a position that will block the way of the noodles on the non-running line and make the noodles flaw on IV the operating lines. The effectiveness of FNS was tested in the Pouch Line Packaging process, which revealed a potential cost savings and showed that it could help improve the process.1.0. (Author's abstract)

Keywords: Engineering

DLSU Engineering Journal, Volume No. 18 Issue No. 1, 2006, (Filipiniana Analytics) NP

0158

Design for variable-geometry rotor of vertical-axis wind turbine using CATIA software Bugtai, Nilo T., Jungao, E.

A ten-year plan of Philippine Energy which started in 1999 projected a wind energy contribution of 410 mega watts. The action is a part of its commitment to United Nations Framework Convention on Climate Change and is also to utilize the country's wind resource potential. However, the country is situated in a typhoon-belt Wind

gustover250km/h during typhoon is one of the key problems that may hinder the wind turbine development in the country. In the search for an alternative solution, a variable-geometry vertical axis wind turbine rotor (£0.6meter) as a test model with straight and symmetrical airfoil blades was designed. The rotor was so designed that the blades can be reefed to reduce the size of its projected area to limit both power and blade loads by self-acting control. The reduction in load was estimated based on blade element-theory; and used in the calculation of stress reduction using CATIA Version 5 design software. In the experiment, the test model was subjected to air velocities generated by industrial fans. Rotor torques for corresponding rotational speeds were calculated by inertia-acceleration method. An omni-directional cup anemometer and a non contact speed meter were used in wind speed and rotor's rotational speed measurements, respectively. A maximum power of 2.5watts (1.4%Cp) was generated by the rotor at 10.7 m/s free-air velocity and at 70 rotor rpm with blades not reefed. At the maximum reef of 60° (from vertical position) with a relative rotor area of 41 %, the torque load reduces up to 86%. The data can be used as a guide in the design of a£3-meter prototype rotor. (Author's abstract)

Keywords: Engineering, Rotor, Vertical-axis, Wind turbine, CATIA software

DLSU Engineering Journal, Volume No. 18 Issue No. 1, 2006, (Filipiniana Analytics) NP

0159

Developing learning modules for a computer-aided structural engineering subject at De La Salle University *Oreta, Andres Wins*

Civil Engineering schools may integrate the use of commercial computer software in the civil engineering curriculum to enhance the teaching and learning process. A one-unit (three-hour laboratory) computer oriented course on "Computer Methods in Structural Engineering" is introduced in the undergraduate civil engineering curriculum at De LaSalle University, Manila. This computer laboratory course aims to introduce the students on the use of state-of-the-art civil engineering software in solving both routine and complicated problems in the analysis and design of structures. One of the software that will be used is GRASP, a user friendly software for two-dimensional analysis of framed structures. This paper describes the development of learning and instructional materials using a commercial software to deepen the students' understanding of the modeling, analysis and behavior of structures in 2D. (Author's abstract)

Keywords: Engineering

DLSU Engineering Journal, Volume No. 18 Issue No. 1, 2006, (Filipiniana Analytics) NP

0160

Development of a MATLAB-based controller for the CRS robotics A255 robot arm Santiago, Arthur P

This study focuses on the development of a Windows-based controller for the CRS Robotics A255 Robot Arm. Previously, the controller interface for the robot arm is DOS based making it difficult to use. The result of this study is a user-friendly controller which utilizes a graphical user interface (GUI) generated by MATLAB with the use of the Robot Toolbox by Peter Corke. Movements modeled on the host computer are then mimicked by the robot arm. In driving the robot arm's motors, an external circuit was built using LM628 motion controller ICs. All data exchange between the host computer and the external circuitry is done through serial communications. Comparison between simulated movement and actual robot movement and behavior were used to gauge the effectiveness of the robot arm controller. (Author's abstract)

Keywords: Engineering

DLSU Engineering Journal, Volume No. 18 Issue No. 1, 2006, (Filipiniana Analytics) NP

Development of pollution prevention strategies using swarm intelligence *Tan, Raym*

Particle swarm optimization (PSO) is a metaheuristic algorithm based on the behavior of social animals. Its key advantages are its computational efficiency and ability to locate global optima by incorporating "stochastic kicks." Use of a discretized PSO in selecting an optimal array of pollution prevention techniques for day brick production is described. Statistically significant improvement in the rate of successful convergence was achieved by modifying the basic PSO algorithm. (Author's abstract)

Keywords: Engineering, Particle swarm optimization (PSO, Metaheuristic algorithm, Stochastic kicks, Optimal array

DLSU Engineering Journal, Volume No. 18 Issue No. 1, 2006, (Filipiniana Analytics) NP

0162

Disaster risk management background of DMAPS for infrastructure *Pacheco, Benito M.*

The first part of this paper is a situationer for the Philippines in the most recent (2009) UN global assessment report that ranked it among the first 14 of approximately 200 countries and economies whose population is most at risk from earthquakes, cyclones, landslides, and floods. Second is an introduction of DMAPS for Infrastructure, a new (2009) public-private partnership agreement for disaster mitigation, adaptation, and preparedness strategies for infrastructure, involving scientists and enginers in the Philippines; this may be viewed as having evolved from the Philippine Institute of Civil Engineers DMAPS that was first conceptualized five years earlier (2004), and DQRP that was first institutionalized four years even before (2000), both volunteerism programs by Filipino civil engineers. Third and main part is a framework of concepts and terminologies that the author proposes for engineers and scientists to harmonize among themselves and with professionals in finance, medicine, and other disciplines.

author proposes that fundamental issues common to various professional disciplines concerning the management of risk be associated with four general steps of risk management, easily remembered as R-I-S-K: Recognize, Impute an estimate, Survey over time, and Keep inside tolerance range. The particular type of risk needs to be clearly recognized (in step 1 of risk management), before deciding on the ordinal or other level of measure to impute an estimate (in step 2 of risk management). The older paradigm of managing disaster meets the newer paradigm of managing risk, at the step of surveying the risk over time (in step 3 of risk management), by virtue of the recognition that risk factors do evolve. Risk reduction is cited as the preferred mode of keeping disaster risk inside the tolerance range, yet many risk control modes indeed exist (in step 4 of risk management) from many viewpoints. Highlights of the four steps of the risk management spiral are summarized; ideally, each complete cycle of risk management R-I-S-K brings down the level of uncertainty and reduces the risk. It is proposed that the DMAPS for Infrastructure public-private partnership program be viewed in this framework. In appendices, this paper includes three essays that offer an altrnative way of appreciating risk management concepts and terminologies. (Author's abstract)

Keywords: Engineering, Risk factor, Hazard, Exposure, Vulnerability, Uncertainty, Human factor, Risk management spiral, Volunterism

Philippine Engineering Journal, Volume No. 28 Issue No. 2, 1-28 2008, (Filipiniana Analytics) Fil(S) TA4 P532 28/2 2007

0163

Eco-mapping the tanning process Puzon Nacu, Debb

This paper looks at the major stages of the tanning process with the aim of identifying the various inputs and wastes generated in each stage through the use of eco mapping. Understanding the inputs and outputs of the various tanning processes is the starting point to identify options to make improvements related to material use, waste reduction and other actions to protect the environment. (Author's abstract)

Keywords: Engineering

DLSU Engineering Journal, Volume No. 18 Issue No. 1, 2006, (Filipiniana Analytics) NP

0164

Ergonomically designed walker for the Filipino elderly as an assistive device *Gador, Charmelaine , Estrella, Rogelio , Gutierrez, Alma Maria Jennifer, Salomon, Patri*

Assistive devices available in the market are designed to give stability to the user by increasing the base of support. They are expected to increase lateral stability and support the weight of the user. Analysis of the different available walker in the market namely: regular walker, swiveling walker and rollator walker paved the way in establishing the need of developing a new design of the walker. Quality function deployment (QFD) was used to systematically identify the needs of the disabled elderly population. The house of quality revealed the needs of customers that were not tackled by current walker designs. Some primary functions not addressed include ease of

moving the walker both horizontally and vertically, lack of stability to support the elderly when walking, difficulty of holding the walker and not being anthropometrically fit to the users. Secondary needs identified from the use of QFD involve affordability of the walker, durability, aesthetics, and adequate clearance. A new design was conceptualized that considered these needs and a working prototype was manufactured. The design was evaluated though user testing and obtaining the feedback of doctors and physical therapists. Questionnaires were used during user testing and interview was used to get the feedback of experts. Results of product testing suggest that all primary functions identified by the users were satisfied by the new design. However, the weight of the prototype needs to be improved because the heaviness of the material used hindered the mobility of the users. A lighter material needs to be used to make the product lighter. **(Author's abstract)**

Keywords: Engineering, Quality function deployment (QFD), Anthropometrically, Regular walker, Swiveling walker, Rollator walker

DLSU Engineering Journal, Volume No. 18 Issue No. 1, 2006, (Filipiniana Analytics) NP

An explicitly dynamic multi-period competitive facilities location model with demand sharing *Li, Richard C.*, *Gobaco*,

Competitive facility location analysis has gained considerable attention in the past years, perhaps due to the increasing presence and significant effects of competition on business profitability. Since the latter half of the 20" century, competitive facilities location models have been continuously studied, explored and extended by many researchers. With the belief that competition will continue to play a significant role in strategic business management and development, this research will therefore deal with a competitive location problem. This study also aims to resolve the limiting and unrealistic novelty assumption of past researches by considering demand sharing. In order to achieve these goals, a multi-period competitive facilities model was formulated that allows opening, dosing, and upgrading of a company's facilities in response to competitor actions or decisions. The model also incorporated the more realistic occurrence of demand sharing whenever customers deem competing facilities equally attractive. Demand sharing was also modeled to occur even if a facility is more attractive than another. (Author's abstract)

Keywords: Engineering

DLSU Engineering Journal, Volume No. 18 Issue No. 1, 2006, (Filipiniana Analytics) NP

0166

Field programmable gate aray-based power factor controller *Pavia, Carlo Mar M.*, *Moralina, Don O.*, *Cuartero, Francisco C.*, *Yap, Ro*

Power factor is defined as the ratio of the real power and the apparent power. A power factor value of 1 reflects a very efficient loading of supply. On the other hand, a low power factor value can lead to huge losses in the supply

system. When power factor is poor due to effect of inductive loading, corrections can be applied using capacitors to improve its value. This paper focuses on the study and implementation of a power factor controller with the use of Field Programmable Gate Array as the main controller. (Author's abstract)

Keywords: Engineering

DLSU Engineering Journal, Volume No. 18 Issue No. 1, 2006, (Filipiniana Analytics) NP

0167

Field programmable gate array based remote home control using dual tone multi frequency Mallonga, Raymund William M., Carpio, Ryan M., Yap, Ro

Humans have increasingly been mobile in the recent years. Mobility has brought about rapid changes in a person's lifestyle. A person may worry about his/her property every time he/she makes a travels. This has introduced a need for a person to remotely access certain devices in his house. This paper presents a design of a Field Programmable Gate Array(FPGA) based remote home control system. The user controls selected devices of his home from a remote location using the telephone line. After execution, the system sends a message back to the user through Short Message Service (SMS) to confirm a successful operation. (Author's abstract)

Keywords: Engineering

DLSU Engineering Journal, Volume No. 18 Issue No. 1, 2006, (Filipiniana Analytics) NP

0168

FPGA - based turbo encoder/decoder using soft output viterbi decoding algorithm Selda, Edison A., Yap, Rod

Turbo Codes have gained prominence because of its near channel capacity error correcting capability. Bit streams are encoded by concatenating two parallel convolutional encoders, separated by an interleaver This results to a code, which when transmitted, achieves a very low (almost zero) bit error rate, when observed at the receiver. A more significant characteristic of this encoding/decoding scheme is how these error stricken codes are recovered by the decoder. By utilizing soft decision decoding and an iterative decoding structure, transmitted sequences are recovered with better efficiency. Given these outstanding features, this study presents how a turbo encoder/decoder implemented on a Field Programmable Gate Array (FPGA) using the Soft Output Viterbi Decoding Algorithm (SOVA), Several models were synthesized and implemented but only two were chosen, one with the fastest speed and the other with the smallest number of gate utilization. A VHDL model was also created for the 25 and 50 bits frame, The designs' performance was verified by comparing it with the results obtained from the MATLAB simulation. The decoder's performance was further evaluated by measuring and comparing the Bit Error Rate (BER) with published results. (Author's abstract)

Keywords: Engineering

DLSU Engineering Journal, Volume No. 18 Issue No. 1, 2006, (Filipiniana Analytics) NP

0169

Fruit characteristics and ripening indicators of Kara Mandarin (*Citrus reticulata*) in Kabacan, Cotabato, Philippines *Gutierrez, Herminigi*

This study examined the relationships among physical, chemical and other characteristics of mature fruits from 6year-old USM-grown Kara Mandarin (*Citrus reticulata*) trees. The results showed that juice volume could be estimated adequately from physical properties such as fruit diameter, weight and circumference. Sweetness of the juice was found to be significantly correlated with juice pH, acidity and TSS/A ratio. These three variables could be used to determine the readiness of the fruits for harvesting; to obtain sweet or very sweet fruits, the values of pH and TSS/A ratio should be more than 3 and 14, respectively. Fruit color and electrical resistance were found to have no significant correlation with sweetness and could not be used as ripening indicators. Juice volume could be estimated using physical measurements such as diameter, circumference and fruit weight. The % juice volume (as percentage of fruit volume), on the other hand, was significantly correlated with fruit density (positively) and rind thickness (negatively), and averaged 41.4%. This implied more juice per unit weight with denser fruits and thinner rinds. **(Author's abstract)**

Keywords: Engineering, Acidity, Fruit diameter, Weight and circumference, Sweetness.

USM R&D Journal, Volume No. 17 Issue No. 1, 31-38 2009, (Filipiniana Analytics) NP

0170

A heuristic for minimizing total weighted tardiness in the two-machine flowshop problem when jobs have processing times MIN(P1) > MAX(P2) Siy, E

Minimizing the NP-hard problem of total weighted tardiness for the two machine flowshop(F2//WjTj) requires a computationally less difficult approach than complete enumeration. This paper presents a heuristic for the case of the two-machine flowshop where the largest processing times for all job in the 2nd machine (P2) js smaller than the minimum processing times the first (P1). In this case of the flowshop, all jobs are initially available for processing and have to be processed in the same sequence of machines; jobs also have associated due dates and weights. The heuristic performance is compared against the currently accepted Rachamadugu and Morton (1981) heuristic on numerical examples on 4-and 5 jobs flowshop with completely enumerated permutation schedules. It is shown that the presented heuristic would be able to find a sequence of jobs that surpasses the performance of R&M heuristic in finding the minimum total weighted tardiness. (Author's abstract)

Keywords: Engineering

DLSU Engineering Journal, Volume No. 18 Issue No. 1, 2006, (Filipiniana Analytics) NP

0171

History and development of prediction models of time-to-initiate-corrosion in reinforced concrete structures in marine environment. *Que, Norbert S.*

This paper presents the history and development of mathematical models for the prediction of time to initiate corrosion of reinforced concrete exposed to chlorides in marine environment. Emphasis is given to prediction models (empirical and mathematical) that consider Fick's 2nd law of diffusion as the theoritical basis. Since repair and rehabilitation of corroded reinforced concrete marine structures draw significant portion of the budget for infrastructures, the capability to accurately predict deterioration levels due to to chloride attack, especially the time-to-initiate corrosion, in reinforced concrete structures exposed to chloride-induced corrosion can translate to major economic savings and possible extension of service life of a member or a structure. (Author's abstract)

Keywords: Engineering, Chloride, Marine environment, Fick's 2nd Law, Reinforced concrete, Corrosion

Philippine Engineering Journal, Volume No. 28 Issue No. 2, 29-44 2008, (Filipiniana Analytics) Fil(S) TA4 P532 28/2 2007

0172

Hydraulic computations for flood routing of a modular urban stormwater drainage system *Cruz, Eric C.*

This paper discusses the htdraulic analyses carried out to evaluate flooding due to overbanking of stretches of a 4-meter-wide drainage canal through an existing subdivision in Metro Manila. The proposed land development will convert the upstream portion of the property into a mixed-use commercial residential area. Computations are carried out to determine the spatial extent of the present flooding potential, and to quantify the upstream-migrated inundated areas under the present condition of a submerged exit. Hydraulic analyses are also undertaken to solve the recurring problem of a submerged culvert outfall. The study also provides the quantitative bases for the structural measures to mitigate the flooding hazards associated with the land use modifications. It is concluded that hydraulic computations are necessary in predicting local flooding conditions, as well as in analyzing the effects of proposed engineering interventions to mitigate this condition. The methodology is demonstrated via project application involving an urban stormwater drainage system. (Author's abstract)

Keywords: Engineering, Flood routing, Urban drainage, Stormwater, Hydraulic analysis

Philippine Engineering Journal, Volume No. 28 Issue No. 2, 45-58 2008,

Image watermarkings with self-healing capabilities

Lee, Andrew Powell K., King, Kelvin Mackenzie D., dela Cruz, Charisse C., Co, Stephanie Joy C., Manalang, Kenneth Josef L., Lapira, Edze

The modem world is rapidly becoming more "digitized" and thus the need for more improved and robust security mechanisms against forgery and piracy of digital contents increases in urgency. This paper describes a watermarking scheme with self-correcting features that would spur new developments in the field of information security protection, since it would provide improved protection of the intellectual property right of the owner for their digital creations. The system employs a hybrid watermark such that both qualities of a robust and a fragile watermark were integrated into a single system. The restoration capability of the system depends on the fragile watermark. Also, the encrypting algorithm used, aliased linear topology was specially designed to appear as if the sequence of the image blocks are scattered as a result of a pseudorandom scrambling when in truth a series of linear scrambling with different patterns were done. (Author's abstract)

Keywords: Engineering

DLSU Engineering Journal, Volume No. 18 Issue No. 1, 2006, (Filipiniana Analytics) NP

Leadership and strategic alignment in construction Acacio, Alexis A.

Construction management and engineering is generally thought of as a purely technical part of construction management consisting of bar charts, scheduling, estimates and bidding. While these tools may guide a company to construct a project, the management skills and techniques employed are generally not enough to ensure the success and optimization of a construction project. A successful construction project manager needs three skills that are separate but nonetheless interrelated and interdependent. These skills are 1.) Leadership skills, 2.) General management skills, and: 3.) Construction engineering and technical management skills.

While civil engineers are expected to be competent in construction management skills, areas of expertise in project leadership, organizational alignment and general management are lacking. Organizational alignment is the congruence and compatibility of the various activities in a construction project and determines the outcome of success or failure. This looks at the external environment in which the firm operates and the internal capabilities that it can offer. It is important that the needs of the various stakeholders in a project are satisfactorily met to ensure project

This paper aims to describe the leadership and general management skills that are necessary for the successful completion of projects. The trategic fit that is necessary to ensure project success is described through a strategic alignment methodology. This simple process can be used by construction engineers to ensure that their project takes

into account both the external environment and the congruence of internal processes within the organization. (Author's abstract)

Keywords: Engineering, Strategy, Strategic alignment, Strategic construction management

Philippine Engineering Journal, Volume No. 28 Issue No. 2, 59-64 2008, (Filipiniana Analytics) Fil(S) TA4 P532 28/2 2007

0175

Measuring the elasticity of some kinds of Philippine wood Maxino, Theresa C.

A simple self-constructed instrument was used to measure Young's modulus of elasticity of 15 samples of Philippine wood. Loads were applied at the center of horizontal beams and the vertical deflections were measured. Values of Young's modulus of elasticity were obtained from calculations using a standard formula and from slopes of graphs of deflection vs. mass of load. The computed values of Young's modulus of elasticity range from 2.17 x 10^{10} to 2.17 x 10^{11} dynes/cm². (Author's abstract)

Keywords: Engineering, Young's modulus of elasticity, Philippine wood, Pinus insularis

The Philippine Scientist, Volume No. Issue No., 121-130 2008, (Filipiniana Analytics) Fil(S) Q1 J95 v31 1994

0176

Microcontroller-based safety spotter for body building bench press exercise Ticzon, Jason Ron M., Ignacio, Cristina Coreen B., Dulay, Ann E., De Leon, Marco Alejandro D., Uy, Claire

The ultrasonic sensor and QTERM were used to acquire input data such as the arm's length of the person using the system, the number of repetitions, and the value of the weights. The signal from the sensor and QTERM is sent to the micro controller. The micro controller activates the actuator and solenoid when spotting is needed. Spotting will be done once the output from the sensor indicates that the speed of the lifting is slow, stalled for 3 seconds going up and 2 seconds going down, or when the displacement from the chest to the sensor is at its minimum point, which is set in this study to 3 inches [Hermano, 2003], [De Larrazabal, 2003, Temida, 2003]. (Author's abstract)

Keywords: Engineering

DLSU Engineering Journal, Volume No. 18 Issue No. 1, 2006, (Filipiniana Analytics) NP

Parametric and kinetic studies on the treatability of distillery slop by photocatalysis using paint-immobilized titanium dioxide

Bautista, Ramer P., Movillon, Jovita L., Del Barrio, Marilyn C., Tengco, John Meynard M., Arocena, Rhebner

Е.

Distillery slop is the large amount of wastewater generated which is equivalent to about 12 to 15x of the volume of ethanol produced. It causes serious disposal problem due to to its large volume, high organic load, low pH, high temperature and dark color (if coming from molasses-based distilleries). This study aimed to determine the efficiency of using paint-immobilized titanium dioxide for the photocatalytic reduction of color and chemical oxygen demand (COD). Titanium dioxide is a non-toxic white powder, resistant to photocorrosion, relatively inexpensive and effective in oxidizing organic and inorganic compounds. The synthetic distillery slop (color of 127,200 PCU, 46,600 mg/L COD and pH 4) was tested using three parameters: presence of light, catalyst loading and pH (4, 5, 6, 7 and 8) to determine which conditions will give the maximum degradation of organic and inorganic materials at 20x dilution. Highest color reduction of 33.65% was measured for the catalysis under solar exposure using the optimum catalyst loading of 50 g titanium dioxide mixed with 50 mL both of water and BoysenTM Gloss Latex paint in Burnt Sienna. Two controls were used: plain paint and glass alone. Results of treatment with titanium dioxide were significant compared to those of the controls based on the analysis of variance. Kinetic parameters were calculated using the differential and integration methods, giving the preferred values of k at first order of reaction to be 3.5394 x 10^{-4} /min for color reduction; and k = 9.1497 x 10^{-4} /min for COD reduction. Photocatalysis using paint-immobilized titanium dioxide may be used as a primary treatment for decolorization and COD reduction of distillery slop. However, secondary treatment should be performed to make it compliant to the requirements of the Philippine Clean Water Act. (Author's abstract)

Keywords: Engineering, Distillery slop, Titanium dioxide, Photocatalysis

Transactions of the National Academy of Science and Technology, Volume No. 34 Issue No. 1, page 137 2008, (Filipiniana Analytics) Fil(S) Q149.P5 N25 34/1 2012

0178

Parametric study on the growth of green alga *Chlorella vulgaris* Biej. (*Chlorophyta*) cultivated in polyethylene photobioreactors under outdoor operations Santiago, Denise Ester O., Goss, Milagrosa M., Demafelis, Rex B., Nacorda, June Owen O., Movillon, Jovita L., Aquino, Sammy D.C.

Microscopic alga is rich in oils (30% to 80% by weight in biomass), and can produce more than 30 times the amount of oil (per year per unit area of land) compared to oil seed crops used for biodiesel production. This study determined the growth kinetics (specific growth rate, doubling time, doublings per day and maximum cell concentration) of green algae *Chlorella vulgaris* Beijerinck, in polyethylene photobioreactor in batch and outdoor operation; and identified the effects of variations in the aeration rate, reactor diameter, and culture media. The batch and outdoor cultivation of *C. vulgaris* CV1 strain was done in polyethylene photobioreactors of varying diameters (4.0"D, 6.0"D, 7.0"D), aeration rates (vvm of 0.114, 0.275 and 0.377) and 3 kinds of culture media (fertilizer solution 0.17192 g/L of urea and 0.02073 g/L of NPK; hog manure mixture; BG-11 medium in Stanier et al, 1971). The biomass concentration at stationary phase for aeration settling of 0.275 vvm was 0.3202 g/L and for 0.114 vvm, it was 0.2670 g/L. The growth of *C. vulgaris* was most favorable in photobioreactor with smallest diameter (4.0"), and in the BG-11 in terms of specific growth rate. The highest oil yield (6.962%) was obtained from the reactor with 7.0"D, followed by 4.0"D (4.546%); least was 6.0"D (3.423%). (Author's abstract)

Keywords: Engineering, Chlorella vulgaris Beijerinck, Chlorophyta, Polyethylene photobioreactors

Transactions of the National Academy of Science and Technology, Volume No. 34 Issue No. 1, page 138 2008, (Filipiniana Analytics) Fil(S) Q149.P5 N25 34/1 2012

0179

A public transportation stop location and scheduling model with stochastic demand Uy, Darlene Joy, Ruiz, Reginald, Lim, Tanya, Beng Hui, Dennis T., Li, Richar

This study presents a mathematical model that simultaneously locates transport stations and formulates a schedule for transport systems given stochastic demand for different time periods. These are important decisions to make because of the conflicting objectives of the different groups in involved in transport operations. Previous studies have considered only location or scheduling and sought the optimisation of performance measures desired by one group of decision-makers only. (Author's abstract)

Keywords: Engineering

DLSU Engineering Journal, Volume No. 18 Issue No. 1, 2006, (Filipiniana Analytics) NP

0180

Refinery hydrogen integration with symmetric fuzzy linear programming Tan, Raymond R., Cruz, Den

Optimal utilization of hydrogen streams in refineries using process integration techniques is necessary as the rising cost of high grade crude oil forces companies to use feed stocks of lower grade. Lower grades of crude oil can be used to make petroleum products of the desired quality level through a variety of thermochemical conversions such as hydrocracking and hydrotreating. Optimal allocation of hydrogen streams of required flowrates and concentrations can be done using different integration techniques, including mathematical programming. In practice accurate stream data is not always available. Synthesis of hydrogen allocation networks under such conditions of uncertainty can be done using symmetric limy linear programming. This approach, which was originally applied to water allocation problems, is demonstrated using a hydrogen integration problem from literature. (Author's abstract)

Keywords: Engineering, Hydrocracking, Hydrotreating, Thermochemical conversion, Hydrogen integration

DLSU Engineering Journal, Volume No. 18 Issue No. 1, 2006, (Filipiniana Analytics) NP

Shielding effectiveness of nickel-coated polycarbonate film de Guzman, Eric M., Culaba, Ivan B., Caluyo, Felic

Nickel coated polycarbonate film has been investigated to determine its shielding effectiveness (SE). A method to measure the SE is to place the coated film in an open side of a metal square box (3"x3"x3") and then expose to RF Source. Using the U.S. Military Standard 285 [1] and revised version of ASTM-D4935 [2] as reference and at 100 Mhz to 3 Ghz frequency range, the SE of nickel coated on polycarbonate film can be experimentally determined by taking the difference between the RF Signal with and without the shield as measured using Advantest R3131A Spectrum Analyzer. (Author's abstract)

Keywords: Engineering

DLSU Engineering Journal, Volume No. 18 Issue No. 1, 2006, (Filipiniana Analytics) NP

0182

A survey on the use of statistical process control tools in Philippine-based companies Zalatar, Wi

The main concern of this study is to ascertain the extent and magnitude of the use of SPC tools in Philippinebased companies. A survey was conducted in order to determine which of the major SPC tools are being utilized by the various companies and their reasons for doing so, what types of data are inputted into and the persons in-charge of constructing these tools, and what are the benefits obtained by the organizations as a result of the application of SPC methods. (Author's abstract)

Keywords: Engineering, SPC tools, SPC methods, Philippine-based companies

DLSU Engineering Journal, Volume No. 18 Issue No. 1, 2006, (Filipiniana Analytics) NP

0183

Synthesis of cobalt boride nanoparticles using radio frequency thermal plasma Lapitan, Jr., Lorico DS., Chen, Ying Ying, Choi, Seesoek, Watanabe, Takayuki

Nanosize cobalt boride particles were synthesized from the vapor phase using a 30 kW – 4 MHz radio frequency (RF) thermal plasma. Cobalt and boron powder mixtures used as precursors in different composition and feed rate were evaporated immediately in the high temperature plasma and cobalt boride nanoparticles were produced through the quenching process. The X-ray diffractometry (XRD) patterns of cobalt boride nanoparticles prepared from the feed powder ratio of 1:2 and 1:3 for Co:B showed peaks that are associated with the Co_2B and CoB crystal phases of cobalt boride. The XRD analysis revealed that increasing the powder feed rate results in a higher mass fraction and a

larger crystalline diameter of cobalt boride nanoparticles. The images obtained by field emission scanning electron microscopy (FE-SEM) revealed that cobalt boride nanoparticles have a spherical morphology. The crystallite size of the particles estimated with XRD was found to be 18 - 22 nm. (Author's abstract)

Keywords: Engineering, Cobalt boride nanoparticles, Thermal plasma, X-ray diffraction, Scanning electron microscopy

Transactions of the National Academy of Science and Technology, Volume No. 34 Issue No. 1, page 122 2008, (Filipiniana Analytics) Fil(S) Q149.P5 N25 34/1 2012

0184

Validating the autoregressive model of the angat reservoir monthly inflows *Dizon, Cornelio Q.*

Thirty six years of historical streamflow records (1946 to 1985), before and after construction of the Angat Reservoir, were used to identify the time series model that can forecast the Angat Reservoir monthly inflows. After more than twenty (20) years when the autoregressive model of the Angat Reservoir inflows was identified in a previous study by this author, its effectiveness and practicality to forecast the monthly inflows to the Angat Multipurpose Reservoir is validated by comparing the generated model outputs with recent observed measurements from 1986 to 2008. The paper presented the ARMA model selection process and showed the validity of the selected autoregressive model. (Author's abstract)

Keywords: Engineering, Angat multipurpose reservoir, Validating autoregressive model, Modeling, Streamflows, Precipitation

Philippine Engineering Journal, Volume No. 28 Issue No. 2, 65-83 2008, (Filipiniana Analytics) Fil(S) TA4 P532 28/2 2007

0185

A VHDL hardware model of the ITU-T G.728 standard with a synthesizable code book search module

Lu, Michael Adrian L., Faustino, Jr., Narciso D., Hernando, Jonathan S., Del Cano, Ser Christian R., Lapira, Edzel R., Tan Casis, Arnold Benedic

The transmission of audio signals over a medium of limited bandwidth has been a longtime problem that had caused several compression schemes to be developed over the years. For audio signals the compression scheme that is to be implemented must be able to perform compression fast enough so that the delay would not be noticeable. An ITUT standard for low delay code excited linear prediction algorithm known as G. 728 is one of the best solutions developed to address the specific need. The research includes the hardware model of the G. 728 encoder implemented in VHDL and a G.728 decoder implemented in C language. (Author's abstract)

Keywords: Engineering

DLSU Engineering Journal, Volume No. 18 Issue No. 1, 2006, (Filipiniana Analytics) NP

This paper explored the perceptions of upland farmers in Northern Sierra Madre Mountain Range in Luzon about their resources, land use practices, aspirations and problems. The survey found out that important aspirations and problems in upland farming were related to soil, water, nutrients, and climate nested in the biophysical and social domains. Land use practices were reflection of water and nutrient availability and perceived rainfall distribution. Farmers explained these dynamics incorporating their local knowledge and perceptions about changes in their environment. They had identified several indicators for soil quality and some local knowledge in predicting weather occurrences. The use of modern technologies (e.g. chemical fertilizers, new varieties) was evidently observed. Though these technologies brought productivity, it made upland farming susceptible and vulnerable to stress and shocks. This paper outlined some possible strategies for adaptation. In a short note, USM's role can be explored with particular reference to the institutions' expertise in industrial crops. (Author's abstract)

Keywords: Engineering, Land use practices, Nutrient depletion, Perceptions, Priority index, Priority maps, Sustainability, Upland agriculture, Water scarcity

USM R&D Journal, Volume No. 17 Issue No. 1, 9-23 2009, (Filipiniana Analytics) NP

ENVIRONMENTAL SCIENCE

0187

Fish diversity, ecological status, and conservation measures of the coastal waters in Tubay, Agusan del Norte, Philippines Patricio, Jose Hermis P., Alima, Mark Anth

This study was conducted primarily to determine fish diversity of the coastal waters of mining areas in Tubay, Agusan del Norte. There were 23 fish species identified belonging to 19 genera and 12 families. Indo-pacific sergeant fish *(Abudefduf vaigiensis)* was relatively the most abundant in all the three stations comprising more than 25% of the total. Station 1 had the most numerous (556) and diverse (1.969) fish species. There was a significant difference in the number of fish individuals but had no significant difference on species diversity index with respect to sampling stations. Station 2 had the highest species richness index (0.633), while Station 3 had the most even distribution (0.817). Stations 1 and 2 were 77.8% similar. The average water depth, temperature, transparency, pH and salinity were 4.52 meters, 26.53 °C, 3.97 meters, 8 and 34.33 ppt, respectively. These all fall within the DENR standards for Class SC water. **(Author's abstract)**

Keywords: Environmental science, Fish diversity, Properties, Conservation, Coastal waters

Asian Journal of Biodiversity, Volume No. 1 Issue No. 1, 139-164 2010, (Filipiniana Analytics) NP

0188

Species account of marine diatoms of the genus Pseudo-nitzschia in San Pedro Bay, Philippines

Yap-Dejeto, Leni G., Omura, Takuo, Cinco, Genneline F., Cobacha, Marjorie M., Fukuyo, Yasuwo

Phytoplankton samples were collected by bucket, 20 μ m mesh size plankton net and Van Dorn water sampler in San Pedro Bay, Leyte, Philippines from December 2006 to May 2008. Acid-washed valves of *Pseudo-nitzschia* were observed and critically identified using transmission electron microscopy (TEM). The following species were identified: *Pseudo-nitzschia brasiliana*, *P. caciantha*, *P. micropora*, *P. pseudodelicatissima*, and *P. pungens*. Morphometric measurements of valves and descriptions of species are included herein. *P. pungens* was the most abundant species encountered in this study with maximum density at 3.5×10^4 cells·L⁻¹ during February 2007. This is the first taxonomic account at the species level of this genus in the Philippines waters. (Author's abstract)

Keywords: Diatom, Philippines, Environmental science, Amnesic shellfish poisoning (ASP), Pseudo-nitzschia species, San Pedro Bay, Taxonomy

Philippine Journal of Science, Volume No. 142 Issue No. 1, 27-37 2008, (Filipiniana Analytics) Fil(S) Q1 P55 142/1 2013

FISHERIES

0189

Checklist of fishes found in the fresh and brackish waters of Negros and Siquijor, Philippines Carumbana, Esther E., Bucol, Ab

A total of 89 species of fish found in fresh and brackish waters belonging to 45 families is known in Negros and Siquijor islands. The most species rich is the Family Gobiidae (13 species) followed by the Family Eleotridae (10 species), Ophichthidae (six species), Cyprinidae (three species), and Poeciliidae (four species). The Families Muraenidae, Ambassidae and Mugilidae are represented by three species each and the Families Plotosidae, Syngnathidae, Terapontidae, Apogonidae, Carangidae, Lutjanidae, and Cichlidae are represented by two species each. The rest of the families are represented by only one species. Most of the species belonging to the Families Poeciliidae, Clariidae, Cyprinidae, and Loricariidae are all introduced species and brought to the country through the aquarium trade and aquaculture programs. (Author's abstract)

Keywords: Fisheries, Fresh water fish, Brackish water fish, Fish checklist, Fish fauna

Asian Journal of Biodiversity, Volume No. 1 Issue No. 1, 91-125 2010, (Filipiniana Analytics) NP

Culture of Siganus guttatus in brackishwater ponds Ganzon-Naret, Erlinda S., Catedrilla, Liah C.

This study was conducted to determine the feasibility of mono-culturing the siganid *S. guttatus* in brackishwater ponds, to determine the length of time needed for the fish to reach marketable size, and to study the effect of various stocking densities on growth and survival.

The growth and survival of *S. guttatus* stocked at 3000, 6000, 9000, 12000, and 15000 fish/ha in fifteen 200 m² earthen ponds were evaluated after a 210-day culture period.

Highest production of 4.82 kg was obtained at a stocking density of 3000 fish/ha, the lowest at a stocking density of 9000 fish/ha. However, no significant difference (P > 0.05) was observed among treatments.

Survival was low in all treatments. This is attributed mainly to poor growth of filamentous algae and the occurrence of fin rot and fungal infection. (Author's abstract)

Keywords: Fisheries, Siganus guttatus, Brackishwater ponds, S. canaliculatus, S. vermiculatus, S. spinus, S. javus

The Philippine Scientist, Volume No. Issue No. , 58-66 2008, (Filipiniana Analytics) Fil(S) Q1 J95 v31 1994

0191

Daily rates of ingestion of rotifers and *Artemia nauplii* by laboratory-reared grouper larvae of *Epinephelus suillus Duray*, *M.N*

The amount of rotifers and *Artemia* nauplii consumed daily by the grouper *Epinephelus suillus* larvae was determined through examination of gut contents. The larvae (2.6 mm TL) were initially fed rotifers on day 2 and newly hatched *Artemia* nauplii on day 21 (9.1 mm TL). The amount of food consumed by the larvae increased with larval growth. Larvae also showed diurnal feeding pattern at day 7 (3.6 mm TL), day 14 (4.9 mm TL), day 21 (9.1 mm TL) and day 28 (11.1 mm TL). Feeding incidence increased in the evening and became zero at 2100-2200 h. Active feeding started earlier in the older larvae and satiation was between 0900-1100 hr. (Author's abstract)

Keywords: Fisheries, Artemia nauplii, Epinephelus suillus, Epinephelus akaara, E. amblycephalus, E. fuscoguttatus, E. salmoides, E. tauvina

The Philippine Scientist, Volume No. Issue No., 32-41 2008,

Diversity and distribution of freshwater fish assemblages in Tayabas River, Quezon (Philippines) Paller, Vachel Gay V., Corpuz, Mark Nell C., Ocampo, Pablo P.

Three stream sections (upstream, midstream, and downstream) of Tayabas River, Philippines were surveyed during the wet and dry seasons of 2010 to evaluate the poortly known status of freshwater fish assemblages. The study collected a total of 1,070 individuals comprising 15 species, 13 genera, and 8 families. The three most abundant groups were poeciliids (61.85%), gobiids (26.16%), and cichlid (5.51%). Shannon-Weiner's diversity indices ranged from 1.270 to 2.171. Relatively high Shannon evenness indices (0.653-0.846) and low Simpson's dominance values (0.142-0.322) were calculated implying a fairly equitable distribution of niche space for dominant and non-dominant fishes. Significant change on fish assemblage in longitudinal gradient was observed (p(Author's abstract)

Keywords: Fisheries, Diversity, Fish assemblages, Native and introduced fish species

Philippine Journal of Science, Volume No. 142 Issue No. 1, 55-67 2008, (Filipiniana Analytics) Fil(S) Q1 P55 142/1 2013

0193

The effect of lipid-enriched broodstock diets on spawning and on egg and larval quality of hatchery-bred rabbitfish (*Siganus guttatus*) Duray, Marietta, Kohno, Hiroshi, Pascual, Felicitas

Three isocaloric and isonitrogenous diets formulated to contain 12 (diet A), 15 (B) and 18% (C) lipids were tested on hatchery-bred rabbitfish *Siganus guttatus* broodstock to determine their effect on spawning and quality of the eggs and larvae. The results show that fish on diet C has higher fecundity than those on diets B and A. Also fish on diet C yielded eggs of better quality than either fish on diet B or A. This was indicated by spawns resulting in higher percentage of normal hatchlings, larger newly-hatched larvae and higher survival rates until the 14th day of rearing. Dietary lipid levels, however, have no remarkable effects on fertilization, yolk and oil globule volumes, hatching rate nor larval size at harvest. (Author's abstract)

Keywords: Fisheries, Siganus guttatus, Isocaloric, Isonitrogenous

The Philippine Scientist, Volume No. Issue No., 42-57 2008, (Filipiniana Analytics) Fil(S) Q1 J95 v31 1994
Effects of different dosages of astaxanthin on giant freshwater prawn Macrobrachium rosenbergii (De Man) challenged with Lactococcus garvieae Angeles, Jr., Isagani P., Chien, Yew-Hu, Tayamen, Melchor M.

Carotenoids, such as astaxanthin (AX), have received increasing attention in recent years due to their reported various functions not only as a pigment enhancer but also as an antioxidant. As an antioxidant, carotenoids inactive free radicals produced from normal cellular activity and various stressors. The health of stressed aquatic organisms is linked to the overproduction of reactive oxygen species, which is a precursor to the occurrence of disease. Antioxidants help protect cell membranes against the damage from excessive production of reactive oxygen species. The effects of astaxanthin (AX) injected at 0.67 and 1.34 nmol g⁻¹ BW⁻¹ on the survival, antioxidant capacity, total haemocyte count (THC) and hepatopancreas astaxanthin content of the giant freshwater prawn, Macrobrachium rosenbergii, challenged with Lactococcus garvieae were evaluated. AX-injected M. rosenbergii at 1.34 nmol g⁻¹ BW-1 had significantly (P<0.05) higher survival rates. However, AX showed no significant effects on the capacity of certain antioxidant indicators (superoxide dismutase, glutathione peroxidase and glutathione reductase). This implies that L. garvieae infection suppressed the activity of the haemolymph antioxidant system of infected M. rosenbergii. This result suggests that the two different dosages used in this study could not exert significant effects on the tested antioxidant capacity of L. garvieae-infected M. rosenbergii. On the other hand, AX-injected M. rosenbergii at either dose showed a significant increase in the THC and hepatopancreas AX content when compared with the challenged control group. Overall, the results of this study indicate that the injected AX led to an improvement in M. rosenbergii's resistance against L. garvieae infection. (Author's abstract)

Keywords: Fisheries, Glutathione peroxidase, Glutathione reductase, Hepatopancreas, Lactococcus, Macrobrachium, Superoxide dismutase, Total hemocyte count

Transactions of the National Academy of Science and Technology, Volume No. 32 Issue No. 1, 57-58 2008, (Filipiniana Analytics) Fil(S) Q149.P5 N25 32/1 2010

0195

Freshwater fishes of Tikub Lake, Tiaong, Quezon, Philippines Briones, Nicomedes D., Labatos, Jr., Bonifa

Freshwater fish survey was conducted in Tikub Lake, a landlocked crater lake with an area of 48.34 hectares nestled at the foot of Mt. Malepunyo which is shared and bordered by Barangay Ayusan I and Barangay San Pedro in Tiaong, Quezon, Philippines. A total of 221 individuals comprising 9 species from 7 families were found in Tikub Lake, three of which are native and six are introduced. Diversity index was 1.87. A native, *Giuris margaritacea* and an introduced, *Poecilia sphenops* are the two most abundant species in the lake with relative abundance of 29.41% and 26.24% respectively. Although the study revealed that Tikub Lake hosts diverse community of fish, this is due to different introduced species as the lake is being utilized for aquaculture. Other uses of the lake include subsistence fishery, and to limited extent recreation and tourism. Just like any other lake ecosystems of the country, Tikub Lake experiences pressures due to different human activities both in the aquatic and terrestrial realms such as cutting of trees as wood fuel, excessive extraction of resources, and the ever increasing human population as evidenced by the presence of informal settlers. A sound community-based management strategy is a prerequisite to achieving environmental sustainability. **(Author's abstract)**

Keywords: Fisheries, Aquatic ecosystem, Freshwater fishes, Introduced, Translocated

Asian Journal of Biodiversity, Volume No. 5 Issue No. 1, 41-53 2014, (Filipiniana Analytics) NP

The performance of two Philippine fisheries journals in international scientific literature *Dizon, Leticia B.*

The use of two Philippine fisheries journals – the *Fisheries Research Journal of the Philippines* (FRJP) and *Kalikasan, the Philippine Journal of Biology* (fisheries articles only) – in international scientific literature, from 1972 to 1991, is investigated. The study, which is based on citations in the SCISEARCH computer database of the Institute of Scientific Information, yielded 59 citations to FRJP and 42 to *Kalikasan*. The average citation age was 7.5 years. Self-citation rates are 17% for FRJP and 12% for Kalikasan. Both journals had a low impact outside of the Philippines. (Author's abstract)

Keywords: Fisheries, Kalikasan, Fisheries Research Journal of the Philippines (FRJP), Aquaculture

The Philippine Scientist, Volume No. Issue No., 158-168 2008, (Filipiniana Analytics) Fil(S) Q1 J95 v31 1994

A red tide management scheme in the Philippines at the regional level Sotto, Filipina B., Young, Jason, Rodriguez, Jose

In November 1992, a dinoflagellate bloom of *Pyrodinium bahamense* var. *compressum* occurred in Samar and Leyte, eastern Philippines. Several incidents of seafood poisoning were reported. Led by the Department of Health, various local government agencies formed Red Tide Task Force with responsibilities and decision-making capabilities quasi-independently from the sluggish National Red Tide Committee. Quick and timely action prevented any undue loss of life, and the task force gained credibility with the public. Training on sampling, identification and counting of *P. bahamense* cells was provided by the Marine Biology Section of the University of San Carlos. This report shows that a localized response team, separate from the national Committee, is more practical for archipelagic countries like the Philippines. (Author's abstract)

Keywords: Fisheries, Pyrodinium bahamense var, Compressum, Red tide

The Philippine Scientist, Volume No. Issue No., 79-87 2008, (Filipiniana Analytics) Fil(S) Q1 J95 v31 1994

Taxonomic study of icthyofauna in Tanduyong Island Anda, Pangasinan Casipit, Gildence L., Ogabar, Ana Marcelina T., Elazegui, Erwin P.

This study was conducted to assess the fish fauna in three selected sites of Tanduyong Island in Anda, Pangasinan. It aims to provide baseline information on the commonly caught fish species of the island and generate a taxonomic listing of these species. Physico-chemical parameters such as water temperature, pH and salinity were determined. Fish hook and fish net were used to catch the species. Collection was done using transect-quadrat method in 500 m by 500 m area. A total of 46 fish species belonging to 6 orders, 27 families and 40 general have been documented. Order Perciformes and Family Carangidae has the most number of representative species having 5 genera and species type followed by Family Scaridae with 4 genera and Family Acanthuridae, Family Labridae, Family Lutjanidae with 3 genera, respectively. The most dominant species is *Stolephorus ronguilloi*, locally known as dilis. The gathered data will provide useful information on the survival of the taxa and promote effective strategies for conservation of fish fauna. (Author's abstract)

Keywords: Fisheries, Conservation, Icthyofaunal resources, Taxa, Taxonomic

Transactions of the National Academy of Science and Technology, Volume No. 32 Issue No. 1, 52 2008, (Filipiniana Analytics) Fil(S) Q149.P5 N25 32/1 2010

FORESTRY

0199

Estimation of aboveground biomass in Mount Makiling Forest Reserve using landsat ETM+ data

Vallesteros, Shierel F., Bantayan, Nathaniel C., Vallesteros, Arvin P.

Several studies have been made to estimate the aboveground biomass (AGB) of the different forest stands in the Mt. Makiling Forest Reserve - an important mountain landscape in the Philippines for its rich biological diversity using ground inventory data. Our study provides an estimate of the total AGB of the landscape. Inventory and Landsat ETM+ data were combined to develop AGB regression equations. The normalized difference vegetation index (NDVI) came out to be the most important predictor variable. The total AGB of MFR based on December 2009 Landsat ETM+ image is 1,602,200 tons. This translates to an average value of 368 ton^{-ha}. The forest reserve has varied land cover types but tree cover is generally high even in what are traditionally classified as cultivated, grassland and built-up areas. Our estimate seems to agree with previous estimates that are based on ground data only. Because we used an SLC-off Landsat product, or image with scan gap error, we created a simple method of filling in missing pixels and we compared the mean AGB estimates from an image with gap pixels masked out and the same mage with gap pixels were filled in. (Author's abstract)

Keywords: Forestry, Aboveground biomass, NDVI, Scan-gap error, Makiling

Transactions of the National Academy of Science and Technology, Volume No. 34 Issue No. 1, page 143 2008, (Filipiniana Analytics) Fil(S) Q149.P5 N25 34/1 2012

Evaluation of lahar barrier to protect wood structures from Philippine Subterranean Termites Acda, Menandro N.

Volcanic debris consisting of a sandy aggregate (lahar) from Mt. Pinatubo Central Luzon, Philippines was used as physical barrier to prevent tunneling and penetration of Philippine subterranean termites into a small wooden structure. The protective barrier consisting of mixed lahar particles was installed beneath floor and concrete foundation walls. Regular inspections were made over a five year period to determine signs of termite damage inside and outside of the structure. Results showed that Philippine subterranean termites were unable to penetrate the 5.0 cm thick layer of 1.18 to 2.40 mm lahar particles from the underground soil. The structure remained in good condition with no sign of termite damage to the wooden interior. The study indicated that lahar barrier could be used to protect wooden structures from entry of subterranean termites and offer a non-chemical alternative to commercially available termiticides. **(Author's abstract)**

Keywords: Forestry, Lahar, Physical barrier, Non-chemical method, Termites, Mt. Pinatubo

Philippine Journal of Science, Volume No. 142 Issue No. 1, 21-25 2008, (Filipiniana Analytics) Fil(S) Q1 P55 142/1 2013

0201

Use of edible forest plants among indigenous ethnic minorities in Cat Tien Biosphere Reserve, Vietnam Mizoue, Nobuya, Ogata, Kazuo, , Sang, Dinh

Based on the surveys combining the use of household interviews, key informants, rapid rural appraisal (RRA), and the "walk-in-the-wood" method; this article examines the uses of edible forest plants among the indigenous ethnic minorities (IEMs) in Cat Tien Biosphere Reserve (CTBR), southern Vietnam. The findings confirm that all of the respondents gathered and harvested the edible forest plants for both subsistence and income generation, primarily for favorite daily food. Overall, the survey identified 100 species of edible forest plants belonging to 45 families used by the IEM households, these were collected from natural forest, forest plantations and allocated forest land in CTBR, but primarily from the first type of land; 100% of households surveyed harvested some or many species of the plants. However, poor harvesting practices and overuse of the plant species are threatening their sustainability, the local uses and even the food source for wildlife. Additionally, most of the gathering was officially illegal since it occurred in state protected forests. It is recommended Asian Journal of Biodiversity 24 that the participation of IEMs in planned uses as well as the forest resource management, improved harvesting practices, techniques of domestication, encouragement of priority forest edible cultivation should be preferred. (Author's abstract)

Keywords: Forestry, Cat Tien Biosphere Reserve, Domestication, Edible forest plants, Indigenous ethnic minorities, Sustainable use

Asian Journal of Biodiversity, Volume No. 3 Issue No. 1, 23-49 2012, (Filipiniana Analytics) NP

Vascular plants of the peat swamp forest in Caimpugan, Agusan del Sur Province on Mindanao Island, Philippines. *Fernando, Edwino S., Aribal, Low*

The peat swamp forest is a newly recognized forest formation in the Philippines following its discovery to science in 2005. This paper aimed to present the checklist of plant species in the peat swamp forest of Caimpugan, Agusan del Sur, where such information has been lacking. The checklist was based on the collected specimens during the rapid assessment on November 2010, intensive fieldworks on September 2011 and in the recent site visit on September 2013. One hundred and one (101) species belonging to 56 families and 81 genera were recorded. *Tristaniopsis micrantha* (Merr.) Peter G. Wilson and J.T. Waterh and *Thoracostachyum sumatranum* (Miq.) Kurzare were the most dominant species for trees and understory vegetation, respectively. Four (4) species are considered threatened such as *Hoya crassicaulis* Elmer ex Kloppenb, *Huperzia squarrosa* (G. Forst.) Trevis., both are endangered while *Asplenium nidus* L. and *Myrmecodia tuberosa* Jack are considered vulnerable. The families with the highest number of taxa observed were Rubiaceae (5 genera, 5 species), Orchidaceae (4 genera, 4 species), Lauraceae (3 genera, 4 species), Myrtaceae (2 genera, 6 species), Clusiaceae (2 genera, 5 species), Arecaceae (2 genera, 3 species), Pandanaceae (1 genus, 4 species). The rank abundance of taxa conforms to the observed percent indigenous and endemism pattern of the country based on the framework for Philippine plant conservation strategy action plan of DENR-PAWB. (Author's abstract)

Keywords: Forestry, Species composition, Caimpugan, Peat swamp forest, Agusan del Sur

Asian Journal of Biodiversity, Volume No. 5 Issue No. 1, 1-17 2014, (Filipiniana Analytics) NP

GENETICS

0203

Ecology and genetic structure of giant clams around Savu sea, East Nusa Tenggara Province, Indonesia Calumpong, Hilconida P., Tisera, Wilso A., Naguit, Ma.

Giant clams are harvested by coastal communities around Savu Sea for food. As one of the important inhabitants of the reef, their status in terms of abundance of adult population and recruits was assessed. The genetic structure of *Tridacna maxima* was also determined for use in the establishment of network of MPAs around Savu Sea. There were four species identified during the survey: *Tridacna crocea, T. maxima, T. squamosa* and *Hippopus hippopus* with *T. maxima* as the most common in all sites. Clam density ranged from 0.33 ind./ m^2 to 19 ind./ m^2 .

Population subdivision was found to be highly significant among the five *T. maxima* populations as assessed using the Analysis of Molecular Variance (AMOVA). The percentage of total molecular variation within samples was 73.20%, and that among samples was 26.80%, amounting to FST = 0.26798 which is significant (p-value = 0.014). However, pairwise comparison revealed genetic relatedness between some populations. (Author's abstract)

Keywords: Genetics, MPAs, Genetic structure, Genetic relatedness, Giant clams, Savu sea

Asian Journal of Biodiversity, Volume No. 3 Issue No. 1, 174-194 2012, (Filipiniana Analytics) NP

0204

Genetic variability within the population of the Vulnerable Mindanao Endemic Blue-Capped Kingfisher (Actenoides hombroni) using polymorphic DNA markers Nuñeza, Olga M., Casim, Lothy F., Teves, Franc

The restricted range and small population size of Mindanao endemic blue-capped kingfisher (*Actenoides hombroni*) and the degradation of its habitat provide an ideal case to study the genetics of this species. DNA samples were taken from *A. hombroni* netted from Nursery and Gabunan, Rogongon, Iligan City and Kimangkil, Bukidnon. Random amplified polymorphic DNA (RAPD) analysis and agarose gel electrophoresis were used to assess the genetic variability within its population. The random primer used had generated 25 reproducible RAPD markers showing three distinct banding patterns with low polymorphism. Shared or specific fragments were counted and genetic similarity within population was calculated. The similarity coefficient (F) estimation revealed that there were more pairs of individuals with F values equal to 1 (high genetic similarity) and having no F value equal to 0 (low genetic similarity). 157 Results suggested that there is a considerable low genetic diversity that existed within the population of *A. hombroni*, which could be explained by their geographic proximity. Findings of this study are significant most specially in the formulation of conservation strategies for the Mindanao endemic and vulnerable *A. hombroni*. (Authors' abstract)

Keywords: Genetics, Actenoides hombroni, Genetic variability, PCR, RAPD markers, Similarity coefficient, Rogongon, Ilagan City, Mt. Kimangkil, Bukidnon

Asian Journal of Biodiversity, Volume No. 3 Issue No. 1, 156-173 2012, (Filipiniana Analytics) NP

GEOLOGY

0205

Internal structure and origin of the double reefs of north Bohol and the Olango Reef Flat (Philippines) Willkom, Horst, Grobe, Hannes, Wefer, Gerold

Nine holes were drilled with a submersible hydraulic drill into the slopes and reef flats of the Caubyan and Calituban reefs as well as of Olango Flat. The maximum depth of core penetration was 11m. ¹⁴ C ages showed that the Caubyan and Calituban reefs were formed within the last 6,000 years. Corals settled on a pre-existing relief parallel to the island of Bohol, building a framework for other carbonate-producing organisms. The reef flat south of Olango has a different structure. Formation took place during a Pleistocene high sea level, e.g. 125,000 years ago. (Author's abstract)

Keywords: Geology, Reefs, Corals, Caubyan Reefs, Calituban reefs

The Philippine Scientist, Volume No. Issue No. , 83-94 2008, (Filipiniana Analytics) Fil(S) Q1 J95 v22 1985

0206

Sedimentation in channels of the reef area off northwest Bohol (Philippines) as studied with high-resolution seismic and side-scan sonar *Werner, Friedrich, Wefer, Gerold*

In channels between and off the barrier reef complex northwest of Bohol Island, high-resolution seismic and side-scan sonar surveys were made. Apart from some sheltered areas, the intra-reef channels (Calituban and Caubyan Channels) were largely free of a seismically detectable layer of young sediments. The maximum sediment thickness found in sheltered localities in the channels and in the small basin in front of the southwestern end of the channels do not exceed 5 m. In the deeper Olango Channel outside the barrier reef complex, at least 20 m of sediment were detected. However, the western, shallower part of the Olango Channel and the inlet channel connecting this channel with the intra-reef channels were also largely devoid of young sediments.

Although the deficit of young sediments in the channels is indicative of the action of (tidal) currents, the bottom character indicated otherwise a lack of bed-load transport apart from local megaripple fields due to topographical effects. Reef-derived sandy sediment of sand size is therefore thought to be retained within the reefs themselves and on their slopes, whereas fine materials were transported as suspended load by-passing the channels to the sedimentation areas. (Author's abstract)

Keywords: Geology, Calituban channel, Caubyan channel, Olango channel, Sedimentation

The Philippine Scientist, Volume No. Issue No., 95-111 2008, (Filipiniana Analytics) Fil(S) Q1 J95 v22 1985

Sedimentological study of a section of the "upper zigzag" formation along Bued River, Tuba, Benguet Reves, Milagros V., Peña, Rolando E.

Sedimentological study of the sedimentary section below the Middle Miocene Kennon Limestone along Bued River consisted of detailed description of selected local sections and subsequent evaluation of primary sedimentary structures and detailed petrographic analysis of representative rock samples.

Primary sedimentary structures shown mostly by sandstone interbeds in the dominantly conglomerate section are parallel lamination and cross stratification, normal and reverse graded bedding. Slump structures and sandwaves were also noted. Paleocurrent directions derived from reoriented foresets of cross stratification indicate a southwestern source of the sediments.

Textures and composition of the wackes and conglomerates of the section studied suggest that the sediments were principally derived from a volcanic terrain with considerable relief. These sediments were probably deposited in a nearby shallow marine basin by very strong fluvial currents whose energy diminished as it reached the basin area. Intermittent changes in current velocity during transport and at site of deposition were most likely responsible for the development of small and large scale cross stratification. (Author's abstract)

Keywords: Sedimentation and deposition, Geology, Geology, Petrographic analysis of representative rock samples

Journal of the Geological Society of the Philippines, Volume No. 24 Issue No. 1, 181-195 (Filipiniana Analytics) Fil(S) QE1 P54 v50 1995

0208

Tidal effects on groundwater in a very small tropical island: a study on the groundwater resources of Pag-asa Island, Kalayaan Island Group

Ong, John, Aguda, Nancy, Jaraula, Caroline, Mateo, Zenon, Pascua, Chelo, Foronda, Joseph

The Pag-asa Island, with its very small land area and low relief, has a very limited fresh water supply occurring as a thin freshwater lens. Climate, topography, vegetation, lithology, human abstractions, and tides affect the volume of the freshwater lens. Topographic and hydrogeologic surveys, coupled with a 72-hour groundwater-monitoring were done to assess the effects of tides on the freshwater program lens

Ground water parameters measured in wells during the monitoring program include variations in water table depths, specific electrical conductivity (SEC), and temperature. Changes in these parameters were then correlated with the observed variations of the tides.

The groundwater levels oscillate with the tides at varying amplitudes. The hydraulic properties of the lithologies making up the island's aquifer influence the amplitude of the oscillations. Groundwater level oscillations are least in the reef materials and greatest in the sandy materials where it is nearly simultaneous with the tidal variations. High electrical conductivity values are marked in wells built near the coasts and in sandy materials.

The average annual precipitation is approximately 2,020 mm. Based on empirical studies, the estimated sustainable yield for small tropical islands is 6% of the lowest annual rainfall or about 20,300 m³/yr for Pag-asa Island. (Author's abstract)

Keywords: Geology, Kalayaan island group, Pag-asa island, Hydrogeology, Small island, Groundwater, Tidal effects

Science Diliman A Journal of Pure and Applied Science, Volume No. 12 Issue No. 2, 33-44 2008, (Filipiniana Analytics) Fil(S) Q1.A3 S4 12/2 2000

HEALTH AND WELLNESS

Behavioral troubles for the newcomer doctors in the public sector hospitals of Pakistan Ullah

The concept of job burnout earned considerable interest of researchers because of its important implications for both individuals and organizations. Using qualitative research methodology, this study has explained the process of job burnout among the post-graduate doctors of the public sector hospitals of Pakistan. The data were collected from 40 post-graduate doctors of eight public sector hospitals in Pakistan using semi-structured interviews. Convenience sampling was used to select the respondents. The data collected suggested that doctors appear to face high level of demand stressors which are the starting point of burnout process. Due to the highly demanding nature of job and responsibility of life saving, doctors begin to feel emotionally exhausted. Due to the absence of supporting behavior from the colleagues and organization, doctors start using depersonalization to cope with the situation on emotional exhaustion. Finally, they begin to feel a diminished sense of personal accomplishment especially when their work environment provides little feedback and few rewards for their work accomplishments. Among few overall qualitative studies on job burnout, this is the only qualitative study conducted in Pakistan to explain the process of job burnout among doctors. This study not only explains the process of job burnout but also provides a way to control the burnout prevalence among the doctors. (Author's abstract)

Keywords: Health and wellness, Burnout, Stressors, Emotional exhaustion, Depersonalization, Personal accomplishment, Qualitative research

Asian Journal of Health, Volume No. 2 Issue No. 1, 1-15 2012, (Filipiniana Analytics) NP

The caregiver's and nurse therapist's experiences on gestalt therapy Caneda, Hazel, Lapa, Ma. Mayla Imelda M., Palompon, Daisy, Gonzaga, Joni Inocenc

The most often neglected member of the group who cares for the patients in the hospital is the informal family caregiver who often experiences emotional crisis. This study explored how gestalt therapy helps the caregiver and the personal experiences of the nurse therapist who did gestalt therapy. Utilizing phenomenological design, three caregivers were provided with gestalt therapy and interviewed. The caregivers and the nurse therapist related that through gestalt therapy there was a feeling of relief and awareness of the crisis being experienced developed by the participants. It is concluded that gestalt therapy enables the caregivers to go through their crisis by enabling them to develop relief from emotional crisis, awareness of their problems and to move on despite the continued presence of the crisis. **(Author's abstract)**

Keywords: Health and wellness, Gestalt therapy, Caregiver experiences, Nurse therapist

Asian Journal of Health, Volume No. 1 Issue No. 1, 48-59 2011, (Filipiniana Analytics) NP

Clinical environment and critical thinking skills among graduating nursing students of Liceo De Cagayan University

Kwong, Maryliet T., Gaabucayan, Rex Januarius R., Barcubero, Rudson Czar S., Acuesta, Rubie Vicky Lyn C., Acain, Kate June F., Role, Remedios S., Medio, Diana Apr

This descriptive study, which was conducted at Liceo de Cagayan Univeristy delved to determine the clinical environment of the nursing unit that the students are exposed to and the critical thinking skills of the Graduating Nursing Students of Liceo de Cagayan University. It looked into the relationship of the independent variables indicated by the clinical environment characterized by encouragement to ask question, collaboration, exposure to case studies with critical thinking skills such as comprehension, application, analysis, synthesis and evaluation being the dependent variables. The respondents are the selected graduating nursing students of Liceo de Cagayan during the school year 2006-2007. The main tool used in the data gathering during the survey was a modified questionnaire patterned from the work of Benjamin Bloom, Creative Thinking: Blooms Taxonomy. The gathered data were analyzed and presented through weighted mean. The null hypothesis set at 0.05 level of significance was tested through the Pearson r test of significant relationship. The convenience sampling technique was utilized in the study. The study found that the student nurses were almost always exposed to the clinical environment of the nursing unit. They have frequently shown their critical thinking skills in all its indicators such as the comprehension, application, analysis, synthesis and evaluation. In conclusion, the study further revealed that a significant relationship exists between critical thinking skills and the clinical environment of collaboration. (Author's abstract)

Keywords: Health and wellness

Nursing Research Journal, Volume No. 5 Issue No. 1, 2009, (Filipiniana Analytics) NP

0212

The empty nest: unvoiced concerns of the elderly Mahilum, Jofi Vald

The study investigated the unvoiced concerns of the elderly in reference to their empty nest. The descriptive research design was used in the study. The respondents were 150 older persons from selected urban and rural communities. The respondents were selected through the purposive sampling technique. The selection criteria were: a) 60 years old or above; b) Neither living alone with the family or relatives; and c) either head of household or dependent. The research tool was an interview guide/schedule formulated to answer the objectives of the study. The data were analyzed using frequencies, percentages, and rank. The theory on "empty nest" is concretized by the experiences of the elderly as they voiced out their concerns related to this phase of their lives. A good number of the elderly are household heads with own sources of income. This contradicts the assumption that the elderly depends much on their children for their needs. It is ironic that the majority of the elderly provides support to their own family. Emotional insecurity is felt for having perceived that their children will only care when they are sick. Economic insecurity is felt for having incurred additional expense for regular medication and proper diet. The pressing health care needs of the elderly are founded on older age issues on the health care, financial assistance, providing for proper diet and nutrition, healthy environment, emotional counseling, physical therapy, and recreation. **(Author's abstract)**

Keywords: Health and wellness, Elderly, Empty nest, Pressing needs, Problems, Challenges

Asian Journal of Health, Volume No. 1 Issue No. 1, 17-32 2011, (Filipiniana Analytics) NP

Environmental indicators of life expectancy Lozano, Emiliana J., Japos, Genaro V., Estrada, Ron

The study determined the global patterns of environmental indicators and life expectancy in 97 countries selected through purposive sampling. Life expectancy index is the number of years a newborn infant would live if prevailing patterns of mortality at the same time of birth were to stay the same throughout the child's life. The study used data mining with four phases: exploratory data analysis, confirmation of data for reliability, theory formulation, and theory validation. The global pattern of human development indices revealed that clustering of countries reflects similarities in environmental characteristics. Cluster 1 includes the USA and the highly developed countries in Europe, Australia and Asia. These countries have strong environmental structures. Cluster 2 includes the least developed countries in Africa and Asia with low ratings in environmental indicators. Cluster 3 is formed by Asian developing countries and other newly industrialized countries. They have low ratings in environmental sustainability indicators. Cluster 4 includes countries in the American continent, and the southern and central parts and Asia. These countries have low environmental sustainability. The global trend of life expectancy indicates that people live longer if they live in countries with sustainable environment in terms of higher environmental health, clean and potable water, and clean and fresh air. (Author's abstract)

Keywords: Health and wellness, International pattern, Life expectancy index, Gross domestic product index, Environmental health, Water stress, Air pollution

Asian Journal of Health, Volume No. 1 Issue No. 1, 1-16 2011, (Filipiniana Analytics) NP

0214

Environmental management practices: their impact on family health of the households at Sitio Parola, Macabalan, Cagayan De Oro City

Narisma, Loui John R., Lopez, Joelle Christyne M., Pabelic, JibsonJanry U., Luzano, Dafoodil O., Ellevera, April Ann A., Vasig, Sheila May N., Baluran, Flor

This descriptive study conducted at Sitio Parola, Barangay Macabalan, Cagayan de Oro City, delved into a discussion of the environmental management practices and their impact on the family health of the residents. It focused on the three major points, namely: (1) What are the environmental management practices of the households at SitioParola, Barangay Macabalan, Cagayan de Oro City in the areas of waste disposal, cleaning the surroundings, maintaining the drainage, taking care of plants and trees, and caring for the domesticated animals? (2) What are the health conditions of the families and the common illnesses they have experienced? (3) Is there a significant relationship between environmental management practices and the health condition and common health problems of the families at SitioParola, Barangay Macabalan, Cagayan de Oro City? Forty households, represented by their heads, were purposively chosen as respondents of the study. A researcher-made instrument stated in the Cebuano dialect for better understanding was the main tool used in data gathering. The questions included in the research

instrument were fixed alternative questions wherein the respondents were asked to indicate a check mark on the box opposite their answer to each query. The questions offered 4-point Likert scale response choices. Data analysis yielded the following results: On the average, the households \hat{a} Cæseldom \hat{a} do the following activities involved in environmental management; waste disposal, cleaning of surroundings, maintenance of drainage, taking care of trees, plants, as well as domesticated animals. In terms of health conditions, the most common complaints are headache, cough, loose bowel movement, fever, and colds. Environmental management practices with regard to \hat{a} Cæmaintenance of the drainage \hat{a} were very highly correlated with the perceived health conditions of the families. The rest of the environmental management practices are only slightly correlated with the residents \hat{a} CTM health condition. Basing on the findings, it may be concluded that doing activities in relation to environmental cleanliness may have a positive impact on disease prevention and health promotion, especially on drainage systems. Since the residents only \hat{a} Cæseldom \hat{a} practice environmental management, it is recommended that the city and barangay officials plan activities to promote information and implement programs related to health and environment. (Author's abstract)

Keywords: Health and wellness

Nursing Research Journal, Volume No. 5 Issue No. 1, 2009, (Filipiniana Analytics) NP

0215

Extent of nursing care rendered by student nurses among postpartum clients Lingat, Angela Michaela F., Ledesma, Odessa Adl B., Jacobe, JeliusTriztan I., Dacalos, Felipe Gerard G., Basas, Emmie G., Lingat, Ren

This descriptive study conducted in hospitals in Cagayan de Oro City - Justiniano R. Borja Memorial City Hospital (JRBCH), Cagayan de Oro Medical Center (COMC), Sabal Doctors Hospital (SDH), and Cagayan de Oro Polymedic General Hospital (CDOPGH), aimed to determine how postpartum clients perceive the extent of nursing care provided by student nurses of the aforementioned hospitals. The only criteria for choosing the respondents were that they should be patients of the mentioned hospitals and that they are postpartum clients that are taken care of by student nurses. There are 26 postpartum-respondents and 22 student-nurses included. A modified questionnaire was the main tool in gathering the data and was administered during a 3-day period. The findings of the study were divided into the following aspects: therapeutic communication: establishing rapport and gaining trust, therapeutic communication: manner of communication, physical care: attentiveness/anticipation, physical care: competence, physical care: control of environment, and teaching collaboration: flexibility. (Author's abstract)

Keywords: Health and wellness, Postpartal period, Retrogressive, Progressive

Nursing Research Journal, Volume No. 5 Issue No. 1, 2009, (Filipiniana Analytics) NP This descriptive study explores the health promotion of local migrant workers in a highly urbanized city in Southern Philippines. The respondents were the 164 workers in five of the biggest retail stores in the city. Modified questionnaires, supplemented with focus group discussions, were the main tools employed. Permission to conduct the study was requested from the Department of Labor and Employment and the store management. Written informed consent from the study participants was also sought. Data gathered were then processed using descriptive statistics. Results show that the male and female migrant workers are barely legal, just off their teenage life, attended college, mostly single, belonged to medium-sized families, with fathers either farmers or private employees and mothers who were housewives with no gainful employment. The workers had various physical and mental health problems, as well as poor health-seeking behaviors. The findings have various implications on program planning and policy making in related private and government agencies to promote the health of local migrant workers. **(Author's abstract)**

Keywords: Health and wellness, Health promotion, Migrant workers, Health problems, Health-seeking behaviors

Asian Journal of Health, Volume No. 1 Issue No. 1, 78-99 2011, (Filipiniana Analytics) NP

0217

Interactions with the chronically-ill: discovering care opportunities for holistic health care Coballes, Arianne Katr

This research is a qualitative inquiry on the caring interactions of hemodialysis nurses and End Stage Renal Disease patients. The research questions were focused on determining the caring characteristics that nurses used as they interact with the chronically-ill. A case study approach was considered appropriate by the researcher to match with the nature of the given processes. The study had been conducted in a natural setting with a total number of six hemodialysis nurse participants. Data were gathered by means of individual interviews and direct non-participant observations. The data were explored primarily within the case followed by cross case analysis incorporating thematic analysis. The data analysis generated conclusions: the existence of a unique caring relationship, the power of interpersonal teaching and the need for advocacy of end-of-life care opened doors for a better understanding of the interactions of a hemodialysis nurse and a chrnically-ill patient. (Author's abstract)

Keywords: Health and wellness, Nurses, Hemodialysis, Nurse-patient interaction, Chronic kidney disease

0218

Level of awareness on health effects of second hand tobacco smoke among nonsmokers in selected bars in Cagayan De Oro City

Quabo, Septchie C., Manoto, Anthony Oliver B., Manganar, Maria Amor C., Francisco, Karlo Misael N., Ampong, April Kristy C., Vale, Lainie D., Sy, E

Asian Journal of Health, Volume No. 1 Issue No. 1, 33-47 2011, (Filipiniana Analytics) NP

This study aimed to determine the level of awareness on the health effects of secondhand tobacco smoke among nonsmokers in selected bars in Cagavan de Oro City. It focused on the three major points: What is the profile of the respondents in terms of: age, educational attainment, civil status, gender and frequency in going to bars? (2) What is the level of awareness on the health effects of secondhand tobacco smoke among the respondents?(3) Is there a significant difference in the level of awareness on the health effects of secondhand tobacco smoke when respondents were grouped according to: age, educational attainment, civil status, gender and frequency in going to bars? In answering these problems, the researchers used the descriptive design. The method was further used to determine if there was significant difference in the level of awareness on health effects of secondhand tobacco smoke when the respondents were grouped according to age, educational attainment, civil status, gender and frequency if going to bars. The analyses yielded the following results: (1) The majority of the respondents are 21-25 years old, college level, single, female and go to the bar once a week. (2) The respondents are very aware on persistent cough and nicotine addiction as the health effects of second hand tobacco smoke. (3) The respondents significantly differ in their level of awareness on the health effects of secondhand tobacco smoke when they were grouped according to educational attainment. In conclusion, the respondents are not very aware of the other negative health effects of secondhand tobacco smoke. The respondents' educational attainment has significant influence on their level of awareness on the health effects of second hand tobacco smoke. (Author's abstract)

Keywords: Health and wellness, Second hand tobacco smoke, Level of awareness, Health effects

Nursing Research Journal, Volume No. 5 Issue No. 1, 2009, (Filipiniana Analytics) NP

0219

Level of independence in performing activities of daily living among older persons in Barangay Kauswagan, Cagayan De Oro City

Palarca, Eden A., Ladlad, Justine B., Ipanag, Kristine M., Gebe, Mary Hope Charmaine P., Elio, Angela Corazon B., Arrojado, Donald A., Basas, Emmi

This descriptive study aimed to identify the level of independence in performing activities of daily living among older people in Barangay Kauswagan, Cagayan do Oro City. It focused on three major themes: (1) the profile of the respondents in terms age gender, educational attainment and health status (2) the level of independence in performing the activities of daily living among elderly in terms of bathing, dressing, toileting, transferring, continence and feeding and (3) the significant difference in the level of independence in performing the activities of daily living among elderly when respondents are grouped according to age, gender, educational attainment and health status. The purposive sampling method was used in finding the respondents of the study which comprised of 50 elderly. An adapted standardized questionnaire was the main tool used based on the concept of Mary She/key RN, MSN, PhD and Meredith Wallace, PhD, RN, MSN, CS. called Katz Index of Independence in Activities of Daily Living or commonly referred to as the Katz ADL. The following are the results of study: In terms of age, most of the respondents were 70-74 years old, same were elementary level others were elementary graduates, and suffering from metabolic disorders, specifically diabetes mellitus In general, the respondents degree of independence in performing activities of daily living in terms of bathing, dressing, toileting, transferring, continence and feeding is high based on age, gender, educational attainment and health status. There is no significant difference on the level of independence in performing activities of daily living when respondents are grouped according to age, gender and educational attainment. A significant difference existed when respondents are grouped according to health status. In conclusion, senior citizens or elderly people when seen with afflictions or diseases that affect their physical stamina in doing things like bathing, feeding, transferring and the like independent is very much compromised. This is a very revealing finding to open the eves of the health care providers and other stakeholders to design appropriate activities or programs, may it be social, medical, etc. that will enhance the health status of the elderly. (Author's abstract)

Keywords: Health and wellness, Level of independence in bathing, Level of independence in toileting, Level of independence in dressing, Level of independence in feeding, Level of independence in transferring, Level of independence in continence

Nursing Research Journal, Volume No. 5 Issue No. 1, 2009, (Filipiniana Analytics) NP

0220

Molecular identification of T4 and T5 genotypes of *Acanthamoeba* isolates in the Philippines

Buerano, Corazon C., Trinidad, Abigail D., Fajardo, Lindsay Sydney N., Cua, Irwin Y., Baclig, Michael O., Natividad, Filipinas F.

Acanthamoeba species are ubiquitous free-living single-celled, opportunistic pathogens, which can be isolated from water, soil, dust in the air, and from other organisms. It can cause sight threatening Acanthamoeba keratitis as well as the rare but fatal encephalitis in humans. Traditionally, laboratory procedures to detect this organism include culture on non-nutrient agar with heat-killed E. coli (NNE) and microscopic examination. Identification can easily be done at the genus level but not at the species level. A recent way of detecting and identifying the organism propagated on NNE is through molecular means. This technique is based on the presence of ASA.S1, a partial 18S ribosomal DNA (Rns) gene unique to the genus. Subgeneric level of identification can be achieved by genotyping. Here we report on the genotyping of Acanthamoeba species in corneal scrapings from three keratitis patients and in nasal swabs from six unrelated healthy volunteers. A 461-bp amplicon was amplified using genus specific JDP1 and JPD2 primers. DNA sequencing of the PCR product was carried out using conserved 892 and 892C primers to determine the sequence of diagnostic fragment (DF3) of Rns. Phylogenetic tree was constructed using MEGA5. Results showed that isolates from all three corneal scrapings and from five out of six nasal swabs belonged to genotypeT4, whereas one nasal swab was of the genotype T5. Phylogenetic analysis showed that these isolates clustered with the reference sequences most similar to them. T4 (89%) is the predominant genotype found among nine isolates analyzed in this study. Molecular-based technique is a useful tool for the identification of genotypes of Acanthamoeba from other free-living amoebas. Genotyping helps in decision-making for clinical management of Acanthamoeba infection, in tracking the source of infection, as well as in epidemiological and environmental studies. (Author's abstract)

Keywords: Health and wellness, Acanthamoeba, Genotyping, Keratitis, 18S ribosomal DNA

Transactions of the National Academy of Science and Technology, Volume No. 34 Issue No. 1, page 147 2008, (Filipiniana Analytics) Fil(S) Q149.P5 N25 34/1 2012

0221

Predictors of depression among institutionalized elderly clients Bantugan, Jose, Ente Ruth, Palompon, Daisy, Florida, Kristine R The elderly population is considered vulnerable to stress. One common stereotype of growing older is that there is a high chance of becoming depressed. Utilizing a descriptive design, data were gathered from thirty-seven (37) respondents in two geriatric facilities in Cebu. A researcher-administered questionnaire was utilized containing the demographic data, Self-esteem Scale adapted from Rosenberg, Berlin Social Support Scale adopted from Schwarzer and Schulz and Geriatric Depression Scale. Findings revealed that majority of the respondents who are institutionalized are female, single and has acquired elementary level in terms of education with a mean age of 76. Moreover, respondents had moderate self-esteem, adequate social support and a depression level of moderate to severe. Only social support showed a significant correlation with depression. It is concluded that although social support is a necessary element for the prevention of depression among institutionalized geriatric clients. (Author's abstract)

Keywords: Health and wellness, Predictors of depression, Institutionalized elderly clients, Elderly population

Asian Journal of Health, Volume No. 1 Issue No. 1, 136-150 2011, (Filipiniana Analytics) NP

Psychological well-being and coping mechanisms of battered women *Rodriguez, Tes*

The study determined the battered women's degree of psychological well-being, coping mechanisms and the relationship between psychological well-being and coping mechanisms. The variables were measured using the Caroll Ryff Scales of Psychological Well-Being and Ways of Coping Inventory and test of relationship was made using the Pearson r. The results show that the battered women had very good psychological well-being and positive reappraisal, seeking social support, accepting responsibility and planful problem-solving coping mechanisms were employed in succumbing distress associated with the experience from domestic violence. Psychological well-being and coping mechanisms were correlated but at various strengths. The findings reveal that battered women must not prolong their stay at home nor stay in the abusive relationship but run for shelter and seek help to promptly restore the shattered psychological well-being. An excellent psychological well-being leads them to cope with the crisis through problem-focused type of coping mechanisms. However, emotion-focused coping mechanisms are used when psychological well-being is not in excellent status. Constant supervision and monitoring must be given to them even if they are subjected to therapeutic sessions. A trained psychiatrist, psychologist and social worker are required to efficiently and effectively respond to the victims. Finally, a comprehensive intervention program encompassing all dimensions of a person must be crafted, designed and implemented in support to the battered women in the shelter home. **(Author's abstract)**

Keywords: Health and wellness, Psychological well-being, Coping mechanism, Battered women

Asian Journal of Health, Volume No. 1 Issue No. 1, 119-135 2011, (Filipiniana Analytics) NP

MARINE SCIENCE

An annotated checklist of macrobenthic algae of the western coast of Zamboanga City (Mindanao, Philippines)

Tito, O., Sescon, C., Adalla, C., Asdani, J., Basilio, E. M., Climaco, A., Dagalea, A., Luna, M., Uddin, Y., Vega, R. A.

Seaweed collections were made at several sites along the western coast of Zamboanga City from July to August 1999. Ninety-four (94) taxa were identified. These represent the three (3) major algal divisions broken down into fifteen (15) orders, twenty-six (26) families and forty-four (44) genera.

Six species: *Botryocladia leptopoda* (J. Agardh) Kylin, *Halimeda distorta* (Yamada) Colinvaux, *Halimeda melanesica* Valet, *Kallymenia perforata* J. Agardh, *Sarconema filiforme* (Sonder) kylin and *Solieria robusta* (Greville) Kylin, and the genus *Sarconema* Zanardini represent new records for Zamboanga and the Philippines. All specimens are deposited in the Zamboanga State College of marine Sciences and Technology Herbarium. (Author's abstract)

Keywords: Marine science, Checklist, Seaweed species, New records, Zamboanga

Science Diliman A Journal of Pure and Applied Science, Volume No. 12 Issue No. 2, 67-74 2008, (Filipiniana Analytics) Fil(S) Q1.A3 S4 12/2 2000

0224

Characterization of a ΰ-Carrageenase-producing marine bacterium, isolate ALAB-001 Tayco, Crimson C., Tablizo, Francis A., Regalia, Raymond S., Lluisma, Arturo O.

Carrageenases are glycoside hydrolases that specifically degrade carrageenan, a highly anionic polysaccharide found in the cell wall of many red algal species. To date, only a few of these enzymes have been characterized, and identifying additional sources is important considering the role of carrageenases in production of carrageenan derivatives. In this paper, we report the characterization of a marine bacterial strain that produces $\hat{1}^{\circ}$ -carrageenase. The strain, which we designate as ALAB-001, was isolated from diseased thallus fragments of the red alga *Kappaphycus alvarezii*, a commercially important source of carrageenan. Genotypic and phenotypic data suggest that the isolate belongs to a relatively poorly-characterized group of bacteria in Alteromonadaseae (Alteromonadales) and is closely related to *Marinimicrobium* and *Microbulbifer*. Significant $\hat{1}^{\circ}$ -carrageenane activity (175 U/mL) was evident when the isolate was grown in the presence of $\hat{1}^{\circ}$ -carrageenan, and $\hat{1}^{\circ}$ -carrageenan was significantly lower (25-50 U/mL). Laboratory-scale production of the enzyme using batch cultures of the isolate was achieved by optimizing culture medium, length of culture time and degree temperature. Optimal growth was observed at 25°C, though the isolate survived at 30°C. An in-house developed seawater-based medium containing equal concentrations of yeast extract and tryptone (YETS) yielded the highest cell growth based on total protein concentration (~ 3000 µg/mL) and enzyme activity (~45 U/mL). (Author's abstract)

Keywords: Marine science, \hat{l}° -Carrageenan, \hat{l}° -Carrageenase, Carrageenan-degrading bacteria, Kappaphycus alvarezii

Philippine Journal of Science, Volume No. 142 Issue No. 1, 45-54 2008, (Filipiniana Analytics) Fil(S) Q1 P55 142/1 2013

Development and application of genetic markers for population structure analysis of the blue coral reef starfish, *Linckia laevigata* (Linn) (*Echinodermata:Asteroidea*) *Magsino, Richard M., Juinio-Meñez, Marie Antonette R., Ravago, Rachel V.*

The tropical blue coral reef starfish, *Linckia laevigata*, is a good model species for examining genetic affinities among reef populations. Allozymes and mtDNA PCR-RFLP genetic markers were developed for this species. A total of nine (9) polymorphic and three (3) monomorphic allozyme marker loci were resolved out of 25 enzyme systems assessed for genetic activity in three electrophoretic buffers used. Polymorphic mitochondrial DNA gene segments of the control region with flanking sequences and the cytochrome oxidase I (CO1) were amplified after examining several gene regions for PCR product amplifications. Restriction enzyme screening of the CO1 region revealed variation of restriction profiles in seven (7) out of twenty (20) enzymes initially tested. Preliminary comparison of the genetic structure of *L. laevigata* based on allozyme and mtDNA markers for selected reefs are presented. The development of these genetic markers will be useful in inferring gene flow and reef connectivity in the South China Sea, Palawan shelf, and Sulu Sea. (Author's abstract)

Keywords: Marine science, Genetic markers, Allozymes, PCR-RFLP, Linckia laevigata, Population genetics, Asteroidea

Science Diliman A Journal of Pure and Applied Science, Volume No. 12 Issue No. 2, 10-16 2008, (Filipiniana Analytics) Fil(S) Q1.A3 S4 12/2 2000

0226

Economic modeling of residual generation for the Lingayen Gulf Watershed *McGlone, Douglas H., Caringal, Herminia R.*

The Philippines is one of four countries involved in the Southeast Asian core project of LOICZ (Land Ocean Interactions in the Coastal Zone) which has among its general goals the determination of how changes in human activities affect the fluxes of materials between land, sea, and atmosphere through the coastal zone. The economic component of the Philippine project addresses the questions: "Hoe does a changes in economic activity affect coastal waters?" Of particular concern is the introduction of anthropogenically-derived residuals (N, P, C, SS) into coastal waters.

A regional input-output (IO) mode for Region 1 of the Philippines has been developed to estimate how projected changes in economic activity may affect residual flows into Lingayen Gulf. A residual coefficient matrix, derived from information obtained with a rapid assessment model (RA) of residual generation in the Lingayen Gulf watershed, has been incorporated into the IO model. Such a model allows for analysis of various economic scenarios for the region, with projections of residual generation as the output. The resulting changes in residual flows may then serve as inputs to biogeochemical models of Lingayen Gulf. From this process, the impact of various economic scenarios on the water quality of Lingayen Gulf may be ascertained.

This paper discusses and compares the RA and IO models of residual generation for the Lingayen Gulf watershed and provides examples of the scenario analysis process. (Author's abstract)

Keywords: Marine science, Economic modeling, Lingayen Gulf, Rapid assessment watershed, Residual generation

Science Diliman A Journal of Pure and Applied Science, Volume No. 12 Issue No. 2, 17-27 2008, (Filipiniana Analytics) Fil(S) Q1.A3 S4 12/2 2000

0227

Enhancement effect of sea urchin grow-out cages in Lucero, Bolinao, Pangasinan Malay, Maria Celia Defrance, Bangi, Helen Grace P., Juinio-Meñez, Marie Antonette R.

A preliminary study was conducted was conducted on the environmental impact of sea urchin (*Tripneustes gratilla Linnaeas*) grow-out culture in Lucero, Bolinao, Pangasinan. It was hypothesized that the feces generated by the caged urchins (~6,000 individuals at any one time) might cause localised sediment organic enrichment and subsequent shifts in benthic faunal communities. Results from preliminary surveys conducted in April and August of 1999 indicated minimal impact of sea urchin grow-out culture on the local reef flat community. Some enhancement of faunal abundance and sediment organic matter content in the cage area were noted; however, the impact was limited to a radius of 5-25 meters from the grow-out cages. The enhancement effects appeared to be seasonal occurrences that were dependent on local currents and degree of wave exposure. Epiphyte biomass, total suspended solids, sediment grain size, and relative water movement seemed largely unaffected by sea urchin grow-out culture. However, more frequent and thorough samplings are needed to validate these initial results. The presence of localised enrichment in sediment organic content and epibenthic faunal density suggest the possibility of converting the sea urchin grow-out area into polyculture systems that would make more efficient use of the food resources available while minimizing potential anthropogenic impacts on the environment. (Author's abstract)

Keywords: Marine science, Sea urchin, Aquaculture, Environmental impact, Enhancement effect, Organic enrichment

Science Diliman A Journal of Pure and Applied Science, Volume No. 12 Issue No. 2, 1-9 2008, (Filipiniana Analytics) Fil(S) Q1.A3 S4 12/2 2000

0228

Establishment and implementation of the Balingasay Marine Protected Area: a community-based approach

Salmo, III, Severino G., Turion, Renato A., Juinio-Meñez, Marie Antonette R., Aliño, Porfirio M.

A community-based approach in the establishment and implementation of a marine protected area (MPA) in Balingasay, Bolinao, Pangasinan is presented. The factors necessary to facilitate the successful establishment and implementation of a community-managed MPA include heightening of environmental awareness, community mobilization, and legal/institutional and financial assistance. A heightened environmental awareness encouraged the community to undertake resource management action. The formation of a people's organization, SAMMABAL (Samahan ng mga Mangingisda at Mamamayan ng Balingasay), was crucial in assessing environmental problems (e.g., overfishing) and identifying the establishment of an MPA as a management tool to address the problem. SAMMABAL was also instrumental in eliciting community support for the issuance of a municipal ordinance in the establishment of the MPA. Subsequently, the organization initiated the patrolling of the MPA. Institutions involved in the community-based management of the MPA also included the multi-sectoral council (BRMC – Balingasay Resource Management Council) and representatives from the barangay council and the municipal government. This institutional arrangement has proven to be very resilient, indicating a high probability of sustaining its successes despite some obstacles and shortcomings. Clear delineation of the role and functions of the institutions and the stakeholders was essential in advancing the initiative. This case study will draw on the lessons from the experience of a four-year community-managed MPA. (Author's abstract)

Keywords: Marine science, Community-based approach, Environmental awareness, Management tool, Marine protected area (MPA), Community mobilization, Inter-institutional interaction, CBCRM

Science Diliman A Journal of Pure and Applied Science, Volume No. 12 Issue No. 2, 121-128 2008, (Filipiniana Analytics) Fil(S) Q1.A3 S4 12/2 2000

Ethnobotany of Solieria robusta (Gigartinales, Rhodophyta) in Zamboanga, Philippines Tito, Oliver D., Liao, Lawrence M.

A market survey was made at the Zamboanga City public market to determine the diversity of economic macrobenthic algae sold by the local population. Interviews were conducted to obtain information on local names, uses, stock distribution, method of harvest, seasonality, and some aspects of marketing practices. (Author's abstract)

Keywords: Marine science, Ethnobotany, Solieria robusta, Seaweed utilization

Science Diliman A Journal of Pure and Applied Science, Volume No. 12 Issue No. 2, 75-77 2008, (Filipiniana Analytics) Fil(S) Q1.A3 S4 12/2 2000

0230

Growth and reproductive pattern of intertidal and subtidal Sargassum (Sargassaceae, Phaeophyta) populations in Bolinao, Pangasinan Ortiz, Ariel T., Trono, Jr., Gavino C.

First and second year populations of the Sargassum in the intertidal and subtidal portions of a seagrass bed were tagged and monitored over a period of 14 months (May 1996-June 1997). Statistical analysis (ANOVA and MANOVA) showed that there was a temporal variation in the thallus length of the *Sargassum* population between the intertidal and the subtidal regions (p<0.05). The subtidal population have longer thallus length than the intertidal population. Mean plant heights in the intertidal area (20.5 cm [1st year age group] and 25.0 cm [2nd year age group]) were significantly shorter than those in the subtidal region (26.0 cm [1st year age group] and 31.6cm [2nd year age group]). *Sargassum* population in the intertidal region reached full maturity a month earlier (November) than those in the subtidal area (December). Peak fertility stage occurred in December for both regions. **(Author's abstract)**

Keywords: Marine science, Sargassum, Growth rate, Fertility, Reproductive pattern, Seasonality

Science Diliman A Journal of Pure and Applied Science, Volume No. 12 Issue No. 2, 45-50 2008, (Filipiniana Analytics) Fil(S) Q1.A3 S4 12/2 2000

Induction of symbiosis in *Tridacna crocea* (C. Bivalvia, F. Tridacnidae) using Zooxanthellae from T. gigas and from T. crocea: effects on clam survival and growth Mingoa-Licuanan, S. Suzanne

Survival and growth of post-metamorphic *Tridacna crocea* juveniles were improved by inducing symbiosis with fresh or cloned zooxanthellae (Tg 10) derived from *T. gigas*. Although clam growth was best with Tc4, survival was also poorest. Symbiosis with specific zooxanthellae was established at the pediveliger stage, with reinfection a few days after. It is suggested that while survival and growth may be easily monitored and may be used as indicators of good performance of a functional holobiont, other phenotypic traits such as resistance to disease, bleaching, etc. may also be considered in evaluating the effectivity of the selected zooxanthellae. **(Author's abstract)**

Keywords: Marine science, Symbiosis, Tridacna crocea, Zooxanthellae, Tridacna gigas, Survival, Growth

Science Diliman A Journal of Pure and Applied Science, Volume No. 12 Issue No. 2, 28-32 2008, (Filipiniana Analytics) Fil(S) Q1.A3 S4 12/2 2000

0232

Milkfish (*Chanos chanos*) fry concession system in Bolinao, Pangasinan: implications to coastal resources management Salmo, III, Severino G., Juinio-Meñez, Marie Antonette R., Aliño, Porfirio M.

The ecological and socioeconomic implications of the concession system on milkfish (Chanos chanos Forssk.) fry in Bolinao, Pangasinan were evaluated from 1996 to 1999. Monitoring of landed catch from 1996 to 1998 showed that the seasonal trend and annual volume of catch varied widely during the three-year period. The fry season in 1996 and 1997 lasted seven months, starting from the second week of April to the second week of October. However, during the 1998 season, fry were available for eight months starting in the second week of March and ending in November. The peak period also varied considerably during the three-year period. In 1996, peak abundance of fry was observed in the last week of July while in 1997 and 1998, the peak was during the second week of May. The volume of total catch for the entire season also varied widely, from as low as ~400,000 fry (1997) to as high as 2,400,000 fry (1996). The concessionaire "postor" has the sole right to buy all fry caught within the municipal waters. Thus, s/he dictates the buying price. Moreover, the existing concession system has no mechanism to regulate harvest of milkfish fry gathering. This arrangement allows the concessionaire to enjoy huge economic benefits while the fry gatherers only get a minimal share in the income. To promote sustainable and equitable harvest of milkfish fry, a new access arrangement through a permit system was proposed by the fry gatherers. The proposed permit system will promote a sustainable harvest of milkfish fry through the implementation of a closed period during the fry season. Compared to the present concession system, the permit system is believed to be more equitable because of the abolition of the 1/3 cut levied by the concessionaire on the landed catch. The permit system also facilitates a mechanism that provides for transparency on the selling/buying price. More importantly, fry

gatherers will have the opportunity to sell to buyers offering a relatively higher in buying price. In addition, fry gatherers may also opt to grow out milkfish fry to fingerlings which may potentially give them higher economic returns for their catch. (Author's abstract)

Keywords: Marine science, Milkfish fry, Concession system, Economic benefits, Sustainable/equitable resource use, Permit system

Science Diliman A Journal of Pure and Applied Science, Volume No. 12 Issue No. 2, 59-66 2008, (Filipiniana Analytics) Fil(S) Q1.A3 S4 12/2 2000

0233

Nitrogen and phosphorus in coastal systems: focus on dissolved organic N and P Padayao, Daisy O., San Diego-McGlone, Maria Lourdes

Quantification of dissolved organic phosphorus (DOP) and dissolved organic nitrogen (DON) levels, and the relative importance of the organic fraction at various habitats (river, seagrass bed, mangrove area, coral reef, fishpen, and ocean) were the focus of this study. DON concentrations ranged from 9.5 to 44.3 µM during the dry season and from 10.9 to 23.7 µM during the wet season. DOP values ranged from 0.3 to 0.4 µM during the dry season and from 1.0 to 1.6 µM during the wet season. DON was 70-90% of the dissolved fraction in the first five habitats for both dry and wet seasons. DOP was approximately 15-35% during the dry season and 50-60% during the wet season. DON was highest in the river and lowest in the coral reef area for both seasons. High DOP concentrations were determined in the river and mangrove area in the dry season while lowest values were seen in the coral reef area. During the wet season, DOP was highest in the coral reef area and lowest in the mangrove area. When compared with oceanic systems, dissolved inorganic nitrogen (DIN) and dissolved inorganic phosphorus (DIP) have higher percentages (25-58% for DIN and 71-83% for DIP) in the open ocean than in coastal areas (10-32% for DIN and 62-67% for DIP). However, DON and DOP were the dominant forms in the coastal sites (42-75% DON vs 7-32% DIN and 17-30% DOP vs35-67% DIP). The smaller fraction of the organic forms of N and P in the open ocean may be indicative of the greater efficiency in nutrient recycling/regeneration in the open ocean than in the coastal area. N:P ratios in the five habitats ranged from 2 to 14 with the highest ratio in the coral reef area. (Author's abstract)

Keywords: Marine science, Dissolved organic nitrogen (DON), Dissolved organic phosphorus (DOP), Dissolved inorganic nitrogen (DIN), Dissolved inorganic phosphorus (DIP), Coastal habitals

Science Diliman A Journal of Pure and Applied Science, Volume No. 12 Issue No. 2, 51-58 2008, (Filipiniana Analytics) Fil(S) Q1.A3 S4 12/2 2000

0234

Participatory metalegal and legal processes for the coastal development plan of Bolinao, Pangasinan Talaue-McManus, Liana, Asido, Jr., Wenceslao N.

The Coastal Development Plan that was passed into alw as the Municipal Fisheries Ordinance of Bolinao, Pangasinan, is a concrete example of community participation in policy development. Among the effective metalegal strategies used during the evolution of the plan into an ordinance were the lobbies staged by the federation of people's organizations (KAISAKA), the Municipal Fisheries and Aquatic Resources Management Council (MFARMC), and the Municipal Mayor. The capacity of various sectors to participate actively in the passage of the plan was enhanced through legal consultations and training provided by the Marine Fisheries Resources Management Project, in partnership with Tanggol Kalikasan, the legal arm of Haribon Foundation. The experience underscores the need for development projects to include the metalegal training of community constituents as a requisite for the latter to actively participate in the formulation of policies and laws for coastal resources management. (Author's abstract)

Keywords: Marine science, Metalegal training, Coastal development planning, CBCRM

Science Diliman A Journal of Pure and Applied Science, Volume No. 12 Issue No. 2, 101-109 2008, (Filipiniana Analytics) Fil(S) Q1.A3 S4 12/2 2000

Participatory monitoring and feedback system *Verceles, Lailany F., Talaue-McManus, Liana, Aliño, Porfirio M.*

The aquaculture industry in Caquiputan Channel contributed P2.3M to municipal revenues in 1998. However, the uncontrolled construction of fish pens and fish cages have contributed to the deterioration of the water quality in the Caquiputan Channel. Despite monitoring of parameters (e.g. DO, salinity, and temperature), low production was implicated because of limited dissolved oxygen supply.

A participatory monitoring of fish pens and fish cages was facilitated to pave the way for sustainable aquaculture. A system for monitoring and disseminating information on water quality, production and zonation of pens and cages, has been pursued to assess the situation and identify mechanisms to regulate aquaculture activities. The feedback system adopted has raised and facilitated environmental awareness, issue identification and implementation, of solutions to some major issues. Furthermore, the results have resulted in policy reforms, as embodied in the provisions on aquaculture in the Municipal Fisheries Ordinance. (Author's abstract)

Keywords: Marine science, Participatory monitoring, Fishpens and fishcages, Caquiputan Channel

Science Diliman A Journal of Pure and Applied Science, Volume No. 12 Issue No. 2, 78-87 2008, (Filipiniana Analytics) Fil(S) Q1.A3 S4 12/2 2000

0236

Strategies in mobilizing coastal communities for community-based coastal resources management in Bolinao, Pangasinan

Pinat, Jacquelyn, Turion, Renato A., Asido, Jr., Wenceslao N., Talaue-McManus, Liana

The Marine Fishery Resources management Project (MFRMP) hopes to facilitate partnership between the local government unit and the local communities in managing the coastal resources of Bolinao. Mobilization, both at the community and municipal levels, has been very important in promoting community-based strategies in coastal resources management. The community organization process in the municipality has gone through several levels; and different organizations have been formed. In empowering individuals and organizations, strategies tend to be varied and fluid depending on the need, the reason for mobilization, and the resources at hand. The Bolinao experience showcases different strategies used in implementing the resource enhancement, coastal zoning, harvest regulation, and capability building components of the program. These have included the formation of people's organizations, the mobilization of zonal action teams for each of the four zones, the creation and orientation of fishery and aquatic resources management councils at the barangay and municipal levels, and the active collaboration with the local government unit. These strategies and approaches have provided the people and the communities a wealth of experience and lessons that provide helpful insights in undertaking different endeavors. The strategies employed in the mobilization activities have significantly contributed to the empowerment of communities and individuals who are the primary managers of their resources. (Author's abstract)

Keywords: Marine science, Community mobilization, Participatory planning, Integrated management, CBCRM, Coastal resources management

Science Diliman A Journal of Pure and Applied Science, Volume No. 12 Issue No. 2, 110-120 2008, (Filipiniana Analytics) Fil(S) Q1.A3 S4 12/2 2000

0237

The use of science in environmental advocacy for coastal resource management *Aguinaldo, Maria Maida S., Talaue-McManus, Liana*

Environmental advocacy in Bolinao has played an important role in the prevention, remediation, and rehabilitation of potential and felt impacts of the various activities in the coastal zone. Most initiatives have been spurred by the sharing of knowledge and information in mobilizing community advocates. Facilitating action in four key areas-development planning, coastal aquaculture, concession systems, and tourism- involved the provision of venues for information transfer. This included the conduct of orientations and consultations, sharing of results of research project undertaken, lobbying, and use of primers, newsletters, and theater. Mechanisms for sustaining these actions and upholding the Coastal Resources Management (CRM) principles (sustainable, equitable, empowering) long after projects have been phased out were initiated through the establishment of a Coastal Resource Management Center, and the institutionalization activities through existing institutions, such as the local government, academic institutions, and peoples' organizations.

Maximizing knowledge and information, popularizing information, and sharing this with members of the community and getting them to use it, as well as enjoining them to act, are the challenges that must be faced. Environmental advocacy, as a tool empowering different community sectors in evolving a consensus for CRM has become an integral feature of development work in Bolinao. (Author's abstract)

Keywords: Marine science, Environmental advocacy, Information transfer, Coastal zone management, CBCRM, Resource management

Science Diliman A Journal of Pure and Applied Science, Volume No. 12 Issue No. 2, 88-100 2008, (Filipiniana Analytics) Fil(S) Q1.A3 S4 12/2 2000

MATHEMATICS

Numerical computations on feedback control state estimation of the kuramoto-sivashinsky equation

Lampayan, Valentine Blez L., Arellano, Christian Victor L., Lope, Jose Ernie C., del Rosario, Ricardo C.H.

We considered the problem of minimizing the fluctuations of thin film flow which was modeled by the Kuramoto-Sivashinsky equation, a scalar nonlinear partial differential equation. We specifically addressed the problems of determining the optimal locations of the sensors and actuators, estimating the state from partial state observations and formulating a feedback control method. The control methodology was based on the LQR/LQG theory and its extension to nonlinear problems. In the numerical implementation of the feedback control methods, we considered systems with different viscosities, and we compared the performance of feedback controls based on the linear and nonlinear systems. Our results showed that the control and state estimation strategies based on the linear system performed as well as the strategies based on the nonlinear system. This result is useful for real-time applications where the computation time for the feedback coefficients is crucial. (Author's abstract)

Keywords: Mathematics, Feedback control, Kuramoto-Sivashinsky, LQR, LQG, State estimation, Thin film flow control

Philippine Journal of Science, Volume No. 141 Issue No. 1, 89-101 2008, (Filipiniana Analytics) Fil(S) Q1 P55 141/1 2012

0239

On the representation of AB-generalized Lucas sequence by Hessenberg matrices *Frondoza, Michael B., Labendia, Mhelmar A.*

Let n be a positive integer. The Lucas sequence {Ln} has the recurrence relation $L_{n+1}=L_n+L_{n-1}$, where $L_0=2$ and $L_1=1$. A lower Hessenberg matrix $M_n = (a_{ij})$ is an nXn matrix where $a_{jk} = 0$ whenever k>j+1 and $a_{j(j+1)} \neq 0$ for some j. In this paper, we introduce the second order linear recurrence relation of the AB-generalized Lucas sequence { v_n } and give the relationships between { v_n } and Hessenberg permanents and determinants. Moreover, we also give representations of { v_{2n} } and { v_{2n+1} }. (Author's abstract)

Keywords: Mathematics, Lucas sequence, AB-generalized Lucas sequence, Hessenberg matrix, Hessenberg permanent, Hessenberg determinant

Transactions of the National Academy of Science and Technology, Volume No. 34 Issue No. 1, page 129 2008, (Filipiniana Analytics) Fil(S) Q149.P5 N25 34/1 2012

MEDICINE

The accessibility and utilization of mobile phones among TB patients: a feasibility survey for short messaging service (SMS) as s strategy to improve adherence to TB services *Alejandria, Marissa M., Amarillo, Maria Lourdes E., Lansang, Mary Ann D.*

Objectives: To estimate the proportion of TB patients who have access to mobile phones and to describe mobile
practicesofTBpatients.

Methods: Sic public and six private TB clinics representing the four districts of Metro Manila and one institution in Cavite were purposively selected for this cross-sectional survey conducted in 2006. Using an intervieweradministered questionnaire, patients suspected to have TB, those newly diagnosed and those currently on treatment under either DOTS or non-DOTS were interviewed.

Results: Of the 337 patients interviewed, 65% (95% CI 60.2 to 70.6) have access to mobile phones (45% currently own a mobile phone and 20% share a mobile phone with a household member). The mean duration of ownership was 1.8 years (SD1.7). Almost all had prepaid subscriptions (99%) and 72% had some credit/load in their mobile phones at the time of interview. Of the three existing networks, subscription to SMART was highest, followed by the Globe network. Most of them use their phones for social purposes and emergency-related communications.

Most of the respondents were male (60%) in the age group of 20-39 (54%) and 40-59 years old (33%). Half of the respondents were from public TB clinics (52%). On multivariable analysis, patients consulting in private clinics [OR 2.25, 95% CI 1.36 to 3.74], belonging to the younger age of <20 [OR4.54, 95% CI 1.48 to 13.89] and 20-39 years old [OR 2.56, 95% CI 1.48 to 4.39], who had college education [OR 4.97, 95% CI 1.84 to 13.43] and currently employed [OR 3.23, 95% CI 1.92 to 5.47] were more likely to have access to mobile phones.

Conclusion: Considering the fair access (65%) to mobile phones of the patients interviewed, it is feasible to conduct a pilot intervention using SMS as a strategy to improve adherence to treatment. The intervention should consider that majority use prepaid subscriptions and that sharing of phones among household members is a common practice. (Author's abstract)

Keywords: Medicine, Tuberculosis, Short-messaging service, Survey

Acta Medica Philippina, Volume No. 43 Issue No. 4, 10-14 2008, (Filipiniana Analytics) Fil(S) R97.4 A21 43/4 2009

Adenocarcinoma of the fallopian tube: Primary or Metastatic? Malvar, Ellsa Patricia May R.

The study on Adenocarcinoma of the fallopian tube is presented through a case report on the 48 year old woman admitted in the De La Salle University College of Medicine, due to vaginal bleeding. She had stopped menstruating three years prior to admission and had started bleeding seven months before her admission. "Clinical history was observed to be unremarkable." Adenocarcinoma was considered rare and this case attempted to prove if the patient's case is one wherein the tumor is a primary tumor or a metastatic tumor. Since the patient declined further medical testing and procedures, the researchers relied on the initial data available. From these data, various metastasis of carcinomas of urinary tract, lungs, breasts and others were ruled out. The case was concluded to be that of a primary adenocarcinoma of the fallopian tube.

Keywords: Adenocarcinoma, Fallopian tube, Medicine, Vaginal bleeding

The Medical Journal of De La Salle University, Volume No. 11 Issue No. 2, 27-32 2008, (Filipiniana Analytics) Fil(S) R935 M468 11/2 1995

0242

Antimicrobial, antipyretic, and anti-inflammatory activities of selected Philippine Medicinal Pteridophytes

Buenavista, Dave P., Antesa, Dorothy A., Coritico, Fulgent P., Amoroso, Vic

Pteridophytes are some of the herbal plants used to cure ailments. The present study scientifically finds out the folkloric therapeutic claims of 15 species of Philippine medicinal pteridophytes. Phytochemical components namely alkaloids, flavonoids, saponins, tannins, and anthraquinones of each plant samples were qualitatively determined. Antimicrobial activity of ethanolic extract was tested on *Staphylococcus aureus, Bacillus subtilis, Escherichia coli, Pseudomonas aeruginosa,* and *Candida albicans.* The antipyretic activity using yeast-induced pyrexia and the anti-inflammatory activity using egg-albumin-induced paw edema were done on white rats. The results revealed the presence of alkaloids, saponins, flavonoids, and tannins in most of the extracts. Anthraquinones were absent. Extract form three species of pteridophytes namely: *Equisetum ramosissimum, Pyrrosia piloselloides,* and *Selaginella usterii* did not manifest any antibacterial activity. *Blechnum orientale* has no antifungal activity. All extracts showed significant effect in reducing yeast-induced pyrexia when compared with the negative control (NSS). Fourteen (14) out of the fifteen (15) plant extracts in 400 mg/kg Body Weight dosage inhibited anti-inflammatory activities in eggalbumin induced rat paw edema except for *Pyrossia piloselloides.* However, all plant extracts in 800 mg/kg Body Weight dosage showed significant rat paw reduction. A dose-dependent anti-inflammatory effect was observed within 6 hours of paw thickness observation. (Author's abstract)

Keywords: Medicine, Phytochemicals, Ferns, Bioassay, Philippines

Asian Journal of Biodiversity, Volume No. 5 Issue No. 1, 18-40 2014, (Filipiniana Analytics) NP

0243

Artificial intrauterine insemination: How I Do It *Ubaldo, Cesar C.*

The paper discussed how Artificial Intrauterine Insemination is done. The Intrauterine insemination (IUI) is a form of "treatment for patients who failed to produce adequate cervical mucus and were unable to achieve an adequate post-coital test." The Artificial Insemination (AI), on the other hand, is "defined by the location in the reproductive tract where the sperm is deposited and the source of the sperm." Some of the cases cited wherein IUI may be important are the following: "cervical hostility; failure of sperm transport; unexplained infertility and endometriosis. The paper also cited techniques, timing, and sperm preparation. The paper concludes that IUI "should not be continued for more than six cycles." It was found that 60% to 80% of the pregnancies are likely to occur within the first 2-cycles and the chance increases up to the 5th cycle. Thus, IUI should be restricted to 6 cycles.

Keywords: Medicine, Intrauterine, Artificial insemination, Insemination

The Medical Journal of De La Salle University, Volume No. 11 Issue No. 4, 38-39 2008, (Filipiniana Analytics) Fil(S) R935 M468 11/4 1995

0244

Assessment of distal gut microbial diversity among Filipino children of different nutritional status through the rRNA gene

Dalmacio, Leslie Michelle M., Destura, Raul V., Tecson-Mendoza, Evelyn Mae

Acanthamoeba species are ubiquitos free-living single-celled, opportunistic pathogens, which can be isolated from water, soil, dust in the air, and from other organisms. It can cause sight threatening Acanthamoeba keratitis as well as the rare but fatal encephalitis in humans. Traditionally, laboratory procedures to detect this organisms include culture on non-nutrient agar with heat killed E. coli (NNE) and microscopic examination. Identification can easily be done at the genus level but not at the species level. A recent way of detecting and identifying the organism propagated on NNE is through molecular means. This technique is based on the presence of ASA.S1, a partial 18S ribosomal DNA (Rns) gene unique to the genus. Subgeneric level of identification can be achieved by genotyping. Here we report on the genotyping of Acanthamoeba species in corneal scrapings from three keratitis patients and in nasal swabs from six unrelated healthy volunteers. A 461-bp amplicon was amplified using genus specific JDP1 and JDP2 primers. DNA sequencing of the PCR product was carried out using conserved 892 and 892C primers to determine the sequence of diagnostic fragment (DF3) on Rns. Phylogenetic tree was constructed using MEGA5. Results showed that isolates from all three corneal scrapings and from five out of six nasal swabs belonged to genotype T4, whereas one nasal swab was of the genotype T5. Phylogenetic analysis showed that these isolates clustered with the reference sequences most similar to them. T4 (89%) is the predominant genotype found among nine isolates analyzed in this study. Molecular-based technique is a useful tool for the identification of genotypes of Acanthamoeba from other free-living amoebas. Genotyping helps in decision-making for clinical management of Acanthamoeba infection, in tracking the source of infection, as well as in epidemiological and environmental studies. (Author's abstract)

Keywords: Medicine, Acanthamoeba, Genotyping, Keratitis, 18S ribosomal DNA

Transactions of the National Academy of Science and Technology, Volume No. 34 Issue No. 1, page 148 2008, (Filipiniana Analytics) Fil(S) Q149.P5 N25 34/1 2012

0245

Basic factors that affect dose distribution in the irradiation box Borras, Alan M.

Experimental irradiations at cell No. 2 of the ⁶⁰Co Food Irradiation Facility of Takasaki Radiation Chemistry Research Establishment (TRCRE), Takasaki-shi, Japan were carried out using Radix RN-15 (polymethylmethacrylate, PMMA) dosimeters to determine the basic factors that affect the uniformity of the distribution absorbed of dose in the target material inside an irradiation box.

Based on the results obtained, the uniformity ratio and distribution of the absorbed dose in the target material are greatly affected by material density, air gap, thickness of the material and mode of irradiation. (Author's abstract)

Keywords: Medicine, Radix RN-15, 60Co irradiation, Takasaki Radiation Chemistry Research Establishment (TRCRE)

The Nucleus: Official Journal of the Radioisotope Society of the Philippines, Inc, Volume No. Issue No. , 23-35 2008, (Filipiniana Analytics) Fil(S) QC173 N88 v30 1992

0246

A biomechanical study on single rod spinal instrumentation system in an unstable thoracolumbar injury model: a finite element analysis *Atupan, Jereme B., Bundoc, Rafael C.*

Objectives. To develop three dimensional computer models of the anterior thoracolumbar spine implants or constructs (the novel single rod-screw implant and the standard implants) and to evaluate its biomechanical properties through a graphically reconstructed testing standard.

Methods. We developed a finite element modeling technique based on actual geometry of the implant constructs and mechanical property data from standard biomechanical studies on anterior thoracolumbar spinal instrumentation systems. Seven constructs were mounted on simulated vertebral bodies. Axial load sharing was measured through a range of applied axial loads from 100 N to 1600 N. The static destructive tests were conducted. The bending strength of each construct was calculated with a full length corpectomy graft in place, simulating reconstruction of the anterior column, and with no graft in place, simulating catastrophic graft failure.

Results. Static testing parameter demonstrated highly significant differences between devices. The plate construct formed the highest subset in bending strength of 1000-1100 N, whereas the single rod showed the lowest value of 300-400N. However, the bending strengths of single, rod and dual rod both without bone grafts were not significantly different. With the graft in place, bending strength of the constructs significantly increased beyond the maximum set load of 1600N, underlying the importance of the graft in overall construct strength.

Conclusion. The 3-D finite element models for anterior thoracolumbar instrumentation system were designed with mechanical properties comparable to the actual biomechanical testing results. Although single rod construct has the lowest value, its bending strength is comparable to the standard dual rod system under static axial loading. Bone graft contributed to overall construct stiffness. (Author's abstract)

Keywords: Medicine, Anterior spinal instrumentation, Thoracolumbar spine, Biomechanical testing, Finite element analysis

Acta Medica Philippina, Volume No. 46 Issue No. 2, 38-43 2008, (Filipiniana Analytics) Fil(S) R97.4 A21 46/2 2012

Causes of Infertility Tongo, Caesar D.

This paper presented in a scientific meeting discussed the possible factors causing infertility consultations among couples: (1) delayed marriage; (2) low sperm count arising from exposure to pollution; (3) sexually transmitted disease; (4) declining number of children for adoption; (5) rise in surgical sterilization. The factors vary depending on gender. Factors for male infertility are different from factors for female infertility. The main factors affecting male infertility are "failure to deliver sperms and poor timing," and "problems in sperm production." On the former, common challenge encountered by males are poor timing, premature ejaculation, ejaculatory incompetence, retrograde ejaculation and impotence. A brief discussion on diagnostic evaluations and treatment were also mentioned. Among the factors and problems cited for female infertility are: vaginal, uterine, tubal, ovarian and peritoneal.

Keywords: Medicine, Infertility, Causes of infertility, Sperm

The Medical Journal of De La Salle University, Volume No. 11 Issue No. 4, 28-34 2008, (Filipiniana Analytics) Fil(S) R935 M468 11/4 1995

0248

The causes of vaginal discharge in children and adolescents *Ferrolino, Joseline A.*

The paper distinguishes the types and causes of vaginal discharge complained mostly by children and adolescents. One type is the common discharge, which is referred to as physiologic leukorrhea, a normal discharge due to "vaginal estrogen stimulation." This type of discharge can occur in early adolescence at the onset of gonadal estrogen production. The other type is Abnormal discharge often cause by infection. For girls who are not yet having their menstrual period (premenarcheal), the common infection is vulvovaginitis, an infection which occurs mostly in the vulva and vagina. It was also mentioned that infection occurs in these forms: vulvitis, vaginitis or cervicitis. For the adolescents, however, "specific microbiologic agents," causes vaginal discharge. The symptoms and treatment for genital infections among adolescents are the same as those among adults.

Keywords: Medicine, vaginal discharge, causes of vaginal discharge, discharge

The Medical Journal of De La Salle University, Volume No. 11 Issue No. 4, 35-37 2008, (Filipiniana Analytics) Fil(S) R935 M468 11/4 1995

0249

Cellular response to *Aglaia loheri* Blanco active principle, maldi 531.2[M+H]⁺ is predicted by genes *Galutan, Else F., Jacinto, Sonia D., Efferth, Thomas* The expression of genes can be influenced by the presence of drugs or chemicals in cellular environment. The newly isolated *Aglaia loheri* active principle, Maldi 531.2[M+H]⁺ was investigated for its *in vitro* cytotoxicity against human leukemia cell lines, CCRF-CEM and their multidrug resistant (MDR) type, ADR5000-CEM. Changes in the regulation of genes of two human leukemic cell lines were also evaluated after treatment with the active principle. XTT tetrazolium hydroxide for the non-radioactive quantification of cell proliferation and viability was used for cytotoxic test, and human illumina chip ID 6247215020 for DNA microarray analysis. Maldi 531.2 [M+H]⁺ showed potent anticancer activity against both CCRF-CEM and ADR5000-CEM cells with IC50 of 0.02 and 0.03 μ M respectively. The active principle further caused down-regulation of genes associated with cell survival: *ALDH1 A2* and *AKR1 C3*, including genes which play a role in maintaining mitochondrial DNA, NIPSNAP1. The data indicate that cytotoxic principles derived from *A. loheri* maybe a valuable source for the development of novel treatment options for cancer as it is seen that cellular response to Maldi 531.2[M+H]⁺ is predictable by genes. (Author's abstract)

Keywords: Medicine, Aglaia, loheri, Cytotoxicity, Expression analysis, Illumina sequencing, Multidrug resistance, Leukemia

Transactions of the National Academy of Science and Technology, Volume No. 34 Issue No. 1, page 153 2008, (Filipiniana Analytics) Fil(S) Q149.P5 N25 34/1 2012

0250

Characterization of mutations and polymorphisms in the G6PD gene among Filipino newborns with clucose-6-phosphate dehydrogenase deficiency

David-Padilla, Carmencita, Abaya, Christian Eric S., Cutiongco-de la Paz, Eva Maria, Silao, Catherine Lynn T., Shirakawa, Taku, Nishiyama, Kauru, Matsuo, Masafumi

Background: Glicose-6-phosphate (G6PD) deficiency is the most prevalent enzyme deficiency to date. The global prevalence of G6PD deficiency is estimated at around 330 million people affected with the disease worldwide. This 4.9 percent prevalence, correlates highly with geographic areas endemic to malaria. It is the most common among the disorders in the Newborn Screening (NBS) panel in the Philippines, with one confirmed case for every 52 newborns (1.52). This paper determines the molecular background of G6PD deficiency among Filipino newborns detected by newborn screening.

Methods: A total of 200 cases confirmed to have G6PD deficiency, 180 males and 20 females, were identified through the Philippine Newborn Screening Program from 2001-2003. Genomic DNA was extracted from dried blood spots followed by multiplex polymerase chain reaction using multiple tandem forward primers and a common mutations and polymorphisms in exons 5,6,9,11 and 12 of the G6PD gene.

Results: Of the 200 samples analyzed, mutations and polymorphisms in the G6PD gene were identified in 148 cases (74%). The most common mutation was a G to A transition on nucleotide 871 (Viangchan) of exon 9 in combination with a silent mutation on exon 11, accounting for 32.9% of the cases. This was followed by a C to T transition on nucleotide 1360 (Union) in 21.1% of the cases. Other mutations were Vanua Lava in 10% Chatham in 9.4% and Canton in 3.5% of the newborns, The silent polymorphism on nucleotide 1311 was present in 12.9% of cases. There were combinations of these mutations and polymorphisms present in a minority of cases.

Conclusion: Results of this study showed the molecular heterogeneity underlying G6PD deficiency among Filipino newborns. (Author's abstract)

Keywords: Medicine, Glicose-6-phosphate dehydrogenase deficiency, G6PD, Mutations, Filipino

Acta Medica Philippina, Volume No. 45 Issue No. 4, 53-57 2008, (Filipiniana Analytics) Fil(S) R97.4 A21 45/4 2011

Child abuse: characteristics of the victims and the perpetrators Obiedo, Antonieta, Cempron, Jezyl T., Lapa, Ma. Mayla Imelda M., Garcia, La

Discipline in the Filipino culture is often carried out as a corporal punishment, which, if carried to the extreme would constitute an abusive situation. The study sought to make an accurate picture of child abuse. The study used the descriptive research using documentary analysis. Results of the study revealed that the greater incidence of child abuse occurred most commonly in female children between the ages 12 - 18 years old, in families with low socioeconomic level and to parents whose highest educational attainment were high school level. These abuses lasted for 1 - 5 years before being reported to the proper authorities for intervention. Most perpetrators of the abuses were the male neighbors followed by the female neighbors and the cohabiting husband; adults whom the parent/s entrust the care of their children. The study revealed that the most common form of abuse was physical abuse in the form of hitting, followed by child-rape, spousal abuse in the presence of the child and verbal assault, respectively. The study concluded that child abuse damages the child not only physically but also psychologically. The parents' low socio-economic status contributed to the stress and trauma of the child. **(Author's abstract)**

Keywords: Medicine, Child abuse, Perpetrators, Child and victims, Socio-economic status, Stress and trauma, Sexual exploitation, Child rape

Asian Journal of Health, Volume No. 2 Issue No. 1, 72-94 2012, (Filipiniana Analytics) NP

0252

Comparative analysis of the classic lachman's test with the drop leg lachman's test Monicit, Dilbert A., Valdez, III, Ambrosio Emilio S.

Objective. The objective of this study is to compare the validity of the Drop Leg Lachman's test (DDLT) with Lachman's test (LT) in appreciating abnormal knee AP lzxity using KT-1000, specifically comparing LT and DLLT in terms of sensitivity and specificity.

Methods. A prospective randomized cross-sectional study was used on 36 patients complaining of unilateral knee symptoms from April 2009 to November 2009, 18 to 50 years of age consulting at the UP-PGH Department of Orthopedics Sports Clinic. Descriptive statistics were used to obtain the frequency, percentage, mean, standard deviation and range. Data was analyzed and calculated using the KT-1000and STATA software.

Results. The subjects included 31 (86) males and 5 (14%) females. Thirty-six percent were students and the rest were employed. The average age of the subjects was 28 years old with a range from 17 to 50 years. Their average weight was 72 kilograms with a range of 50 to 92 kilograms. Their average height was 170 centimeters with a range of 157-187 centimeters. Twenty eight (78%) complained of knee pain, 7 (17%) of knee instability and 1 (2%) of knee tightness. All of these subjects attribute the current complaint to a previous trauma, 72% were basketball-

related. The average duration of onset of symptoms to testing was 22 months. Our study showed identical results of 95.45% sensitivity and 50.0% specificity when DLLT and LT were compared to KT-1000.

Conclusions. The drop Leg Lachman's test shows no statistical difference with that of Lachman's Test in diagnosing knee instability using the KT-1000 as gold standard. It has an identical sensitivity of 95.45% and specificity of 50%. (Author's abstract)

Keywords: Medicine, Instability, Sensitive exam, ACL, Drop leg

Acta Medica Philippina, Volume No. 46 Issue No. 2, 13-18 2008, (Filipiniana Analytics) Fil(S) R97.4 A21 46/2 2012

0253

Comparison between surface electrode and monopolar needle electrode in the determination of the nerve conduction studies of the radial nerve *Dela Cruz, Jerico S., Ignacio, Sharon D.*

Objective: This cross-sectional study aims to determine the accuracy of using a surface electrode compared with using a needle electrode in the determination of the latency, amplitude, and duration of the compound motor action potential and nerve conduction velocity of the radial nerve.

Methods: A cohort of 42 males and 30 females consisting of patients from the Philippine General Hospital referred for electrodiagnostic studies of the upper extremity and healthy volunteers were included in the study. The compound motor action potential of the radial nerve in each participant was determined using the surface electrode technique and the monopolar needle technique, and the results were compared. The main outcome measures were: compound motor action potential amplitude, latency, duration, and nerve conduction velocity; sensitivity; specificity; and agreement between the two techniques under investigation.

Results: When all parameters in the nerve conduction studies were considered, the sensitivity of the surface electrode compared with the monopolar needle electrode in determining radial nerve abnormalities was 46.14% (95% Confidence Interval (CI) 0.27 - 0.65), with a specificity of 82.61% (95% CI 0.72 - 0.94) and an overall diagnostic accuracy of 69.44%. When the parameters were taken individually, analysis of the latency showed sensitivity of 60% (95% CI 0.17 - 1.03), and specificity of 100%, with overall diagnostic accuracy of 97.22%. The test for amplitude yielded sensitivity of 50% (95% CI 0.1 - 0.90) and specificity of 100%. The overall diagnostic accuracy was 95.83%. Analysis of the duration showed a sensitivity of 71.43% (95% CI 0.38 - 1.05) and specificity of 100%, with overall diagnostic accuracy of 97.22%. The nerve conduction velocity alone showed sensitivity of 55% (95% CI 0.33 - 0.77), specificity of 84.61% (95% CI 0.75 - 0.94), and overall diagnostic accuracy of 76.39%. The kappa test revealed a fair association or agreement when all the parameters of the compound motor action potential were taken into consideration (k=0.30), moderate association between the surface and the needle electrode in nerve conduction velocity (k=0.40), a substantial association in amplitude (k=0.65) and latency (k=0.74), and a high association between the techniques the duration (k=0.81). two for

Conclusion: In the comparison of the surface electrode and the monopolar needle electrode techniques in the determination of the compound motor action potential of the radial nerve, the parameters have high specificity and a high probability of a negative test in individuals who are disease-free. The kappa test indicated a fair association between the two techniques. When the parameters of compound motor action potential are taken separately, the latency, amplitude, duration and nerve conduction velocity of the radial nerve have a high probability of positive test results in people with disease and a high probability of negative test results in people with no disease. The study

showed that the surface electrode technique is a fair to good alternative to the needle electrode when conducting a radial motor nerve study. (Author's abstract)

Keywords: Medicine, Rehabilitation medicine, Electrodiagnosis, Nerve conduction studies, Radial Nerve, Surface electrode, Needle electrode

Acta Medica Philippina, Volume No. 44 Issue No. 2, 23-27 2008, (Filipiniana Analytics) Fil(S) R97.4 A21 44/2 2010

0254

Comparison of the hybrid locking plate, standard dynamic compression plate, and standard dynamic compression plate augmented with bone cement for fixation of osteoporotic humeral shaft fractures: a cadaveric biomechanical study *Tabu, Irewin A., Arbatin, Jr., Jose Joefrey F., Bundoc, Rafael C.*

Background. Studies comparing the relative strength of polymethylmethacrylate (PMMA) augmented fixation, standard plating and locked compression plate (LCP) system are few. The use of either the bone cement-augmented dynamic compression plate or the Hybrid LCP constructs may provide an additional tool for the treatment of fractures in patients with osteoporosis.

Methods. Eighteen (18) osteoporotic cadaveric humeral bones were assigned randomly to each of three groups (Dynamic Compression Plate [DCP], DCP Augmented with bone cement, and the Hybrid LCP system) and tsted in anterior-posterior bending and torsion/external rotation. The load to failure values were obtained and the results for each specimen compared.

Results. Significant differences were observed between the standard DCP and Hybrid LCP group (p-value=0.012), and in the cement-augmented and Hybrid LCP group (p-value=0.099) in torsion/external rotation loading . No significant difference was observed between the standard DCP and bone-cement augmented group (p-value=0.248). No significant difference was observed among the three groups in terms of stiffness (p-value=0.3868) in the four-point anterior-posterior bending modality. Screw pull-out of the implant was observed only in the regular DCP group in torsion/external rotation loading stress.

Conclusion. Significant differences were seen between the three constructs in torsion/external rotation but not in anterior-posterior four-point bending. Bone failure, but not screw pull-out, was seen in the Hybrid LCP and bone cement-augmented DCP groups in torsion. This study showed that the LCP system and the bone cement-augmented constructs may provide greater screw purchase to the osteoporotic humerus. (Author's abstract)

Keywords: Medicine, Humeral shaft fracture, Osteoporosis, Dynamic compression plate, Polymethylmethacrylate (PMMA), Locking compression (LCP)

Acta Medica Philippina, Volume No. 46 Issue No. 2, 24-31 2008, (Filipiniana Analytics) Fil(S) R97.4 A21 46/2 2012

Computer-assisted dosimetry in the radiotherapy of cancer of the cervix Calaguas, M.J.C., FPCR, Rodriguez, L.V., M. Sc., Vito Cruz, E.Q., Legaspi, G.C., de Luna, R.M., Hermoso, T.M., B.S.M.E., Razon, E.C., Madrid, E.T., Viray, R.G.

Cancer of the cervix is the third leading cause of cancer in the Philippines. The Department of Radiotherapy of the Jose R. Reyes Memorial Medical Center has participated in the Regional Coordinated Research project sponsored by the International Atomic Energy Agency (IAEA) to undertake a study to compare computer treatment planning and manual calculations in radiotherapy of the cancer of the cervix; and to perform actual measurements on bladder and rectal points using TLDs.

Twenty-seven patients with Stage II-B to III-B were included in the study. External beam teletherapy of 40 Gy without shielding for 4 weeks and 50 Gy with blocks plus brachytherapy of 20-40 Gy were given using LDR or HDR machine. Point A, bladder and rectal points were defined following ICRU 38 recommendations. The results showed dose calculations between commercially available computers and IAEA- provided computers agree to within 20%. Results of TLD measurement in bladder and rectum however have shown wide range of variation. (Author's abstract)

Keywords: Medicine, Bladder, Rectal, LDR and HDR machine, TLD

The Nucleus: Official Journal of the Radioisotope Society of the Philippines, Inc, Volume No. Issue No. , 7-15 2008, (Filipiniana Analytics) Fil(S) QC173 N88 v30 1992

0256

Cost analysis for the management of acute coronary syndrome using different quality of care indicators

Tumanan-Mendoza, Bernadette A., Mendoza, Victor L., Morales, Dante D.

Objectives: This study determined the economic burden for nonfatal uncomplicated acute coronary syndrome (ACS) using 100% compliance to certain a) non-invasive or b) invasive and non-invasive diagnostic and therapeutic interventions with class I recommendations in the American College of Cardiology-American Heart Association (ACC-AHA) clinical practice guidelines for ACS in three tertiary hospitals using the societal perspective. It also determined the costs using the patient's perspective in the setting of one private tertiary hospital.

Methods: This study was a cost analysis that included a) costs of patient's resources, b) production losses, and c) costs of other resources or sectors, from hospitalization to one month post-discharge for ACS. Several models were constructed due to variations in the costs of diagnostic and therapeutic interventions in the three settings.

Results: Using the societal perspective, one model for non-invasive options yielded the following (costs as of January 31, 2009): hospital A, Php87,014 - 124,799; hospital B, Php75,592 - 96,072; hospital C, Php71,969 - 92,148. excluding fibrinolytic therapy, the lowest total cost would be Php65,000. However, if coronary angiography was added to the models for hospital C, the cost was Php107,154 - 134,574 (coronary angiography was not available in hospitals A and B). Using the patient's perspective, the adjusted mean cost for the model which used the least expensive medication was Php96,421 (Standard Deviation = 34,076).

Conclusion: The economic burden for nonfatal uncomplicated ACS may range from Php65,000 - 134,574. **(Author's abstract)**

Keywords: Medicine, Cost analysis, Nonfatal acute coronary syndrome, Economics, Out-of-pocket payments, ACS quality of care indicators

Acta Medica Philippina, Volume No. 43 Issue No. 4, 15-22 2008, (Filipiniana Analytics) Fil(S) R97.4 A21 43/4 2009

Cost of mass drug administration for filariasis elimination in the province of Sorsogon, Philippines

Amarillo, Maria Lourdes E., Belizario, Jr., Vicente Y., Panelo, Carlo Irwin A., Sison, Stephanie Anne M., de Leon, Winifreda U., Ramirez, Bernadette L., Adrid, Leah P.

Objective: Elimination efforts for lymphatic filariasis underway in the Philippines using mass drug administration (MDA) of diethylcarbamazine and albendazole as one of the main strategies. This cost analysis was done to determine the MDA implementation cost and provide useful information to the control programme on how to best utilize limited resources.

Methods: This cost analysis study was conducted in the province of Sorsogon, Philippines in 2004. The study was done from a program perspective. Cost data for 2003 was obtained retrospectively via key informant interviews and records review using a standardized guide from a multi-country cost analysis study of filariasis elimination programs. Cost figures were classified as either economic or financial costs and expressed in real terms using 2002 as base year. Sensitivity analysis was likewise performed.

Results: The total economic cost and cost per person treated with MDA were estimated at US\$223,549.55 (Php12,116,385.48) and US\$0.40 respectively. The financial costs were less than half of the economic costs. The main cost driver was drug distribution. The highest economic and financial costs were incurred at the national (54.5%) and municipal (74.4%) levels, respectively. High variation in costs of MDA activities was observed.

Conclusion: This cost analysis provides reasonable estimates which may be used to assist government and other stakeholders in program planning and resource generation for filariasis elimination programs in endemic areas. **(Author's abstract)**

Keywords: Medicine, Cost analysis, Lymphatic filariasis, Mass drug administration, Diethylcarbamazine, Albendazole

Acta Medica Philippina, Volume No. 43 Issue No. 4, 23-28 2008, (Filipiniana Analytics) Fil(S) R97.4 A21 43/4 2009

0258

Detection of dengue virus using a quartz crystal microbalance (QCM)-based immunosensor

Monlinong, Jason Paul C., Corales, Olga, Miguel, Roland Jay, Sison, Luiz, Pascual, Cherrie, Matias, Ronald

Continuing efforts to develop fast and reliable methods for the early detection of dengue virus in human blood samples prompted us to develop a Quartz Crystal Microbalance (QCM)-based immunosensor. Following surface
functionalization on the gold electrode surface of the quartz crystal, the immunosensor was used to detect dengue viral antigen using a laboratory-fabricated QCM set-up. Dengue monoclonal antibody (mAb) was immobilized on the gold electrode surface of the 5-MHz crystal using Protein A. C6/36 cells were then infected with dengue 2 viruses and propagated. Harvested infected culture fluid was utilized to determine the sensitivity of the QCM-immunosensor. Binding of the dengue virus antigen to the immobilized dengue monoclonal antibody induced detectable changes in the oscillation frequency of the quartz crystal. Baseline oscillation frequencies (finitial) were measured and compared with the oscillation frequency at the time of binding of the dengue antigen to the dengue mAb (f_{final}). Quantification of the frequency shifts ($\hat{a}^+ f = f_{final}-f_{initial}$) yielded a reliable signal for the detection of the dengue virus. Parameters that were optimized for the QCM-immunosensor include dengue mAb concentration, Protein A concentration and incubation time. Optimum parameters used in the fabrication of the immunosensor were the following: 120 min of Protein A incubation using 10.0 mg/mL Protein A concentration and 180 min of dengue mAb incubation using 0.1 mg/mL dengue mAb. The QCM-immunosensor shows promise as a reliable diagnostic method for the detection of dengue. Using this technology, clinical samples will be tested parallel to IgM Capture ELISA and real-time PCR methods which are currently used to diagnose dengue virus infection. (Author's abstract)

Keywords: Medicine, Dengue viral antigen, Quartz crystal microbalance (QCM), Immunosensor, Protein A, Monoclonal antibody (mAb)

Transactions of the National Academy of Science and Technology, Volume No. 34 Issue No. 1, page 156 2008, (Filipiniana Analytics) Fil(S) Q149.P5 N25 34/1 2012

0259

Development and validation of screening test for *Genital chlamydia trachomatis* and Neisseria gonorrhea infections Tolabing, Ma. Carmen, Saniel, Ofelia P.

Objectives: To develop and validate a screening tool for *Chlamydia trachomatis* and *Neisseria honorrhea* that can be used as a screen-to-treat tool among female commercial sex workers.

Methods: The cross-sectional study design was employed. The records of female sex workers who participated in the prevalence survey on C. trachomatis and N. gonorrhea infections were reviewed. The data included information that was obtained from interview and cervical examination of female sex workers. Interview data included personal and medical history (risk factors and symptoms of infection). The clinical data included the results of the polymerase chain reaction test (PCR), gram stain of cervical specimen, and cervical examination. Two screening algorithms were developed using a personal risk score and validated on a separate sample: 1) screening test based on personal medical history factors, and 2) screening test incorporating personal-medical history and clinical examination factors. Validation of infection status was carried out using the result of the polymerase chain reaction test as the gold standard of diagnosis.

Results: *C. trachomatis* and/or *N. gonorrhea* were present in 35.5% of the test sample and in 38% of the validation sample. The screening algorithm based on personal-medical history factors and the screening algorithm that combined personal-medical history and clinical examination factors had a sensitivity of 79.9% and 76.3%, respectively, while their specificity and positive predictive value were 28.1% and 34.1% and 38% and 41.6%, respectively.

Conclusion: The screening algorithms derived from this study cannot be used as a screen-to-treat tool because of

their poor validity and predictive values. However, they may be useful for screening female commercial sex workers for further diagnostic testing. (Author's abstract)

Keywords: Medicine, Screening, Validation, Sexually transmitted diseases

Acta Medica Philippina, Volume No. 41 Issue No. 2, 15-24 2008, (Filipiniana Analytics) Fil(S) R97.4 A21 41/2 2007

0260

Diagnosis and molecular characterization of *Trichomonas vaginalis* in sex workers in the Philippines Queza, Macario Ireneo P., Rivera, Windell L.

Trichomonas vaginalis is a pathogenic protozoan which causes the sexually transmitted infection, trichomoniasis. The absence or non-specificity of symptoms often leads to misdiagnosis of the infection. In this study, 969 samples consisting of vaginal swabs and urine were collected and screened from social hygiene clinics across the Philippines. Of the 969 samples, 216 were used for the comparative analysis of diagnostic tools such as wet mount microscopy, culture and PCR utilizing universal trichomonad primers, TFR1/2 and species-specific primers, TVK3/7 and TV1/2. PCR demonstrated higher sensitivity of 100% compared to 76.92% of the wet mount. PCR primer set TVK3/7 and culture had the same and the best expected average performance (ROC, 0.9848). Prevalence of infection in the sample population was 6.81%. Restriction fragment length polymorphism (RFLP) and phylogenetic analyses of the 18S rRNA gene and ITS1-5.8S-ITS2 region revealed that majority of the *T. vaginalis* isolates belonged to one main group. This study could serve as a trigger in enhancing cooperation among health institutions including local government units, health departments, non-government organizations, research and the academe to improve the prevention of the increasing cases of STI/STDs in the country. **(Author's abstract)**

Keywords: Medicine, Trichomonas vaginalis, Diagnosis, PCR, Microscopy, Culture, Phylogenetic analysis

Transactions of the National Academy of Science and Technology, Volume No. 34 Issue No. 1, page 149 2008, (Filipiniana Analytics) Fil(S) Q149.P5 N25 34/1 2012

0261

Distal radius fractures Ranjeet, Niraj, Estrella, Emmanuel P.

Background. Distal radius fractures (DRFs) are the most common fractures of the upper extremity. At present, it can be treated by various options that include closed reduction and cast, open reduction and internal fixation using plates and screws with or without Kirschner wires and external fixation. Thus, the primary objective of this study was to determine if the radiographic parameters, pain score and grip strength was associated with the Gartland and Werley's Functional Scoring System and Modified Mayo Scoring System functional scores. The secondary objective was to determine the association between the Gartland and Werley scores and the Modified Mayo scores.

Methods. We retrospectively reviewed 18 patients with distal radius fractures treated within 3 weeks of injury by

closed reduction and casting, closed reduction and pinning or open reduction with internal or external fixation. Patients were followed up at 1.5 and 3 months and were evaluated in terms of functional scoring using the Gartland and Werley's and Modified Mayo Functional Scoring System.

Results. The radiological parameters improved from preoperative to immediate postoperative x-ray and all parameters remained the same until 3 months follow-up. Grip strength improved from 50.3 ± 18.1 % of the contralateral at 1.5 months to 70.33 ± 11.2 % at 3 months follow up. This was significant (p<0.05). There was no association between the x-ray score (Sarmiento's modification of the Lindstorm score) and the functional outcome scores of Modified Wrist Mayo and Gartland and Werley score (p=0.53 and 0.21, respectively). Overall, the average Modified mayo wrist score was 77.5 and the average Gartland and Werley score was 2.1. A higher grip score was also associated with a higher Modified Mayo Wrist score (r²=0.51, p=0.03) and a better Gartland and Werley Score (r²=0.70, p=0.001). Lower pain scores were associated with a higher Modified Mayo Wrist score. Of 18 patients, two developed pin tract infection.

Conclusion. We could not find any correlation between the radiologic scoring of distal radius fractures after treatment to the functional outcome scoring according to the Gartland and Werley and Modified Mayo score. (Author's abstract)

Keywords: Medicine, Distal radius fractures, Functional outcome, Radiologic outcome

Acta Medica Philippina, Volume No. 46 Issue No. 2, 55-59 2008, (Filipiniana Analytics) Fil(S) R97.4 A21 46/2 2012

0262

A double blind randomized controlled trial on the effectiveness of 10% lemongrass oil (*Cymbopogon citratus*) vs. 1% clotrimazole solution in treating *Tinea corporis* and *Tinea cruris*

Cue, Pamela Christine C., Torres, Rosalinda C., Paliza, Arnelfa C.

Superficial fungal infection is among the most common reasons for dermatologic consultation. This superficial infection is usually treated with topical antifungal agents such as the azoles & allylamines, sold usually as topical creams but not in solution forms. The essential oil of *Cymbopogon citratus* (lemongrass) exhibits antifungal activity. This porject therefore aims to compare the efficacy of 10% lemongrass oil with 1% clotrimazole solution in treating *tinea corporis* and *tinea cruris* in terms of complete cure and adverse events. Ninety-six patients clinically and mycologically diagnosed with tinea corporis and/or tinea cruris were assigned randomly to apply either 10% lemongrass oil or 1% clotrimazole solution twice daily for 4 weeks. Clinical and mycological evaluations were conducted at baseline, and weekly up to 2 weeks post-therapy. Complete cure was achieved if there was clinical and mycological cure at 4 weeks. There was no statistically significant difference in terms of complete cure at four weeks between the two groups (p = 1.0, Fisher's exact test). There was no recurrence 2 weeks post-treatment in both groups. Erythema and burning sensation from the application of lemongrass were observed in two patients. This randomized controlled trial showed that 10% lemongrass oil was as effective as 1% clotrimazole solution in treating *tinea corporis* and *tinea cruris* based on clinical, mycological and complete cure assessments. (Author's abstract)

Keywords: Medicine, Lemon grass, Tanglad, Clotrimazole, Tinea corporis, Tinea cruris

Transactions of the National Academy of Science and Technology, Volume No. 34 Issue No. 1, page 152 2008, (Filipiniana Analytics) Fil(S) Q149.P5 N25 34/1 2012

The environmental sanitation, hygienic practices and the prevalence of intestinal parasitism among schoolchildren

Militante, Ivon Claire S., Tagra, John Angel, Nuñez, Aldwyn A., Pelayo, Jerald L., Abordo,

This paper presents the prevalence of parasitic infection three weeks after a de-worming process in August 2010 of a community in Valencia, Bukidnon, Philippines. Using mixed methods, the authors obtained data from the 203 schoolchildren and the parents of the infected school children. Thirteen schoolchildren had parasitic infections, and hookworm was the most prevalent parasite observed. This suggests resistant infection or rapid reinfection after the de-worming process. The infection could have occurred especially with the children playing barefooted in contaminated watery areas. The free-living pets that came in and out of their houses could have contributed to the rapid reinfection. The 13 infected children had cough and colds, abdominal pain, manifested pallor, and suffered body weakness. Five of the infected children experienced loss of appetite and four had BMI below the normal range based on the Philippine BMI standards. No differences were found in the environmental sanitation and hygienic practices between those schoolchildren who were (13) and were not (190) infected with parasites. The parents interviewed reacted with wonder, worry, and anger, and received confirmation for their suspicions about their children's condition. They were happy that May 2011 is scheduled for another de-worming procedure. (Author's abstract)

Keywords: Medicine, Environmental sanitation, Hygienic practices, Intestinal parasitism, De-worming

Asian Journal of Health, Volume No. 1 Issue No. 1, 194-213 2011, (Filipiniana Analytics) NP

0264

Eosinophilia and incidence of soil-transmitted helminthic infections of secondary students of an indigenous school *Emverda, Floricel M.*, *Sumagaysay, Ja*

The incidence of STHI and its relation to eosinophilia were examined in 74 students of a secondary school for the indigenous people (IP) in Bukidnon, Northern Mindanao, Philippines. After obtaining necessary permission and consent, blood and stool samples were collected and examined. Kato-Katz method was used to determine and quantify helminths. Differential WBC count identified the manifestation of eosinophilia. Incidence of blood eosinophilia among the participants was 58% (43/74) with 12.2% mean eosinophil WBC count. Percentage of eosinophil among infected and non-infected varied significantly (p< 0.05), except for Trichuris infection. Cumulative morbidity of STHI is 37.8% (28/74) with mean ova count of 1266 EPGF. Females have significantly higher parasite load than males (t = 2.663; p = 0.015). Single and co-infections occurred among the participants. Occurrence of single infection was 14.7% (11/74) for *Ancylostoma duodenale*, 14.7% (11/74) for *Ascaris lumbricoides*, 1.4% (1/74) for *Trichuris trichura*, 6.8% (5/74) for co-infections. Light infection occurred in 35.1% (26/74) of the participants while 2.7% (2/74) suffered moderate infection. There was a moderate association (r = 0.328; p = 0.004) between eosinophilia and parasitism. Because STHI aggravate health, IP groups must be ensured of access to health services and health education. Regular implementation of effective helminthic-disease

management and prevention programs is crucial to eliminate the prevalence and persistence of STHI in the area. (Author's abstract)

Keywords: Medicine, Eosinophilia, Soil-transmitted helminthic infections, Intestinal parasitism, Helminthiasis, Indigenous people, Bukidnon

Asian Journal of Health, Volume No. 1 Issue No. 1, 181-193 2011, (Filipiniana Analytics) NP

0265

Extreme presentations of anomalous left coronary artery from the pulmonary artery (Alcapa):: A wheezy infant and an asymptomatic adolescent Sison, Ma. Concepcion C., Del Rosario, Jonas D., Sison, Eric Oliver D.

In summary, we presented two cases of ALCAPA, one with cardiac failure early in life and the other, asymptomatic to this date. The first already underwent LMA litigation but succumbed to nosocomial infection while the 14-year-old patient still has to undergo ALCAPA repair. Disparity in presentations is attributed to the extent of intercoronary collaterals and myocardium perfused by the RCA (Author's summary)

Keywords: Medicine, Anomalous left coronary artery, Pulmonary artery, ECG, Coronary angiography, 2D-echocardiogram

Acta Medica Philippina, Volume No. 39 Issue No. 1, 51-54 2008, (Filipiniana Analytics) Fil(S) R97.4 A21 39/1 2005

0266

Fascial versus fascio-cutaneous pedicled sural flaps in the reconstruction of distal leg, ankle and food soft tissue defects *Estrella, Emmanuel P., Lee, Ellen Y.*

Background. The coverage of soft tissue defects of the distal leg, ankle or foot poses several challenges to the reconstructive surgeon. Reconstructive procedures may range from simple skin grafting to complicated free tissue transfers. The reverse sural flap has been one of the most dependable methods for soft tissue coverage of such complex wounds. The purpose of this paper was to compare the clinical results of reverse sural flaps harvested with a fascial versus a fasciocutaneous pedicle.

Methods. A retrospective cohort of twenty-six patients who underwent a reverse sural flap procedure for complex wounds of the distal lower extremity was examined from January 1, 2003 to December 31, 2009, with a minimum follow-up of one month. Fifteen patients had a fascial pedicled flap, while eleven patients had fasciocutaneous pedicled flaps with a minimum of one month follow-up. The primary outcome was flap-related complications. Fisher's exact test was used to determine the differences between the two groups and the level of significance was set t = t = t = t

Results. All flaps survived. Flap-related complications were more common in the fascial pedicled flap (6/15) compared with the fasciocutaneous pedicled flap (1/11). The difference was not significant (p=0.09). In terms of cosmetic acceptability, 11 patients (11/15) in the fascial pedicle group and five patients (5/11) in the fasciocutaneous pedicle group expressed that the sural flap was acceptable.

Conclusion. Reverse sural flap was a reliable reconstructive procedure for coverage of soft tissue defects of the distal leg, ankle or foot. There was no significant difference in terms of complication rates for those with fascial compared with those with fasciocutaneous flaps. Cosmetic acceptability was higher for the fascial pedicled flap. **(Author's abstract)**

Keywords: Medicine, Soft tissue defect, Sural flap, Distal leg, Pedictleg, Pedicled flaps

Acta Medica Philippina, Volume No. 46 Issue No. 2, 19-23 2008, (Filipiniana Analytics) Fil(S) R97.4 A21 46/2 2012

Fetal monitoring: Applications and limitations Reyles, Ramon

In summary, monitoring of fetal well-being during labor is accomplished by the use of a stethoscope, fetoscope or fetal Doppler ultrasound device. Their limitation is the inability to provide a continuous means of fetal assessment and its recording. The use of EFM, on the other hand, enables clinicians to identify fetuses who are compromised much earlier thus increasing their chances of survival. Fetal scalp stimulation and vibro-acoustic stimulation coupled with EFM provide an alternative almost comparable if not better than fetal scalp blood pH determination. (Author's summary)

Keywords: Medicine, Fetal monitoring, fetal, Electronic fetal monitoring, Fetal heart rate

The Medical Journal of De La Salle University, Volume No. 11 Issue No. 4, 47-48 2008, (Filipiniana Analytics) Fil(S) R935 M468 11/4 1995

0268

The gait, arms, legs and spine (GALS) locomotor screen teaching learning package: has it achieved its intended learning outcome *Tee, Michael L., Mojica, Alvin P.*

Introduction: Clinicians rarely screen their patients for musculoskeletal disorders during routine physical examination. Reasons vary, but inadequate teaching of musculoskeletal medicine is cited as a major factor. to Address the above issue, the Section of Rheumatology, Department of Medicine, College of Medicine, and Philippine General Hospital, University of the Philippines Manila recently adopted the Gait, Arms, Legs and Spine Locomotor Screen (GALS) as the central focus of instruction for musculoskeletal conditions.

Objectives: A total of 189 medical interns participated in this descriptive study to determine whether GALS is deemed useful and can be readily applied in the outpatient clinics.

Methods: Data was gathered using a questionnaire, key informant interviews, and chart review. The data was analyzed using measures of central tendency, percentages and qualitative evaluation.

Results: Only 26% claimed to routinely perform the musculoskeletal screening examination and only 21% claimed the used the GALS technique. The medical interns emphasized that they were adequately taught to perform the GALS technique but felt that the routine use of GALS was time consuming. Emphasis on musculoskeletal screening was done only during clinical rotations in specialties like rheumatology, rehabilitation medicine or orthopedics, but not in other specialties. In addition, only the Section of Rheumatology used the GALS technique.

Conclusion. The findings of this study suggest that while medical interns feel competent in performing the GALS technique, its application in the clinics leaves much room for emphasis and that there is a need to standardize instruction on musculoskeletal screening. (Author's abstract)

Keywords: Medicine, GALS, Locomotor screen, Learning outcome

Acta Medica Philippina, Volume No. 44 Issue No. 2, 32-37 2008, (Filipiniana Analytics) Fil(S) R97.4 A21 44/2 2010

0269

Hair lead bio-monitoring among school children in the province of Cavite, Philippines Macawile, Janet P., Sia Su, Glenn L.

Airborne lead is one of the pressing environmental problems that cause neuropsychological impairments to people who are exposed to it. In assessing people's exposure to airborne lead, bio-monitoring techniques has been used as an indicator of chemical exposure. This study aims to determine the hair lead concentrations among school children in the Province of Cavite and compare the hair lead concentrations of the school children living and studying in the urban and rural areas of the Province of Cavite, Philippines. Consenting public and private school children of the municipalities of Bacoor and Alfonso were involved in the study. Hair strands were obtained from each student and analyzed for lead concentrations. Results of hair lead concentrations were compared for significant differences between the public and private schools in both areas using the t test under the P < 0.05 level of significance. A total of 922 consenting school children participated in this study. The mean ± SD hair lead concentrations of all school children surveyed was 0.2814 ± 0.1245 ppm. Hair lead concentrations of children studying in public schools (0.3044 ± 0.1081 ppm) were higher relative to those in private schools (0.2259 ± 0.1428 ppm). School children residing in the urban areas $(0.3079 \pm 0.1442 \text{ ppm})$ had a higher hair lead concentrations compared to those residing in the rural areas $(0.2499 \pm 0.0863 \text{ ppm})$. Hair lead concentrations of school children living in urban and rural areas and those studying in private and public schools in Bacoor and Alfonso were found to be significantly different (t=9.096 and t=6.867, respectively, P<0.05). Findings indicate that school children are exposed to airborne lead. Higher hair lead concentrations were evident among school children who were residing in urban areas and studying in public schools. (Author's abstract)

Keywords: Medicine, Airborne lead, School children, Bio-monitoring, Cavite, Chemical exposure

Headache among Filipino adolescents consulting at the UP PGH outpatient clinic a retrospective review Del Rosario-Daya, Lourdes M., Nancho, Rosa Ma

The study is the review of the five year (1990-1994) out-patient adolescent records of UP PGH, who consulted for headache. The retrospective study aims to determine the following: frequency of headache among adolescent patients; common causes of headache; factors associated to headache; and the required initial laboratory exam. The charts of 345 patients, complaining of headache, aged 10-20 years old were analyzed. Most patients are female and among the leading causes of headache are problems in the family, muscle imbalance related to the use of the eyes, neurologic causes such as migraine and tension. The study recommends further exploration by individually looking at the causes of headache, using a bigger sample size.

Keywords: Medicine, Headache, Adolescent, Neurologic

Postgraduate Pediatrics, Volume No. 12 Issue No. 1, 71-84 2008, (Filipiniana Analytics) Fil(S) RJ1 P67 12/1 1996

Heterocepon marginatum shiino, 1936, (crustacea: isopoda: epicaridea: bopyridae): a new hyperparasite from the Philippines, and a short review of the biology of the bopyridae Janssen, Hans Heinrich, Brandt, Angelika

The number of close associations between different species is unusually high in tropical waters compared with that in temperate climates. In the present paper, we describe symbiosis involving more than two organisms. A hyperparasitic isopod was found in the gill chamber of the decapod crab *Pinnotheres palaensis* BÜRGER 1895 (Crustacea: Brachyura: Pinnotheridae), living as a commensal in the commercial bivalve *Anadara maculosa* REEVE 1884 (Taxodonta-Filibranchia: Arcidae). This was identified as *Heterocepon marginatum* SHIINO, 1936 (Crustacea: Isopoda: Epicaridea), so far known only to occur in Japanese waters, parasitizing *Pinnotheres parvulus* STIMPSON and *P. Cardii* BÜRGER. The new Philippine material is presented with drawings and micrographs. As incentive for further studies on the faunistic, ecological and behavioral aspects of this symbiosis, a short introductory review on bopyrid biology is given. (Author's abstract)

Keywords: Medicine, Heterocepon marginatum shiino, Pinnotheres palaensis BURGER, Pinnotheres parvulus STIMPSON, P. Cardii BURGER, Bopyrid biology, Anadara maculosa REEVE, Hyperparasitic isopod

The Philippine Scientist, Volume No. Issue No. , 5-31 2008, (Filipiniana Analytics) Fil(S) Q1 J95 v31 1994

0272

Hoku cryokinetics for the reduction of pain during the active phase of labor Bejoc, Jillian A., Ysmael, Fleoy T., Alforque, Jose Mari Louis, Elizon, Lagrima

Hoku is located on the medial midpoint of the first metacarpal, within 3 - 4 mm of the web of skin between the thumb and forefinger. The study evaluated the effectiveness of the use of ice massage on the energy meridian point, large intestine 4 (Hoku), during contractions to reduce the woman's perception of labor pain. This one-group, pretest-post test design was instituted among 30 primigravid Cebuano women. The study utilized a 100 mm Visual Analog Scale (VAS) to numerically measure pain levels before and after using ice massage on the left and right hand. Pain response difference being evaluated consisted of four elements: pain before and after ice massage of left hand and pain before and after ice massage of right hand. Results indicated significant pain reduction with a mean difference of 18.93 mm on the left hand and 20.87 cm on the right Hoku point. The study concludes that ice massage on either hand is a cost-efficient, safe, non-invasive, non-pharmacologic and effective method in reducing labor pain. (Author's abstract)

Keywords: Medicine, Hoku cryokinetics, Active phase of labor, Reduction of pain, Cebuano women

Asian Journal of Health, Volume No. 2 Issue No. 1, 54-71 2012, (Filipiniana Analytics) NP

0273

HPLC analysis of cortisol and cortisone in human urine Portilla, Ma. Cristina B., Apa, Jessa Karyl R., Monlinong, Jason Paul C., Pascual, Cherrie B.

Cortisol is a steroid hormone which increases blood sugar, suppresses the immune system and aids in fat, protein and carbohydrate metabolism. It is clinically important to measure urinary free cortisol and its metabolite, cortisone, to diagnose and treat adrenal dysfunctions like Cushing's and Addison's syndrome. A reversed-phase HPLC method was developed for the determination of free cortisol and cortisone in human urine, using 6α -methylprednisolone as internal standard. The steroids were separated on a Lichrosphere C18 column using mobile phase of 40:60(v/v) acetonitrile:water mixture with UV detection set at 248 nm. The average retention times were 7.9 minutes for cortisol, 8.5 minutes for cortisone and 10.0 minutes for 6α -methylprednisolone. Linear response for cortisol and cortisone dissolved in mobile phase and spiked in urine was within the range 0.50-10.00 µg/mL. The limit of detection (LOD) for cortisol and cortisone was 0.002 µg/mL and 0.001 µg/mL respectively, while the the limit of quantification (LOQ) was 0.007 µg/mL and 0.003 µg/L respectively. Intra-batch and inter-batch CV were all less than 13%. Prior to chromatography, samples were extracted with solid-phase extraction (SPE) column. Recoveries after SPE ranged from 90.3-115.3% for cortisol and 93.0- 107.1% for cortisone. Human urine samples were analyzed and cortisol concentration ranged from 0.06-0.09 µg/mL which was within the normal cortisol in human urine. (Author's abstract)

Keywords: Medicine, HPLC, Cortisol, Cortisone, Chromatography, SPE

Immunomodulatory effect of *Tinospora rumphii* Boerl lotion in *Sarcoptes scabiei* var *hominis*-infected patients and its predicted shelf life: a pilot study

Castillo, Agnes L., Osi, Marina O., Ramos, John Donnie A., De Francia, Jean L., Dyjunco, Marylaine U., Quilala, Peter F.

Scabies is a major public health problem affecting 10% of the general population. It is caused by the Sarcoptes scabiei mite that has the ability to modulate the host's inflammatory and immune responses. A randomized, controlled, double-blind, pilot clinical study was performed to investigate the immunomodulatory effect and clinical efficacy of the Tinospora lotion in 66 scabies-infected patients through Enzyme-linked Immunosorbent Assay (ELISA) for Interleukin-1, Interleukin-6, Interleukin-8 and Monocyte Chemoattractant Protein-1 (MCP-1) in the serum samples. The pediatric patients were treated with *Tinospora* and Permethrin lotions for three consecutive days for two weeks and blood extraction was performed before treatment, during and after treatment. Clinical assessment of each patient was performed every week for five weeks. Tinospora lotion is comparable with Permethrin as antiscabies agent (p=0.315) with significant reduction in the mean global evaluation score from baseline $(7.20 \pm 0.48 \text{ ys})$ 7.264 ± 0.44) to day 28 (0.933 ± 0.35 vs 0.95 ± 0.25). No significant difference in the clinical improvement of the patients treated by both lotions (p=0.9123) and at different periods of observation (p=0.4747). The mean clearance time is 23, 20.47 to 25.53; and 21, 17.39 to 23.67; p=0.226 for *Tinospora* and Permethrin lotions, respectively. Tinospora lotion significantly reduced the IL-1, IL-6, IL-8 levels from Day 14 to Day 28 (p=0.0002, p=0.0002, p=0.0065) which is comparable to Permethrin lotion (p<0.050) with the exception of MCP (p=0.3497). Its predicted shelf life is 6 months, *Tinospora* lotion exhibits significant antiscables activity through down-regulation of IL-1, IL-6 and IL-8 levels. Its incorporation as therapeutic reagent in Sarcoptes scabiei infections is highly recommended. (Author's abstract)

Keywords: Medicine, Tinospora, Scabicide, Immunomodulatory, Interleukin, MCP-1

Transactions of the National Academy of Science and Technology, Volume No. 34 Issue No. 1, page 151 2008, (Filipiniana Analytics) Fil(S) Q149.P5 N25 34/1 2012

Inter-observer and intra-observer reliability of the Harris Hip Scoring System Ganal-Antonio, Anne Kathleen B., Azores, Gregorio Marcelo S.

Objective. The Harris hip score (HHS) is a 100-point scale for rating pain, function, absence of deformity, and range of motion. The purpose of this study is to assess the inter-observer and intra-observer reliability of the Harris hip score among senior orthopedic residents at the Philippine General Hospital.

Methods. Twenty-four hips from 20 patients were evaluated using the Harris hip score by four senior residents from the Department of Orthopedics, Philippine General Hospital. All patients were interviewed twice in the clinic and the reliability of the HHS was evaluated.

Results. The inter-observer coefficient of concordance (Kendall coefficient of concordance W) was 0.9 for both groups of observers. The intra-observer coefficients of concordance were 0.8, 1.0, 0.9, and 0.9, for the four observers. A 0 value indicates no concordance among a set of raters while a score of 1 indicates perfect

concordance. Obtaining a score greater than 0.75 represents excellent level of agreement.

Conclusion. We conclude that the Harris hip score has high inter-observer and inter-observer reliability among senior Orthopedic residents at the Philippine General Hospital. (Author's abstract)

Keywords: Medicine, Harris hip scores, Inter-observer, Intra-observed reliability

Acta Medica Philippina, Volume No. 46 Issue No. 2, 32-37 2008, (Filipiniana Analytics) Fil(S) R97.4 A21 46/2 2012

0276

Intravenous pamidronate treatment in Filipino children with moderate to severe osteogenesis imperfecta

Alcausin, Maria Melanie B., de Dios, John karl L., Chiong, Mary Anne D., Cavan, Barbara Charina V., David-Padilla, Carmencita, Cutiongco-de la Paz, Eva Maria

Objective: To present preliminary data on the effects of intravenous pamidronate in children with moderate to severe Osteogenesis Imperfecta (OI).

Methods: This is a retrospective study wherein a review of medical records and available serial radiographs of children (N=14) with moderate to severe OI started on pamidronate from 2006 to 2010 was done.

Results: Two children have OI Type I, 8 have OI Type III and 4 have OI Type IV. At baseline, 2 had normal height, 8 had height <2SD and the rest with <-1SD. Twelve out of 14 had vertebral compression fractures. Mean age at start of pamidronate was 5.4 years (range 0.5- 11 years). First infusion fever in five patients and transient generalized macular rash in five patients and transient generalized macular rash in one child were noted. Serum calcium and phosphorus levels were normal at baseline and remained stable. Based on parental report, improvement of motor function was noted. In the 10 children who had at least a year of treatment, long bone fractures decreased from a mean annualized fracture rate of 2.6 at baseline to 0.9. In patients with vertebral compression fractures, serial radiographs showed improvement of vertebral shape.

Conclusion: This preliminary study shows that treatment was generally well tolerated and led to decrease in long bone fractures, improved vertebral shape and improved function. (Author's abstract)

Keywords: Medicine, Osteogenesis imperfecta, Bisphosphonate, Primary osteoporosis

Acta Medica Philippina, Volume No. 45 Issue No. 4, 35-39 2008, (Filipiniana Analytics) Fil(S) R97.4 A21 45/4 2011

0277

Investigating the protective effect of Solanum melongena Gul, Humaira, Gul, Saima, Ahmed, Sagheer, Kaneez, Fatim The aim of this study is to investigate the protective effect of *Solanum melongena* (*S. Melongena*). Different solvent were used to extract the fractions. Antiplatelet activity was monitored using dual channel Lumi aggregometer, antioxidant enzymes were measured using kits purchased from RANDOX, UK while calcium channel blocking activity was screened on guinea pig ileum using isolated organ bath assembly. Aqueous fraction, Ethyl acetate fraction and Chloroform fraction potently inhibited platelet aggregation, antioxidant and calcium channel blocking activity respectively. These results indicated that all fractions of *S. Melongena* possesses antioxidant properties but aqueous fraction posses both AA and PAF antiplatelet activity and chloroform fraction of the active compounds present in the extracts of *S. Melongena* and hence for their respective properties. Moreover, PAF aggregation cycle molecules which are involved in blocking may not be soluble either in ethyl acetate or chloroform. (Author's abstract)

Keywords: Medicine, Solanum melongena, Platelet aggregation, Antioxidant, Calcium channel blockers, Traditional medicine

Asian Journal of Health, Volume No. 1 Issue No. 1, 288-308 2011, (Filipiniana Analytics) NP

0278

Investigation on the level of evidence in researches done by orthopedic residents of the Department of Orthopedics, Philippine General Hospital over the past twenty-seven years. *Estrella, Emmanuel P., Orillaza, Jr., Nathaniel S., Decenteceo, Ana Cristina D.*

Background. Clinical research has been part of the orthopedic residents' training program over the past 27 years of the Department of Orthopedics, Philippine General Hospital. The purpose of the present study was to determine the levels of evidence in the researches done by orthopedic residents in training from January 1983 to December 2010.

Methods. The authors reviewed all completed research performed by the department's orthopedic residents in training from January 1983 to December 31, 2010. The exclusion criteria for the study were as follows: review articles, research articles whose full texts were not available and those research articles in which consultants were primary authors. The research articles were scored according to the level of evidence proposed by the *Journal of Bone* and *Joint Surgery* (American Volume), and were categorized according to decade: 1980s, 1990s, and 2000s.

Results. A total of 224 research articles were retrieved and reviewed. There were no Level I studies performed in the department by the residents since 1983. There was a significant increase in the number of Level II and Level III studies from the 1980s to the 2000s (p=0.00010. The Hand Section had the highest number of Level II studies 8.6% (3 out of 35) while the Adult Section had the highest number of Level III studies at 21% (11 out of 53). The Pediatric Section had the highest number of Level IV studies at 91% (30 out of 33).

Conclusion. The level of evidence in research conducted by the orthopedic residents in training of the Department of Orthopedics, Philippine General Hospital has improved significantly in the past 27 years. (Author's abstract)

Keywords: Medicine, Level of evidence, Orthopedic residents, Residents' research, Research in orthopedic training

Acta Medica Philippina, Volume No. 46 Issue No. 2, 44-47 2008, (Filipiniana Analytics)

Isolation and structure characterization of chemical constituents from *Micromelum compressum* with *in vitro* antituberculosis activity

Vidar, Warren S., Macabeo, Allan Patrick G., Kohls, Paul, Wang, Yuehong, Franzblau, Scott G., Aguinaldo, Ma. Alicia M.

This study investigated polymethoxy flavones from the leaves of *Micromelum compressum* with synergistic inhibitory effect against *Mycobacterium tuberculosis* H37Rv. The crude DCM-MeOH extract obtained from the sample exhibited 84% inhibition against *M. tb.* at 128 µg/mL using the colorimetric microplate Alamar blue assay (MABA). It was subjected to acid-base partitioning, followed by partitioning by polarity using petroleum ether, DCM, and water and gave three fractions (McP, McD, and McW). McD was partitioned using vacuum liquid chromatography yielding five fractions where the third showed 96% inhibition against *M. tb.*, while McP showed 92%, at 128 µg/mL. Silica chromatographic purification of McD3 resulted in the isolation of the following: 3,5,7,4' - tetramethoxyflavone (McD3.3), a 1:1 mixture of McD3.3 and 3,5,7,8,4' -pentamethoxyflavone (McD3.5), and a mixture with the pentamethoxyflavone and traces of McD3.3 (McD3.6) The structures were elucidated using HREIMS, 1H-NMR, 13C-NMR, COSY, HSQC and HMBC. MABA showed McD3.3 and McD3.6 to have low inhibition against *M. tb.*. Surprisingly, McD3.5, exhibited a good activity with a minimum inhibitory concentration (MIC) of 15.98 µg/mL. The results also uniquely present the synergism of two polymethoxy flavones in enhancing the inhibition of *M. tb.*, making it a potential source of antitubercular constituents. **(Author's abstract)**

Keywords: Medicine, Micromelum compressum, Polymethoxy flavones, Synergistic effect, Antitubercular inhibitory activity, Antitubercular constituents

Transactions of the National Academy of Science and Technology, Volume No. 34 Issue No. 1, page 124 2008, (Filipiniana Analytics) Fil(S) Q149.P5 N25 34/1 2012

0280

Jejunal ischemia in a 15 year old female with primary antiphospholipid antibody syndrome: a case report and review of literature *Genuino, Maria Lourdes G.*

Antiphospholipid antibody syndrome (APS) is increasingly being recognized in pediatrics as a cause of vascular thrombosis. Thrombotic events are diverse and could affect any organ system. Intestinal involvement however, is rarely reported for both the pediatric and adult population. This paper describes the first locally reported case of primary APS with jejunal ischemia in the pediatric age group. It aims to highlight the pertinent clinical features as seen in this patient. A review of literature is also provided on the current issues on clinical significance of antiphospholipid antibodies and on optimal anticoagulation treatment to prevent recurrence of thrombosis. (Author's abstract)

Keywords: Medicine, Antiphospholipid antibodies, Antiphospholipid antibody syndrome, Thrombosis, Jejunal ischemia, Pediatric, Heparin

Acta Medica Philippina, Volume No. 43 Issue No. 3, 56-60 2008, (Filipiniana Analytics) Fil(S) R97.4 A21 43/3 2009

The landscape of health researches in Ilocos Region, Philippines Cadorna, Edelyn A., Cadorna, Erwin

The content and methods of research adopted reflect the expertise of researchers and the capability of academic programs. This study analyzed the health researches conducted in the Ilocos Region and focused on quantity and quality. The descriptive research design was utilized in the study. The respondents were the health researchers in Ilocos Region. The data were gathered through the use of a questionnaire and supplemented by documentary analysis and interviews. The quality of the researches was evaluated by the researchers themselves and then validated by two research experts. Results showed that there were 241 health researchers and 248 health researches conducted in the region. The health researches conducted in the hospitals were mostly clinical, while those conducted in the academic institutions were theses and dissertations. Majority of the researches were conducted by individual authors and personally funded and mainly focused on local concerns. Most of the researches were published in research and scientific journals, disseminated through forums, conferences, research display and exhibits, but they were not actually utilized. In general, the health researches conducted in the region had average quality. The study concluded that researches were moderately relevant and responsive, highly effective, highly scientific, highly transferable, but slightly disseminated. Furthermore, the personal and professional variables of the respondents contributed significantly to the quantity and quality of the health researches conducted. (Author's abstract)

Keywords: Medicine, Health research, Documentary analysis, Scientific journals, Ilocos region

Asian Journal of Health, Volume No. 2 Issue No. 1, 39-53 2012, (Filipiniana Analytics) NP

0282

Level of community awareness on selected medical imaging modalities on the availability of health care services in Canitoan Village

Flores, Khristy Joy L., Ebcas, Eamme Fides U., Cepeda, Brent Lloyd D., Carbon, Niña Marie C., Almajar, Ja

The study pertains to community awareness on selected medical imaging modalities. A study that answered questions of community on the benefits of diagnostic examinations in discovering illnesses, and delivery modes of health care services in the community. It sought answer the following objectives: 1) Identify respondents $\hat{a} \in \mathbb{T}^{M}$ profile, their level of awareness on the availability of and access ability of selection imaging modalities; 2) determine referral system practiced in the village; 3) identify the relationship between respondents $\hat{a} \in \mathbb{T}^{M}$ profile and their level of awareness; and relationship between referral systems used in the community. Study employed the descriptive method to describe the characteristics of respondents. The following conditions were derived from the study. Respondents $\hat{a} \in \mathbb{T}^{M}$ monthly incomes were significant in measuring level of awareness of the medical imaging modalities, while the rest of the variables were not. Majority of the respondents were less knowledgeable with new imaging modalities in the city such as CT Scan, MRI and Nuclear Medicine. Respondents relied on information

from the neighborhood, health center provider and microteaching of health care students. Referral system used by respondents contributed to their low level of awareness since they most likely acquire information from personnel in the health care center, who refer them to hospital that could render needed service. (Author's abstract)

Keywords: Medicine

Advancing Radiologic Technology Research, Volume No. 1 Issue No. 1, 2013, (Filipiniana Analytics) NP

0283

The level of discomfort experienced among patients who undergone mammographic examination

Sabellina, Charisse Mae L., Sabaña, Kareen June P., Rosell, Diana Cristy B., Ebcas, Erich Jan E., Abugho, Jesyl D., Almajar, Ja

The study was designed to measure the level of discomfort experienced among patients who have undergone mammographic examination. First, to identify the profile of the patients in terms of age, size of breast, marital status, and number of mammogram examinations experienced and family history of breast tumor. Second, to determine the perception of discomfort experienced by patients before, during, and after the procedure. Third, to determine the relationship between the profiles of patients and their perception of pain during the procedure. To achieve the objectives, the study used the descriptive survey since the researchers decided to determine the extent or the level of pain experienced by the patient during mammographic examination. The respondents of this research were patients, who have undergone mammographic examination in selected hospitals, in Cagayan de Oro City namely; Polymedic General Hospital, Cagayan de Oro Medical Center and Madonna and Child's Hospital. Majority of the respondents that had undergone mammographic examination belonged to the age bracket of 41-50 years old, with cup size B (breast), married and first time to undergo mammographic examination. It showed that most of the respondents felt nervous before examination. Moreover, the results showed that there is a significant relationship between the size of breast and number of mammograms experienced whereas ages, marital status, family history of breast cancer were not significant. (Author's abstract)

Keywords: Medicine

Advancing Radiologic Technology Research, Volume No. 1 Issue No. 1, 2013, (Filipiniana Analytics) NP

0284

Lived experiences of patients undergoing cardiac rehabilitation Sintay, Robert Kenn

This qualitative study focused on the patients' lived experiences in cardiac rehabilitation. A phenomenological research design was the foundation of the study. The lived experiences of the patients directly discovered the uniqueness of the true meaning of cardiac rehabilitation experience in its physical and psychological aspects. Participants were selected through purposive and snowball sampling. Key informant interview served as a method

for data collection. Themes that emerged from the participants' unique encounter comprised of three (3) major themes: recovery, behavior modification and interpersonal relationship and fifteen (15) subthemes: physical recuperation, sexual activity, positive outlook in life, motivation, psychological recovery, gaining new knowledge, fear, openness, self-discipline, empathy, change in mood, willingness to participate, spiritually, safety, camaraderie, and family support. In conclusion, listening and learning the experiences from the patient who is in the process of CCReP lead us to identify the physiologic and psychological aspect of recovery. This study on CCReP provided an insight not only about clinical improvement but also about the body of the nursing profession. Greater encouragement to post operative cardiac surgery will allow patients to immerse themselves in the uniqueness of the experience and the positive physiological and psychological effect of cardiac rehabilitation. (Author's abstract)

Keywords: Medicine, Cardiac rehabilitation, Psychological recovery, Behavior modification, Physical recuperation

Asian Journal of Health, Volume No. 1 Issue No. 1, 60-77 2011, (Filipiniana Analytics) NP

Lived experiences with arthritis among older people *Defensor, J*

Arthritis is one of the many disabling diseases in the Philippines today. Its effects on the older persons are paramount in terms of productivity and quality of life. This study identified the experiences of older people with arthritis in Cagayan de Oro City. A descriptive method was used. The study was conducted at the office of Senior Citizen's Organization, Cagayan de Oro City. The respondents were members of OSCA (Office of Senior Citizen Affairs) who are affected by arthritis. An interview schedule was used in the gathering of data. The majority of older people are still living under the debilitative and disabling effects of arthritis despite the advancement of medical management. Without proper medical management of arthritis, quality life for older people with arthritis shall remain to be attained. Effective ways must be done to deliver education, knowledge and understanding of arthritis to the older individuals. (Author's abstract)

Keywords: Medicine, Lived experiences, Arthritis, Older people

Asian Journal of Health, Volume No. 1 Issue No. 1, 100-118 2011, (Filipiniana Analytics) NP

0286

Making sense of ultrasound results in obstetrics and gynecology Crisostomo, Conrado P.

Sonographic features of normal and abnormal gestations during the three trimesters have been discussed. Emphasis was made on sonographic findings in abortion, ectopic gestation, determination of gestational age, fetal weight, assessment of amniotic fluid and diagnosis of placenta previa and placenta accreta. In gynecology, TVS features of the normal uterus and ovary were discussed. Findings in ovarian neoplasms were also elaborated. Limitations with the use of the ultrasound and the advantages of the TVS over the TAS were discussed. Lastly,

recommendations to maximize the use of the US machine for the improvement of delivery of health care for women were enumerated. (Author's conclusion)

Keywords: Medicine, Ultrasound, Obstetrics, Gynecology

The Medical Journal of De La Salle University, Volume No. 11 Issue No. 4, 40-45 2008, (Filipiniana Analytics) Fil(S) R935 M468 11/4 1995

0287

A master of science in genetic counseling program in the Philippines Laurino, Mercy Ygona, David-Padilla, Carmencita, Alcausin, Maria Melanie B., Silao, Catherine Lynn T., Cutiongco-de la Paz, Eva Maria

In the Philippines, there is an urgent need to expand the clinical services for diagnosis, management and emotional support for patients with genetic conditions and their family members. Despite the lack of trained health care providers with specialization in genetics, public health-related genetics programs are continuously being implemented. To address these current demands, strategic planning began in 2009 between local medical geneticists and international genetic professionals to develop the curriculum for an advanced degree in genetic counseling program. The Board of Regents at the University of the Philippines approved the proposed curriculum in January 2011, and training of the Philippines' first cohort of genetic counseling students commenced in June 2011. The successful implementation of the MS in Genetic Counseling program will provide the opportunity to incorporate the much needed genetic counseling services in the country. (Author's abstract)

Keywords: Medicine, Genetic counseling, Philippines

Acta Medica Philippina, Volume No. 41 Issue No. 2, 7-9 2008, (Filipiniana Analytics) Fil(S) R97.4 A21 45/4 2011

0288

Modified Mc Robert's Maneuver vs Mc Robert's Maneuver in shortening the second sstage of labor Monzon, Liza, Alvero, Rita Grace

This study, which involves forty-eight primigravida, aims to determine which birth method will shorten the second stage of labor, which specifically refers to that "period of cervical dilatation to expulsion of the fetus." Two methods of birthing position were compared: The Modified McRobert's Maneuver group (designed by Ocampo et.al) which "requires a lesser degree of flexion of the patient's legs," and Mc Robert's Maneuver (a position described by Williams), where "the legs were sharply flexed upon the patient's abdomen." Inclusion and exclusion criteria for the patients involved were indicated in this study. The results which were analyzed using Independent T-test, processed in Dbase and SPSS, showed that the period of second stage labor is shorter in McRobert's Manuever (Williams) than in the Modified McRobert's group (Ocampo et. Al.) Thus, the former position is strongly recommended to mothers giving birth to shorten the duration of the second stage of labor.

Keywords: Mc Robert's Maneuver, Modified Mc Robert's Maneuver, Medicine, Independent T-test

The Medical Journal of De La Salle University, Volume No. 11 Issue No. 2, 17-20 2008, (Filipiniana Analytics) Fil(S) R935 M468 11/2 1995

0289

Modified negative pressure wound therapy (NPWT): an experience of 106 cases at Philippine General Hospital Dy, Jr., Albert U., Ranjeet, Niraj

We studied 106 cases of Negative Pressure Wound Therapy (NPWT) or Vacuum Assisted Closure (VAC) from 2000-2004 on open wounds. Our modification using packing foam, infant feeding tube, wall suction set at 60-70 mmHg and Glad[®] or Saran[®] wrap showed similar good results. (Author's abstract)

Keywords: Medicine, Negative pressure wound thepary (NPWT), Vacuum assisted closure (VAC), Open wounds

Acta Medica Philippina, Volume No. 43 Issue No. 3, 29-33 2008, (Filipiniana Analytics) Fil(S) R97.4 A21 43/3 2009

0290

Music on the second stage of labor among women in their first pregnancy Elizon, Lagrimas G., Gonzaga, Joni Inocencia, Cañeda, Hazel, Bejoc, Jillian A., Ysmael, Fleoy T., Palompon,

This study determined the effects of music on the duration of the second stage of labor among primigravida or women in their first pregnancy at Cebu City Medical Center. An experimental design was utilized in this study with experimental and control group. A random sampling was utilized with the following criteria considered: a) primigravida or women on their first pregnancy admitted at the Delivery Room; b) age bracket: 20-30 years old; c) no complications of pregnancy. All respondents had Normal Spontaneous Vaginal Delivery (NSVD). Each qualified respondent was chosen randomly to three conditions. A total of forty-five respondents (15 for classical music group, 15 fast music group and 15 for silence or control group) was selected. The shorter the second stage of labor, the more effective is the treatment provided. Findings revealed that the group of mothers who had no music has the shortest duration of the second stage of labor, followed by the group using fast music and the longest duration was that of the group using slow music. ANOVA computation was done which was significant at p=.05. Scheffe's Test further showed that fast music is more effective in hastening the second stage of labor than slow music and a significant difference between the slow music group and the no music group was also identified. **(Author's abstract)**

Keywords: Medicine, Normal Spontaneous Vaginal Delivery (NSVD), Music, Primigravida, Scheffes Test

Asian Journal of Health, Volume No. 1 Issue No. 1, 227-239 2011,

(Filipiniana Analytics) NP

Myocardial perfusion scintigraphy: utilization patterns and impact on patient management at the Philippine Heart Center

Obaldo, J.M., Torres, Jr., J.F, Monzon, O.P., Martinez, A.O., Bolotaulo-Sadava, T.M.

The clinical use of SPECT myocardial perfusion scintigraphy in 101 patients referred to the nuclear medicine department of a tertiary care hospital was evaluated. The most common indications for requesting the test were for assessment of myocardial viability after infarction, determination of the size of the infarcted or ischemic area, and confirmation of the presence or absence of suspected coronary artery disease (CAD). Using the chest symptoms and demographic data to calculate pretest likelihood for CAD, it was determined that 10 had high probability, 34 had intermediate probability and 8 had low probability for the disease. The rest (49 patients) had proven CAD. The test result contributed to a modest degree of stratification into the extremes of CAD likelihood. There was a change in the decision to catheterize in 17 of the 101 patients, planned catheterizations being reduced by 25% (16/64) as a result of the scan findings. A normal scan had greater impact however, with the perceived need for catheterization going down by 80%. A change in whether to proceed with surgical procedures (angioplasty or bypass) or not was also noted in 17 patients. Finally, the results contributed to achange in medical management in 29 patients. Our data indicate that perfusion scanning is used more often for the functional information it gives, rather than simply for CAD detection, and has substantial impact on subsequent clinical decision-making. (Author's abstract)

Keywords: Medicine, SPECT, Coronary artery disease (CAD), Myocardial perfusion scintigraphy

The Nucleus: Official Journal of the Radioisotope Society of the Philippines, Inc, Volume No. Issue No., 1-5 2008, (Filipiniana Analytics) Fil(S) QC173 N88 v30 1992

0292

Non-microsurgical technique of fingertip replantation: a report of three cases *Estrella, Emmanuel P.*

The goal of surgery in fingertip amputation is to restore finger length, preserve function and at the same time provide cosmetic acceptability. Treatment options are varied and can range from simple suturing of the stump to microvascular replantation surgery. We report three cases of fingertip amputations in one adult and two pediatric patients treated with non-microsurgical replantation of the fingertip using the palmar "pocket" technique. (Author's abstract)

Keywords: Medicine, Fingertip amputation, Non-microsurgical replantation, Finger replantation

Acta Medica Philippina, Volume No. 46 Issue No. 2, 74-77 2008, (Filipiniana Analytics) Fil(S) R97.4 A21 46/2 2012

Nursing program and patient watchersâ€TM satisfaction on the quality of nursing care in Bukidnon Provincial Hospital, Malaybalay City

Tiu, Jr., Richard B., Pellazar, Dennis Daniel I., Macapundag, Qamarah R., Diola, Anthony Ashly G., Vitorillo, Rory P., Dalman, Judit

This descriptive study was conducted to determine the relationship of the Nursing Program and Patient Watcherâ€[™]s Satisfaction on the Quality of Nursing Care provided by the Nurses at Bukidnon Provincial Hospital in Malaybalay City, Bukidnon. In context, the study sought to answer the following aspects: What is the type of Nursing Program of the Staff Nurses, the level of patient-watcher's satisfaction on the quality of Nursing Care provided by the nurseâ€[™]s in terms of their roles as care provider, advocate and as a teacher, and the relationship between the Nursing Program and the patient-watcherâ€TMs satisfaction on the quality of nursing care provided. The findings of the study are; of the 21 nurses at the Bukidnon Provincial Hospital, 62% finished the Bachelor of Science in Nursing program through taking Associate in Health Science Education and 38% finished on a pure Bachelor of Science in Nursing program. In terms of patient-watcherâ€[™]s profile, majority belong to the 40 years old and above bracket; most are females; High School graduates; and majority of the respondents are in-laws or others who could be house-helps or hired watchers of the patients. The patient-watchers were satisfied with the nursing care provided by the nurses particularly in terms of performing their roles as care providers, advocates and educators. Based on the findings, the following conclusions are came up: The nurses working at the hospital comprised of those who either finished the Associate in Health Science Education and Bachelor of Science in Nursing programs. Most of the patient-watcher's are in their forties and above age; high school graduates and household members, either helpers or paid watcher's (others). The patient-watcher was generally satisfied on the nursing care provided by the nurses as they assumed the roles of acre providers, advocates, and as teachers to the patient's. Whether the staff-nurses were graduates of the Associate in Health Science Education and Bachelor of Science in Nursing programs, these facts did not create any difference at all in the satisfactory performance they have shown to their patients and as observed by the patient-watchers. (Author's abstract)

Keywords: Medicine

Nursing Research Journal, Volume No. 5 Issue No. 1, 2009, (Filipiniana Analytics) NP

Posterior fossa tumors: clinical outcome of surgery without cerebrospinal fluid diversion Legaspi, Gerardo D., Jimenez, Kay Celine P.

Objective: To present the results of surgery for posterior fossa tumors without CSF diversion and describe the patients who may require permanent CSF diversion post op.

Methods: We analyzed data of 72 patients with posterior fossa tumors and hydrocephalus who were treated surgically through a suboccipital craniotomy/craniectomy and tumor excision without CSF diversion. All of the patients were operated on by the authors and the surgical technique standardized as follows: suboccipital craniotomy/craniectomy, early access of the cisterna magna and evacuation of CSF until the posterior fossa compartment is relaxed, then tumor excision. Data underwent statistical tests for significance for the variables age,

tumor type, tumor location, degree of hydrocephalus and extent of tumor excision using Mantel-Haenszel estimates and p values.

Results: The mean age of patients was 36.15 years. The most common tumor type was schwannoma. Eighty-six percent (86%) of patients had moderate to severe hydrocephalus. Eighty-one percent (81%) had total tumor excision. No patient required any other form of CSF drainage or diversion intra-op. The complication rate was 4.2%, with pseydomeningocoele being the most common complication. Four patients required a permanent VP shunt post tumor excision.

Conclusion: The good clinical outcome and low postoperative shunt insertion rate in our series led us to believe that posterior fossa tumor surgery without CSF diversion is a safe and effective treatment plan for posterior fossa tumors with hydrocephalus, and routine CSF diversion for posterior fossa tumor surgery may not be entirely justified. Factors such as age, tumor type, tumor location, degree of hydrocephalus and extent of excision, which showed a statistically significant association with the postoperative shunt requirement in our study, should be considered when the decision regarding CSF diversion is made. **(Author's abstract)**

Keywords: Medicine, Posterior fossa, Tumors, CSF diversion

Acta Medica Philippina, Volume No. 43 Issue No. 3, 25-28 2008, (Filipiniana Analytics) Fil(S) R97.4 A21 43/3 2009

0295

Predictive value of lateral bending, push-prone, and fulcrum-bending radiographs in adolescent idiopathic scoliosis Arbatin, Jr., Jose Joefrey F., Bundoc, Rafael C.

Introduction. The advent of pedicle screws which provide distraction and derotation has led to higher correction of major curves. Newer methods have been devised to evaluate preoperative coronal flexibility, including lateralbending (LB), push-prone (PP) and Fulcrum-bending (FB) radiographs. Documentation of a consistent radiographic method predictive of correction rate has not been established.

Objective. To determine the most predictive radiographic method for evaluating spine flexibility and correction by comparing the correction rate (CR), flexibility rate (FR) and correction index (CI) of the Cobb's angle using the different radiographic methods.

Methods. Preoperative radiographs of 20 patients who underwent spinal fusion for adolescent scoliosis were obtained using the LB, PP, and FB method and compared with postoperative radiographs.

Results. Comparing the mean Cobb angles using the different methods to that of postoperative standing showed that only the FB method is not significantly different from the latter (p=0.669). There was significant difference between the Cobb's angle measured on the LB and PP and that measured on postoperative standing (p=0.043, p=0.008). Comparing the mean flexibility of the different methods with the mean CR also showed that the mean FR of LB (p=0.007) and PP (p=0.00013) were significantly different from the CR (p=0.687).

Conclusion. The FB radiograph demonstrated no statistical difference compared to postoperative radiograph, FR, and CI. (Author's abstract)

Keywords: Medicine, Scoliosis, Radiography, Adolescent, Spinal fusion

Acta Medica Philippina, Volume No. 46 Issue No. 2, 48-54 2008, (Filipiniana Analytics) Fil(S) R97.4 A21 46/2 2012

Preliminary determination of the microbial count on x-ray tables in selected hospitals in Cagayan de Oro City, Philippines

Barrieta, John Lester S., Balcovero, Marvs Tadeo D., Baguio, Robbie Ringo G., Espina, Edzen A., Banasihan, Dan Engela

This study aimed to determine the microbial count present on x-ray tables utilized during x-ray examinations with patients in Radiology Departments of Cagayan de Oro City hospitals. Particularly, it sought to evaluate and assess the sanitary conditions of these x-ray tables. This study used the evaluation research approach to determine the sanitary level of the x-ray tables. In order to rate the sanitary level, $\hat{a} \in \mathbb{C}$ Ollins and Lyne $\hat{a} \in \mathbb{T}^{M}$ s Microbiological Method Chapter 17 $\hat{a} \in \mathbb{C}^{W}$ Swab \hat{e} was used as the guide of the study. This method made use of the swab rinse method. The parameter utilized the total plate count which was an estimation of the number of viable cells in a culture. Based on the microbial count results released by DOST, Hospitals A, B, and C yielded microbial counts of 28, 40, and 36 CFU/ cm² respectively while Hospitals D and E yielded 100 and 164 CFU/cm² respectively. Based on the findings, Hospitals A, B, and C yielded microbial counts that were less than 100 CFU/ cm² and are within the limits established by USPHS, thus, they were considered sanitary. Meanwhile, Hospitals D and E have exceeded the limits and were considered unsanitary. (Author's abstract)

Keywords: Medicine

Advancing Radiologic Technology Research, Volume No. 1 Issue No. 1, 2013, (Filipiniana Analytics) NP

0297

A preliminary study on the efficacy of plumeria acuminate (Kalachuchi) bark extract ointment versus clotrimazole cream in the treatment of otomycosis *Boncalon, Rhoda Mae V., Arugay, Marida Arend V., Ramos, Rachel Zita*

Objective: To compare the therapeutic efficacy of kalachuchi (Plumeria acuminata Ait.) bark extract ointment (KO) and clotrimazole cream 1% (CC) in the treatment of otomycosis. Methods Design: Randomized double blind controlled trial Setting: Outpatient otorhinolaryngology clinic of a tertiary government hospital Subjects: Patients aged 18-years-old and above diagnosed clinically to have otomycosis with a positive potassium hydroxide (KOH) smear were randomly assigned to kalachuchi (Plumeria acuminata Ait.) bark extract ointment or clotrimazole cream 1% in unlabeled containers. Selfapplication thrice daily for two weeks followed initial detailed instructions and demonstration. Symptoms, physical findings and repeat KOH smears were recorded after the first and second weeks of treatment. Results: Eighteen patients with otomycosis were enrolled in the study. There was one dropout per treatment group with no intention to treat. There were no statistically significant differences between KO and CC, with 75% (n=8) and 87.5% (n=8) cure rates, respectively. One subject in the KO arm reported severe ear pain. Conclusion: Kalachuchi extract ointment may be a promising topical antifungal agent. Multicenter clinical trials to

establish its efficacy and safety as an effective alternative in the management of otomycosis should be conducted. (Author's abstract)

Keywords: Otomycosis, Medicine, Kalachuchi, plumeria acuminate, Clotrimazole, Clinical trial, Herbal medicine

Philippine Journal of Otolaryngology Head and Neck Surgery, Volume No. 24 Issue No. 1, 5-8 2009, (Filipiniana Analytics) NP

0298

Preparation of the blood-enriched agar with the use of red cell suspension Sumaray, Karen D., Llanes, Darwin A., Castillo, Melvin M., Caringal, Ma. Charisma S., Aro, Richelle S., Magbojos, Car

A culture medium is said to support the growth and development of different microorganisms. Certain bacteria like *Staphylococcus aureus* and *Staphylococcus epidermidis* entail hemoglobin found in the red blood cells. Because of its cost effectiveness and availability, expired human blood is being utilized in some developing countries. Despite the widely accepted disadvantages of using human blood as enrichment agent, many laboratories still opt to use it due to the unavailability of sheep blood or due to budgetary reasons. This study determined if the washed expired human blood can be used as an alternative enrichment agent in the preparation of Blood Agar Plate (BAP) culture medium in the isolation of *Staphylococcus aureus* ATCC 25923 and *Staphylococcus epidermidis* ATCC 12228. The cultural characteristics and hemolytic reactions of the selected microorganisms were recorded, assessed and compared with their growth in BAP. The stability of the washed expired human blood was evaluated in terms of temperature and storage period. Results reveal that expired human blood with washing improved the morphologic and hemolytic pattern of *Staphylococcus aureus*. The washing of blood had no effect on *Staphylococcus epidermidis* because it is a gamma hemolytic bacterium. Both unwashed expired and fresh human blood and washed fresh human blood produced beta hemolysis. Washed expired human blood could be stored for seven days and still could be used for microbial culture. **(Author's abstract)**

Keywords: Medicine, Blood, Blood-enriched agar, Red cell suspension

Asian Journal of Health, Volume No. 1 Issue No. 1, 271-287 2011, (Filipiniana Analytics) NP

0299

Prevalence of cumulative trauma disorders of the upper extremity and identification of risk factors among non-medical personnel in the University of the Philippines – Philippine General Hospital

Dizon-Mangubat, Hiyasmine, Galinato, Primavera B., Rafanan, Jose Bonifacio S.

Objectives: This cross-sectional study aimed to determine the prevalence of cumulative trauma disorders (CTDs) of the upper extremity among non-medical personnel of the University of Philippines – Philippine General Hospital

(UP-PGH) and to identify risk factors that may have contributed to their development.

Methods: A total of 87 participants from five different administrative divisions of the UP-PGH were included in this study. Three assessment tools were administered, namely: 1) symptoms survey form, 2) Rapid Upper Limb Assessment, and 3) ergonomic workstation evaluation checklist.

Results: The study showed that the prevalence of CTDs of the upper extremity was 47.1%. The highest prevalence of CTDs was noted in the Budget division (75%), which was composed mainly of budget officers and clerks. The most common CTD identified was myofascial pain syndrome. Among the socio-demographic factors, only handedness was significantly related to the development of CTDs (p=0.022).

Conclusion: This study did not show a significant relationship between the identified risk factors and the development of CTDs. Awareness of the existence of CTD cases as documented in this study, however, should raise concern from the authorities to implement corrective measures to reduce or prevent CTDs and to improve the general health and thus, productivity of the non-medical personnel at the UP-PGH. (Author's abstract)

Keywords: Medicine, Cumulative trauma disorders, Repetitive strain injury, Occupational overuse syndrome, Upper extremity, Office workers, Administrative personnel

Acta Medica Philippina, Volume No. 44 Issue No. 2, 45-51 2008, (Filipiniana Analytics) Fil(S) R97.4 A21 44/2 2010

0300

The prognostic value of pathologic fractures in patients with high-grade classic osteosarcoma Wang, Edward H.M., Durban, Claire Marie C., Serrano, Ma. Victoria T.

Pathologic fracture in osteosarcoma has traditionally been associated with a poor prognosis and is an immediate indication for amputation of the affected extremity. This concept has been questioned and remains an area of debate, especially because advances in osteosarcoma treatment have today resulted in better survival and limb salvage rates.

It is the objective of this paper to analyze the survival and limb salvage rate of osteosarcoma patients presenting with pathologic fractures and compare these with the population of osteosarcoma patients without pathologic fractures.

Over a 15-year period (1993-2008), there were 84 patients presenting with non-metastatic high-grade classic osteosarcoma of the extremities (Enneking Stage IIB) who received complete treatment from the University of the Philippines-Musculoskeletal Tumor (UP-MuST) Unit and who had a follow up of at least 2 years. Ten of these 84 patients had pathologic fractures prior to surgery. Their overall survival was 50%, similar to the 50.38% overall survival of the entire group of 84 osteosarcoma patients. Limb salvage rate was 60%, similar to the 59% rate of patients without pathologic fractures.

This study shows that contrary to traditional teaching, overall survival for this subset of osteosarcoma patients with pathologic fractures is acceptable at 50% and is equal to that of the entire group of osteosarcoma patients. At the same time, successful limb salvage surgery is possible despite the presence of a pathologic fracture, especially in patients with good response to chemotheraphy. (Author's abstract)

Keywords: Medicine, Pathologic fractures, Osteosarcoma, Limb salvage surgery

Acta Medica Philippina, Volume No. 46 Issue No. 2, 9-12 2008, (Filipiniana Analytics) Fil(S) R97.4 A21 46/2 2012

Prosthesis for a patient with proximal femoral focal deficiency de Leon, Kristopher P., Inciong, Gaerlan D.

Proximal femoral focal deficiency is a rare birth defect that affects the hip bone and the proximal femur. The incidence is one case per 50,000 to 200,000 population. The disorder may be unilateral or bilateral, with the hip being deformed and the leg shortened. The goal of treatment is to provide optimal function during standing and ambulation. A 15-year-old male diagnosed with left proximal femoral focal deficiency was admitted for prosthetic reabbilitation. He presented with a very short left lower extremity, 38 cm leg length discrepancy, flail left hip and knee joints, and normal range of motion at the left ankle, and with muscles graded at 4/5. The patient was independent in transfer activities and ambulated with bilateral axillary crutches. A combination of orthosis and prosthesis (henceforth "prosthosis") was designed for the patient with a mechanical hinge joint to equalize the leg length and to improve lower extremity function during standing and ambulation. Upon discharge, the patient was independent in donning and doffing the prosthesis, was ambulatory using the prosthesis without gait aid but with minimal listing during the stance phase on the prosthesis side. During the patient's two-year follow-up, adjustment of the prosthesis was done to accommodate growth; checking of the prosthesis for mechanical breakdown and anticipatory management of potential musculoskeletal complications and psychosocial concerns on the use of the prosthesis were also done. (Author's abstract)

Keywords: Medicine, Proximal femoral focal deficiency, Leg length discrepancy, Prosthesis, Prosthosis

Acta Medica Philippina, Volume No. 44 Issue No. 2, 62-66 (Filipiniana Analytics) Fil(S) R97.4 A21 44/2 2010

0302

Radiographic analysis between real human and human phantom using conventional x-ray machine in Liceo de Cagayan University School Year 2009-2010 Boo, Feyd, Bongaros, Amaliah, Cabasag, Carl Benedict, Orong, Denise O., Bastillada, Ju

Major problems of Radiologic Technology students who are currently enrolled in subjects such as radiographic technique and positioning are the insufficient and poor radiographic quality of Human Phantom and its limited movements. This Human Phantom contains structures same as in real human and is designed to serve as a replacement of real human in study purposes. Radiographic images of human phantom are obtained together with real human radiographic images. Series of different radiation exposures is conducted in both human phantom and real human using the same technique factors. This study was conducted using conventional type of x-ray machine presently used in Radiologic Technology Laboratory. Radiographic images of human phantom are then compared to real human radiographic images by rating with the aid of some registered professionals who are experts in this field. Human phantom was found to be good in demonstrating some anatomical structures but was found to be insufficient and poor in radiographic quality due to its vague image as compared to real human using conventional type of x-ray

machine presently used in Radiologic Technology laboratory. Overall, human phantom is quietly not suitable in using conventional type of x-ray machine when it comes to radiographic quality. (Author's abstract)

Keywords: Medicine

Advancing Radiologic Technology Research, Volume No. 1 Issue No. 1, 2013, (Filipiniana Analytics) NP

0303

Rash of motorcycle accidents: a growing national health concern Geronilla, Mario B., Sison, Joseph Keat T.

Introduction. Discussions on road safety are both timely and relevant. From its sixth place in 1995, death from road accidents rose to fourth in 2004, and is expected to become the second leading cause of death worldwide by 2020. It is notable that road accidents specifically motorcycle accidents are increasingly more common among developing countries such as the Philippines.

Objectives. Because of this growing public concern, this cross-sectional descriptive study aims to determine the profile of motorcycle accidents in Metro Manila, the prevalence of musculoskeletal injuries resulting from such accidents, and to proposed recommendations for its prevention.

Methods. Charts and clinical records of road accident victims from three major institutions namely, the Philippine General Hospital, Philippine Orthopedic Center and East Avenue Medical Center were selected. The profile of these patients and the incidence of musculoskeletal injuries were gathered.

Results. Males were found to be more involved in these accidents with an average age in the range of 21 to 35 years. The most common time of fatal vehicular accidents was at 9 p.m. while nonfatal injuries occurred most commonly around 4 a.m. Motorcycles rank as the leading cause of injuries to motorists, both fatal and nonfatal. There was a 16.3% increase in the incidence of motorcycle-related musculoskeletal injuries from 2007 to 2008. The lower extremity was involved in half of cases with the rest occurring in the spine and upper extremity. The most commonly involved segment was the tibia (25%), followed by the femur (20%) and the forearm (12.5%).

Summary and Recommendations. It is apparent that the increase in vehicular crash causing fatal accidents is due to an increased number of motorcycles and cars, and these commonly involve the pedestrian and drivers. It is understandable that in order to improve road safety, education should be enhanced among motorists and students alike as a form of prevention, and primary trauma centers should be determined to facilitate identifying which centers can adequately manage these injured motorists. (Author's abstract)

Keywords: Medicine, Road safety, Motorcycle accident, Fatal injuries, Nonfatal injuries, Musculoskeletal injuries

Acta Medica Philippina, Volume No. 46 Issue No. 2, 5-8 2008, (Filipiniana Analytics) Fil(S) R97.4 A21 46/2 2012

Reconstruction of the first metacarpal after giant cell tumor excision using nonvascularised fibular autograft, ligament reconstruction and tendon interposition arthroplasty of the carpometacarpal joint

Orillaza, Jr., Nathaniel S., dela Rosa, Tammy L., ASTRO (Advanced Study and Research in Orthopedics) Study Group

We report an innovative approach to reconstructing the defect after excision of a giant cell tumor (GCT) involving the entire first metacarpal. Reconstruction was performed using non-vascularized fibular autograft fused at the metacarpo-phalangeal (MP) joint and soft tissue arthroplasty using ligament reconstruction and tendon interposition (LRTI) at the carpometacarpal (CMC) joint of the thumb.

Two years after the procedure, the CMC joint had functional pain-free motion and radiographs showed fusion of the MP joint. The patient did not present with any major complication and was satisfied with the outcome of the procedure. (Author's abstract)

Keywords: Medicine, Metacarpal giant cell tumor, Suspension arthroplasty, Hand tumor reconstruction, Non-vascularized fibula graft

Acta Medica Philippina, Volume No. 46 Issue No. 2, 60-63 2008, (Filipiniana Analytics) Fil(S) R97.4 A21 46/2 2012

0305

Resiliency in sexually abused children and adolescents seen at the child protection unit of a tertiary government hospital Calma-Balderrama, Norieta

Resiliency is "the capacity to withstand, recover, and even grow from negative experiences." (Banaag, 1997) This study examines the demographic characteristics and most common resiliency factors seen in sexually abused pre-adolescents and adolescents screened for mental illness at the University of the Philippines-Philippine General Hospital (UP-PGH) Child Protection Unit. The subjects of the study were all sexually abused children and adolescents screened at the Child Protection Unit from January to April 2009 who were not found to have any behavioral problems or mental disorders. Of the 28 subjects, 19 were adolescent and 9 were pre -adolescent. Sixteen subjects only completed grade 3 while seven completed grade 6; and fourteen students were in high school. Among the children who had parents who were not married, they had more than four household members. All the subjects had low socioeconomic backgrounds and were mostly being cared for by their mothers. Using the resiliency scale translated by Cadao, Rubia, and Banson (Cadao, et al. 2008), 36 items were found to contribute to their resiliency. The items that were also the most common resiliency factors in the order of importance were: verbal ability as part of interpersonal skills; spirituality; adult support; the child's use of her talents; and opportunities for major life changes. This study differs in some aspects compared with other studies done in the Philippines and will be helpful in mapping out resiliency modules for sexually abused adolescents. (Author's abstract)

Keywords: Medicine, Resilliency, Sexual abuse, Mental illness

Acta Medica Philippina, Volume No. 43 Issue No. 3, 34-37 2008, (Filipiniana Analytics) Fil(S) R97.4 A21 43/3 2009

Resurgence of Schistosomiasis japonicum in school children in Agusan del Sur, Philippines: Opportunities for control in the school setting

Belizario, Jr., Vicente Y., Amarillo, Maria Lourdes E., Martinez, Ruth M., Mallari, Alexander O., Tai, Cyndi Mae C.

Objectives: The aim of this study was to describe baseline prevalence rates and intensity of schistosome infection in
publicpublicschoolchildreninBunawanandTrento.

Methodology: The municipalities of Bunawan and Trento, which are located in the province of Agusan del Sur in Mindanao Island, Philippines, were chosen as study sites. The study targeted individuals belonging to the 10 to 19 year old age group. The Kato Katz technique was used for quantitative assessment of infection. The data gathered was used to derive the cumulative prevalence and intensity of infection. The results of the study were encoded using EpiInfo Version 6.0 and Stata 8.0 software. Ten percent of all Kato-Katz slides were reread by a reference microscopist.

Results: The overall prevalence of schistosomiasis was 31.8%. Among the 351 pupils examined in Bunawan, 23.1% were positive for *Schistosoma* infection. Moderate to heavy intensity infections were observed in 46.9% of the pupils. In Trento, 33.9% of the1,497 pupils examined had *Schistosoma* infection. A little more than half (54.4%) had moderate to heavy intensities of infection.

Conclusion: The overall prevalence of schistosomiasis in school children remains high, with a strong possibility of the existence of significant morbidity. School-based strategies are recommended to address the high prevalence of schistosomiasis in the community. Integration of the control of schistosomiasis, lymphatic filariasis and soil-transmitted helminth infections may be the most promising approach for more cost-effective control of these parasitic diseases in developing countries. (Author's abstract)

Keywords: Medicine, Schistosomiasis japonicum, Agusan del Sur, Philippines, Oncomelania hupensis quadrasi, Soil transmitted helminth infections

Acta Medica Philippina, Volume No. 41 Issue No. 2, 9-14 2008, (Filipiniana Analytics) Fil(S) R97.4 A21 41/2 2007

0307

Self efficacy and self-care management outcome of chronic renal failure patients Balaga, Paolo Angelo

Patients with chronic renal failure (CRF) often fail to comply with their diet therapy, as well as hemodialysis and medications, caused by low perceived self-efficacy which undermines the effectiveness of self-care. This paper looked into self-efficacy and self-care management outcome of patients with CRF utilizing Bandura's Self-Efficacy Theory as basis for self-care management guidelines. Respondents included 50 randomly chosen CRF patients acquiring hemodialysis in Cebu City who answered the researcher-made questionnaire. Exploring patient's self-efficacy, the researcher observed that many respondents claimed compliance to diet, hemodialysis treatment and

medications and showed hypoalbuminemia and hypophosphatemia throughout the year. Diet adherence was positively correlated to albumin levels, had inverse relationship to interdialytic weight gain levels and had no significant correlation to preblood urea nitrogen levels. Kt/V and urea reduction ratio levels possessed no significant correlation to compliance with hemodialysis. Meanwhile, compliance with medications had direct bearing on hemoglobin and hematocrit levels and had inverse relationship to phosphorus levels. In conclusion, self-efficacy had bearing on self-care management outcome of CRF patients. Health professionals need to constantly evaluate the patient's self-efficacy in compliance to improve prognosis and quality of life of CRF patients. (Author's abstract)

Keywords: Medicine, Chronic renal failure, Self efficacy, Self-care management outcome, Hemodialysis

Asian Journal of Health, Volume No. 2 Issue No. 1, 111-129 2012, (Filipiniana Analytics) NP

0308

Strümpell-lorrain syndrome in three brothers *Tiangco, Anna Cecilia S.A., Ang-Muñoz, Cynthia D.*

Three brothers, ages 5, 19, and 24 years, from Tuguegarao, consulted because of walking difficulty due to stiffening of lower extremities which started at varying ages. Common findings were mild spasticity and weakness in both lower extremities consistent with Strümpell-Lorrain Syndrome. Individualized rehabilitation medicine interventions were provided to address different functional deficits, leading to improved outcomes. This case series aims to illustrate the importance of initiating early, comprehensive rehabilitation to maximize function and minimize complications. (Author's abstract)

Keywords: Medicine, Str \tilde{A} ^{1/4}mpell-lorrain syndrome, Hereditary spastic paraparesis, Familial spastic paraparesis, Rehabilitation

Acta Medica Philippina, Volume No. 44 Issue No. 2, 72-76 2008, (Filipiniana Analytics) Fil(S) R97.4 A21 44/2 2010

0309

Supervisory practices of radiologic technology clinical instructors and the clinical performance of radiologic technology interns of Liceo de Cagayan University Tajor, Kristine Ingrid Mae H., Sumalpong, Luigi Mikhail N., Durotan, Angelie T., Cruz, Fenella A., Marcos,

Ki

The clinical instructor has the major role in the professional growth of the interns. It is best to determine these qualities and effectiveness as it affects the clinical performance of the radiologic technology interns. This study aimed to determine the factors in the supervisory practices of the radiologic technology clinical instructors as they are involved in the $\hat{a}\in$ hands on $\hat{a}\in$ practices of the interns in the clinical setting. To determine these, the study used a modified questionnaire taken from different studies which is composed of two parts Demographic Profile and Supervisory Practices. The interns $\hat{a}\in^{TM}$ evaluation sheet from the Department of Radiologic Technology was used for the evaluation of clinical performance rated by the clinical instructors. The result of the study revealed that most

of the clinical instructors are young adults with short working experience as radiologic technologists; majority of them are males and BSRT graduates working in private tertiary hospitals a full time radiologic technologists. Moreover, their supervisory practices to the interns are described as $\hat{a} \in \mathbb{C}$ moderately supervised $\hat{a} \in \mathbb{C}^{TM} \hat{a} \in \mathbb{C}^{TM}$ while the clinical performance of the interns falls under $\hat{a} \in \mathbb{C}^{TM} \hat{a} \in \mathbb{C}^{TM}$ level. (Author's abstract)

Keywords: Medicine

Advancing Radiologic Technology Research, Volume No. 1 Issue No. 1, 2013, (Filipiniana Analytics) NP

0310

Total body irradiation dosimetry for cobalt-60 machine

Rodriguez, Lilian V., Lagarde, Charlie S., Sy Ortin, Teresa T., FPCR, Elesango, Maribelle G., de Castro, Ma. Normita C.

Radiation beam data for large fields at long distances are not readily derivable from published beam data for conventional treatment field sizes and distances. Constraints in radiotheraphy apparatus and room designs lead to variations in treatment set-up and protocol among centers carrying out Total Body Irradiation (TBI. In this study, dosimetric measurements were performed for TBI at treatment geometry using the Theratron 80 Cobalt-60 machine of the Makati Medical Center. Treatment simulation using an Alderson Rando phantom was made. LiF thermoluminiscent dosimeters (TLDs) were placed at different anatomical locations to verify calculated doses. Calculated and measured doses agree to within $\pm 2\%$. (Author's abstract)

Keywords: Medicine, Total body irradiation (TBI), Theratron 80, Cobalt-60, Alderson Rando phantom, Lif thermoluminiscent dosimeters (TLDs)

The Nucleus: Official Journal of the Radioisotope Society of the Philippines, Inc, Volume No. Issue No., 17-22 2008, (Filipiniana Analytics) Fil(S) QC173 N88 v30 1992

Traditional and modern practices enhance health knowledge of the Bagobo Tribe *Gascon, Mer*

Using interviews and community discussions, this paper sought to determine the health practices of the Bagobo in the Malagos watershed, particularly the confluence between the modern and indigenous. This paper discusses why despite the high-level of acceptance of modern health practices introduced by health workers, the Bagobo have not ended traditional ways of making themselves healthy. Instead, they have combined the traditional and modern practices to enrich their health knowledge. The decision to fuse the two is a consequence of what facilities and materials are available to them in the area. The Bagobo have fully embraced modern ways in some aspects of their life-cycle such as maternal and child care, however their indigenous ways particularly circumcision, child-delivery, and the use of medicinal plants still prevail. (Author's abstract)

Keywords: Medicine, Bagobo, Health practices, Indigenous knowledge, Malagos watershed

Asian Journal of Health, Volume No. 1 Issue No. 1, 151-187 2011, (Filipiniana Analytics) NP

Traditional ecological knowledge system of the Matigsalug Tribe in Mitigating the effects of dengue and malaria outbreak *Gascon, Mer*

This paper presents the traditional ecological knowledge system (TEKS) of the Matigsalug tribe in mitigating the effects of dengue and malaria in the hinterlands of Marilog District, Davao City, Philippines. Dengue fever and malaria are prevalent in the area during the rainy season. The Matigsalug people are otherwise known as "river people" as they have been occupying the banks of the Davao River. Participants in the study were the tribe's herbalists, healers (*Babaylan*), elders, and tribal leaders (*Datu* or male chieftain and Bai or female chieftain). This inquiry finds that the Matigsalug tribe people heavily practice TEKS in managing natural disasters especially the dreadful dengue and malaria fever. The tribal community sees the essential role of ecological balance in reducing the risks and mitigating the effects of proliferation of disease-carrying mosquitoes. They commonly use homemade lemongrass preparations in lotion and smoke forms to deter mosquitoes. They command their children to stop catching and playing with spiders and frogs. They view the role of these organisms very important in keeping the spread of mosquitoes at bay. The tribal people conduct community cleaning of river bank and backyard at regular intervals during the rainy season. **(Author's abstract)**

Keywords: Medicine, Herbalists, Dengue, Malaria, Lemongrass, Matigsalog, Traditional ecological knowledge

Asian Journal of Health, Volume No. 1 Issue No. 1, 168-180 2011, (Filipiniana Analytics) NP

0313

Trauma patientsâ€[™] satisfaction on radiographers management based on standard operational procedures in x-ray facilities Cagayan De Oro City.

Prantilla, Ian Kris I., Pabualan, Claire Nathalie C., Mama, Anna Jobaira M., Mardan, Faizal T., Gozo-dy, Es

Progress of human social awareness depends on manâ \in^{TM} s ability to communicate with one another. In a hospital setting, whose primary concern is life, wherein some factors may cause a patientâ \in^{TM} s anxiety and fear. Health personnel therefore, should take time to give comfort to patient, find greater personal satisfaction in work, and quality of care. The study was conducted in radiologic facilities of Cagayan de Oro City involving radiologic technologists and trauma patients brought to the clinics. The study used sampling procedure in a form of the questionnaire and interview to gather imperative dataâ \in^{TM} both quantitative and qualitative. Pertinent data gathered from the respondents were tabulated to simplify and organize the results. Surveys and interviews conducted and researchersâ \in^{TM} profound data analysis resulted to the following findings: The extent of the trauma patient satisfaction on radiographerâ \in^{TM} s management based on standard operational procedures in x-ray facilities. Patients were found to be satisfied with the clinical operating procedure in terms of positioning, protection, communication, instruction, waiting time and patient care, except for application of gonadal and thyroid shield, self-introduction of

radiographers, patient information on the procedure to be done, care to be administered and time to answer patient questions should be given attention for improvement of services. (Author's abstract)

Keywords: Medicine

Advancing Radiologic Technology Research, Volume No. 1 Issue No. 1, 2013, (Filipiniana Analytics) NP

0314

Trichomonas vaginalis induces apoptosis in human lung alveolar basal carcinoma epithelial cell line A549

Salvador, Daile Meek C., Jacinto, Sonia D., Rivera, Windell L.

Trichomonas vaginalis, a known inhabitant of the genitourinary tract has been identified in the respiratory tract of neonates and adults. The unusual presence of *T. vaginalis* in this site is associated with respiratory infections. However, the medical significance of this occurrence is unclear. In this study, the pathogenic potential of *T. vaginalis* in human lung alveolar basal carcinoma epithelial cell line A549 was investigated. It was shown that T. vaginalis can induce apoptosis in A549 cells as determined by TUNEL assay and transmission electron microscopy. After six hours of incubation with *T. vaginalis* there were about 20% TUNEL-positive A549 cells indicating apoptotic cells. Electron microscopic observations of infected A549 cells with trichomonads demonstrated apoptotic morphological features such as nuclear membrane disintegration, intense vacuolarization in the cytoplasm and chromatin condensation in the nucleus. Results from this study suggest the possible pathogenic effect of *T. vaginalis* in A549 cells. Continued researches are recommended to establish the clinical presentation of *T. vaginalis* in lung cells. **(Author's abstract)**

Keywords: Medicine, Trichomonas vaginalis, A549 cells, Apoptosis, Host-parasite interactions, Human lung cells

Transactions of the National Academy of Science and Technology, Volume No. 34 Issue No. 1, page 150 2008, (Filipiniana Analytics) Fil(S) Q149.P5 N25 34/1 2012

0315

Twin reversed – arterial perfusion sequence: the experience of a tertiary referral hospital in the Philippines with acardiac twinning Silao, Joyceline Noemi I.

Twin reversed-arterial perfusion sequence is a rare complication of monochorionic pregnancies. It is characterized by the hemodynamic dependence of the recipient twin on a pump twin. The recipient twin exhibits lethal malformations. The pump twin's survival is threatened by congestive heart failure and prematurity. Mortality rate ranges from 50% to 75% if untreated. Mortality is reduced to 13.6% with surgical intervention. Five cases of twin reversed-arterial perfusion sequence were seen in the Philippine General Hospital, a university hospital and tertiary referral center. All cases had acardiac twins and were managed conservatively. The first three cases were

previously reported. Two additional cases were encountered in 2007-2008 and are here presented. The first case was in a 41 year old G8P7 (7007) with diffuse toxic goiter and hypertension. The pregnancy was plagued with polyhydramnios and cardiac decompensatiom of the pump twin resulting in fetal death- in-utero. The second case was in a 37 year old G3P2 (2002) who had no medical co-morbidities. There were no risk factors and the outcome was a term livebirth. (Author's abstract)

Keywords: Medicine, Acardiac twins, Pump twin, Twin reverse arterial perfusion sequence (TRAP) sequence, Chorangiopagus parasiticus (CAPP)

Acta Medica Philippina, Volume No. 43 Issue No. 3, 61-69 2008, (Filipiniana Analytics) Fil(S) R97.4 A21 43/3 2009

0316

Validation of the pictorial pediatric symptom checklist – Filipino version for the psychosocial screening of children in a low-income urban community *Canceko-Llego, Cindy D., Castillo-Carandang, Nina T., Reyes, Alexis L.*

Rationale: The timely identification of children with psychosocial problems is very important in facilitating early intervention. Detection of these children in the community setting requires the development of an easy-to use screening tool that can be used by community health workers.

Objective: To develop a valid and reliable screening tool that can be easily used by community health workers for the detection of psychosocial problems in Filipino children. Specifically, 1) To develop a Filipino version of the Pictorial Pediatric Symptom Checklist (PPSC) for use by community health workers; and 2) To culturally validate the PPSC-Filipino version in a low-income urban community.

Methods: This study consisted of three phases:Phase 1 (Exploratory Study) consisted of focus group discussions and key informant interviews for content validation. Phase 2 9Questionnaire Development) involved refinement of the Filipino translation of the PPSC. In Phase 3 (Actual Survey), the PPSC was administered by health workers to 127 primary caregivers of children aged 4 to 7 years residing in a low-income community in Pandacan, Manila. Data gathered were subjected to reliability testing and factor analysis for construct validation. Chi-square analyses were done to determine the association of sociodemographic factors to overall PPSC results.

Results: Construct and content validity were confirmed. The Filipino PPSC showed high internal consistency (Cronbach's alpha 0.89). Factor analysis resulted in three new domains: 1) Attention & Externalizing Problems, 2) Internalizing Problems, and 3) School & Learning Problems. Among the 127 children screened, 24 (18.9%) were positive for psychosocial problems. Externalizing behaviors (fighting, rule-breaking, teasing) dominated among those who screened positive. The child's age and number of siblings were the factors significantly associated with the overall PPSC results.

Conclusions: The Pictorial Pediatric Symptom Checklist-Filipino Version is a valid and reliable tool in screening for psychosocial problems in children aged 4 to 7 years old residing in a low-income urban community. Administration by community setting is particularly relevant since many cases of psychosocial disorders remain undetected. **(Author's abstract)**

Keywords: Medicine, Psychosocial problems, Behavioral symptoms, Community screening services, Validation study

Acta Medica Philippina, Volume No. 43 Issue No. 4, 62-68 2008, (Filipiniana Analytics) Fil(S) R97.4 A21 43/4 2009

Value of post-therapy whole body scintigraphy in predicting the need for subsequent radioactive iodine therapy in patients with well-differentiated thyroid carcinoma *Obaldo, Jerry M., Ogbac, Ruben V.*

Introduction: Patients with well-differentiated thyroid carcinoma (EDTC) may require more than one session of radioactive iodine therapy (RAIT). This study was conducted to determine if post-therapy whole body scintigraphy (PTWBS) can identify patients who will require repeat RAIT due to persistent disease.

Method: The records of patients with WDTC who were referred to the Philippine General Hospital for RAIT from 2005-2007 were reviewed in this retrospective cohort study. PTWBS results (number of remnants, area of remnants, and presence of metastasis) of patients who had repeat RAIT (based on laboratory and clinical evidence of persistent disease) were compared with those patients who did not have repeat RAIT. Multiple logostic regression anlysis was done.

Results: Forty-five of 99 patients in the study [45%, 95% Confidence Interval (CI): 35 - 55] had repeat RAIT. Thirty-six of 38 patients (95%) with metastases on PTWBS required repeat RAIT, while only 9 of 61 patients (15%) with no scan evidence of metastases required subsequent therapy. Controlling for age group (age \geq 57), the odds ratio was 102 (95% CI:20 - 507). Using the model to predict repeat RAIT, the sensitivity was 80 (95% CI: 68-92); specificity was 94 (95% CI: 85 - 99). Positive and negative predictive values were 95 and 85% respectively. The same results were obtained using metastases alone as a predictor. Twenty-six patients had extra-cervical metastases alone as a predictor. Twenty-six patients had extra-cervical metastases by PTWBS and all required repeat RAIT. The number and aggregate size of thyroid remnants by PTWBS, however, were not found to be predictive of the need for repeat therapy.

Conclusion: The presence of functioning metastases seen on PTWBS was highly predictive of the need for repeat RAIT. (Author's abstract)

Keywords: Medicine, Radionuclide imaging, Thyroid carcinoma, Thyroid cancer, Radioactive iodine, Radioisotope therapy, Nuclear medicine

Acta Medica Philippina, Volume No. 43 Issue No. 4, 69-75 2008, (Filipiniana Analytics) Fil(S) R97.4 A21 43/4 2009

0318

Vascularized proximal fibular epiphyseal transfer for shoulder reconstruction after tumor resection Estrella, Emmanuel P., Lee, Ellen Y., Wang, Edward H.M.

We present a case of an 8-year-old girl with a high grade osteogenic sarcoma of the proximal humerus treated with wide resection and vascularized proximal fibular epiphyseal transfer. At 5 years after reconstruction, the patient is tumor free and had a Musculoskeletal Tumor Score of 26/30 or 86.7%. The functional outcomes in terms of shoulder range of motion and pain were good. Complications include transient peroneal nerve palsy and mild valgus instability of the knee. (Author's abstract)

Keywords: Medicine, Fibula transfer, Epiphyseal transfer, Shoulder reconstruction, Osteosarcoma

Acta Medica Philippina, Volume No. 46 Issue No. 2, 64-68 2008, (Filipiniana Analytics) Fil(S) R97.4 A21 46/2 2012

0319

Vertebral osteomyelitis with profound neurologic deficit: successful treatment with rhBMP-2 and titanium cage device

Sembrano, Jonathan N., Yson, Sharon C., Polly, Jr., David W.

The efficacy of bone morphogenetic proteins (BMP) in infection has not yet been established. Since fusion is a necessary aim in the treatment of vertebral osteomyelitis with spinal instability, BMP may be a helpful adjunct in the surgical treatment of these cases. We present a case of vertebral osteomyelitis associated with neurologic deficits, treated with decompression and fusion using recombinant human bone morphogenetic protein-2 (rhBMP-2) and titanium cage device. Eradication of infection, recovery of neurologic deficits, spinal stabilization and solid fusion were achieved and maintained at 5 years follow-up. (Author's abstract)

Keywords: Medicine, Bone morphogenetic proteins, rhBMP-2, Titanium cage, Vertebral osteomyelitis

Acta Medica Philippina, Volume No. 46 Issue No. 2, 69-73 2008, (Filipiniana Analytics) Fil(S) R97.4 A21 46/2 2012

Visual biofeedback: adjunct mirror intervention during stage two labor among primiparous women *Palompon*,

This study determined the effectiveness of visual biofeedback in hastening stage II of labor between primiparous women administered with adjunct intervention and those who were not. A non-equivalent post-test design with twenty primiparous women distributed to both control and experimental groups chosen through purposive sampling. A 3 x 2 foot mirror to provide visual biofeedback (treatment), a stopwatch to measure the length of time elapsed from full cervical dilatation and effacement to the delivery of baby, and a tally sheet for recording of data were used in data gathering. Findings show that the control group (not subjected to mirror) obtained the mean of 18.92 (SD=7.17) while the experimental group (subjected to mirror) obtained a mean of 6.77 with a mean difference of 12.15 (SD=5.24). The computed t- test value is 4.37, which was greater than the table value of 2.23 tested at 0.05

level of significance. Results showed a significant difference in the duration of second stage of labor, thus, the use of mirror as a feedback mechanism during the second stage of labor reduces its duration. (Author's abstract)

Keywords: Medicine, Visual biofeedback, Adjunct mirror intervention, Primiparous women

Asian Journal of Health, Volume No. 1 Issue No. 1, 214-226 2011, (Filipiniana Analytics) NP

0321

Vitamin D receptor gene Bsm1 polymorphism positively correlates with prostate cancer Baxa-Daguplo, Bella Marilou, Calingacion, Nico, Villar, Van Anthony, Villanueva, Rebecca, Garinganao, Dinah, Santos, Remedios, Garcia, Rodrigo

The biologically active 1,25-dihydroxycholecalciferol has been shown to regulate the growth and differentiation of the normal prostate gland. This hormone exerts antiproliferative and oncostatic effects on prostatic cells through the vitamin D receptor, a member of the steroid/retinoid receptor superfamily of nuclear receptors that possesses tumor-suppressive functions. In a case control study, the authors evaluated the allelic frequencies and examined whether the *Bsm1* vitamin D receptor (VDR) gene polymorphism could influence the development of benign prostate hyperplasia (BPH) and prostate cancer among Filipino patients through Restriction Fragment Length Polymorphism (RFLP). The predominant genotypes showed the absence of the *Bsm1* restriction site in both the BPH group (*BB*, 28%; *Bb*, 44%) and the control group (*BB*, 44.4%; *Bb*, 50%). In contrast, majority of the prostate cancer cases had the *bb* genotype (70%) indicating the presence of the *Bsm1* restriction site, and only 28% with *Bb* genotype. Furthermore, homozygosity (*bb*) for the presence of the *Bsm1* restriction site positively correlated with the development of prostate cancer (p=0.0014, Odds Ratio=38.9) but not with benign prostate hyperplasia (p=0.06). These results indicate that the molecular variants of the *VDR* gene play a significant role in the development of prostate cancer among Filipinos and can be employed to identify high-risk individuals. (Author's abstract)

Keywords: Medicine, Benign prostatic hyperplasia, Prostate cancer, Polymorphism

Asian Journal of Health, Volume No. 1 Issue No. 1, 254-270 2011, (Filipiniana Analytics) NP

0322

Vitamin K prophylaxis: A century of uncertainty Agrasada, Ma. Grace V.

The paper discusses previous studies made on the "haemorrhagic disease of the newborn (HDN)," a condition wherein the infant suffers bleeding often on the second or third day of life, due to Vitamin K deficiency. While much of the studies cited were conducted in the developed world: Britain, Australia and Japan, the paper raised the public health issues that may occur in the developing country setting. Three forms of Vitamin K (K1, K2 and K3), their characteristics and routes of administration were also mentioned. K1 is considered to be the most "accepted and available," among the three forms. The three means by which the Vitamin K can be administered are Orally, Intramuscularly (IM), or Intravenously (IV). One major challenge with the oral prophylaxis is the risk of low
compliance, since it will take "three scheduled doses," to complete a cycle. The known risk for IM is "childhood cancer."

Keywords: Medicine, Haemorrhagic disease of the newborn (HDN), Vitamin K, Intramuscularly (IM), Intravenously (IV)

Postgraduate Pediatrics, Volume No. 12 Issue No. 1, 1-6 2008, (Filipiniana Analytics) Fil(S) RJ1 P67 12/1 1996

0323

The volunteer phenomenon of nurses in the Philippines Roco, Irene, Pring, Ceci

Graduate nurses are now facing massive unemployment and underemployment. Statistics of unemployed Filipino nurses hit 150,000 in 2008. Newly licensed nurses would volunteer to work in the hospitals to get the needed experience and training. The Philippine Nurses Association (PNA) claims that volunteer nurses are being exploited by requiring volunteers to pay a fee at the same time availing of the volunteers' professional services. This study aims to explore the nature of volunteer programs and to measure the volunteer nurses' level of self-concept. Utilizing both quantitative and qualitative methods, the respondents were chosen using purposive sampling technique. Focused group discussions (FGD) with volunteer nurses and interview with hospital administrators were both utilized. Questionnaire on Professional Self Concept Scale was used. Data were analyzed using SPSS and Pearson R. The result of the study showed that newly graduate nurses enter into volunteerism program offered by different hospitals to gain clinical experience for future employment. This study concludes that graduate nurses are most likely to volunteer because of lack of opportunity to work. (Author's abstract)

Keywords: Medicine, Volunteer nursing program, Nurse\'s self-concept, Newly graduate nurses

Asian Journal of Health, Volume No. 2 Issue No. 1, 95-110 2012, (Filipiniana Analytics) NP

Written revalida examination as predictor in passing the radiologic technology licensure examination among the radiologic technology graduates of Liceo de Cagayan University Velasco, Oliver Y., Semine, Nino Jan G., Quilantang, Romil M., Gabule, Jessa May S., Almajar, Ja

The success of every student does not depend on how much grades he has, but on how he learns and applies his knowledge. Determining the academic performance of a student in the written revalida, Radiologic Technology Licensure Examination and its relationship is the primary intention of this study. Knowing the weakness and strengths of a student in a certain examination would help the student to motivate more on his/her studies. This study would also help to lessen the number of students who failed in the Radiologic Technology Licensure Examination and its contributing factor that made them to obtain a failure grade by enhancing the academic program of the school. The Radiologic Technology clinical internship program aimed to provide clinical skills and excellent core values towards patient care among intern students. Its objective is to develop the students with a broad skill in

applying into clinical practice the learned theories in the classroom generally. Specifically at the point of the program the students are expected to perform different diagnostic procedures in diagnostic computed tomography, ultrasound, radiotherapy and nuclear medicine and to employ protective measures and devices for radiation workers and the general public. The Revalida is a comprehensive examination, in oral (25%), practical application (25%) and written (50%) based on all major subjects. This will be given on the first week of October (Pre-revalida) and first week of March of the clinical internship program. Failure of the revalida will merit an extended rotation of duty. The study showed that only one Cluster is a predictor in passing the Radiologic Technology Licensure Examination. All graduates have passed their Radiologic Technology Licensure Examination. All graduates have passed their Radiologic Technology Licensure Examination and Licensure Examination does not predict in passing the Radiologic Technology Licensure Examination and Licensure Examination does not predict in passing the Radiologic Technology Licensure Examination and Evaluation. (Author's abstract)

Keywords: Medicine

Advancing Radiologic Technology Research, Volume No. 1 Issue No. 1, 2013, (Filipiniana Analytics) NP

NUTRITION

0325

Iron absorption from adequate Filipinos meals Trinidad, Trinidad P., Madriaga, Juanita R., Valdez, Divinagracia H., Cruz, Erlinda M., Mallillin, Aida C., Sison, Carmencita C., Kuizon, Miriam D.

Iron absorption from adequate Filipino meals representing the three major island groups of the Philippines (Luzon, Visayas, and Mindanao) was studied using double isotope extrinsic tag method. Mean iron absorption of the one-day meal for Metro Manila was $6.6 \pm 1.26\%$, Central Visayas, $6.3 \pm 1.15\%$ and Southern Mindanao, $6.4 \pm 1.19\%$. Comparison between meals (breakfast, lunch, dinner) for each region as well as one-day meal for the three regions showed no significant differences (P > 0.01). Correlation tests done between iron absorption and the following iron enhancers: ascorbic acid, amount of fish, meat or poultry; and inhibitors: phytic acid and tannic acid, did not give significant results. The overall average of $6.4 \pm 1.20\%$ may be used as the iron absorption level from an adequate Filipino meal. This value can be considered as one of the bases for arriving at recommended dietary allowances for iron among Filipinos instead of the 10% iron absorption assumed in 1976. (Author's abstract)

Keywords: Nutrition, Iron absorption, Phytic acid, Tannic acid

The Nucleus: Official Journal of the Radioisotope Society of the Philippines, Inc, Volume No. Issue No. , 39-47 2008, (Filipiniana Analytics) Fil(S) QC173 N88 v27 1989

Micronutrient situation and strategies for ending hidden hunger in the Philippines Barba, Corazon VC.

Based on the data from the national nutrition surveys conducted by the Food and Nutrition Research Institute of the Department of Science and Technology, Philippines, while there have been improvements in the nutritional status of the Filipinos, malnutrition continues to be an important public health concern, affecting the major proportion of the population, specifically the infants and preschool children, the pregnant and lactating mothers.

The results of the 1998 Fifth National Nutrition Survey affirmed continued persistence of protein-energy malnutrition (PEM). Using weight-for-age and height-for-age as indicators, and based on the NCHS standards, about 31.9% of 0-5 year old Filipino children are underweight and 32.0% are stunted. Among 6-10 year-old children, 30.2% and 40.9% are underweight and stunted, respectively.

Micronutrient malnutrition affects a greater proportion of the population. Iron deficiency anemia (IDA) had a prevalence rate of 30.6%. By biochemical tests, deficient and low serum vitamins A levels among 6 months to 5 years old is 38.0%. While iodine deficiency disorders (IDD) in the country is of mild severity based on the median UIE of 71 μ g/L, by percent distribution, 35.8% of the 6-12 year-old children are under moderate and severe levels of IDD.

The food consumption pattern shows a general decrease from 1982 to 1993, and following this downtrend, intakes of energy and other nutrients also decreased. Although protein intake increased, this was found insignificant.

Cognizant of the problems, an integrated plan of action for nutrition was formulated making nutrition a priority agenda of the government. On-going initiatives and new strategies are in place as documented in the Philippine Plan of Action for Nutrition (PPAN), the country's blueprint on the medium-term plan on food nutrition with the goal of nutritional improvement in the country. Among the nutrition impact programs undertaken in the country are: 0 Home, School and Community Food Production Program which aims to assure food security at the household and community levels 0 Micronutrient Supplementation and Food Fortification Programs, a short and long term intervention designed increase micronutrient intakes to 0 Food Assistance Program is a social safety net to supplement the nutrient intakes 0 Credit Assistance for Livelihood Programs which supports the poverty alleviation program of the present government to provide employment opportunities and generate income for the economically disadvantage Nutrition Education Program aims to promote proper nutrition. (Author's abstract)

Keywords: Nutrition, Iron deficiency anemia (IDA), Protein-energy malnutrition, Iodine deficiency disorders (IDD), Micronutrient malnutrition

Philippine Journal of Nutrition, Volume No. 47 Issue No. 3-4, 3-10 2008, (Filipiniana Analytics) Fil(S) QP141 N935 47/3-4 2000

PHYSICS

0327

Concentration factors for tritium in corn (Zea mays L.) Garcia, Teofilo Y., Juan, Norma B. The uptake, concentration factor and residence time of tritium in corn was studied. Tritium was applied by soil spray to corn plants grown in pots. Analysis was done using the freeze-drying, combustion and liquid scintillation counting techniques. Results showed that tritium was incorporated in the corn tissue in less than one hour. Mean concentration factors for tissue-free water tritium (TFWT) and tissue-bound tritium (TBT) in different portions of the plant (root, stem, leaf, and kernel) were less than unity. Residence times of TFWT were 8.0 days in root, 7.0 days in stem, 10.5 days in leaf, and 9.5 days in kernel. For TBT, residence times were 10.75 days in root, 13.75 days in stem, 15.0 days in leaf, and 11.0 days in kernel. (Author's abstract)

Keywords: Physics, Tritium, Zea mays L., Freeze-drying, Combustion, Liquid scintillation

The Nucleus: Official Journal of the Radioisotope Society of the Philippines, Inc, Volume No. Issue No. , 51-59 2008, (Filipiniana Analytics) Fil(S) QC173 N88 v30 1992

An estimation of whole-body doses due to routine operation of the first Philippine Research Reactor (PRR-1)

Palattao, Ma. Visitacion B., Azanon, Edwin M., dela Paz, Lilia R.

Atmospheric dispersion calculation of the routine releases of the TRIGA-converted Philippine Research Reactor (PRR-1) was carried out using the computer model developed by the United States Nuclear Regulatory Commission (USNRC). It calculates average relative effluent concentrations (X/Q) and average relative deposition values (D/Q) for twenty two (22) specific distances up to 80 km from the area of concern for each sixteen compass directions. This model is based on the theory that material released to the atmosphere will be normally distributed (Gaussiah) about the plume centerline.

Surface meteorological data based on a five-year monitoring period at the PAGASA Science Garden station proximate to the site were utilized in the assessment.

From the result of X/Q values, annual whole body dose in mSv y^{-1} with respect to ⁴¹Ar was evaluated. (Author's abstract)

Keywords: Physics, Philippine Research Reactor (PRR-1), Argon-41, Radioactive gas

The Nucleus: Official Journal of the Radioisotope Society of the Philippines, Inc, Volume No. Issue No. , 1-20 2008, (Filipiniana Analytics) Fil(S) QC173 N88 v27 1989

0329

External radiation measurements using thermoluminescent dosimeters Palad, Lorna H., Duran, Emerenciana B., Gumasing, Leonardo G.

Thermoluminescent dosimeters were used as detectors to measure natural background radiation levels in 10 provinces throughout the Philippines. These dosimeters were deployed in densely populated areas. The average dose rate for outdoor and indoor exposures were 4.41 μ R h⁻¹ and 4.52 μ R h⁻¹ respectively. External radiation

measurements (outdoors) were also conducted in these 10 provinces using a Studsvik gamma et r which gave an average outdoor exposure dose rate of 4.40 μ R h⁻¹. (Author's abstract)

Keywords: Physics, Thermoluminescence (TLD) systems, External radiation, Thermoluminescent dosimeters

The Nucleus: Official Journal of the Radioisotope Society of the Philippines, Inc, Volume No. Issue No. , 21-26 2008, (Filipiniana Analytics) Fil(S) QC173 N88 v27 1989

0330

Notes on saltwater intrusion and trace element distribution in metro manila groundwaters Santos, Jr., Gabriel, Ramos, Angelito F., Fernandez, Lourdes G., Almoneda, Rosalina V., Garcia. Teofilo Y., Cruz, Cynthia C., Petrache, Christina A., Andal, Teresita T., Alcantara, Ernesto

Preliminary analyses of water for uranium and other trace elements from deepwells operated by the Metropolitan Waterworks and Sewerage System (MWSS) in Metro Manila were performed. Uranium, which ranged from 0.2 ppb to 6 pbb, was correlated with saltwater intrusion. Values ≥ 0.8 ppb for uranium were considered indicative of saline water intrusion in the aquifers. Saline water intrusions in Malabon, Navotas, Parañaque, Las Piñas, Bacoor, Imus, Kawit, Pasig, Antipolo, San Mateo, Taguig, Cainta, Taytay, Alabang and Muntinlupa were noted. Most of these areas were also identified by MWSS as being affected by saltwater intrusion. Tritium values ranged from 0 (below detection limits) to 44 tritium units. Except for one well in Muntinlupa, all the values obtained were below the lower limit of detection of 30.83 T.U. Mercury contents in six well locations had values above the maximum limit set by the National Standards for Drinking Water. Four wells exceeded the permissible level for manganese while two wells had iron concentrations greater than the National Standards. Other trace element concentrations such as Cr, Pb, Zn, Co and Ni either did not exceed their permissible levels or were not included in the National Standards. (Author's abstract)

Keywords: Physics, Uranium, Saltwater intrusion, Mercury

The Nucleus: Official Journal of the Radioisotope Society of the Philippines, Inc, Volume No. Issue No. , 51-62 2008, (Filipiniana Analytics) Fil(S) QC173 N88 v27 1989

0331

Primordial radionuclides in soil and their contributions to absorbed dose rate in air Moriones, Cecilia R., Duran, Emerenciana B., dela Cruz, Fe M.

The predominant primordial radionuclides in soil which give rise to terrestrial radiation (external irradiation) were analyzed by gamma spectrometry. ⁴⁰K has the highest average activity mass concentration, i.e., 212 Bq kg⁻¹. ²³⁸U and ²³²Th concentrations are much lower and are only 14 and 16 Bq kg⁻¹ respectively. Based on conversion factors given in the UNSCEAR Report (1988), the absorbed dose rates in air at one meter above the ground surface per unit activity mass concentration of primordial radionuclides were calculated. The average per caput absorbed dose rate in air received by Filipinos due to terrestrial radiation is 23 nGy h⁻¹. The relative contribution of ²³²Th series to the total absorbed dose rate is highest, followed closely by ⁴⁰K. The contribution of ²³⁸U series is only about one-half that of the ²³²Th series. Based on the results obtained, the terrestrial component of the average per caput exposure

dose rate due to natural radiation sources is 2.64 μ R h⁻¹ or roughly 3 μ R h⁻¹. This leads to an annual average effective dose equivalent of 202 μ Sv. (Author's abstract)

Keywords: Physics, Radionuclide, Primordial radionuclides, Coversion factors

The Nucleus: Official Journal of the Radioisotope Society of the Philippines, Inc, Volume No. Issue No. , 27-38 2008, (Filipiniana Analytics) Fil(S) QC173 N88 v27 1989

0332

Survey of indoor radon using activated charcoal canister *Parami, Vangeline K.*

The aim of this study is to survey indoor radon using activated charcoal canister. The survey was done in selected buildings at the University of Surrey and selected dwellings in the United Kingdom (UK).

The results of the survey showed that concentration of radon in homes was on average higher than that in buildings of the University of Surrey, UK. It was also observed that among the houses, the levels of concentration differed and that high concentration of radon was not confined to houses built on granite or uranium-containing soil. A house in Guildford, UK was found to have relatively higher concentration of radon. The source of radon was the bricks used in constructing the house and was enhanced by rendering the house energy efficient, especially during winter. The radon concentration this house could exceed the action level. in

Furthermore, it was shown that within a house, the level of radon varied from room to room, and also at different locations within a room.

Exposed charcoal canisters can be reused after releasing the absorbed radon by heating the canisters for several hours. (Author's abstract)

Keywords: Physics, Charcoal canister, Uranium, Granite

The Nucleus: Official Journal of the Radioisotope Society of the Philippines, Inc, Volume No. Issue No., 37-50 2008, (Filipiniana Analytics) Fil(S) QC173 N88 v30 1992

SCIENCE AND TECHNOLOGY

0333

Antibacterial activity of knitted cotton fabrics dyed with natural dyes Leaño, Jr., Julius L., Malabanan, Jenice P., Cabansag, Jeannie Lynn J.

Scoured and bleached knitted cotton were pre-mordanted with either copper sulfate (CuSO₄.5H₂O) or alum (KAISO₄. 12H₂O) solution. Same cotton fabrics were dyed with the crude aqueous extracts from fresh *Coleus blumei* (mayana) leaves, *Swietenia macrophylla* King (mahogany) barks, young *Cocos nucifera* (coconut) husks,

fresh *Terminalia catappa* (Indian almond) leaves, *Bixa orellana* (annatto) seeds and *Tamarindus indica* (tamarind) bark. These were extracted using technologies in dye extraction previously established by the Philippine Textile Research Institute (PTRI), while the indigo powder used was obtained from *Indigofera tinctoria* (indigo) leaves using another PTRI-developed technology. All the dyed fabrics were washed throughly then air-dried.

The anti-bacterial activities of the fabrics were evaluated using AATCC Test Method 147-2004 (Parallel Streak Method) using *Klebsiella pneumoniae* and *Staphylococcus aureus*. Results indicated that all the dyed fabrics showed activity against the two bacteria. Further, AATCC Test method 100-2004 using *S. aureus* revealed reduction of bacterial counts between 69.69%-99.99% confirming anti-bacterial property and the bio-functional activity of naturally-dye knitted cotton fabrics. (Author's abstract)

Keywords: Science and technology, Copper sulfate, Alum, AATCC Test Method 147-2004 (Parallel Streak Method), Klebsiella pneumoniae, Staphylococcus aurues

PTRI Samay Bulletin, Volume No. Issue No. , 15-22 2008, (Filipiniana Analytics) Fil(S) TS1300 S42 v.12 2012

0334

Color quality and colorfastness of textiles dyed using young *Cocos nucifera* (coconut) husk with copper sulfate-alum mordant system *Leaño, Jr., Julius L.*

Crude aqueous extract of young coconut (Cocos nucifera) husk was used to dye fabrics made of *Musa Textilis* (Abaca), knitted cotton, *Ananas comocus* (pineapple), pineapple-silk, fine (21D) silk and coarse (360D) silk. Colorimetric evaluation revealed that generally alum lightens the color, while $CuSO_4$ tends to darken it. The use of $CuSO_4$ /alum mordant system revealed the almost equal influence of each mordant in the resulting *L* values except in the case of fine silk and *M. tectilis* fabrics where the darkening effect of $CuSO_4$ predominated. Incremental changes caused by varying the mordants were observed in the corresponding *a* and *b* values. Higher color strength, *K/S* values were obtained on fabrics using alum mordant compared to pure $CuSO_4$ or their combination. Further, colorfastness to laundering (AATCC 61-2003) ratings are in the range of 3-4, although predominantly, the laudered samples all turned darker and qualifying the observed change not due to fading but to darkening. The corresponding staining ratings were in the range of 3.5-4.5 using multi-fiber No. 1. The colorfastness to perspiration (AATCC 15-2002) ratings were in the range of 3.5-4.5 with observed yellowing. The staining ratings were in the range of 3.4, all the other ratings of the dyed fabrics comply with the minimum staining ratings specified by Oeko Tex 100. The use of $CuSO_4$ /alum mordant system further diversified the colorway of *C. nucifera* as it generally maintained the performance of the dye fabrics compared when using either 5% CuSO_4 or 5% alum mordants. **(Author's abstract)**

Keywords: Science and technology, Cocos nucifera, CuSO4, Musa textilis, Ananas comosus

PTRI Samay Bulletin, Volume No. Issue No., 1-8 2008, (Filipiniana Analytics) Fil(S) TS1300 S42 v.13 2013

Colorimetry and colorfastness properties of textiles dyed with indigo and top-dyed with other natural dyes

Cariño, Argentina T., Fenoy, Rudy C., Andrade, Cristina H.

The utilization of indigo for the development of a color gamut proves its versatility for a wide range of textile dyeing applications. In this study, indigo was used as a base dye source for the development of a color gamut through its combination with natural dyes such as *Syzygium cumini* (duhat) barks, *Tamarindus indica* (sampalok) barks, *Cocos nucifera* (buko) husks, *Caesalpinia sappan* (sibukao) wood, *Bixa orellana* (annatto) seeds, *Colleus blumei* (mayana) leaves, and *Curcuma longga* (yellow ginger) rhizomes. Evaluation of the different dye combinations resulted to 16 optimized and verified top-dyeing combinations based on crude extracts of *C. nucifera* (buko), *T. indica* (sampalok), *C. blumei* (mayana), and *C. longga* (yellow ginger). These combinations were found suitable for applications on cotton, piña-seda, and silk. Colorimetric analysis also revealed the effect of various shades of indigo dye and mordant systems on the resulting color of the top-dyed textile materials. Finally, colorfastness to laundering and perspiration of the top-dyed textile materials passed the standard value in terms of color change and staining. (Author's abstract)

Keywords: Science and technology, Syzygium cumini (duhat) barks, Tamarindus indica (sampalok) barks, Cocos nucifera (buko) husks, Caesalpinia sappan (sibukao) wood, Bixa orellana (annatto) seeds, Colleus blumei (mayana) leaves, Curcuma longga (yellow ginger) rhizomes

PTRI Samay Bulletin, Volume No. Issue No. , 18-28 2008, (Filipiniana Analytics) Fil(S) TS1300 S42 v.11 2011

Commercial activated carbon as sequestering agent of copper (II) in buko (*Cocos nucifera*) dye effluent *Cariño, Argentina T.*

An economical and effective technology on treating *buko* (*Cocos nucifera*) dye effluents was developed using commercially available activated carbon produced from reactivated granular coal with a mesh size of 12x40. The activated carbon served as an effective adsorbent to remove and/or reduce the copper (II) content in *buko* dye effluents obtained from various textile materials. At 5% activated carbon, the copper (II) was effectively removed from the effluents thereby complying with the *Department of Environment and Natural Resources Administrative Order (DENR AO) 2008 on Water Quality Guidelines and General Effluent Standards* stated setting a maximum of 0.02 ppm of copper in the effluents. The pH was correspondingly adjusted to the required standard of 6.5 to 9. The developed treatment method, however, was not suitable in decolorizing the *buko* dye effluents due to the nature of the colored compounds present in it. The developed technology was found to be effective in terms of material cost, high-adaptability, and biodegradability. (Author's abstract)

Keywords: Science and technology, Cocos nucifera, Activated carbon, Copper

PTRI Samay Bulletin, Volume No. Issue No. , 7-14 2008, (Filipiniana Analytics) Fil(S) TS1300 S42 v.12 2012

Comparative evaluation of 25-m skein and 80-m skein length in yarn shrinkage determination

Jurado, Rowena Caridad C., Pico, Mirasol D.

The American Society for Testing and Materials (ASTM) D 2259 is the standard test method for yarn shrinkage. A 25-m skein length was compared to the standard 80-m skein for yarn shrinkage by the boiling water exposure using different types of yarn to save on time in sampling preparation and to lessen the tension weight used which is strenuous to the testing personnel.

The Student's t-test for paired data was applied for the evaluation of the length. Results showed that the two skein lengths were not significantly different. Therefore, a 25-m can be used as a replacement for the 80-m skein length. **(Author's abstract)**

Keywords: Science and technology, American Society for Testing and Materials (ASTM), Yarn shrinkage, Student's t-test

PTRI Samay Bulletin, Volume No. Issue No., 16-20 2008, (Filipiniana Analytics) Fil(S) TS1300 S42 v.8 2008

0338

Controlled-release of citronella and lavender oils on monochlorotriazinyl-ß-cyclodextringrafted naturally-dyed cotton Cariño, Argentina T., Gomez, Gilbert V.

A method of creating a controlled-release system (CRS) for cotton fabrics with fragrance-release properties through the grafting of monochlorotriazinyl-ß-cyclodextrin (MCT-ß-CD), which also served as the host molecule for the organic oils. Infusion of citronella and lavender oils to the MCT-ß-CD-grafted cotton fabrics were separately conducted by pad-dry-cure method. Kjeldahl analysis of the grafted MCT-ß-CD revealed 0.03% maximum nitrogen. Different natural dyes also affected the grafting of MCT-ß-CD onto the fabrics as seen from the varying percentage of nitrogen values obtained from the Kjeldahl analysis. Amount of oils infused in the cotton fabric was also analyzed using gas chromatography via headspace sampling to quantify the amount of the volatilized oils from the fabric. Results showed that MCT-β-CD-grafted cotton fabrics can hold a maximum of 4.5x10⁻³mg oil per gram of fabric after infusion with separate ethanolic solutions of both citronella and lavender at 16% (vol/vol) concentrations. Further, the developed functionalized cotton fabrics were able to retain the scents for six days in ambient conditions. **(Author's abstract)**

Keywords: Science and technology, Controlled-release system (CRS), Citronella, Lavender

PTRI Samay Bulletin, Volume No. Issue No. , 55-63 2008, (Filipiniana Analytics) Fil(S) TS1300 S42 v.11 2011

Correlation of the single fiber breaking tenacity and elongation of polyester fibers at 25 and 10 millimeters gauge lengths *Rafols, Rocelia A., Mallari, Ma. Yehsa G.*

Polyester fiber is one of the most common raw materials used in the textile industry. Breaking tenacity and elongation are the important properties of fibers which have direct effect on yarn strength and elongation. These properties of man-made fibers like polyester, can be determined through the single fiber method using different equipment and different gauge lengths. In this study, the Instron Universal testing Machine 5566 was used. Specimens for the samples were prepared and tested using 25 mm and 10 mm gauge lengths. It was found that the breaking tenacity has a strong evidence of positive correlation while the elongation has no relationship at all between the two gauge lengths. In cases of disputes arising from differences in reported breaking tenacity test results when the two gauge lengths were used, this study can be helpful in the resolution. (Author's abstract)

Keywords: Science and technology, Polyester fiber, Instron Universal Testing Machine 5566, 25 mm gauge, 10 mm gauge

PTRI Samay Bulletin, Volume No. Issue No. , 21-24 2008, (Filipiniana Analytics) Fil(S) TS1300 S42 v.9 2009

0340

Curcuminoid contents of water extracted-spray dried and acid extracted-air dried yellow ginger (*Curcuma longa* L.) Dye powders *Belmonte, Christopher J.*

Yellow ginger (*Curcuma longa* L.) is a good source of orange-yellow color pigment that consists of a mixture of curcuminoids, namely, curcumin, demethoxycurcumin, and bisdemethoxycurcumin. This study aims to evaluate the curcuminoids in the yellow ginger dye powder produced using the Philippine Textile Research Institute's (PTRI) developed powder production methods, namely; the water extraction-spray drying and acid extraction-air drying. The dye powders were subjected to thin-layer chromatography (TLC) and ultraviolet-visible (UV-Vis) spectroscopy and compared with a curcuminoid standard. The chromatogram of the powder produced by the water extraction-spray drying method revealed one spot, which was assumed as bisdemethoxycurcumin, while the acid extraction-air drying method showed the presence of the three pigments identical to the standard. The calibration graph using UV-Vis spectophotometer revealed that the water extracted-spray dried powder has 0.6% curcuminoids while the acid extracted-air dried has 16% curcuminoids. Results obtained indicated the positive advantage of the latter method over the former procedure. (Author's abstract)

Keywords: Science and technology, Yellow ginger (Curcuma longga L.), Zingeberaceae, Thin-layer chromatography (TLC), Ultraviolet-visible

PTRI Samay Bulletin, Volume No. 3 Issue No. 2, 18-22 2008, (Filipiniana Analytics) Fil(S) TS1300 S42 3/2 2003

Development of laboratory method for the simultaneous determination of gross alpha and gross beta activities in water by liquid scintillation counting

Sucgang, Raymond J., Pabroa, Preciosa Corazon B., Mendoza, Norman DS., Casta $\tilde{A}\pm eda$, Soledad S.

The Philippine National Standards for Drinking Water (PNSDW) includes the determination of the radiological quality of drinking water to ensure that water is safe from contamination due to fallout, or suspected sources of radiological impurities. The standard limits are: 0.1 Bq/L for gross alpha counts and 1.0 Bq/L for gross beta counts. A liquid scintillation (LSA) based method that requires smaller sample quantities, less sample preparation time and operator intervention, and produces adequate minimum detection levels for local drinking water guidelines has been developed. It involves the enrichment of the sample 10 times by evaporation and counting for two hours, the alpha and beta emissions simultaneously by pulse shape analysis using the Guardian 1414 liquid scintillation counter. The method overcomes the self-attenuation problems typical of high dissolved solid waters and gas flow proportional counting that was previously used. Additionally, the need to evaporate large volumes of water, quantitatively transfer residues to counting planchets and developing operator skills in producing homogeneous and evenly distributed samples are eliminated. Operator intervention is also minimized during sample preparation and counting. This resulted in the reduction of analysis time to 1/5 and analysis cost to 1/3 from that using the former procedure. The detection limits: 0.03 -0.06 Bq/L for alpha and 0.2-0.5 Bq/L for beta, are sufficiently low for the required regulatory limits. Detection limits of ≤ 0.05 Bq/L for gross alpha and ≤ 0.3 Bq/L for gross beta were achieved for a total of two hours counting per sample. **(Author's abstract)**

Keywords: Science and technology, Radiological testing, Water, Liquid scintillation, Gross alpha, Beta

Transactions of the National Academy of Science and Technology, Volume No. 34 Issue No. 1, page 119 2008, (Filipiniana Analytics) Fil(S) Q149.P5 N25 34/1 2012

0342

Dyeing and fastness properties of textiles dyed with C. blumei (Mayana) leaf extract Malabanan, Jenice P.

The dye extracted from *C. blumei* (mayana) is a potential source of natural colorant for textiles. The dye was extracted through aqueous extraction process by boiling the unsteeped *C. blumei* leaves for 30 minutes to achieve optimum dye release. The collected dye extracts gave yellow green to green shades when applied to cotton, abaca, pineapple-silk fabrics and silk yarns. Mordanting with $CuSO_4$ revealed better affinity of the dye on cotton, silk and abaca while alum mordant is better for pineapple-silk fabrics. This new method of obtaining green shade from one dye source significantly showed better colorfastness to laundering and colorfastness to light ratings compared with the old method which utilized indigo and yellow ginger dye sources. These colorfastness properties then signified that the *C. blumei* leaf extract has high potential as a dye source and further, the new method of employing it is more suitable for textile dyeing. (Author's abstract)

Keywords: Science and technology, C. blumei (mayana), Cotton fabric, Abaca fabric, Pineapple-silk fabric, Silk yarns, CuSO4

PTRI Samay Bulletin, Volume No. Issue No. , 25.32 2008, (Filipiniana Analytics) Fil(S) TS1300 S42 v.9 2009

Dyeing handwoven pineapple-silk (Ananas comosus-Bombyx mori) and abaca (Musa textilis) fabrics with aqueous extracts of young coconut husks (Cocos nucifera) Leaño, Jr., Julius L.

The textile dye potential of young coconut (*Cocos nucifera*) husks was investigated and was found to impart reddish brown and light pinkish brown shades on pi \tilde{A} ±a-seda (*Ananas comosus-Bombyx mori*) and abaca (Musa textilis) fabrics. The crude aqueous extract is reddish brown in color with varied shades obtained on the two materials by simply varying the choice of mordant. Darker shades were obtained from copper sulfate mordanted materials while lighter shades were obtained from the alum-mordanted samples. Although pH is not critical in modifying the color of the extract and the shades it produces, addition of acid was found to be detrimental to the colorfastness to laundering (CFL) color change ratings. Better CFL (color change) results were generally obtained from less concentrated dye extract but staining ratings were all very satisfactory. Ferrous sulfate succeeded in deepening the shade of the extracts but it led to a dramatic decline in color change although superior CF to rubbing were noted from the dried samples but low with wet samples. (Author's abstract)

Keywords: Science and technology, Pineapple-silk (Ananas comosus-Bombyx mori) fabrics, Abaca (Musa textilis) fabric, Young coconut husk, Chemistry

PTRI Samay Bulletin, Volume No. Issue No., 7-14 2008, (Filipiniana Analytics) Fil(S) TS1300 S42 v.9 2009

0344

Ecological footprint of the National Capital Region households: bridging the gap between nutrition and environment

Serafico, Michael E., Espinoza, Marilen M., Perlas, Leah A., Tanchoco, Celeste C.

The impact/influence of environmental conditions on the nutritional status of the National Capital Region (NCR) households in the Philippines was studied. Ecological Footprint (EF), an indicator that measures how much nature is used to produce resources and to absorb wastes by means of existing technologies and thereby translates it in terms of land area, was utilized to assess each household's consumption pattern. A questionnaire was prepared to obtain the data needed to utilize the EF worksheet developed by Wackernagel and Rees. Body Mass Index (BMI) was used to assess the nutritional status of the household members. Data on weight and height of each household member were taken from the 7th National Nutrition Survey (NNS) conducted by the Food and Nutrition Research Institute (FNRI) in 2008. The calculated EF of the NCR was 4.6666 global hectares per person (gha/person). Quezon City topped the list with 1.2048 gha/person while the only city living within the sustainable limits of its boundaries was Mandaluyong City with 0.4143 gha/person. The highest consumption category contributing to the total EF of all cities was the food category while pasture and arable lands topped the land-use components. About 60% of the participants lived within the city's resources and 70% had normal BMI. A significant correlation was recognized between the nutritional status of the population studied and the environment in terms of EF. Household size was found to be a factor for both EF and nutritional status. (Author's abstract)

Keywords: Science and technology, Ecological footprint, Environment, Nutrition, Sustainability

Philippine Journal of Science, Volume No. 141 Issue No. 1, 67-75 2008, (Filipiniana Analytics) Fil(S) Q1 P55 141/1 2012

Effect of exposure and refrigeration duration on bivoltine silkworm eggs hatchability Basaen, Adelfa M., Kim, Kye-Myeong, Boedts, Bruno, Delos Reyes, Rosemarie

The relationship of exposure and cold storage duration of silkworm eggs was studied to determine its effect on the hatchability. Two bivoltine silkworm hybrids, PTRI SW 3 and PTRI SW 4, produced locally under semi-temperate conditions were tested by subjecting these under seven different exposure durations of 25°C and four refrigeration or cold storage periods of 31 days, 50 days, 60 days and 70 days at 5°C - 7°C.

The results revealed that three days of exposure at 25°C gave the highest hatching percentage. On the other hand, the highest hatchability for PTRI SW3 was attained with cold storage of 70 days while PTRI SW 4 required 90 days. The effect of the combination of exposure and refrigeration periods proved that newly laid silkworm eggs exposed for longer period must undergo longer refrigeration to break the diapause to give higher hatchability. (Author's abstract)

Keywords: Science and technology, Morus alba L., Bombyx mori L., Bivoltine silkworm eggs, Hibernating silkworm eggs

PTRI Samay Bulletin, Volume No. 3 Issue No. 2, 11-17 2008, (Filipiniana Analytics) Fil(S) TS1300 S42 3/2 2003

0346

The effect of relative humidity to fabric weight *Rafols, Rocelia A.*

The study is conducted to determine the effect of relative humidity (RH) to the mass or weight of woven fabrics made of pure cotton, polyester/cotton, and polyester/cotton/piña. The fabric weight or mass was measured at 60%, 65%, and 70% RH at the PTRI Testing Laboratory in accordance with ISO 3801. Results revealed that there is no significant difference on the obtained fabric weights at different relative humidities. (Author's abstract)

Keywords: Science and technology, Relative humidity, Fabric weight, Pure cotton, Polyester/cotton, Polyester/cotton/pi $\tilde{A} \pm a$

PTRI Samay Bulletin, Volume No. Issue No. , 27-30 2008, (Filipiniana Analytics) Fil(S) TS1300 S42 v.8 2008

Effect of type of washing machine and temperature on the dimensional change of woven cotton fabrics

Rafols, Rocelia A., Jurado, Rowena Caridad C.

Pure cotton woven fabrics were subjected to one cycle of washing using top loading and front loading type washing machines at temperatures 30°C and 40°C. Since the two types of washing machines have different operation principles, the detergent, water, load and drying temperature were kept constant for all specimens to investigate the effect of the type of washing machine and temperature on the dimensional change of fabrics.

The t-test was used for the four sets of comparisons and it was found that the type of washing machine and temperature have no effect on the dimensional change of heavy weight plain woven pure cotton fabric while the light weight fabric is affected by the type of washing machine and not by the change in temperature. The dimensional change of the medium weight fabric is affected by the use of different types of washing machines and temperatures. (Author's abstract)

Keywords: Science and technology, Pure cotton woven fabrics, Drying temperature, T-test, Detergent, Washing machine temperature

PTRI Samay Bulletin, Volume No. Issue No. , 15-20 2008, (Filipiniana Analytics) Fil(S) TS1300 S42 v.9 2009

Effective alkaline solution for silkworm egg glue removal Inumpa, Arnold M., Espiritu, Zoraida R., Bayeng, Fermin O., Bacuso, Paul M.

A study aimed to determine locally available alkaline solutions for silkworm egg glue removal was conducted. The study tested sodium hypochlorite (NaOCl), calcium hypochlorite ($Ca(OCI)_2$) and potassium hydroxide (KOH) in ten concentration levels, from 1,000 to 10,000 ppm. The test eggs were soaked in the respective solutions for 10 minutes, washed, acid treated and incubated to hatch for assessment.

On the basis of percentage hatchability, percentage brushed worms and dead eggs, the study revealed that NaOCI, Ca(OCI)₂ and KOH at 5,000 ppm can be safely used to dissipate silkworm egg glue. (Author's abstract)

Keywords: Science and technology, Sodium hypochlorite (NaOCI), Calcium hypochlorite (Ca(OCI)2), Potassium hydroxide (KOH), Silkworm egg glue removal

PTRI Samay Bulletin, Volume No. Issue No. , 16-23 2008, (Filipiniana Analytics) Fil(S) TS1300 S42 v5 2005

Egg laying performance of cold stored Chinese (C102) female silkworm (*Bombyx mori*) moth

Bayeng, Fermin O., Inumpa, Arnold M., Espiritu, Zoraida R., Bacuso, Paul M.

The effect of cold storage duration of Chinese, C102, female moth on egg laying performance was studied. The moths were stored at 24, 48, 72, 96, 120 and 144 hours before they were mated with Japanese, J102, male moths. Results revealed that Chinese, C102, female moths cold stored at 5°C from 24 to 96 hours yielded the most number of eggs fertilized and laid, and that extended duration of 120 to 144 hours produced the least number of eggs fertilized and laid and yielded the most number of unlaid eggs, unfertilized eggs and dead eggs. Thus, it is recommended that if non-synchronization occurs, Chinese, C102, female moths may be stored at 5°C for 24 to 96 hours while awaiting for male moths for copulation. (Author's abstract)

Keywords: Science and technology, Cold stored chinese (C102), Bombyx mori, Unlaid eggs, Unfertilized eggs, Dead eggs

PTRI Samay Bulletin, Volume No. Issue No., 1-5 2008, (Filipiniana Analytics) Fil(S) TS1300 S42 v5 2005

0350

Ethnic designs utilizing multi-harness handlooms for the weeving industry in Central Cordillera Ethno Groups

Hayin, Jovita A., Listano, Henry R., Garlitos, Josefa L., Lim, Michael P., Llorico, Cora P., Rico, May S.

The possibility of executing existing weave design from various ethnic groups in multi-harness handlooms, such as four-harness upright loom, countermarch handloom, and dobby loom available at the Philippine textile Research Institute (PTRI), was explored. Utmost consideration on replicability, quality, and efficiency of production and flexibility was made on the seven collected ethnic designs which were produced either in the back strap or two-harness handlooms by the Central Cordillera ethno groups located in Kalinga, Ifugao, Abra, and Sagada.

All seven designs were executed using polyester and cotton threads in the multi-harness handlooms with some limitations on one-double-designed fabric from Kalinga. (Author's abstract)

Keywords: Science and technology, Four-harness upright loom, Countermarch handloom, Dobby loom, Polyester threads, Cotton threads

PTRI Samay Bulletin, Volume No. Issue No., 12-17 2008, (Filipiniana Analytics) Fil(S) TS1300 S42 v.11 2011

0351

Extraction and characterization of achuete (*Bixa orellana*) dye powder and its application to cotton and silk *Leaño, Jr., Julius L.*

Dyes from achuete seeds were extracted using ethanol at different liquor ratios (LR) and agitation time. The powders obtained were oven-dried at 60°C and were characterized using UV-Vis spectrophotometry and FT-IR spectroscopy. The λ_{max} of the aqueous alkaline dye solution is 451nm and is stable to prolonged heating. The FT-IR spectrum suggests the presence of bixin and norbixin pigments in the powder. Adsorption curves (isotherms) reveal rapid dye absorption during the first 30 minutes and slows down after 60 minutes for all the mordanted fabrics. Different concentrations of the aqueous alkaline dye powder solution were applied to alum and copper sulfate mordanted cotton and silk materials under varied dyeing time. Color yield was found dependent on the mordant used whereas the colorfastness (CF) to laundering was not affected by the dyeing time. CF to laundering rating is 3.5 for cotton and 4.0 for silk. (Author's abstract)

Keywords: Science and technology, Achuete (Bixa orellana), Cotton, Silk, Natural dying

PTRI Samay Bulletin, Volume No. Issue No. , 9-17 2008, (Filipiniana Analytics) Fil(S) TS1300 S42 v7 2007

0352

Extraction and dye application of crude and powdered indigo (Indigofera tinctoria) from Ilijan, Bago City, Negros Occidental: an R&D an technology transfer experience Leaño, Jr., Julius L., Cabansag, Jeannie Lynn J., Fenoy, Rudy C.

Through a memorandum of agreement between the Philippine Textile Research Institute and the Non-Timber Forest Products – Task force (NTFP-TF), a seminar-workshop on the production of indigo cake and the application of crude indigo extract on abaca and piña fabrics was conducted on 25-26 August 2009. Members of the Ilijan Sustainable Farmers Association of Brgy. Ilijan, Bago City, Negros Occidental benefited from the training. The participants expressed their appreciation on natural dyeing and its economic impact on their livelihood. The indigo plant abundant in the place was also evaluated. Promising results were obtained as regards color quality using spectrophotometer and colorfastness performance using AATCC Method 15-2007 (colorfastness to perspiration) and AATCC Method 61-2007 (colorfastness to laundering). (Author's abstract)

Keywords: Science and technology, AATCC Method 61-2007 (colorfastness to laundering), Crude indigo extract, Non-timber forest product - task force (NTFP-TF), Ilijan, Bago City, Negros Occidental, AATCC Method 15-2007 (colorfastness to perspiration)

PTRI Samay Bulletin, Volume No. Issue No. , 1-7 2008, (Filipiniana Analytics) Fil(S) TS1300 S42 v.10 2010

0353

Extraction, characterization, and application of native chitosan from crab (Portunus pelagicus) shells as biomordant and anti-microbial finish for naturally-dyed textiles *Uson, Rachael A., Fenoy, Rudy C.*

Chitosan is a high-molecular-weight linear polycationic heteropolysaccharride, comprising copolymers of β -1,4linked D-glucosamine and N-acetyl-D-glucosamine. In this study, chitin was extracted from crab (Portunus pelagicus) shells by demineralization and deproteinization, and then converted to chitosan through deacetylation. The produced chitosan and standard commercially-available chitosan from Sigma-Aldrich were compared by UV-Vis spectrophotometer and Fourier Transform Infrared Spectroscopy (FTIR). The spectra revaled the same profile and confirmed that the native chitosan was successfully extracted from crab shells. Treatment parameters such as pH, steeping time, temperature and percent chitosan loading were optimized using standard chitosan for application onto silk (Bombyx mori) varns, abaca (Musa textilis), cotton (Gossypium spp.), and pineapple-silk (Ananas comosus-Bombyx mori) fabrics. The optimized parameters were applied to said materials using the native chitosan and then dyed with aqueous talisay (Terminalia catappa) leaf extracts using established dyeing procedures. Knitted cotton fabrics were applied with chitosan through pad-dry-cure approach using a laboratory-scale padding mangle. The antimicrobial activity of dyed, chitosan-treated samples, native and standard, was evaluated for activity against Staphylococcus aureus using AATCC Test Method 100-2004. Results showed the comparable antimicrobial activity of the native and standard chitosan as shown in the assays. Physical properties including colorfastness to perspiration and laundering using AATCC Test Methods 61 and 15, respectively, were conducted and revealed ratings ranging from 3.5 to 4.5 in the gray scale. The colorimetric properties assessed using the CIE Lab color space with illuminant D65 at 10° standard observer were also noted. The added functionality of chitosan applied using a straightforward approach enables the development of functional and anti-microbial all-natural Philippine textiles. (Author's abstract)

Keywords: Science and technology, Portunus pelagicus, Fourier Transform Infrared Spectroscopy (FTIR), AATCC Test Method 100-2004, Bombyx mori, Gossypium spp., Musa textilis, Terminalia cattapa

PTRI Samay Bulletin, Volume No. Issue No., 29-45 2008, (Filipiniana Analytics) Fil(S) TS1300 S42 v.11 2011

Hatchability and cocoon characteristics of triple-cross F1 silkworm hybrids *Pia, Gerrylou Sweet M., Ompoy, Serenita S.*

This study was conducted to evaluate the cocoon characteristics of eight newly developed triple-cross F1 hybrids. Three rearing trials were conducted and the hatching percentage, number of cocoons per 500 grams, cocoon shell percentage, and filament length of each hybrid were determined. The values obtained were statistically analyzed and were also compared to the Philippine Textile Research Institute (PTRI) standard set for silkworm hybrids.

Five triple-cross hybrids passed the Philippine Textile Research Institute-Technology Center, Misamis Oriental (PTRI-TC, M.O.) standard for good hatching percentage, namely: PTRI SW-300, PTRI SW-301, PTRI SW-304, PTRI-SW-306 and PTRI SW-307. As to the number of cocoons per 500 grams, only PTRI SW-301 passed the PTRI standard. For cocoon shell percentage, all hybrids, except hybrids PTRI SW-300 and PTRI SW-301, passed the PTRI standard. However, all eight did not meet the standard for filament length. Results showed no significant differences among the eight triple-cross hybrids in terms of hatching percentage, number of cocoons per 500 grams, cocoon shell percentage and filament length properties.

Although there may be no remarkable or superior qualities observed among the eight new hybrids that would compensate for the longer breeding process required to produce them, the aim to develop new triple-cross hybrids and determine the economic characteristics for future references were accomplished. Continued crossbreeding activities are therefore recommended for other silkworm parent lines to develop better and promising silkworm hybrids. (Author's abstract)

Keywords: Science and technology, Cocoon, Triple-cross F1 silkworm hybrids, Cocoon shell

PTRI Samay Bulletin, Volume No. Issue No., 1-8 2008, (Filipiniana Analytics) Fil(S) TS1300 S42 v.8 2008

HPLC elution programs for carcinogenic amines from azo dyes *Reconose, Marina V., Lopez, Daisy C.*

Neat methanol (MeOH) and MeOH: H_2O (7:3) have been reported as suitable eluants for quick screening by high performance liquid chromatography of the eight carcinogenic amines from azo dyes. This paper covers 11 standard amines eluted with neat MeOH, MeOH: H_2O (7:3, 6:4), acetonitrile (CH₃Cn), and buffer solution using isocratic and gradient techniques. Results showed that for the 11 amines considered (a) isocratic elution with MeOH: H_2O [7:3] is the most suitable eluant for quick screening, (b) the less hazardous MeOH/Buf [15/80] is suitable for preliminary identification of amines that overlap at MeOH: H_2O [7:3], (c) CH₃CN/Buf [28/28/60/60]t55 is the best elution program, and (d) the toxic CH₃CN should be used only when Amn13 and Amn22 are suspected to be present. (Author's abstract)

Keywords: Science and technology, Neat methanol (MeOH), Carcinogenic amines, Azo dyes

PTRI Samay Bulletin, Volume No. Issue No. , 32-39 2008, (Filipiniana Analytics) Fil(S) TS1300 S42 v5 2005

0356

Hybrid vigor of double cross *Bombyx mori* silkworms Lopez, Cheryl G., Ompoy, Serenita S., Salon, Michael Vincent E., Liguan, Ronnie M.

A study was conducted to assess the hybrid vigor of double cross silkworm hybrids namely PTRI SW 2000, 2001, 2002, and 2003. These hybrids came from crossbreeding silkworm inbred parents of Japanese and Chinese races. The study showed that when compared to their parental origins, the improvement of the double cross hybrids was significantly better in terms of larval weight, cocoon size, cocoon weight, and shell weight, filament length, filament weight, and filament size. Moreover, the hybrids satisfactory met the PTRI requirements for these economic parameters. Among the four, PTRI SW 2001 performed best. (Author's abstract)

Keywords: Science and technology, Bombyx mori, Hybridization, Hybrid vigor of double cross, Silkworm, Sericulture, Zoology

PTRI Samay Bulletin, Volume No. Issue No., 1-6 2008, (Filipiniana Analytics) Fil(S) TS1300 S42 v.12 2012

Larval and cocoon quality of four Mindanao silkworm (Bombyx mori) F1 hybrids Lopez, Cheryl G., Ompoy, Serenita S.

The performance of four Mindanao silkworm F_1 hybrids namely PTRI SW 101, 102, 103, and 104 was evaluated in terms of larval characteristics and cocoon quality. The hybrids were found to exhibit similar egg qualities and larval characteristics and performed within the standard in terms of average single cocoon weight, average cocoon yields, and average cocoon shell weight.

The visual inspection of cocoon classification, aided by the combined results of single weight, shell ratio, and live pupal percentage showed that about 57.13% of the actual dried cocoons of Mindanao F_1 hybrids reeled were graded as Class A. Moreover, based on mechanical testing and the international standard classification, the hybrids got the highest reelability mark of 5A grade, indicating their good performance in the reeling process. when cocoon filament length mark was considered, however, all the hybrid cocoons received a final grade of Class C.

A two-sample t-test comparison showed that all the four Mindanao F_1 hybrids have significantly heavier cocoon weight and longer filament lengths than their parental origins. (Author's abstract)

Keywords: Science and technology, Silkworm F1 hybrids, Cocoon, Bombyx mori

PTRI Samay Bulletin, Volume No. Issue No., 1-11 2008, (Filipiniana Analytics) Fil(S) TS1300 S42 v.11 2011

Manually operated miniaturized carding and fiber opener Pechera, Ronald S., De Leon, Marites, Mangalindan, Nora B.

The invention relates to a simplified manually operated laboratory carding machine which can perform multiple tasks, such as fiber opening and cleaning, at the same time.

The machine consists of four wooden cylindrical drums with metal card clothing each concentrically aligned by shaftings to perform carding/cleaning and opening actions on the fibers being fed. The carding motion of the drum cards is synchronized through the chain and sprocket assembly and relayed by a metal/wood hand crank. The development and adoption of the machine, coupled with an available hand spinning machine can provide significant impetus to the handicrafts and hand weaving industry of the country. (Author's abstract)

Keywords: Science and technology, Miniaturized carding and fiber opener, Water hyacinth, Saluyot

PTRI Samay Bulletin, Volume No. Issue No. , 23-28 2008, (Filipiniana Analytics) Fil(S) TS1300 S42 v.12 2012

Mechano-physical properties of enzyme-treated *Musa textilis* (abaca) fibers Cabansag, Jeannie Lynn J., Leaño, Jr., Julius L.

Treatment of knotted abaca (*Musa textilis*) fibers with enzymes affording the substrate specific removal of noncellulosic impurities such as pectin, fats, waxes, lignin, and xylans was studied and compared with the conventional alkaline method of scouring.

M. textilis fibers were treated with commercially available pectinase, cellulase, protease, and xylanase at varying pH, temperature, surfactant and enzyme concentrations, and treatment duration. Physico-mechanical properties of treated fibers were evaluated in terms of % weight loss, whiteness, and tensile strength and compared with alkaline scoured fibers. Whiteness index was assessed using the CIE $L^*a^*b^*$ data expressing color in tri-stimuli values. Results showed that the efficiency of enzyme treatment on the fibers were comparable with the mechanical properties of alkaline treated fibers and exhibited better tensile strength. The use of enzymes in pre-treating *M. textilis* fibers offers a greener alternative to the conventional alkaline pre-treatment process. (Author's abstract)

Keywords: Science and technology, Musa textilis, Pectinase, Cellulase, Protease, Xylanase

PTRI Samay Bulletin, Volume No. Issue No. , 49-54 2008, (Filipiniana Analytics) Fil(S) TS1300 S42 v.13 2013

0360

Natural dyes technology intervention to the *T'nalak* weavers of Lake Sebu, South Cotabato *Leaño, Jr., Julius L*.

The traditional dyeing practices on the tinalak of the T'boli weavers in Lake Sebu, South Cotabato was assessed to suit the proposed intervention. The evaluation revealed the low productivity and lack of systematic dyeing procedure which often compromised the quality of the dyed materials. In addition to the still existent natural dyeing practices, the use of natural dyes was introduced. Having recognized it, the Philippine Textile Research Institute introduced a technology, which sought to instill a more systematic, standard and scientific approach in dyeing abaca fibers and is akin to an age old tradition in natural dyeing. Fiber pre-treatment was introduced to clean and render a whiter appearance of the fibers prior to dyeing. Some of the local dye sources used include tungog (roots of Morinda citrifolia), yellow ginger (rhizomes of Curcuma longga), and the native kinalum (leaves of Diospyrus sp.). The use of sibukao (wood of Ceasalpinnia sappan), talisay (leaves of Terminalia cattapa), annatto (seeds of Bixa orellana) and mahogany (Switeenia macrophylla King) was also introduced to obtain the much-desired red, black and orange and brown colors. Standardizing techniques of the local dye sources were likewise pursued.

The assimilation of the PTRI technology in natural dyeing was found to have increased the overall quality, and productivity and likewise improved the aesthetic appeal of the tinalak. These findings ascertained the successful intervention of PTRI in sharing the systematic process of natural dyeing in the T'boli weavers. (Author's abstract)

Keywords: Science and technology, T'boli weavers, Traditional dying, Natural dying, Tungog (roots of morinda citrifolia), Yellow ginger (rhizomes of curcuma longga), Native kinalum (leaves of diospyrus sp.), Sibukao (wood of ceasalpinnia sappan), Talisay (leaves of terminalia cattapa), Annatto (seeds of bixa orellana), Mahogany (switeenia macrophylla king)

PTRI Samay Bulletin, Volume No. Issue No. , 9-15 2008, (Filipiniana Analytics) Fil(S) TS1300 S42 v.8 2008

Performance of J102 and C102 parent silkworm races under La Trinidad, Benguet conditions

Inumpa, Arnold M., Espiritu, Zoraida R., Bayeng, Fermin O., Bacuso, Paul M.

The study assessed the survival and egg laying performance of two silkworm parents, J102 and C102 on a trimestral (mar-June-November) regular egg production cycle of the Phlippine Textile Research Institute Technology Center La Trinidad, Benguet from 2002 to 2006. The 1998 data were utilized as control. It employed five parameters - pupation percentage, mortality, fecudity, percentage of fertilized eggs and hatching percentage of eggs to describe the performance of the two silkworm parent races. The study concluded on the bases of the five parameters employed that the two silkworm parents are still performing well on its 24th generation and recommended that these can still be used for commercial silkworm egg production until replacement strains are. **(Author's abstract)**

Keywords: Science and technology, J102, C102, Silkworm races, Silkworm egg production

PTRI Samay Bulletin, Volume No. Issue No. , 21-26 2008, (Filipiniana Analytics) Fil(S) TS1300 S42 v.8 2008

Performance wear test evaluation of two PTRI-developed indigenous fiber-based fabrics Mangalindan, Nora B.

The performance of two indigenous fiber based fabrics from cotton/polyester/pineapple and cotton/polyester/kenaf blends developed by the Philippine Textile Research Institute (PTRI) was evaluated through actual wear test. Eighty female and 20 male respondents strictly followed the instructions in the conduct of the performance test for six wearings. A survey questionnaire was distributed to record observations specifically on the fabrics' handle expressed in terms of softness, smoothness, comfort and itchiness as well as colorfastness of the dyed fabric, strength and fabric weight. The fabrics' properties were also tested using the established methods of test for

Respondents' ratings and observations revealed that both indigenous fiber based fabrics have promising textile potentials although the fabric handle properties of the resulting fabrics, particularly the kenaf based, still need improvement. Laboratory test results also showed that the fabrics are considerably strong but quite inferior in terms of handle properties. Clearly, there is still a need to improve the fabric finishing technology to minimize their harsh feel and impart the necessary "body" to the fabric. (Author's abstract)

Keywords: Science and technology, Cotton, Polyester, Pineapple, Kenaf

PTRI Samay Bulletin, Volume No. 3 Issue No. 2, 30-39 2008, (Filipiniana Analytics) Fil(S) TS1300 S42 3/2 2003

Practical applications and experiences on S&T services *Alvarez, Virmila B.*

The paper articulated the various science and technology (S&T) services and interventions of the Philippine Textile Research Institute (PTRI) and highlighted the impact and practical applications for the Small and Medium Enterprises (SMEs)

The PTRI's experiences along this field have addressed the SMEs common problems and could serve as lessons learned to avoid its recurrence. Other SMEs in various regions could relate and find solutions to similar problems and experiences encountered. Recommendations for successful S&T services and interventions were also discussed toward empowering the SMEs. (Author's abstract)

Keywords: Science and technology, Small and medium enterprises (SMEs), Handicraft industry, Textile based cottage

PTRI Samay Bulletin, Volume No. 3 Issue No. 2, 1-10 2008, (Filipiniana Analytics) Fil(S) TS1300 S42 3/2 2003

Pre-treatment studies of sweet sorghum non-grain biomass for bioethanol processing Agrupis, Shirley C., Vadlani, Praveen

Lignocellulosic biomass like the residual non-food biomass from agricultural sector is a potential alternative feedstock for bioethanol. However, the complex cross linking of cellulose, hemicellulose, and lignin make the biomass recalcitrant to hydrolysis for further processing to bioethanol and other products. Hence, pre-treatment is essential as this converts lignocellulosic biomass from its native form. In this study, combination of thermochemical was evaluated. The objective was to establish the most appropriate process for sweet sorghum bagasse, which will serve as basis for optimization for other agricultural residues. The thermo-chemical pretreatments were Soda, Kraft, and Organoslov with predetermined amounts of chemical catalysts. They were carried out at constant temperature (170°C), liquid to biomass ratio (10:1), residence time at treatment temperature (60 min), and cooling down (60mins). Hydrothermal process was performed using the same conditions without chemical catalyst. Fiber yield (%) after pretreatment was in a decreasing order from Organoslov (58.75%)> Kraft (51.25)> Soda (38.28) >Water (25.63%). Sugar yields after acid hydrolysis of the pretreated biomass was highest in Soda (30.22%) and Kraft (29.29%) processes. Organoslov was at 15.37% and hydrothermal at 22.77%, respectively. Sugar degradation was at different extents ranging from 8.29-53%. Also, delignification was effected by the pretreatment protocols and was best observed in Kraft process at 70.72%, Soda at 62.49%; Organoslov at 27%, and hydrothermal at 16.64%. High powered microscopy provided clear degradation of the biomass. Soda and Kraft processes gave the best result while hydrothermal process in combination with biological treatment showed promising result for further investigation. (Author's abstract)

Keywords: Science and technology, Biofuel, Lignocellulosic biomass, Feedstock, Pre-treatment, Thermo-chemical

Transactions of the National Academy of Science and Technology, Volume No. 34 Issue No. 1, page 139 2008, (Filipiniana Analytics) Fil(S) Q149.P5 N25 34/1 2012

Properties of S₂ grade fiber from twelve commercial abaca varieties *Hagad, Stela Marie C.*

The study was undertaken on S_2 grade fiber from twelve commercial abaca varieties obtained from the Fiber Industry Development Authority that were subjected to the Philippine Textile Research Institute's (PTRI) established pretreatment process for abaca intended for textile processing. It aimed to assess the influence of varietal differences and the differences among the fiber sections on the gum content, tensile strength and fineness of the treated fibers that were divided into top, middle and bottom sections.

Results on the treated fibers revealed that there are significant differences in all fiber properties considered among the three sections within the same variety and across abaca varieties. Maguino variety showed parity in the residual gum and fineness properties for all its fiber sections. Itolaus variety, on the other hand, yielded the finest fiber. Statistical analysis revealed that for all their fiber sections, Maguindanao Black and Bongolanon varieties, have comparable fiber fineness. The varieties that can be grouped together to give a narrow range of variability in fineness are Bongolanon, Maguindanao Black and Inosa; Tinawagang Puti and Itolaus; Linawaan and Laylay varieties. (Author's abstract)

Keywords: Science and technology, Abaca varieties, S2 grade fiber, Musa textilis, Manila Hemp

PTRI Samay Bulletin, Volume No. Issue No. , 6-15 2008, (Filipiniana Analytics) Fil(S) TS1300 S42 v5 2005

0366

PTRI intervention on the natural dyeing practices of the Higaonon hinabol weavers of Mintapod, Impasug-ong, Bukidnon Leaño, Jr., Julius L.

The traditional dyeing practices on the hinabol of the Higaonon weavers in Impasug-ong, Bukidnon was assessed to suit the proposed intervention. The evaluation revealed the low productivity and lack of systematic dyeing procedure which often compromised the quality of the dyed materials. PTRI introduced a technology, which sought to install a more systematic, standard and scientific approach in dyeing abaca fibers. Fiber pre-treatment using hydrogen peroxide, akali and sodium silicate was introduced to clean and render a whiter appearance of the fibers prior to dyeing. Some of the local dye sources used include tungog (roots of Morinda citrifolia) yellow ginger (rhizomes of Curcuma longga), and the native lila (vine) and ilalama (wood). The use of Sibukao (wood of Ceasalpinnia sappan) was also introduced as a dyeing option to obtain the much desired red color while Talisay (leaves of Terminalia catappa) was used to produce the desired black color. Standardizing techniques of the local dye sources were likewise pursued.

The assimilation of the PTRI technology in natural dyeing was found to have increased the over all quality, and

productivity and likewise improved the aesthetic appeal of the hinabol. These findings ascertained the successful intervention of PTRI in sharing the systematic process of natural dyeing in the Higaonon weavers. (Author's abstract)

Keywords: Science and technology, Natural dying, Traditional dying, Tungog (roots of morinda citrifolia), Yellow ginger (rhizomes of curcuma longga), Native lila (vine), Ilalama (wood), Sibukao (wood of ceasalpinnia sappan), Talisay (leaves of terminalia cattapa)

PTRI Samay Bulletin, Volume No. Issue No. , 26-33 2008, (Filipiniana Analytics) Fil(S) TS1300 S42 v7 2007

0367

PTRI natural dye application technology for the upgrading of ivatan handicrafts industry in Batanes

Pagkalinawan, Jenice O.

The handicraft industry in Batanes pertaining to the production of souvenir woven products plays an important role in the emerging eco-tourism and cultural tourism programs of the province. Evaluation of the produced crafts revealed a need for improvement with regards to the design, packaging and visual appeal of the products. PTRI's established natural dye extraction and application technologies using yellow ginger (Curcuma longga), talisay (Terminalia cattapa), young coconut (Cocos nucifera) and kogon (Imperata cylindrical) were introduced to the Ivatan handicraft producers through lecture and hands-on training/workshop using their emdemic fibers pandan, vayasuvas, and voyavoy. The experience created knowledge and know-how on new skills that could improve the quality and aesthetic value of their products. Likewise, the scouring and bleaching processes for fibers significantly benefited the fiber producers in maintaining good quality fibers. The intervention provided a more in-depth and efficient method for fiber processing and dyeing to strengthen the marketability of Batanes crafts hence, establishing a more globally competitive industry and at the same time supporting the promotion of eco-tourism in the province **(Author's abstract)**

Keywords: Science and technology, Yellow ginger (Curcuma longga), Talisay (Terminalia cattapa), Young coconut (Cocos nucifera), Kogon (Imperata cylindrical, Pandan, Vayasuvas, Voyavoy, Batanes

PTRI Samay Bulletin, Volume No. Issue No. , 31-35 2008, (Filipiniana Analytics) Fil(S) TS1300 S42 v.8 2008

0368

Rejuvenation of old and unproductive mulberry trees through ground-level pruning Toring, Pepito M., De Guzman, Zenaida I., Basaen, Adelfa M.

The effect of ground-level pruning in the rejuvenation of old and unproductive mulberry trees was evaluated atthe mulberry field of the Philippine Textile Research Institute-Technology Center (PTRI-TC), La Trinidad, BenguetfromMay1998to2001.

Ground-level pruning was found to be an easier and cheaper method than totally uprooting and replanting a mulberry. Ground-level pruning was completed in just 5 man days to rehabilitate the 800 old mulberry trees. Activities on the preparation of planting materials, land preparation, transplanting and the maintenance of a nursery were eliminated. Consequently, labor cost was decreased to P750.00. Harvest time was substantially shortened and reduced to about 6 months. (Author's abstract)

Keywords: Science and technology, Mulberry (Morus alba), Rejuvenation, La Trinidad, Benguet

PTRI Samay Bulletin, Volume No. 3 Issue No. 2, 40-44 2008, (Filipiniana Analytics) Fil(S) TS1300 S42 3/2 2003

0369

Sampling techniques for fabric weight determination of woven fabrics *Jurado, Rowena Caridad C.*

Two sampling techniques for fabric weight determination were compared using light, medium, and heavy weight woven fabrics. The first technique using a pneumatic sample cutter is accurate, easy and fast to use but very expensive. The second technique using a template as a guide for the specimen size is a crude method, tedious and time-consuming but very cheap and affordable.

The sampling was done in pairs. Results showed the two techniques were not significantly different, which means that both techniques could be used. Therefore, the use of a simple template as a replacement for a pneumatic sample cutter would be beneficial for testing laboratories that could not afford the exorbitant price of a pneumatic sample cutter. (Author's abstract)

Keywords: Science and technology, Fabric weight determination, Woven fabrics, Pneumatic sample cutter

PTRI Samay Bulletin, Volume No. 3 Issue No. 2, 23-29 2008, (Filipiniana Analytics) Fil(S) TS1300 S42 3/2 2003

0370

Sericulture technology center Misamis Oriental through the years *Lopez, Cheryl G.*

Sericulture, the growing of silkworms into cocoons, is an ancient activity that can be traced 5,000 years back in China. Its economic importance and fame of its silk products paved the way for its global spread. After a thousand years, it reached the northern areas of the Philippines. When the Philippine Textile Research Institute (PTRI) received the technology and facilities of sericulture, it established two sericulture stations in Benguet and Misamis Oriental which, over a period of time, were strengthened as a silkworm breeding and multiplication center, shortly called Technology Center (TC). Particularly, Misamis Oriental TC has 58 parent breeds in its silkworm germplasm which came in mostly as hybrids and improved through years of acclimatization, segregation, characterization, and purification. The TC's widely distributed four Mindanao hybrids came from the crosses of four improved Mindanao parent lines. In effect, these local hybrids phenomenally solved the increasing silkworm egg needs for cocoon

growers in Mindanao that resulted to the escalation of cocoon production. The various trances of technical and financial assistance from foreign and local agencies significantly contributed in the full development of the TC. After more than 30 years, PTRI's focus on sericulture support shifted to Misamis Oriental TC after the defunct of Benguet TC. Prepared for, yet, another transition of management of the TC from PTRI to DOST-10, it keeps itself ready for future pursuits of development. (Author's abstract)

Keywords: Science and technology, Silkworms, Cocoon, Misamis Oriental

PTRI Samay Bulletin, Volume No. Issue No. , 29-36 2008, (Filipiniana Analytics) Fil(S) TS1300 S42 v.12 2012

0371

Simple and effective UV-assisted synthesis of silver nanoparticles in polymethacrylic acid Manalang, Evangeline Flor P., Cabansag, Jeannie Lynn J.

A simple, inexpensive, and intrinsically non-toxic method of preparing silver nanoparticles via UV-induced reduction of silver ions using polymethacrylic acid (PMA) is reported. Parameters such as source of radiation, concentrations of $AgNO_3$ and PMA and duration of irradiation were optimized to establish a technique of synthesizing silver nanoparticles with minimized aggregation. The radiation source, mechanical action, reactant concentration, and irradiation time have significant effect on the preparation of Ag NPs; and they can be varied to control its size, shape and distribution. Results revealed that 10:1 millimolar ratio of $AgNO_3$ and PMA and 1 h UV irradiation using 8 W UV C lamp with continuous stirring are the optimized condition for the preparation of Ag NPs. Using the optimized parameters, characteristic SPR band at 430 nm wavelength was observed via UV-Vis spectroscopic technique. This confirmed the effective conversion of Ag^+ to Ag^0 and the formation of spherical ag NPs with minimized agglomeration. This method has great potential for scaled-up production of Ag NPs for various industrial applications. **(Author's abstract)**

Keywords: Science and technology, Polymethacrylic acid, AgNO3, Nanoparticles, Radiation

PTRI Samay Bulletin, Volume No. Issue No. , 9-22 2008, (Filipiniana Analytics) Fil(S) TS1300 S42 v.13 2013

0372

Status and prospects of the sericulture industry in the Philippines: PTRI perspective Casero, Roberto O., Basaen, Adelfa M., Mangalindan, Nora B.

The sericulture industry in the Philippines was reviewed with emphasis on the status and prospects of the industry. The paper presented the major accomplishments of PTRI and its significant contributions in the development of sericulture in the Philippines The government support to the industry was also highlighted, focusing on the role of the Department of Science and Technology (DOST) and the Philippine Textile Research Institute (PTRI) which is one of the government agencies mandated to conduct research and development projects for sericulture, render technical services and provide training program. The paper also reflected the investment opportunities and competitive advantage of the industry, its strengths, and constraints. (Author's abstract)

Keywords: Science and technology, Sericulture industry, Silk fabric, Silkworms, Cocoon

PTRI Samay Bulletin, Volume No. Issue No. , 37-50 2008, (Filipiniana Analytics) Fil(S) TS1300 S42 v.12 2012

0373

Treatment of industrial wastewater by chemical coagulation Martonito, Roselle L., Tumlos, Elvira T.

The use of guar gum, alum, and ferric chloride as well as their combinations was investigated to treat synthetic and textile industry wastewater. The treatments involved the addition of different concentrations of guar gum and varying ratios of guar gum:alum and guar gum:ferric chloride. The speed and duration of stirring as well as the setting time of the coagulation process were constant in all treatments. Coagulants were added to the synthetic wastewater to assess their effectivity in reducing turbidity, total suspended solids (TSS), and chemical oxygen demand (COD), as well as in maintaining the pH to meet the prescribed regulatory effluent standards of the Department of Environment and Natural Resources (DENR).

Results showed that the two best combinations were T1 (50:50 guar:alum) and T4 (80:20 guar:alum). T1 reduced turbidity and TSS by 74.4% and 92.4%, respectively. T4 reduced turbidity by 84.2% and TSS by 83.3%. The COD level increased and the wastewater became more acidic after both treatments.

Using T1 and T4 to treat the textile wastewater, the former was found to be more effective. Turbidity and TSS were reduced by 77.7% and 60.0% with T1, but only by 63.1% and 40% with T4. COD increased while the pH slightly decreased. After two hours of aeration, COD level was reduced but not to the level within the regulatory standards. Except for COD, all the parameters were within the prescribed regulatory effluent standards. (Author's abstract)

Keywords: Chemical coagulation1, Total suspended solids (TSS), Chemical oxygen demand (COD), Science and technology, Guar gum, Alum, Ferric chloride

PTRI Samay Bulletin, Volume No. Issue No. , 24-31 2008, (Filipiniana Analytics) Fil(S) TS1300 S42 v5 2005

0374

Utilizing spectral reflectance and vegetation indices of *Bougainvilleae spectabilis* in monitoring particulate air pollution in Metro Manila *Olpenda, Alex S., Paringit, Enrico C.*

This research aims to examine the potential of multispectral remote sensing in assessing particulate air pollution at a wider scale and with relative ease wherein plant responses were utilized as indicators of air quality. Major results shows that materials exposed to a polluted area would likely decrease its reflectance mainly from visible to near infrared regions. Vegetation indices such as Ratio Vegetation Index (RVI), Normalized Difference Vegetation Index (NDVI) and Difference Vegetation Index (DVI) including Red Edge Parameter (REP) were utilized to assess potted bougainvillea plants exposed at different pollution level. Further, a spectral mixture analysis (SMA) was made to simulate the effects of exhaust pipe soot to the spectral characteristics of a bougainvillea leaf. The generated data was later used in creating a model thru Partial Least Squares (PLS) regression which produced a 0.91 coefficient of determination. The SMA-based PLS-ran model was then applied to *in situ* measured reflectance of the exposed specimen. Findings reveal an apparent association between the estimated soot content and the Total Suspended Particles (TSP). The same estimation model was also applied to multispectral high-resolution WorldView-2 imageries in producing an interpolated detailed air quality map which shows the spatial extent and concentration of suspended particulate matter. The clearest and least hazed image showed the most reasonable representation of particulate air pollution. The majority of main roads and intersections have high TSP concentration while lower level of pollution can be seen on rivers, cemetery, parks and mostly of residential areas which all suggests a valid scenario. However, some portion of vegetated areas seem to be unrealistic and does not represent TSP level as anticipated due probably to factors such as atmospheric conditions, canopy biophysical attributes, illumination conditions, soil reflectance as well as viewing geometry. (Author's abstract)

Keywords: Science and technology, Air pollution, TSP, Vegetation index, Worldview-2

Transactions of the National Academy of Science and Technology, Volume No. 34 Issue No. 1, page 141 2008, (Filipiniana Analytics) Fil(S) Q149.P5 N25 34/1 2012

0375

Water hyacinth (Eichhornia crassipes) for yarn manufacture Marin, Eduardo M., De Leon, Marites S., Mangalindan, Nora B.

This study explored the potential of water hyacinth (Eichhornia crassipes) as a source of fiber for yarn manufacture. Extraction of the fibers from fresh stalks of water hyacinth using a fiber decorticating machine yielded 1.7% dry fiber. The decorticated water hyacinth fiber contained 58.8% gum with tensile strength of 8.07 kgf-m/g and fineness of 68.8 denier.

Various treatments were employed to convert the fiber into its spinnable form. Results showed that the yarn from the combined woolenization-degumming treatment exhibited fewer breakages and higher yarn realization with acceptable technical properties. (Author's abstract)

Keywords: Science and technology, Water hyacinth, Woolenization-degumming treatment, Fiber decorticating machine

PTRI Samay Bulletin, Volume No. Issue No. , 46-54 2008, (Filipiniana Analytics) Fil(S) TS1300 S42 v.11 2011

SOCIAL SCIENCES

The determinants of poverty incidence in selected rurban communities Mancebo, Samuel T., Perlas, Marylin B., Tan, Francisca

The study attempted to determine the correlates of poverty incidence in a rurban community and identify some appropriate community education, training and other related strategies in reducing poverty incidence. Recommendations were forwarded by the researchers for those concerned to possibly implement in order to reduce the nagging poverty suffered by the people.

This research study selected two municipalities: Daet, Camarines Sur representing Region V and Lumban, Laguna for Region IV. In each municipality a sample of 100 households were randomly picked from rurban and rural barangays of the towns. Surveys and interviews were employed to gather data using open and close-ended questionnaires and likert-type interview schedules. The data were analyzed using descriptive statistics such as frequencies, means and percentages and inferential statistics for qualitative data correlation such as the Rao-Scott and Cramers' V Chi-square tests.

Results of the study revealed that both sample communities had a very high percentage of families above the poverty threshold which are even higher than the Philippine average. All sites in the study communities have demonstrated a high level of attitudinized scores which generally is within the literature definition of poverty. These scores shown by the barangays meant a positive outlook in life to fight their impoverished situation if given the opportunity.

The confluence of factors that came out to be strongly associated with a high level of living as measure of poverty incidence were age, use of cell phones, institutional factors such as the immediate opportunity to apply for a loan, borrow from private institutions and the availment of educational services particularly for those who had completed college education. It is further concluded that in general the mental attitude of poverty exhibited by the respondents also reflected their definition of poverty which could be reversed through quality education. (Authors' abstract)

Keywords: Social sciences, Determinants, Poverty incidence, Rurban communities

USM R&D Journal, Volume No. 17 Issue No. 1, 89-101 2009, (Filipiniana Analytics) NP

0377

The Higher Education Institutions (HEIs) as agents of social change: the case of the University of the Philippines Los BaÃf�Ã,±os (UPLB)

Cardenas, Virginia R., Sulabo, Evangeline C., Villancio, Virgilio T., Domingo, Lorna P. Tan, Francisca

Higher education institutions play a major role in the country's development. Colleges and universities are expected to produce high-level professionals and generate technologies and approaches aimed at improving the people's quality of life. Poverty is a major concern in the Philippines. If colleges and universities will be true to their mission, then their curricula should reflect preferential love for the poor and powerless. In many developing countries including the Philippines, however, colleges and universities have so far not been able to fulfill these roles, partly because of the seeming incompatibility of their multiple missions or functions. Colleges and universities are commonly perceived to be institutions of learning and research and thus, focusing most of their attention to such functions.

Slowly but increasingly, there has been changes in the universities' basic functions and this is true for both

private and public universities. Increasingly, they have been sharing in the efforts to improve the lives of the people impoverished communities.

It is high time that colleges and universities should aim at genuine service to the poor, the deprived and the oppressed by being socially aware, concerned and responsible. They must exert effort to contribute to the economic and social cohesiveness of a nation and as a forum for constructive debates on development. To be responsive to the changing requirements of rural development, it is imperative for the colleges and universities to reflect on their respective curricula and adjust them to meet the needs of changing context of agricultural development. (Authors' abstract)

Keywords: Social sciences, Community-based approach, Farmer scientist, Higher education institution, Nutrition improvement, Rural development, Rural learning, Social change

, Volume No. 17 Issue No. 1, 103-111 2009, (Filipiniana Analytics) NP

0378

Integrating science and local knowledge for climate change impacts and vulnerability assessments

Pulhin, Juan M., Cruz, Rex Victor O., Tapia, Marical A., Peras, Rose Jane J., Cantre, Chandyllane G.

This project aims to build the capacity of concerned stakeholders in the province of Albay in assessing the impacts of and their vulnerability to climate change and sea-level rise with the use of a computer modeling system and complemented by the local knowledge of the people. It serves as a pilot site in the Philippines for the assessment of climate change impacts and vulnerability using SimCLIM, a modeling system for examining the effects of climate variability and change over time and space. Case studies in upland and coastal communities, using household survey, participatory rural appraisal techniques, among others, were conducted to demonstrate the assessment. The upland communities were highly exposed to typhoons and El Niño, while the coastal communities were affected by floods and storm surges during typhoons. Adaptation strategies were mostly spontaneous and meant to bear the losses from the impacts. Meanwhile, future climate change and sea-level rise scenarios generated through SimCLIM, using ensembles and SRES (Special Report on Emission Scenarios) A1FI set at high sensitivity, presented a 4-5°C increase in temperature and about 10% increase in precipitation in 2100 in the barangays where the upland communities are located, and 1.3-meter sea level rise in the same year in the eastern coast of Albay, where lies the coastal communities. Combining both computer-based modeling system and participatory approaches in the conduct of assessment proved useful particularly in developing adaptation strategies, as the former demonstrated the 'forward-looking' aspect of climate change while the latter put into context the vulnerability of the group assessed taking into account the non-climatic factors. The approach also familiarized the local communities and other stakeholders with the concepts of climate change. (Author's abstract)

Keywords: Social sciences, Climate change, Sea-level rise, SimCLIM, Vulnerability, Local knowledge

Transactions of the National Academy of Science and Technology, Volume No. 34 Issue No. 1, page 166 2008, (Filipiniana Analytics) Fil(S) Q149.P5 N25 34/1 2012

Keeping agriculture moving: lessons in Agriculture Extension from five Philippine municipalities

Ponce, Eliseo R., Baconguis, Rowena dela Torre, Hondrade, Rosa Fe D., Mascariñas, Arnulfo M., Saz, Efren B., Tabada, Ma. Aurora Teresita

What criteria do municipal agricultural offices follow when prioritizing and implementing projects? What factors and incentives explain their performance? What reforms may be implemented to improve the delivery of agricultural services? To answer these questions, a documentation of the extension system in five progressive agriculture- based municipalities was undertaken. Key informant interviews, focus group discussions, field visits, and reviews of secondary data were used to provide a rich account of the extension set-up. A key finding was municipalities strongly wanted to provide agricultural services but they were greatly constrained by a lack of policy framework and resources. Given the extensive scope of services outlined in the Local Government Code, municipal agricultural offices were hampered by problems in prioritization of activities; thus, they remained dependent on projects coming from the national government. This situation has greatly affected the ability of extension to catalyze agricultural transformation. Thus, major recommendations include reviewing the policy, organization, and management that guides agricultural extension. (Author's abstract)

Keywords: Social sciences, Current planning dynamics, Extension devolution to LGUs, Extension prioritization, Private sector role in extension, Traditional extension

, Volume No. 17 Issue No. 2, 161-169 2009, (Filipiniana Analytics) NP

Learning styles of engineering technology students and their conceptual understanding on the particulate nature of matter *Marasigan, Elizabeth, Elazegui, Erwin P.*

This research study investigated the learning styles of engineering technology students and explored their understanding on the particulate nature of matter. The sample consisted of 40 engineering technology students enrolled in General Chemistry. The study was a descriptive research-causal comparative and design to accomodate both qualitative and quantitative analysis. Qualitative method was used to analyze the inputs of the students in the Visual Conceptual Questionnaire (VCQ). Quantitative method was used in describing the profile of the students learning styles and determined the relationship on the conceptual understanding of the particulate nature of matter. Results showed that out of 40 students, 12 students (30%) were accommodators, 5 students (12.5%) were assimilators, 9 students (22.5%) were convergers and 14 students (35%) were divergers. The students level of understanding is most likely incline towards partial understanding. This suggests that students answers to VCQ on the particulate nature of matter showed partial misconception but indicating some degree of relevance towards the concept. Considering the result of the One- Way ANOVA Test, there is no significant difference between the scores of student on their learning styles. This further connotes that the learning styles of student does not affect their conceptual understanding in the nature of matter. Results of the study also implies that chemistry teachers should also focus on the microscopic level aside from macroscopic level in teaching the nature of matter since it is fundamental in learning the concept of matter. (Author's abstract)

Keywords: Social sciences, Learning styles, Conceptual understanding, Visual conceptual questionnaire, Misconception, Particulate nature of matter

Transactions of the National Academy of Science and Technology, Volume No. 34 Issue No. 1, page 163 2008, (Filipiniana Analytics) Fil(S) Q149.P5 N25 34/1 2012

0381

The link between extreme poverty and young dependents in the Philippines: evidence from household surveys

Mapa, Dennis S., Albis, Manuel F., Lucagbo, Michael C.

The high level of extreme poverty or those experiencing hunger in the country is the most pressing issue that needs to be addressed by our policymakers. Official government statistics and data from self-rated hunger surveys show an increasing trend in hunger incidence among households. On the one hand, data from the National Statistical Coordination Board (NSCB) show that the percentage of households experiencing hunger almost remained the same from 8.2 percent in 2003 (equivalent to 1.36 million households) to 7.9 percent in 2009 (1.45 million households). On the other hand, the Social Weather Stations (SWS) quarterly surveys on hunger incidence show an increasing trend in the percentage of families that experienced hunger, reaching 21.5 percent (about 4.3 million households) in the 3rd Quarter of 2011, the highest since December 2009. This study looks at the determinants of extreme poverty among households using the data from the Family Income and Expenditures Survey (FIES) by applying the concept of regression discontinuity design to distinguish the characteristics of "extremely poor" (subsistence poor) from "poor" households. Using a logit model on the pooled FIES data in 2003, 2006 and 2009, the results show that presence of a young dependent in the household increases the probability that the household will be extremely poor by about 4 percentage points, controlling for other factors. Other variables that influence the probability of the household being extremely poor are the education of the household head and percentage of cash transfer from abroad. Moreover, regional characteristics such as varying food prices and underemployment rate explain a lot about the probability of the household being extremely poor. The study shows that we cannot ignore the evidence linking population growth and poverty. Development policies aimed at addressing poverty incidence in the country must include measures that will manage the country's bourgeoning population. (Author's abstract)

Keywords: Social sciences, Extreme poverty, Regression discontinuity design, Young dependents, Logit model, Population management

Transactions of the National Academy of Science and Technology, Volume No. 34 Issue No. 1, page 160 2008, (Filipiniana Analytics) Fil(S) Q149.P5 N25 34/1 2012

0382

Problems encountered by prostituted women in Cagayan De Oro City Villanueva, Ingrid E., Paguilion, Leslei V., Ople, Henzel Joy S., Luardo, Kim T., Herbas, Maureen May T., Mercado, Ma. Dolore

The study aimed to determine the problems encountered by the prostituted women in Cagayan de Oro City, with emphasis on economic and sociological aspects. It focused on the three major points, namely: (1) What is the profile of the respondents in terms of age, educational attainment, type of services, length of experience, reasons for being a prostitute, place of origin, and religious affiliation? (2) What are the problems encountered by the respondents in

terms of sexual, psychological, financial, social, health, and spiritual aspects? (3) Is there a significant difference in the problems encountered by the respondents when they are grouped according to age, educational attainment, type of services, length of experience, reasons for being a prostitute, place of origin, and religious affiliation? In answering these problems, the researchers used the descriptive research design to determine the significant relationship between the independent and dependent variables of the study. The analyses vielded the following results: Most of the respondents belonged to the 21-23 age bracket. Of the 30 respondents most of them claimed that they were high school level. In terms of type of services, most of them were serving as exotic dancer. As regards length of experience, most of them responded 0-5 months. Ten of the respondents engaged in sex trading due to "poverty†and "support for the family,†as reported by the respondents. Some of them were from the Province of Misamis Oriental, and majority of the prostituted women claimed to be Roman Catholics. On problems encountered by the respondents, the following findings were identified: The prostituted women reported they seldom encountered the problem on $\hat{a} \in \hat{c}$ men forcefully inserting their genital organs into our vaginas $\hat{a} \in \hat{c}$ On the psychological problems, the respondents showed fear on the statement $\hat{a} \in \mathfrak{Cl} \hat{a} \in \mathfrak{TM}$ s a shame in our family $\hat{a} \in \mathfrak{TM}$ s a shame in our family $\hat{a} \in \mathfrak{TM}$ s a shame in our family $\hat{a} \in \mathfrak{TM}$ s a shame in our family $\hat{a} \in \mathfrak{TM}$ s a shame in our family $\hat{a} \in \mathfrak{TM}$ s a shame in our family $\hat{a} \in \mathfrak{TM}$ s a shame in our family $\hat{a} \in \mathfrak{TM}$ s a shame in our family $\hat{a} \in \mathfrak{TM}$ s a shame in our family $\hat{a} \in \mathfrak{TM}$ s a shame in our family $\hat{a} \in \mathfrak{TM}$ s a shame in our family $\hat{a} \in \mathfrak{TM}$ s a shame in our family $\hat{a} \in \mathfrak{TM}$ s a shame in our family $\hat{a} \in \mathfrak{TM}$ s a shame in our family $\hat{a} \in \mathfrak{TM}$ s a shame in terms of financial problems, the prostituted women claimed $\hat{a} \in \hat{a}$ unequal sharing between pimp and me. $\hat{a} \in \hat{a}$ The respondents had an anxiety on the statement $\hat{a} \in \hat{c}$ ashamed to mingle with other people. $\hat{a} \in \hat{c}$ The prostituted women always used contraceptives, condoms, and other devices. They claimed that their spiritual life was no longer active. It can be said that prostituted women never encountered serious problems as presented in the following ratings: The respondents never encountered serious problems in regard to the sexual aspects. They sometimes encountered psychological and health problems, but seldom did they experience financial, social, and spiritual problems. It was found out that there was no significant difference in the problems encountered by the prostituted women when they were grouped according to age, educational attainment, type of services, length of experience, reasons for being a prostitute, place of origin, and religious affiliation. (Author's abstract)

Keywords: Social sciences, Prostituted women, Economic aspect, Sociological aspect, Educational attainment, Spiritual aspect

Nursing Research Journal, Volume No. 5 Issue No. 1, 2009, (Filipiniana Analytics) NP

0383

Psychological and physiological symptoms of selected menopausal women in Igpit, Opol, Misamis Oriental

Mende, Rosanna Marie M., Lucero, Randy T., Mercado, Ma. Dolores D., Cuenco, Joffre Grant C., Manait, Jie Ann L., Mutia, Olive

This study aimed to determine the Psychological and Physiological Symptoms of Selected Menopausal Women in Igpit, Opol, Misamis Oriental. It focused on three questions, namely: (1) What is the profile of the respondents in terms of age, civil status, educational attainment, and occupation? (2) What are the common symptoms of menopausa in terms of age, civil status, educational attainment, and occupation? In answering these problems, the researchers used the descriptive design. The descriptive method was further used to determine the significant difference between the independent and dependent variables involved in the study. The analysis yielded the following results: (1) More than one-half of the respondents were ranging from 56-60 age brackets and claimed married. Most of them were not able to finish high school education but were employed. (2) Majority of the respondents often experienced fatigue and irritability during menopausal and hypertension. (3) On tests of significant difference, it was found out that age, civil status, educational attainment and occupation did not significantly affect the symptoms of menopausal. Therefore, the hypothesis formulated was accepted. On the basis of the findings, the following conclusions are drawn: There was more or less similar level of the respondentsâ€TM assessment on the symptoms of menopausal in terms of psychological and physiological and physiological. By these findings, it came

out that there was no significant difference in the symptoms of menopausal when the age, civil status, educational attainment, and occupation were considered and the hypothesis was accepted. (Author's abstract)

Keywords: Social sciences

Nursing Research Journal, Volume No. 5 Issue No. 1, 2009, (Filipiniana Analytics) NP

0384

Social impact of ecotourism on the behavior of students on educational field trips to Makiling Botanic Gardens in the University of the Philippines Los Baños Roslin, Ma. Anya Yasmin A., Maga, Janet P., Rosales, Agnes B., Cereno, Roberto, Tapay, Nenita

The Makiling Botanic Gardens (MBG) in the science community of UPLB is one of the notable destinations of educational field trips. The increasing number of such trips calls for a better understanding of tourists' expectations and source of satisfactions. A visit to MBG as a major spot for ecotourism provides student with learning that is beneficial to the environment.

The survey used a structured interview schedule as tool for gathering data. Descriptive statistics in the form of frequency counts, percentages and means was used to analyze the responses. The Pearson correlation was used to determine relationships between sociodemographic profile on one hand and the importance of visits and satisfaction of ecotourism benefits on the other hand. The scenery and opportunities for experiencing nature, admiring the tropical forest ecosystem and outdoor recreation activities were the benefits most sought by the student visitors and also the ones from which they derived the most satisfaction. (Authors' abstract)

Keywords: Social sciences, Ecotourism, Makiling Botanic, Social impact, Student visitors Garden, Tourist behavior

USM R&D Journal, Volume No. 17 Issue No. 1, 71-80 2009, (Filipiniana Analytics) NP

VETERINARY MEDICINE

0385

Aberrant hepatic artery in a one year old male Philippine native horse Olarve, Joseph P., Maala, Cefer

This is a first report in the horse of a hepatic artery arising from the cranial mesenteric artery. As a result, the celiac artery which normally trifurcates into the hepatic, left gastric and splenic arteries, bifurcated only into left gastric and splenic arteries. In addition to the hepatic artery, the cranial mesenteric artery gave off its usual branches, the middle colic artery, right colic artery, colic branch, medial cecal artery, lateral cecal artery, eleal artery and jejunal branches. The aberrant hepatic artery gave off its normal branches, namely, pancreatic, right gastric and gastroduodenal arteries. (Author's abstract)

Keywords: Veterinary medicine, Horse, Hepatic artery, Celiac artery, Cranial mesenteric artery

Philippine Journal of Veterinary Medicine, Volume No. 45 Issue No. 1, 58-59 2008, (Filipiniana Analytics) NP

0386

Age related postnatal micrometrical changes of the seminiferous tubules, sustentacular cells and various spermatogenic cells of the testis in Assam goats (*Capra hircus* L.) (Artiodactyla: Bovidae) *Devi, Jonali , Sarma, M. , Kalita, S. N. , Sarma,*

Post natal anatomical studies on the testis and its tubular system at various ages are important to better understand the sequence of their growth and development. Different measurements of various spermatogenic cells vary according to the length of cycles of the seminiferous epithelium and within different species of animals. Sixty six male Assam goats aged from day-old to ten mos were examined to determine the various micrometrical values of different spermatogenic and sustentacular cells at various ages of post natal life. These goats were distributed into six age groups as follows: group-I (day-old), group-II (2 mos), group-III (4 mos), group-IV (6 mos), group-V (8 mos) and group-VI (10 mos) consisting of eleven animals in each group. Different micrometrical measurements of the testes were recorded using Image Analyzer with ImagePro software (NIKON, Germany) and subsequently analyzed by using SPSS software version 11.5. The thickness of tunica albugenia, diameter of the tubules, height of the epithelium of the seminiferous tubules and their volume densities increased significantly with age. Similarly, the mean nuclear diameter and volume density of the spermatogonia, primary spermatocytes, secondary spermatocytes and round spermatids also increased with age. All the micrometrical parameters of the testes studied showed highly significant (P<0.01) values between different age groups, except with respect to the nuclear diameter of the spermatogonia and numbers of type A & B spermatogonia, as well as secondary spermatocytes per cross section of seminiferous tubule. **(Author's abstract)**

Keywords: Veterinary medicine, Postnatal development, Seminiferous tubules, Spermatogenic cells, Micrometry, Assam goat

Philippine Journal of Veterinary Medicine, Volume No. 48 Issue No. 2, 63-69 2011, (Filipiniana Analytics) NP

0387

Ameeria sp. (Nematoda: Onchocercidae) from the heart & footpad of a Black palm cockatoo (*Probosciger arterimus*) (Aves: Psittacidae) *Eduardo, Salcedo L., Donato, Nielsen*

Ameeria sp. is reported from is reported from the heart and footpad of a black palm cockatoo (Probosciger arterimus) imported to the Philippines probably from Indonesia. Four specimens, all females, were recovered, hence, specific identification was not possible. No gross lesions were observed associated with the nematodes. A

brief description is given based on the four specimens and photomicrographs are also provided. It cannot be ascertained whether the infection was acquired in Indonesia or in the Philippines. (Author's abstract)

Keywords: Veterinary medicine, Ameeria sp., Indonesian parrot, Nematode in footpad

Philippine Journal of Veterinary Medicine, Volume No. 45 Issue No. 1, 60-62 2008, (Filipiniana Analytics) NP

0388

Amylase and lipase activities in pancreatic tissue and duodenal chyme of Philippine native and broiler chicks

Castillo, Eugenia M., Wahyuni, Hanny I., Capitan, Severino S., Librojo-Basilio, Nieva T., Roxas, Ninfa P., Alcantara, Plac

Activities of amylase and lipase in the pancreas and duodenal chyme were compared between 36 native and 36 broiler chicks at 1, 7, 14 and 21 days after hatching. The specific activities of amylase and lipase in the pancreas of both native and broiler chicks increased rapidly to its maximum at day 21. In the duodenal chyme of commercial broiler chicks, the specific activity of both amylase and lipase increased up to its maximum at the age of 14 days, which then decreased thereafter. The specific activity of amylase in the duodenal chyme of native chicks was observed to decrease from days 1-14. On the other hand, duodenal lipase in native chicks was observed to increase only at the first week after hatching. Amylase in both pancreas and duodenal chyme of broiler chicks showed higher specific activity than in native chicks. Broiler's pancreatic lipase had higher activity as compared to that of native chick. On the other hand, similar activities of duodenal amylase were observed in both birds on the day after hatching. **(Author's abstract)**

Keywords: Veterinary medicine, Amylase, Broiler, Duodenum, Lipase, Pancreas

Philippine Journal of Veterinary and Animal Sciences, Volume No. 26 Issue No. 2, 109-119 2000, (Filipiniana Analytics) NP

0389

Amyloid arthropathy in silver chickens: a case study *Bautista-Jimenez, Vingelle, van Eck, Jo HH, Tooten, Peter CJ, Upragarin, Nari*

Thirteen thirty-week-old layers (Lohman Silver) that showed lameness were necropsied. Sera were collected and bacterial isolation was performed. Gross examination revealed amyloid deposits in the joints. The lesion was limitedly present only in knee joints. Enterococcus faecalis was the predominant microorganism isolated. Tissues from joints, liver, spleen, and kidney were positive with anti-chicken AA antisera using EnvisionTM + Peroxidase. SAA levels were generally increased in amyloidotic sera using direct ELISA but relatively low compared to acute phase sera. Moreover, Western Blot analysis revealed a low signal of SAA. From these findings, it was concluded that the birds suffered from amyloid arthropathy. (Author's abstract)
Keywords: Veterinary medicine, Chicken amyloidosis, Chicken SAA concentration in serum, Enterococcus faecalis, Salmonella enteritidis.

USM R&D Journal, Volume No. 17 Issue No. 1, 1-7 2009, (Filipiniana Analytics) NP

0390

Anatomy of the gallbladder of the Philippine water buffalo (*Bubalus bubalis* L.) *Maala, Ceferino P. , Cortez, Eve*

The gallbladder in the Philippine water buffalo was a pear-shaped organ on the visceral surface of the liver between the right and quadrate lobes. It measured 15.8 ± 0.28 cm long and 7.6 ± 0.26 cm wide in the male buffaloes and 15.1 ± 0.30 cm long and 7.4 ± 0.21 cm wide in the female buffaloes. Without bile, the gallbladder weighed 85.5 \pm 0.95 g in males and 84.4 \pm 0.9 g in females and with bile it weighed 233.7 \pm 6.22 g in males and 221.3 \pm 5.21 g in females. The gallbladder was vascularized by the cystic artery, a branch of the gastroduodenal artery. The wall of the gallbladder was composed of tunica mucosa, lamina propria-submucosa, tunica muscularis and tunica serosa (for the free surface) and tunica adventitia (for the attached surface). The tunica mucosa was lined by tall columnar epithelium consisting chiefly of tall columnar cells, clear cells, and a few intraepithelial lymphocytes. The lamina muscularis mucosa was absent. The lamina propria-submucosa contained numerous diffuse or nodular lymphatic tissues, Rokitansky-Aschoff sinuses and mixed tubuloalveolar glands. The tunica muscularis was composed of an outer layer of compact longitudinally-arranged muscle bundles and an inner layer that consisted of an outer circularly arranged muscle fibers and an inner longitudinally arranged muscle fibers. The tunica serosa and adventitia presented no striking features. The epithelium and glands in the lamina propria-submucosa reacted positively to periodic acid Schiff (PAS), alcian blue CAB) pH 1.0 and 2.5 stains. The histology of the gallbladder of the Philippine water buffalo is generally similar to that of cattle described in various veterinary textbooks. (Author's abstract)

Keywords: Veterinary medicine, Gallbladder, Philippine water buffalo, Bubalus bubalis

Philippine Journal of Veterinary Medicine, Volume No. 47 Issue No. 2, 58-65 2010, (Filipiniana Analytics) NP

0391

The anatomy of the glands of the eyelids of the Philippine water buffalo (*Bubalus bubalis* L.) Veridiano, Aniway A., De Ocampo, Grace D., Maala, Cefer

Thirty eyeballs and eyelids from 15 Philippine water buffaloes of both sexes were collected and processed routinely to observe the morphology of the glands of the eyelid. Four glands were identified: superficial gland of the third eyelid, tarsal glands, glands of Moll and glands of Zeiss in the upper and lower eyelids. All four glands were lobulated. The superficial gland of the third eyelid was well-developed, compound tubuloalveolar, encapsulated, and mixed but predominantly serous. The mucous cells secreted neutral and sulfated mucins. The tarsal glands were

numerous and better developed in the upper than in the lower eyelid. They were compound tubuloalveolar, encapsulated and sebaceous. The glands of Moll were small, simple coiled tubular, unencapsulated and serous. It presented two types of secretory units: one lined with cuboidal cells and another lined with columnar cells. Cuboidal cell-lined secretory unit presented a wide, regularly scalloped lumen, secretory cells with short, dome shaped apical blebs containing numerous small eosinophilic granules: and round, centrally located nuclei. Columnar cell-lined secretory unit showed a narrow lumen, irregular luminal surface of the epithelium: and secretory cells with elongated apical blebs containing large eosinophilic granules. The glands of Zeiss were structurally similar to the tarsal glands except that they were smaller, unencapsulated, and simple branched, tubuloalveolar with a duct that opened into the hair follicle. The tarsal glands, glands of Moll and glands of Zeiss reacted negatively to PAS and AB pH 2.5. No morphological differences were observed between the gland of the third eyelid, glands of Moll and glands of Zeiss of male and female Philippine water buffaloes. (Author's abstract)

Keywords: Veterinary medicine, Superficial gland of the third eyelid, Tarsal glands, Glands of Moll, Glands of Zeiss, Philippine water buffalo

Philippine Journal of Veterinary Medicine, Volume No. 46 Issue No. 2, 73-81 2009, (Filipiniana Analytics) NP

0392

Anatomy of the intermandibular region of the Philippine water buffalo (*Bubalus bubalis* L.) (Artiodactyla: Bovidae) *Hyung, Jaehoon , Ducusin, Rio John T. , Maala, Cefer*

The intermandibular region of the Philippine water buffalo was long and narrow measuring approximately 28.0-30.0 cm long, 2.0-4.0 cm wide caudally, 7.0-10.0 cm wide at the middle and 11.0-15.0 cm wide caudally. The skin was 1.0 to 1.5 cm thick rostrally, 0.4-1.0 cm thick at the middle and 0.2-0.4 cm thick caudally. The hairs were oriented slightly mediocaudally and measured 3.5-5.0 cm long caudally and 1.5-2.5 cm long rostrally. Superficially, the caudal third of the intermandibular region was occupied by the sternomandibularis, omohyoideus and sternohyoideus muscles and in the rostral two-thirds by in mylohyoideus muscle. Deep in the caudo-lateral part of the intermandibular region was the digastricus muscle consisting of rostral and caudal belies and their intervening tendon. The latter showed some degree of muscular development. The intermediate tendon was divided into a larger dorsal tendon which joined the long dorsal part of the rostral belly rostrally and a smaller ventral tendon which connected with the short ventral part of the rostral belly of the digastricus. The geniohyoideus muscle, lingual nerve, mylohyoid nerve, the mandibular and sublingual salivary glands and their ducts showed no striking features. The intermandibular region was largely occupied by the massive tongue which measured 30.0-35.0 cm long, 1.5-2.0 cm thick at the apex, 5.0-5.5 cm thick at the body and 7.0-8.0 cm thick at the torus linguae. The present observations will be of great importance when considering the intermandibular region as an alternative approach to intraoral surgery in the Philippine water buffalo. **(Author's abstract)**

Keywords: Veterinary medicine, Bubalus bubalis, Intermandibular region, Tongue, Water buffalo

Philippine Journal of Veterinary Medicine, Volume No. 49 Issue No. 1, 1-7 2012, (Filipiniana Analytics) NP

Anatomy of the superficial lymph nodes of the Philippine water buffalo (*Bubalus bubalis*) important in clinical examination and meat inspection *Binarao, Bony Vincent L.*, *Maala, Ceferino P.*, *Ducusin, Rio J*

The gross and microscopic anatomy of the mandibular, parotid, superficial cervical, subiliac, and superficial inguinal (scrotal and mammary) lymph nodes of the Philippine water buffalo of either sex were described. Three major difficulties encountered in palpation of these lymph nodes in live animals were the presence of obstructive adjacent tissues near the lymph nodes, thick skin and uncooperative behavior of the animals. The subiliac and superficial cervical lymph nodes had the most pronounced definition under the skin and also the most readily palpable. Except for the parotid lymph node, the lymph nodes in the carcass were generally covered by a thick pericapsular envelope consisting largely of adipose tissue. They were significantly larger (P<0.05) in males than in females, but this difference may be attributed to the generally larger body size of males. The location of the lymph nodes in the carcass was generally similar to what has been reported in cattle Microscopically, the cortex had primary and secondary lymphatic nodules, the latter being more predominant in the mandibular and parotid lymph nodes, indicating active stimulation by antigens. There was apparently more diffuse lymphatic tissue than lymphatic nodules. The work apparently more diffuse lymphatic tissue than lymphatic nodules. The medulla had trabeculae which showed many profiles of blood vessels, appeared thick and highly branched. Of the six superficially located lymph nodes described, the subiliac and superficial cervical lymph nodes were the most readily palpable and, therefore, are highly recommended for palpalation during clinical examination and ante-mortem meat inspection in this animal. (Author's abstract)

Keywords: Veterinary medicine, Bubalus bubalis, Lymph nodes, Meat inspection, Philippine water buffalo

Philippine Journal of Veterinary Medicine, Volume No. 46 Issue No. 1, 1-15 2009, (Filipiniana Analytics) NP

0394

Animal rabies patterns in Central Luzon, Philippines and implications for disease control Mananggit, Milagros R., Domingo, Ron

This study aimed to describe the animal rabies patterns in Central Luzon. Significant disease patterns were related to the current control measures against animal rabies. Government laboratory records in Central Luzon from 2002-2013 were used for this descriptive study. The twelve-year data compiled 9136 animal samples. The complete records of 2008-2013 showed that 89% of the samples came from dogs and 10% from cats but almost 98% of rabies cases were from dogs. Almost 40% of the rabid animals fall in the 1-4 mo age group. Incidence counts increase during the dry months of January to May. The animal rabies incidence (cases/100,000 dogs) declined by almost 87% from 52 in 2002 to 7 in 2013. Based on the above results, it is recommended that local rabies control officials consider the following issues: evaluation of the minimum age of three weeks for puppy immunization, strategic implementation of disease control programs from July to November before the months of high endemicity, adoption of a more sensitive disease detection system, securing the provinces of Aurora, Zambales and Bataan to maintain their disease freedom, prioritization of support to Bulacan for rabies control and verification of the actual dog population. (Author's abstract)

Keywords: Veterinary medicine, Central Luzon, Dog, Epidemiology, Philippines, Rabies

Philippine Journal of Veterinary Medicine, Volume No. 51 Issue No. 2, 117-124 2014,

(Filipiniana Analytics) NP

Anthelminthic effects of processed mature betel nut as dewormer to native chicken and small ruminants (sheep and goats) *Tangalin, Moises Gl*

The study aimed to determine the anthelmenthic effects of processed mature betel nut (Areca catechu) and commercial dewormer to native chicken, sheep and goats. The study consisted of four treatments. The result of the study reveals that after thorough laboratory examination of the feces, it was found out that round worms, tapeworms and parasite eggs were expelled by the processed mature betel nut. Among the treatments used, Treatment I, 1g processed nut per 1 kg body weight is the most effective. However, those administered with 2 and 3 grams of powdered betel nut is also effective but the chickens showed unhealthy condition. While in Goat and Sheep; Treatment I, administered with 20g/20kg.BW; Treatment II, administered with 30g/20kgLW; Treatment III, administered with 240g/20kgLW; and Treatment IV, administered with 1 ml/10 kgBW using albendazole, a commercial dewormer. The result of the study revealed that the processed native betel nut can expel eggs and adult parasites like roundworms and tapeworms, while commercial dewormer can expel only roundworms. Among levels of powdered betel nut used, Treatment II, 30g/20kgBW showed better result. **(Author's abstract)**

Keywords: Veterinary medicine, Betel nut, Commercial dewormer, Adult parasites

Asian Journal of Health, Volume No. 1 Issue No. 1, 240-253 2011, (Filipiniana Analytics) NP

0396

Antimicrobial activity of thymol against pathogenic gram-negative bacteria of fishes Shin, Gee-Wook, De Zoysa, Mahanama, Park, Se-Chang, Kim, Cheol-Hyun, Heo, Gan

This work investigated the antimicrobial effects of thymol in vitro against seven species of Gram-negative fish pathogenic bacteria namely, *Aeromonas salmonicida* subsp. *masoucida*, *A. salmonicida* subsp. *salmonicida*, *A. hydrophila*, *Edwardsiella tarda*, *Vibrio vulnificus*, *V. parahaemolyticus* and *V. anguillarum* using disk diffusion, minimum inhibitory concentration (MIC) and minimum bacteriocidal concentration (MBC) tests. In the disk diffusion test, thymol inhibited growth of all bacteria including those known to be resistant to amoxicillin or lincomycin or both. MIC or MBC of thymol against all bacteria were in the range of 0.01 mg/ml to 0.32 mg/ml. The most sensitive was *A. salmonicida* subsp. *salmonicida* (0.01 mg/ml for MIC and 0.02 mg/ml for MBC), followed by *A. salmonicida* subsp. *masoucida* (0.04 mg/ml for MIC and 0.08 mg/ml for MBC). Based on the present results, thymol has the potential of controlling bacterial pathogens in the aquaculture industry. (Author's abstract)

Keywords: Veterinary medicine, Antimicrobial activity, Fish pathogenic bacteria, Gram-negative bacteria, Thymol

Antimicrobial resistance profile of local *Campylobacter jejuni* recovered from ceca of dressed chickens of commercial and backyard raisers in Laguna, Philippines *Raymundo, Asuncion K.*, *Baldrias, Loi*

Twelve *Compylobacter jejuni* isolates from the ceca of chickens at dressing plants of commercial and backyard raisers were tested for susceptibility to 14 different antibiotics using the Kirby-Bauer Method. Isolates showed multi-resistance being resistant to more than 7 different antibiotics tested, presenting at least eight multiple resistance patterns. Majority of isolates (10/12, 83.33%) came from chickens whose livers were previously detected to be positive for antibiotic residues by Four Plate Test. A statistically significant relationship (p<0.05) was found between resistance to chemically unrelated antibiotics with occurrence of residues. Lowest level of resistance to erythromycin (33.3%) parallels the observation that among the antibiotic residues detected in the sampled chicken populations, macrolides were also the least frequent type of antibiotic detected. Data reflect a possible relationship between antibiotic usage in poultry production and development of microbial resistance of isolates reflects a similar trend for increasing frequency of resistance in countries where use of antimicrobial drugs in humans and animals is relatively unrestricted. This is the first report on the occurrence of multi-resistance among local *C. jejuni* isolates in the Philippines. (Author's abstract)

Keywords: Veterinary medicine, Antimicrobial resistance profile, Antimicrobial residues, Four plate test, Dressed chicken

Philippine Journal of Veterinary Medicine, Volume No. 46 Issue No. 2, 87-94 2009, (Filipiniana Analytics) NP

0398

Aspergillosis in a Melon-headed whale (*Peponocephala electra*) Masangkay, Joseph S., Buccat, Mariel C., Torno, Christop

A 29-kg male Melon-Headed Whale (*Peponocephala electra*) calf was stranded in a coastal village in Morong, Bataan, Philippines on 8 November 2005. The animal was washed ashore after few attempts by the nearby residents to bring it back to deeper waters. The animal was emaciated, lethargic, and had weak and shallow respirations. It was brought to a marine mammal quarantine facility where it died after 13 days of treatment for suspected respiratory disease and emaciation. Suppurative bronchopneumonia, alveolar and subplueral edema; and fibrinous bronchitis and bronchiolitis were the main pneumonic lesions. Fungal hyphae were also observed within these pneumonic lesions. The morphology of the fungal organism obtained directly from the lesions and cultures on Saboraud's Dextrose Agar resembled *Aspergillus fumigatus*. Immunosuppression was strongly suspected to have predisposed the animal to aspergillosis. (Author's abstract)

Keywords: Veterinary medicine, Aspergillosis, Aspergillus fumigatus, Cetacean, Melon-headed whale

Philippine Journal of Veterinary Medicine, Volume No. 45 Issue No. 1, 49-57 2008,

(Filipiniana Analytics) NP

Assessment of sperm motility in Water buffaloes using dark field photomicrography Amido, Gilberto S., Ocampo, Fritz C., Flor, Jesus Augustus Cesar G., Torres, Eduardo

Dark field photomicrography was used for the objective assessment of sperm motility in six water buffaloes-. The different movements of individual sperm cells from fresh and frozen semen were clearly observed and counted in the developed film. Abnormalities in sperm morphology and movements were likewise observed.

In this method, no significant difference on the percentage motility was observed between 1-and 2-sec exposures, and low and high power magnification. Better photomicrographs were obtained by using a lower magnification and a shorter exposure time. (Authors' abstract)

Keywords: Veterinary medicine, Buffalo, Photomicrography, Motility, Sperm

Philippine Journal of Veterinary and Animal Sciences, Volume No. 26 Issue No. 2, 101-108 2000, (Filipiniana Analytics) NP

Benzimidazole resistance of some nematodes in small ruminants Dumilon, Rosita A., Ancheta, Patri

The study estimated the extent of benzimidazole resistance of nematodes in small ruminants using larval development assay (LOA). F.ecal samples were collected from 120 sheep and goats infected with nematodes. Worm eggs contained in the sample were cultured for one week in the laboratory in the presence of benzimidazole. From 24 pooled samples obtained from sheep and goats, LOA yielded *Haemonchus contortus* (77%), *Trichostrongylus* (16%) and *Ostertagia* (7%). The efficacy of benzimidazole for native goats, Anglo-Nubian, Saanen, Boer, upgraded goats and native sheep was estimated at 35%, 30%, 52%, 65%, 40% and 40%, respectively. The results suggest that there is considerable resistance of nematodes of goats and sheep to benzimidazole. **(Author's abstract)**

Keywords: Veterinary medicine, Anthelmintic, Benzimidazole, Goat, Larval development assay, Sheep

Philippine Journal of Veterinary and Animal Sciences, Volume No. 26 Issue No. 2, 147-152 2000, (Filipiniana Analytics) NP

Bioavailable phosphorus releasing efficacy of *Escherichia coli* and *Aspergillus* derived phytases in broiler chick diet *Billena, Mylen S. , Mateo, Carmenc*

A broiler chick trial investigated the phosphorus (P) releasing efficacy of phytases derived from Eschericia coli (ECP) and Aspergillus niger, a fungus (FP) when added to a corn-soybean meal diet with no supplemental inorganic P (iP). Four graded levels of iP were added to the basal diet to construct a standard curve from which available P release could be calculated for the phytase treatment. In all cases, phytase supplementation levels were based on an assessment of phytase premix activity. One phytase unit (FTU) is defined as the amount of enzyme required to release 1 umol of iP per min from 5.1 mM sodium phytate at 37°C and pH 5.5. Weight gain, weight and percentage of tibia bone ash increased (P<0.05) with an increase in iP supplementation of the basal diet. ECP derived phytase released two to three times more P (P < 0.05) when added at 130 -260 FTU/kg compared to FP added at 250-500 FTU/kg. At 130 FTUI kg, ECP released more P (P<0.05) than FP added at 1000 FTU/kg. Tibia weight and percentage of tibia ash responded (P<0.05) to graded levels of ECP up to 260 FTU/kg, however, 130 FTU/kg was as effective as 260 FTU/kg. Weight gain and gain: feed ratio were higher (P<0.05) for chicks fed FP added at 250 and 1000 FTU/kg than for those fed ECP at 65 and 260 FTU/kg. However, chicks fed ECP at 130 FTU/kg had similar gain and gain: feed ratio as those fed FP at 1000 FTU/kg. Tibia ash (percentage and milligrams) was higher (P<0.05) for chicks fed ECP added at 130 and 260 FTU/kg than those fed FP at 250, 500, and 1000 FTU/kg, respectively. This trial revealed a significant advantage of the E. coli derived phytase over the Aspergillus fungal derived phytase in releasing phytate bound P in broiler chick diet. (Author's abstract)

Keywords: Veterinary medicine, Phosphorus, Phytase, Efficacy, Broiler chicks

Philippine Journal of Veterinary Medicine, Volume No. 46 Issue No. 1, 37-42 2009, (Filipiniana Analytics) NP

0402

Biochemical and serological identification of mycoplasmas isolated from pneumonic lungs of slaughtered cattle in Cotonou, Benin Republic Adetosoye, Adeyemi I., Ajuwape, Adebowale T.P., Adehan, Razaki K., Alaka, Olugbenga

Fifty bovine pneumonic lungs showing hard, dark lesion (consolidation) and motley appearance with or without fibrin on the pleural surface were collected from Cotonou, Republic of Benin and examined bacteriologically. Four *Mycoplasma* groups 48% (24/50) were isolated from the pneumonic lungs: 12 (50%) isolates which were tetrazolium-negative, phosphatase positive and digested serum, were serologically identified as *M. mycoides* subsp. *mycoides* SC (Group A). Seven (29.2%) isolates which hydrolyzed glucose and reduced tetrazolium chloride were identified serologically as *M. bovirhinis* (Group B). Three (12.5%) isolates which hydrolyzed glucose, reduced tetrazolium chloride and catabolized arginine were identified serologically as *M. alvi* (Group C). Two (8.3%) isolates which catabolized arginine were identified serologically as *M. alvi* (Group D). Other bacteria isolated were *Staphylococcus aureus*, *S. epidermidis*, *Klebsiella species*, *Mannheimia (Pasteurella) haemolytica*, *Arcanobacterium (Actinomyces) pyogenes*, *Escherichia coli* and *Proteus vulgaris* in order of occurrence. Histopathologically, the lungs showed typical fibrino-purulent lesions and severe alveolar collapse. CBPP is present in Cotonou, Benin Republic, hence sustained annual international vaccination campaign coupled with regular monitoring cannot be overemphasized, so that this mycoplasmal problem ravaging the cattle industry in Africa will not continue. (Author's abstract)

Keywords: Veterinary medicine, Serological identification, Biochemical identification, Mycoplasmas, Pneumonic lungs

Philippine Journal of Veterinary Medicine, Volume No. 44 Issue No. 1, 8-13 2007, (Filipiniana Analytics) NP

Birth weights of Holstein-Friesian and its fractional crosses with sahiwal Bautista, Jose Arceo N., Valdez, Conrado A., Alvarez, Alvin Will

The records of Holstein-Friesian and its fractional crosses with Sahiwal were analyzed and evaluated to study the effect of different blood composition on the birth weight of calves. Results showed that animals with 81-90% Holstein-Friesian blood composition produced the heaviest calves while the lightest calves came from the animals with 50-60% Holstein-Friesian blood composition. Furthermore, the bull calves were generally heavier than the female calves in majority of the blood groups. However, the increase in Holstein-Friesian) blood composition did not necessarily result to an increase in the birth weight of calves. (Author's abstract)

Keywords: Veterinary medicine, Birth weight, Holstein-Friesian, Sahiwal

Philippine Journal of Veterinary Medicine, Volume No. 46 Issue No. 2, 123-125 2009, (Filipiniana Analytics) NP

0404

B-mode and M-mode ultrasonography of the heart in female buffaloes (*Bubalus bubalis*) *Pilapil, Flor Marie Immanuelle R. , Acorda, Je*

Ultrasonography of the heart using Brightness mode (B-mode) and Motion mode (M-mode) was conducted using six apparently healthy crossbred female buffaloes to determine characteristic features and patterns in the normal heart. Ultrasonograms of the heart were obtained from the 3rd and 4th intercostal spaces in both the left and right sides of the thorax. There was no difference on the location of the heart observed among the six buffaloes. Ultrasonographic examination revealed distinct structures of the heart, including right ventricle, left ventricle, right atrium, left atrium, interventricular septum, interatrial septum, mitral valve, tricuspid valve, aorta, and left ventricular ou tflow tract. M-mode echocardiography revealed different patterns of the motions of the different structures of the motions of the different meters.

Gross examination of the heart revealed no abnormal lesions in all chambers and vessels. The heart appeared more visible on the left than on the right side resulting in more structures seen in the left side of the thorax than on the right. The measurements of the different cardiac structures obtained through gross examination were higher than those obtained through ultrasonography (P<0.01). This can be attributed to the constant motion of the heart during ultrasound examination. The results of the present study show that ultrasonography can be used to image the different structures of the heart in buffaloes. The B-mode and M-mode ultrasonograms obtained in the present study can be used as a reference for diagnosis of cardiac diseases and disorders in buffaloes. (Authors' abstract)

Keywords: Veterinary medicine, B-mode, Buffalo, Echocardiography, Heart, M-mode, Ultrasonography

Philippine Journal of Veterinary Medicine, Volume No. 45 Issue No. 1, 7-13 2008, (Filipiniana Analytics) NP

B-mode echocardiographic features, measurements and echo mean values in captive reticulated pythons, *Python reticulatus* (Schneider, 1831) (Reptilia: Squamata: Pythonidae) *Lastica, Emilia A.*, *Acorda, Jezie A.*, *Aguisanda, Shar*

B-mode echocardiography was conducted in 12 apparently healthy captive reticulated pythons, 4 males and 8 females, weighing of 3.5-14.4 kg, using an ultrasound machine equipped with a 5.0 MHz linear array transducer to determine the ultrasound features, cardiac measurements and echo mean (E-mean) values of the different cardiac structures. The heart was viewed at the caudal portion of the cranial first quarter of the body. The ventricle, left atrium, right atrium, sinus venosus, pulmonary trunk and the three ventricular cavities, namely, ventral cavum pulmonale, right dorsal cavum venosum and left dorsal cavum arteriosum as well as the muscular ridges, primarily the horizontal septum of the ventricle, were visualized in longitudinal scans as hypoechoic structures. The lumen of the different chambers appeared anechoic. Transverse scans from the apex to the base revealed the three ventricular cavities, horizontal septum, sinus venosus, left and right atria and efferent trunks. The measurements and echo mean values of the different structures were obtained. The hypoechoic wall of the different cardiac structures had higher echo mean value than their corresponding lumen. The results of the present study can be used as reference for diagnosis of cardiac diseases and disorders in reticulated pythons. (Author's abstract)

Keywords: Veterinary medicine, Echo mean, Echocardiography, Heart, Reticulated python, Ultrasound

Philippine Journal of Veterinary Medicine, Volume No. 49 Issue No. 1, 8-14 2012, (Filipiniana Analytics) NP

0406

Body weight determination using external body measurements in the Philippine deer (Cervus Philippinus) Bono, Jr., Reynaldo Rafael S., Valdez, Conr

This study aims to determine the relationship between body weight in the Philippine deer and its external body measurements such as heart girth, midriff girth, flank girth, body length and body width, and to construct prediction equations for body weight determination based on the said parameters. A total of 80 apparently healthy Philippine deers consisting of 28 males and 52 females with ages ranging from 8-48 mos were used in the study. Regression analysis revealed that a linear relationship exists between body weight and external body measurements. Midriff girth was found to be the best single predictor of weight, regardless of sex and age. Where multiple parameters are used for predicting weight, midriff girth and width at shoulder were found to have the highest correlation to weight, regardless of sex and age. A comparison of the actual weights and the estimated weights derived from the regression formulae disclosed no significant differences (P>0.05). Hence, these formulae could be used to estimate body weight in the absence of a suitable weighing scale. (Author's abstract)

Keywords: Veterinary medicine, Body weight, Deer, Body measurement, Cervus Philippinus

Philippine Journal of Veterinary and Animal Sciences, Volume No. 26 Issue No. 1, 1-11 2000, (Filipiniana Analytics) NP

Body weight estimation of local born Thoroughbred horses (*Equus caballus*) using external body measurements

Torres, Eduardo B., Valdez, Conrado A., Marante, Rod

A total of 84 (41 males and 43 females) apparently healthy Philippine-born Thoroughbred horses two to 11 yrs old were weighed using a digital weighing scale and their external body measurements (height; heart girth; umbilical girth; body length 1=distance from point of shoulder to tuber ischium; and body length 2= distance from tuber ischium to olecranon) taken using a tailor 's tape measure to develop a method of weight determination based on the above external body parameters. Correlation analysis revealed a linear relationship between the external body measurements with the actual body weights of horses. Heart girth, as compared to the other external body measurements, has the strongest positive linear relationship with body weight (r=0.803), while body length 2 proved to be the least correlated (r = 0.149). Heart girth was found to be the best single predictor of body weight for the male (r 2=0.635), female (r2= 0. 714), and t he combined population groups (r 2=0.64). On the other hand, measuring the heart girth and umbilical girth increases the accuracy of weight determination in these animals to as much as 10% (r²= 0. 739). Multiple regression analysis revealed that the horses' height and body length 1 are also significant (P<0.05) together with the first two body parameters to predict the weight of horses, but only limited to the female group. Nevertheless, the predicting equation derived through dual regression analysis regardless of sex: CY= -528.096 + 3.101HG + 2.266UG) is the best practical predicting equation for body weights of Philippine-born Thoroughbred horses. Thus, in the absence of a weighing scale, this new formula is fairly suitable for obtaining the body weights of Philippine-born Thoroughbred horses. (Author's abstract)

Keywords: Veterinary medicine, Body weight, Correlation, Regression, Thoroughbred horse

Philippine Journal of Veterinary Medicine, Volume No. 44 Issue No. 2, 114-122 2007, (Filipiniana Analytics) NP

Body weight prediction in Philippine-born adult ostriches (*Struthio camelus* Linnaeus, 1758) (Aves: Struthioniformes: Struthionidae) using external body measurements *Castro, Romina Gemelyn M.*, *Valdez, Conr*

This study was conducted to examine the relationship of body weight to external body measurements in Philippine-born adult ostriches, and to formulate possible equations to predict body weight based on these measurements. A total of 43 ostriches (18 male and 23 female ostriches) were used in this study. The animals were weighed and the body measurements such as the head length, back length, thoracic girth, abdominal girth, tibio-tarsal length, tarso-metatarsal length, wing length, height to top of back, wing length, and length of neck to top of head were taken. Results in mean and standard deviation (mean \pm SD) showed that there was no marked difference (mean \pm SD) between males and females in the population with regards to body weight. Correlation analysis

revealed that for the whole population, thoracic girth (r=0.727), abdominal girth (r=0.572), and back length (r=0.569) had the highest correlation to body weight. Predictive equations were then formulated using log-linear simple and stepwise regression analysis. The analysis of variance results for log-linear stepwise regression analysis revealed that for ostriches of both sexes, thoracic girth was the greatest single predictor. For the whole population, analysis of variance results showed that back length and thoracic girth had the highest significance as multiple predictors. The most preferred equation to predict body weight in the entire population was: log weight = $-2.569 + 0.626 \log$ (thoracic girth) + 0.259 log (back length) with R2 =0.580. It indicates that 58% of variations in body weight can be explained by the external body measurements, thoracic girth and back length. This equation can be used to estimate the body weight of Philippine-born adult ostriches if a weighing scale is not available. It is suggested however that further studies be done to investigate if a similar equation could be used for body weight determination in Philippine-born growing ostriches, and that other external body measurements be included in future studies. **(Author's abstract)**

Keywords: Veterinary medicine, Ostriches, Struthio camelus, Body weight prediction

Philippine Journal of Veterinary Medicine, Volume No. 50 Issue No. 2, 2013, (Filipiniana Analytics) NP

0409

Carcass characteristics of Philippine carabao (Bubalis bubalis Linn.) and its crossbreds Lapitan, Rosalina M., Sarabia, Annabelle S., del Barrio, Arnel N., Abanto, Oliver D., Ibarra, Perlito I., Dizon, Erlinda I., Roxas. Ni

Slaughter and carcass yields of Philippine carabao (PC), Philippine carabao x Murrah F1 (PMF1) and F2 (PMF2) and Philippine carabao x Nili Ravi F1 (PRF1) were investigated. A total of 37 water buffaloes, 25-132 mos old, weighing 278-672 kg, were slaughtered and fabricated into standard wholesale and retail cuts. The yield of each by-product and wholesale cuts were determined and correlated to the live weight and age of water buffaloes. The economic value of the slaughter and carcass yield of each breedtype was determined.

Among the breedtypes, PMF1 had the highest average live weight of 480.50 kg while PC had the lowest with 343.18 kg. PMF1 had heavier hot carcass (249.54 kg) and chilled carcass (242.96 kg) than other breedtypes. The carcass of PMF1 had the highest percent lean, lowest percent fat and highest chilled carcass weight. The percent lean in the carcass increased (r = 0.554) while the percent fat decreased (r = -0.444) as the animals get heavier. The percent fat in the carcass tended to increase (r = 0.388) as the water buffaloes get older. PMF1 had the highest estimated sale of PhP 18,644.89 per head, while PC had the lowest with PhP 12,586.45. PMF1 had the highest estimated sale per kg live weight of PhP 38.80 while PRF1 had the lowest with PhP 36.52.

The results of the study suggest that Philippine carabao x Murrah crossbreds can give higher monetary value to the fanner from slaughter and carcass yields, with almost the same meat quality as the Philippine carabao. The crossbreds have genetic potential to grow faster than Philippine carabaos; thus, they can reach optimum slaughter weight at a much shorter time or at a younger age with a relatively tender meat and less amount of trimmable fats. **(Authors' abstract)**

Keywords: Veterinary medicine, Buffalo, Carcass, Economic value, Bubalis bubalis

Changes in the anterior presentation in sheep fetuses due to their ventro-sacral position in the second half of gestation

Milovanovic, Aleksandar, Barna, Tomislav, Martac, Ljiljana, Novakov-Mikic, Aleksandra, Podgorac, Jelena, Kekovic, Goran, Zarkov, Marija, Bozic, Aleksandar, Sekulić, Slobodan, Pusic, Ivan, Stojanovic, Dragica, Pepelcevic, N

The hypothesis tested was that fetal postural development causes anterior presentation of the sheep fetus during a period of exclusive increase in anterior presentation. Exposing fetuses to a ventro-sacral position during a period of equal incidence of anterior and posterior presentations [50th-90th gestation day (GD)] should not cause changes in fetal presentation. During a period of an exclusive increase in anterior presentation (90th-140th GD) a ventro-sacral position should cause a 180° turn of the fetus. Singleton gestations with fetus in anterior presentation were included. Ultrasound examinations consisted of three consecutive two minute scans to determine fetal presentation, and were conducted with the ewe in the following three positions: the upright quadrupedal position, sitting position in which the ewe's trunk is vertical to the ground; and again the upright quadrupedal position. The Mann-Whitney nonparametric U-test was used. On the 83rd GD (14 fetuses), there were no changes in fetal presentation, whereas on the 86th GD (10 fetuses) (p=0.035 p<0.05) and on the 116th GD (12 fetuses) (p=0.000 p<0.05) fetuses frequently assumed a transverse presentation at the second examination position. Further experiments would require the fetuses to be artificially maintained in a ventro-sacral position for a prolonged period. (Author's abstract)

Keywords: Veterinary medicine, Fetus, Presentation, Sheep, Postural development, Gestation, Ultrasound

Philippine Journal of Veterinary Medicine, Volume No. 49 Issue No. 1, 51-56 2012, (Filipiniana Analytics) NP

0411

Characterization of guard hair from the different body regions of the Philippine brown deer, *Cervus marianus* Desmarest, 1822 (Artiodactyla: Cervidae) by scanning electron microscopy

Sacnahon, Joachim D., Santiago-Flores, Marianne Leila A., Maala, Cefer

The surface morphology of the cuticular scales and the medulla on transverse section of guard hairs in both sexes of young and adult Philippine brown deer, *Cervus marianus* Desmarest, 1822 were examined using a scanning electron microscope. Imbricate flattened cuticular pattern was observed in the majority of hairs in young male and female Philippine brown deer. Only those in the head of young male and dorsum of young female exhibited imbricate crenate cuticular pattern. In contrast, with the exception in the dorsum of adult male and female, and forelimb in adult male deer, all hairs in both sexes showed imbricate crenate cuticular pattern. Majority of the hairs in young male and adult deer showed cuticular scales with smooth dorsal margins except that in the head of young male deer. On the other hand, with the exception in the forelimb of adult male deer, the cuticular scales of all hairs had serrated dorsal margins. In both sexes of young and adult deer, the hairs exhibited a mixture of transverse and oblique orientation of the cuticular scales, although more hairs in the adult deer showed transversely oriented cuticular scales than in young deer. Hairs from various body regions in young and adult deer showed distinct medulla on transverse section. The shape of the medulla which generally followed that of the hair shaft showed

flattened medullary cells that were separated from one another by air spaces. The shape of the medulla ranged from oval- to oblong-shaped with a few biconcave medullas (forelimb of young female, hindlimb and dorsum of adult male and female deer). The study showed that the morphology of the medulla of hair on transverse section can be better examined using a scanning electron microscope. (Author's abstract)

Keywords: Veterinary medicine, Hair, Philippine brown deer, Cervus marianus, Medulla, Forensics

Philippine Journal of Veterinary Medicine, Volume No. 48 Issue No. 1, 1-7 2011, (Filipiniana Analytics) NP

0412

Characterization of the medullary and cuticular patterns of guard hairs from some body regions of the Southeastern Asian House Mouse (*Mus musculus castaneus*) and Asian Musk Shrew (*Suncus murinus*) *Maala, Ceferino P. , Santiago-Flores, Marianne Le*

The medullary and cuticular patterns of guard hair obtained from various body regions of male and female Southeastern Asian house mouse and Asian musk shrew (*bubuwit*) were examined using light and scanning electron microscopy (SEM), respectively. The study showed differences in the medullary and cuticular patterns between the house mouse and musk shrew. The predominant medullary pattern observed in both sexes were wide aeriform lattice in the house mouse and wide truncated continuous in the musk shrew. Wide truncated continuous medullary pattern was noted on guard hairs from the forelimb and corn pound flattened discontinuous pattern from the hindlimb of female house mouse while wide spiral continuous and narrow nodose continuous patterns were observed in the male and female musk shrew. The medullary patterns could be of value in differentiating the two rodent species. The predominant cuticular pattern found in both sexes of the house mouse was imbricate except for the simple coronal on hairs from the dorsum and ventrum in male species. There appeared to be sexual dimorphism for imbricate crenate and serrate coronal cuticular patterns in the musk shrew because guard hairs from all sampling sites showed imbricate crenate in males and serrate coronal in females. Transversely oriented irregular, rectangular and triangular scales, with serrated or smooth dorsal margins were observed in both species. Except in the hindlimb of musk shrew where the scale margins were wider apart, there appeared to be no significant species difference between the distance of scale margins of hairs from other sampling sites. (Author's abstract)

Keywords: Veterinary medicine, Cuticle, Medulla, House mouse, Musk shrew, Hair morphology

Philippine Journal of Veterinary Medicine, Volume No. 44 Issue No. 2, 61-68 2007, (Filipiniana Analytics) NP

0413

Chemical and electrical activation of Swamp Buffalo (*Bubalus bubalis*) Oocytes for the production of parthenogenetic embryos *in-vitro Cruz, Libertado C. , Atabay, Eufrocina P. , AtabayEd* The development of efficient procedure for the activation of *in vitro* matured swamp buffalo oocytes is important towards efficient utilization of the limited buffalo oocytes for cloning. The present study was conducted to compare the effects of chemical or electrical stimulus on the induction of activation of swamp buffalo oocytes, and to investigate the effects of aging on post- parthenogenetic development. Bubaline oocytes matured *in vitro* for 24 or 40 h were activated with ethanol or electrical stimulus with or without cycloheximide (CHX) treatment. Activation and cleavage rates tended to be higher at 40h post maturation than those activated at 24 h. However, a significant decrease was observed when activated oocytes were not exposed to CHX, regardless of the activation treatment (P<0.01). Significant differences were observed in the development of parthenotes to morula and blastocyst stage when activation treatment was applied at 24 h compared to those activated at 40 h post maturation, regardless of the activation treatment. The present study demonstrated the possibility of activating *in-vitro* matured swamp buffalo metaphase II oocytes at 24 h by electric stimulation or with ethanol followed by cycloheximide treatment without deleterious effect on subsequent development of parthenotes. **(Author's abstract)**

Keywords: Veterinary medicine, Activation, Cloning, Cycloheximide, Parthenotes, Swamp buffalo

Philippine Journal of Veterinary Medicine, Volume No. 48 Issue No. 1, 43-48 2011, (Filipiniana Analytics) NP

0414

Comparative conception rate of artificially inseminated dairy cattle after natural and induced estrus *Redondo, Marie Jeanelle H. , Rayos, Anto*

Data from the three-year breeding records of a dairy cattle farm were obtained and the monthly distribution of artificial insemination (AI) was analyzed. The conception rate of dairy cattle artificially inseminated after natural and induced estrus was also compared. More AIs were done after natural estrus during November to March compared to induced estrus for the same period. On the contrary, more AIs after induced estrus were done during April to October. During these months, the cows were said to exhibit silent estrus due to heat stress. Conception rate varied according to type of estrus within the year. Conception rates from April to September after natural estrus were higher (P<0.05) than those of induced estrus. Regardless of the month, AI after natural estrus did not adversely affect the conception rate. For AI after induced estrus, there was a tendency for the conception rate to decline during April to October. The conception rate of AI after natural estrus were higher (P<0.05) than those of induced estrus gave higher conception rate compared to induced estrus but it is recommended to induce estrus during the period when incidence of silent estrus is high. (Author's abstract)

Keywords: Veterinary medicine, Artificial insemination, Conception rate, Dairy cattle, Estrus, Prostaglandin

Philippine Journal of Veterinary Medicine, Volume No. 52 Issue No. 2, 107-112 2015, (Filipiniana Analytics) NP

Comparative effects of chromium, mannan oligosaccharides and zinc bacitracin on production performance and carcass characteristics of broilers *Billena, Mylen S. , Mateo, Carmenc*

Five hundred (500) day-old Arbor Acre broiler chicks were used in a 42-day feeding trial to demonstrate the effects of organic chromium (Cr) from yeast; mannan oligosaccharides (MOS) and zinc bacitracin (ZnB) supplementation on performance and carcass characteristic of broilers. Performance of birds fed with feeds supplemented with Cr, MOS or ZnB were better (P<0.05) than those fed without additive. Supplementation of broilers with Cr, MOS with ZnB and MOS alone significantly increased live body weight, weight gain and feed efficiency during the first 3 weeks of life. MOS alone or in combination with ZnB proved to be superior (P<0.05) to ZnB alone in improving growth performance of broilers. The combination of Cr and ZnB also positively influenced growth performance of broilers. MOS and Cr tended to increase breast yield and decrease fat yield in broilers. This study demonstrated that MOS can replace the feed antibiotic ZnB for improvement of performance and carcass characteristic of broilers. **(Author's abstract)**

Keywords: Veterinary medicine, Broiler, Carcass, Chromium, Mannan oligosaccharide, Zinc bacitracin

Philippine Journal of Veterinary and Animal Sciences, Volume No. 26 Issue No. 2, 175-184 2000, (Filipiniana Analytics) NP

0416

Comparative efficacy of Oregano (*Origanum vulgare*) extract and amprolium in the control of coccidiosis and their effect on broiler performance

Carandang, Nelia F., Luis, Edwin S., Centeno, Josephine R., Batungbacal, Marcela R., Hilomen, Geoffre

A total of 400 straight-run broiler chicks (Ross 308) were used to compare the efficacy of oregano extract and amprolium in the control of coccidiosis in broilers infected with mixed Eimeria oocysts. The treatments were as follows: T1- uninfected control; T2- infected control; T3- infected, amprolium-treated group; T4- infected, oreganotreated group. At 21 days of age, each chick, except in T1, was orally given 1.0ml of diluted inoculum containing about 30,000 mixed Eimeria oocyst. Twenty-four h after infection, chicks in T3 and T4 were given amprolium and oregano extract the recommended dose of 0.60 g/L and 0.30 ml/L of drinking water, respectively, until five days before marketing. Four days post-infection (PI), birds in T2, T3 and T4 showed clinical signs suggestive of coccidiosis, whereas, birds in T1 remained apparently normal. Lesion scores of birds sacrificed at 6, 14, and 21 days PI showed that birds in T2 developed moderate to severe intestinal coccidiosis while those in T3 and T4 had mild to moderate lesion scores that were consistently lower (P < 0.05) that those in T2. Sacrificed birds from T1 showed no gross lesions of coccidiosis at 6 and 14 days PI, however, At 21 days PI, 50% of the sacrificed birds apparently developed a natural infection as evidenced by the presence of mild lesions of coccidiosis in the small intestine. Occyst output taken over a 24-h period on the 9th-10th day PI and five days after withdrawal of medication showed that birds in T3 and T4 had oocyst counts that were consistently lower (P < 0.05) than those in T2. Fecal samples from T1 were negative for coccidian oocysts on the 9th-10th day PI, but were found positive on the 20th -21st day PI. Overall performance at 42 days of age showed that weight gain of birds in T2 and T3 was lower (P<0.05) than that of T1, while that of T4 was not significantly different from the other groups. (Author's abstract)

Keywords: Veterinary medicine, Amprolium, Coccidiosis, Oregano extract, Broiler chicken

Comparative evaluation of carcass and sensory characteristics of four genetic groups of Philippine native chicken Amado, Antonette P., Grecia, Mylene C., Lambio, An

The carcass characteristics of four genetic groups of Philippine native chickens (*Banaba, Paraoakan, Bolinao* and *Camarines*) were evaluated at 12 weeks of age. Data gathered were analyzed using a one way ANOVA in a completely randomized design. The sensory characteristics of the cooked meat of the different genetic groups of Philippine native chickens were compared with 42-day old broilers in "tinola" and roasted recipes using the Wilcoxon Matched Paired Signed-Rank Test. Dressing percentage of *Bolinao* group with (86.20 %) and without giblet (81.06 %) was higher (P<0.05) than the *Camarines* group. The percent cut-up parts based on dressed weight was lowest in the *Bolinao* group. Flavor scores noted in both the "tinola" and roasted recipes were higher in the native chicken groups as compared with broilers although the differences were found to be insignificant (P>0.05). Color scores in the *Banaba, Paraoakan* and *Bolinao* groups were all higher than broilers in the "tinola" group. In the roasted recipe group, the color score was found to be higher than the *Bolinao* group as compared to broiler. Tenderness scores were significantly higher in broilers except in the roasted form where *Paraoakan* obtained a comparable score with that of broilers. No differences (P>0.05) in juiciness and general acceptability of the meat were noted between the native chicken genetic groups and broiler chicken. **(Author's abstract)**

Keywords: Veterinary medicine, Carcass, Chicken, Flavor, Meat, Sensory characteristics

Philippine Journal of Veterinary and Animal Sciences, Volume No. 26 Issue No. 2, 129-136 2000, (Filipiniana Analytics) NP

0418

Comparative evaluation of electroacupuncture analgesia and local anesthesia for castration using vasocclusion method in Water buffaloes (*Bubalus bubalis*)

Bisa, Esteban Aldrin H., Arenda, Bernardo R., Soquila, Salvador S., Amido, Gilberto S., Flor, Jesus Augustus Cesar G., Acorda, Jezie A.

The effects of electroacupuncture analgesia and local anesthesia for bloodless castration in water buffaloes were evaluated using pain response and behavior of the animals during and after the procedure. The electroacupuncture group responded with one good, three moderate and one poor analgesia while the lidocaine group showed moderate to good analgesia. The two acupoints used suggest that electroacupuncture produces analgesia but not sufficient for smooth conduct of the surgical operation. There was significant difference in the treatments usually observed between the control and electroacupuncture groups during regression two weeks (14 days) after and the rest of the monitoring days. The effects of local anesthesia and electroacupuncture analgesia are almost similar in terms of regression or healing rate. There was significant change in rectal temperatures before and after castration in local anesthesia and electroacupuncture analgesia. (Author's abstract)

Keywords: Veterinary medicine, Buffalo, Castration, Electroacupuncture, Local anesthesia

Philippine Journal of Veterinary and Animal Sciences, Volume No. 27 Issue No. 1, 34-41 2001, (Filipiniana Analytics) NP

Comparative evaluation of protein quality of US, owensboro and argentine soybean meals using protein efficiency ratio in male broiler chicks *Mateo, Carmencita D. , Acorda, Jezie A. , Umali, Den*

Four hundred eighty day-old male Ross broiler chicks were used in a ten-day bioassay trial to assess the performance of three sources of soybean meals (SBM), namely Owensboro, United States (US) and Argentine soybean meals, in two semi-purified dietary regimes that were either high in energy but low in protein (cornstarch-dextrose based semi-purified diet) or low in energy but high in protein (peeled cassava meal-based semi-purified diet) using protein efficiency ratio (PER) as the method of measurement. Among the sources of soybean meal fed in cornstarch dextrose semi-purified diet, US SBM significantly gave the superior feed conversion ratio (FCR) and PER (p<0.01) while Owensboro SBM had the highest feed consumption but same average gain as with US SBM. Birds fed with Argentine SBM significantly performed less than birds fed with other soybean meal sources. In contrast, birds fed with cassava-based semi-purified diet did not result to significant differences in all parameters. Results suggested that it is possible to distinguish the qualities of soybean oil meal from various sources through a ten-day bioassay procedure using cornstarch-dextrose based semi-purified diet. This study demonstrated that the performance and PER of birds fed with US SBM are better than SBM from other origins used in the study. **(Author's abstract)**

Keywords: Veterinary medicine, Broiler chicks, Protein efficiency ratio, Protein quality, Soybean meal

Philippine Journal of Veterinary Medicine, Volume No. 47 Issue No. 2, 78-84 2010, (Filipiniana Analytics) HP

0420

Comparative evaluation of the growth performance of Japanese quails (*Coturnix coturnix*) fed with wheat, sorghum, and corn based diets *Mateo, Carmencita D. , Acorda, Jezie A. , Gaño, Re*

A total of 360 straight run, locally grown Japanese quails were used to comparatively evaluate wheat, sorghum and their combination diet with corn, in terms of their body weight gain, feed conversion ratio, livability rate and feed cost per kilogram gain. Results showed no significant difference in terms of feed consumption and livability rate in sorghum, wheat and corn diets. However, there was a significant difference (p<0.05) among the diets in terms of weight gain, feed consumption and feed cost per kilogram gain. Birds fed with corn alone or in combination had higher body weight gain and better feed conversion rate which shows the superiority of yellow corn over sorghum and wheat grain, and that it is much cheaper to use. (Author's abstract)

Keywords: Veterinary medicine, Quail, Corn, Sorghum, Wheat

Philippine Journal of Veterinary Medicine, Volume No. 43 Issue No. 1, 26-32 2006, (Filipiniana Analytics) NP

Comparative gross and microscopic anatomy of the hard palate and palatine printing in goat (*Capra hircus* L.) and sheep (*Ovis aries* L.) *Ducusin, Rio John T. , Maala, Ceferino P. , Encarnacion, Jose Ma*

To determine if the hard palate can be used as a means of identification of goats and sheep, the hard palate of ten goats and ten sheep of nondescript breeding were described and compared. The age of the animals ranged from 1.5 to 5 years and weighed 20-30 kg. Gross dissection and collection of samples for histological examination were performed on newly slaughtered animals. Palatine printing using mimeographing ink and paper was also performed. The tissue samples were stained with Hematoxylin and Eosin (H&E), periodic acid–Schiff (PAS), alcian blue (AB) (pH 1.0 and 2.5) and mucicarmine, then examined microscopically. The hard palate of sheep was longer (p<0.05), had more palatine ridges (p<0.05) and had wider incisive papillae (P<0.05) than in the goat. The palatine glands at the caudal region appeared more developed in the goat than in sheep. In both species, the glands reacted positively to mucicarmine, PAS and AB pH 2.5 stains. The prints obtained from the hard palate in both species showed clearly the various features of the hard palate. Because no two palatine prints appeared identical, it is recommended that palatine printing be tried in live animals as an alternative method of identification. **(Author's abstract)**

Keywords: Veterinary medicine, Capra hircus, Gross anatomy, Hard palate, Histology, Ovis aries, Palatine printing

Philippine Journal of Veterinary Medicine, Volume No. 52 Issue No. 2, 71-82 2015, (Filipiniana Analytics) NP

0422

Comparative morphology of the hyoid apparatus in wild boar (*Sus scrofa*) and domestic pig (*Sus scrofa domestica*) Doichev, Valentin, Ribarski, Stefan, Michaylov, Radoslav, Dimitrov, Rosen, Yordanova, Vio

The morphological features and measurements of the hyoid apparatus of nine wild boars, *Sus scrofa* (five male and four female, 2 years old, 148 ± 2.3 kg body weight) and nine domestic pigs, *Sus scrofa domestica* (four male and five female, 18 months old, 152 ± 2.9 kg body weight) were determined and compared. In both species, the basihyoid had a rostroventral projecting rudiment of the lingual process. At the caudal edge, the basihyoid formed an incisure which was more distinct in the domestic pig. The dorsal surface of the basihyoid in both animals formed a dimple which was better shaped and larger in the wild boar than in the domestic pig. In the wild boar, the left and right thyrohyoid were attached to the basihyoid at a smaller angle compared to the domestic pig. In the wild boar, the keratohyoid was oriented in a craniodorsal direction to the basihyoid. The stylohyoid was longer by 25% in the wild boar than in the domestic pig. The results suggest differences in the function of the hyoid muscles, in relation to masticatory and swallowing process, since the food of wild boar is rougher compared to that of the domestic pig. **(Author's abstract)**

Keywords: Veterinary medicine, Domestic pig, Hyoid bone, Morphology, Wild boar

Philippine Journal of Veterinary Medicine, Volume No. 51 Issue No. 1, 51-55 2014, (Filipiniana Analytics) NP

0423

Comparative ultrasound features of the liver, kidneys and spleen in female sheep (*Ovis aries*) at different ages

| Cabrera, Lyn A., Paloma, Jonnel C., Cariaso, Wreahlen E., Acorda, Je

To determine whether there are variations in ultrasound features of different organs between sheep of different ages, 16 apparently healthy mi.xed breed female sheep (*Ovis aries*), 6 mo to 8 yr old, were distributed into four age groups. Ultrasound examination was performed in non-sedated sheep in standing position using an ultrasound machine equipped with a 3.5 MHz convex array transducer. The liver, kidneys and spleen were examined, ultrasound images were recorded using a video graphic printer and measurements were done using the ultrasound machine electronic caliper. The acoustic window for the liver, kidneys and spleen was similar for all age groups. No difference was observed in liver echogenicity, appearance of gall bladder, and portal and hepatic veins among age groups. No differences in echogenicities of the renal structures were observed. Renal dimensions such as width, thickness and length of the left and right kidneys increased with increasing age. However, no differences were observed in ultrasound features of the different structures of the spleen between the different age groups. No significant differences were observed between the splenic dimensions of the animals at different ages. The results of the study suggest that from the age of six mo up to eight yr old, ultrasonography of the liver, kidneys and spleen can be performed for diagnosis of disorders without consideration of the age of the sheep. (Author's abstract)

Keywords: Veterinary medicine, Kidney, Liver, Sheep, Spleen, Ultrasound

Philippine Journal of Veterinary Medicine, Volume No. 46 Issue No. 1, 26-36 2009, (Filipiniana Analytics) NP

Comparison between electroacupuncture and aquapuncture using red pepper decoction in the treatment of postpartum anestrus in dairy cattle Secka, Arss, Acorda, Jezie A., Rayos, Anto

A total of 36 postpartum anestrus Holstein-Friesian crossbreds, with parity of 1-4, 3-9 years old, were equally distributed into 3 groups, and subjected to the following treatments: a) aquapuncture treatment using red pepper decoction; b) electroacupuncture treatment; and c) no treatment, control group. The reproductive performances of the three groups were compared in terms of conception rates, mean days from start of observation/treatment to conception and mean days open. The number of cows coming into estrus within 150 days from start of observation/treatment was similar for all treatment groups. Electroacupuncture group had the highest number of cows coming into estrus after only one treatment. The total mean days from start of observation/treatment to estrus

within 150 days were 47.8 for control group, 36.9 for aquapuncture group and 38.8 for electroacupuncture group. The number of pregnant cows within 180 days from first artificial insemination exclusive of early embryonic deaths (EEDs) were 8/12 for control, 8/12 for aquapuncture, and 9/12 for electroacupuncture; and the mean days from start of observation/treatment to conception within 180 days from first AI exclusive of EEDs was 98.6, 113.9 and 101.2 respectively. The overall conception rate for acupuncture-treated groups was higher than the non-treated group. Electroacupuncture group also had the highest conception rate for primaparous cows, followed by aquapuncture group. (Author's abstract)

Keywords: Veterinary medicine

Philippine Journal of Veterinary and Animal Sciences, Volume No. 27 Issue No. 2, 2001, (Filipiniana Analytics) NP

Comparison between free amino acids in meat of darag and commercial broiler chickens: implications for source of flavor of native chicken meat

Arenga, Ray L., Casiple, Celma G., Lambio, Angel L., Cocjin, Bernabe B., Roxas, George Fredrick A., Roxas, Ni

Commercial broilers were raised for 12 weeks to compare their meat with those of the Darag chickens raised by cooperators up to 16 weeks for free amino acid level. The meat samples were analyzed for levels of free amino acids by gas chromatography. The higher level of aspartic acid in the Darag chicken meat than in commercial broilers' meat was imputed to convey the favorable flavor on the Darag chicken meat. (Author's abstract)

Keywords: Veterinary medicine, Amino acid, Broiler, Darag chicken, Meat

Philippine Journal of Veterinary and Animal Sciences, Volume No. 27 Issue No. 1, 93-97 2001, (Filipiniana Analytics) NP

0426

Comparison between sorghum-based and corn-based diets on the production performance of broilers

Concimino, Dainty Meryl C., Mateo, Carmencita D., Acorda, Je

A total of 440 day-old male Arbor Acre broiler chicks were randomly allocated to four dietary treatments with 11 replicates per treatment at 10 birds per replicate pen. The composition of dietary treatments were as follows: 1) Treatment 1 - 100% corn; 2) Treatment 2 - 100% sorghum; c) Treatment 3 - 50% sorghum and 50% corn; and d) Treatment 4 -100% sorghum plus pigment. Two growth periods were observed,- starter period (1-21 days) and grower period (22-42 days), and the following parameters were determined: body weight gain, feed conversion, mortality and livability rate, carcass evaluation (carcass yield and weight) and economic analysis. The results showed no significant differences in terms of liveweight, weight gain, feed consumption, carcass yield and weight,

mortality and livability rate in sorghum- and corn-based diets. In feed conversion, however, a slight mean difference of 0.084 % was observed (P

Keywords: Veterinary medicine, Competitive exclusion culture, Lactic acid bacteria, Probiotics, Prebiotics, Salmonella

Philippine Journal of Veterinary Medicine, Volume No. 43 Issue No. 1, 18-25 2006, (Filipiniana Analytics) NP

0428

Comparison of conventionally identified mastitis bacterial organisms with commercially available microbial identification kit (BBL Crystal ID®)

Hikiba, Masanori , Sarmago, Ione G. , Haguingan, Juzie Mae B. , Bautista, Jose Arceo N. , Gordoncillo, Mary

Conventional identification of a total of 132 bacterial isolates recovered from subclinical mastitis cases were compared with the rapid and automated identification using a commercially available microbial identification kit (BBL Crystal ID®). Overall, organisms identified through conventional methods were in agreement with the commercial kit at 86.4% and 63.6% for the genus and species level, respectively. One hundred percent of conventionally identified *Bacillus cereus* and *Klebsiella pneumonia* were confirmed as correct, while an agreement of 89.5% for *Escherichia coli*, 70.7% for *Staphylococcus aureus*, 41.2% for *Streptococcus* species, 37.5% for *Staphylococcus albus*, and 6.7% for *Pseudomonas aeruginosa* were obtained. Organisms which conventional methods failed to identify and were misclassified as another organism included: *Pseudomonas stutzeri*, *Acinetobacter iwoffi*, *Shigella* sp. *Lactococcus lactis* ssp. *cremoris*, *Aerococcus urinae*, *Corynebacterium striatum*, *Aerococcus viridans*, *Staphylococcus hemolyticus* and *Staphylococcus warneri*. This shows that identification of microorganisms from mastitis cases by conventional methods should be taken with caution as this could sometimes be misleading, particularly for many significant mastitis pathogens such as staphylococci and streptococci. Other biochemical and enzymatic tests, in addition to standard conventional approaches for bacterial identification, should be done in order to achieve better accuracy in identification. **(Author's abstract)**

Keywords: Veterinary medicine, Bacteria, BBL Crystal ID®, Conventional identification, Subclinical mastitis

Philippine Journal of Veterinary Medicine, Volume No. 47 Issue No. 1, 54-57 2010, (Filipiniana Analytics) NP

0429

Concentration of hemoglobin plus carbonic anhydrase isoenzyme-I in the feces of rats with indomethacin-induced gastric bleeding

Yamazaki, Shunsuke , Shida, Takuo , Honjo, Toshio , Seita, Tetsurou , Kuribayashi, Takashi , Kawato, Katsuhito, Yamamoto, S

A rabbit antibody against rat hemoglobin (Hb) containing carbonic anhydrase isoenzyme I (CA-I) was used. The concentration of Hb plus CA-I (composite measurement) in feces of rats was measured in which gastric bleeding

was induced by administering indomethacin at 5, 10 or 35 mg/kg. Concentrations of Hb plus CA-I were measured by enzyme linked immunosorbent assay (ELISA). The concentrations of Hb plus CA-I in aging rats were significantly lower than in younger rats. The concentrations of Hb plus CA-I were increased in feces collected from rats administered 10 or 35 mg/kg indomethacin. The peak concentrations at 48 hr after administration of indomethacin were 17.1 mg/g for 10 mg/kg and 5.91 mg/g for 35 mg/kg; these values were significantly greater than those in the control group. The concentrations of Hb plus CA-I in feces did not increase at 5 mg/kg indomethacin, or in the control group. The measurement of Hb plus CA-I in feces could detect gastric bleeding in rats until it is possible to specifically measure Hb concentration in feces. (Author's abstract)

Keywords: Veterinary medicine, CA-I, Feces, Gastric bleeding, Hemoglobin, Indomethacin, Rat

Philippine Journal of Veterinary Medicine, Volume No. 49 Issue No. 1, 30-35 2012, (Filipiniana Analytics) NP

0430

Concomitant myocardial injury and brain lesions in three dogs Cho, Sang-Buem, Park, Jin-ho, Kim, Jun-Hwan, Masangkay, Joseph S., Cho, Ho-Seong, Park,

Three dogs were referred for evaluation of neurologic deficits due to seizure activity. Although they showed cardiac arrhythmias during physical examination and electrocardiographic recording, there were no functional and anatomical abnormalities of the hearts on echocardiographic examination. Marked elevation of serum cTnI and CKMB was confirmed. On magnetic resonance imaging (MRI) of the three dogs, central nervous system (CNS) inflammation on the pons-medullary and right cerebral areas was highly suspected. The clinical signs improved after prednisolone and cyclosporine administration, and the levels of cardiac markers decreased. This report described the clinical findings, specific cardiac enzymes, MRI features of the brain and response of treatment in suspected concomitant myocardial injury and brain lesions in three dogs. (Author's abstract)

Keywords: Veterinary medicine, Brain lesions, Dog, ECG, MRI, Myocardial injury

Philippine Journal of Veterinary Medicine, Volume No. 48 Issue No. 2, 106-113 2011, (Filipiniana Analytics) NP

0431

Cryopreservation of *in vitro* Matured buffalo (*Bubalus bubalis*) oocytes by slow freezing or vitrification Cruz, Libertado C., de Vera, Rodante V., Aquino, Flocerfida P., Duran, Danilda H., Atabay, Edwin C.,

Cruz, Libertado C. , de Vera, Rodante V. , Aquino, Flocerfiad P. , Duran, Danuda H. , Atabay, Edwin C. , Atabay, Eufroc

The present study was conducted to determine the effects on morphology and developmental competence of in vitro matured buffalo oocytes subjected to slow freezing or vitrification. Slaughterhouse-derived buffalo oocytes were matured in vitro and were either cryopreserved by slow freezing with a programmed controlled-rate freezer or were vitrified using conventional 0.25 ml French straws, either sealed (close system) or obliquely cut straw (open system) using an ethylene glycol-based solution. Cryopreserved buffalo oocytes were evaluated for morphology at

post thawing/warming and for subsequent development after fertilization in vitro. The results revealed that the proportions of morphologically normal oocytes were significantly higher with vitrification procedures than with slow freezing (p<0.01). For vitrification, higher survival rate was achieved with buffalo oocytes vitrified using a close system rather than with the open system. Moreover, vitrification in close system resulted in morula and blastocyst development, albeit low. In conclusion, vitrification was more effective than slow freezing for the cryopreservation of buffalo oocytes matured in vitro. (Author's abstract)

Keywords: Veterinary medicine, Buffalo oocytes, Ethylene glycol, In vitro maturation, Slow freezing, Vitrification

Philippine Journal of Veterinary Medicine, Volume No. 47 Issue No. 2, 103-109 2010, (Filipiniana Analytics) NP

Cryopreservation of Water buffalo, *Bubalus bubalis* (L.) spermatozoa using ethylene glycol: effects of equilibration time, thawing temperature and time on post-thaw motility rate

Tate

Valdez, Conrado A., Lammey, Mich

The study was conducted to determine the optimal equilibration time, thawing temperature and thawing time on the post-thaw motility of buffalo spermatozoa frozen using ethylene glycol as the cryoprotectant in the diluent. Collected semen samples from three different bulls were all diluted with a Tris-raffinose-egg yolk extender with 7% ethylene glycol. The samples were then subjected to three different equilibration times (*i.e.*, 20, 40 and 60 min) at 5 °C. After the equilibration time has been reached, the straws were suspended in liquid nitrogen vapor for 7 min. (-126 °C) and then stored in liquid nitrogen (-196 °C) for 7 to 14 days until thawed. The thawed samples were then subjected to different thawing temperatures and thawing times. The study showed that the semen subjected to 20-min equilibration time had a comparable level of post-thaw motility with those equilibrated for 60 min. However, those subjected to 40-min equilibration time had a significantly lower (p<0.05) motility rate as compared to semen samples subjected to 20 and 60 min equilibration times. Results further showed that there were no significant differences in survival rate of samples thawed under different temperatures, and that frozen semen thawed for 17 sec had a significantly (p<0.05) compared to those thawed for 12 sec. Overall, the study demonstrates that semen equilibrated for 60 min, frozen and thawed at 45 °C for 12 or 17 sec yielded higher post-thaw motility rates than the other treatment groups. However, the cryopreservation of bubaline spermatozoa using 7% ethylene glycol in the diluent should be further optimized and evaluated in fertility trials. (Author's abstract)

Keywords: Veterinary medicine, Bubalus bubalis, Cryprotectant, Equilibration, Freezing, Spermatozoa, Thawing, Water buffalo

Philippine Journal of Veterinary Medicine, Volume No. 48 Issue No. 2, 101-105 2011, (Filipiniana Analytics) NP

0433

Cryotop and solid surface vitrification cryodevices are suitable for the cryopreservation of in vitro-matured water buffalo (Bubalus bubalis L.) oocytes Cruz, Libertado C., Atabay, Edwin C., Atabay, Eufroc This work was conducted to evaluate the efficiency of Cryotop (CTP) and Solid Surface Vitrification (SSV) cryodevices in cryopreserving *in vitro*-matured buffalo oocytes and to study the influence of cumulus cells on viability of vitrified oocytes. Cumulus cell-free and –enclosed oocytes were exposed to an equilibration solution (ES) consisting of 7.5% (v/v) ethylene glycol (EG) and 7.5% (v/v) DMSO in TCM 199 + 20% FCS (base medium), for 5 min and then to a vitrification solution (VS) consisting of 15% (v/v) EG and 15% (v/v) DMSO with 0.5 M sucrose for 40 sec. The oocytes were then cooled in liquid nitrogen (LN2) using either a metal surface for SSV or Cyrotop sheets. Warming was performed in base medium with 1.0 and 0.5 M sucrose solutions, respectively. In experiment I, buffalo oocytes were exposed only to ES and VS for chemical toxicity. No significant differences were observed in cleavage, development to morula and blastocyst between the solution-exposed and unexposed groups. The cumulus cell-enclosed oocytes were exposed to ES and VS and cooled in LN2. In vitro developments of cumulus cell-enclosed oocytes were not significantly different between SSV and Cryotop cryodevices. The present study demonstrated that buffalo MII oocytes can be cryopreserved successfully using CTP or SSV cryodevices with similar efficiencies and that the presence of cumulus cells was beneficial for their *in vitro* development. **(Author's abstract)**

Keywords: Veterinary medicine, Cryodevices, Cryotop, In vitro-matured buffalo oocytes, Minimum-volume cooling, Solid surface vitrification

Philippine Journal of Veterinary Medicine, Volume No. 50 Issue No. 1, 24-33 2013, (Filipiniana Analytics) NP

0434

Cryptosporidium oocysts (Apicomplexa: Cryptosporidiidae) in the freshwater asiatic clam, Corbicula fluminea O. F. Müller, 1774 (Bivalvia: Corbiculidae) from selected Municipalities of Aurora, Philippines Asuncion, Bernard, Casao, Philip, Domingo, Clarissa Yvo

The freshwater Asiatic clam (*Corbicula fluminea* O. F. Müller, 1774) or locally called "tulya" collected from freshwater bodies and sold in wet markets in the municipalities of Baler, San Luis and Maria Aurora in the province of Aurora, Philippines (from December 2010 to February 2011) were examined for the presence of *Cryptosporidium oocyts*. Ten clams were pooled as one sample where their tissues and hemolymph were processed by homogenization and concentration technique, stained with Kinyoun acid fast stain and examined by microscopy. Prevalence of *Cryptosporidium* spp. oocyst in pooled clam samples from freshwaters bodies was 87.5% (35/40) in Baler, 83.33% (40/48) in Maria Aurora and 66.67% (28/42) in San Luis. The prevalence of oocysts in pooled samples of clams sold in wet markets was 55% (11/20) in Baler, 50% (10/20) in Maria Aurora and 45% (9/20) in San Luis. The average oocyst density per ml of homogenized tissues from clams collected in water bodies was 234, 84, and 42 in Maria Aurora, Baler and San Luis, respectively. Similarly, the average oocyst density in clams sold by vendors was 81, 77 and 25 in Maria Aurora, Baler and San Luis, respectively. The presence of *Cryptosporidium* oocyst in the freshwater Asiatic clams suggests that this bivalve could be a source of human infection as this is eaten as human food in the province of Aurora and at the same time it can serve as bioindicator of the contamination of the water environment with oocyst of *Cryptosporidium*. **(Author's abstract)**

Keywords: Veterinary medicine, Cryptosporidium spp., Freshwater, Asiatic clam, Oocyst, Philippines, Tulya

Cunico-pathological findings in sarcoptes mite-infested dogs treated with Gliricidia (*Gliricidia Sepium*)

Marte, Benjamin Reuel G., Andales, Sylvester A., Baticados, Waren N., Acorda, Je

Gross, histopathological and blood examinations were conducted in dogs infested with *Sarcoptes scabiei var. canis* with and without treatment of gliricidia (*Gliricidia sepium*). Twenty-five dogs were divided into three treatment groups: 1) Control, without treatment; 2) Gliricidia soap treatment; and 3) Gliricidia decoction treatment. For the latter two groups, gliricidia treatment was given once a week for six weeks. Results showed that the two gliricidia preparations (soap and decoction) reduced the population of mites significantly. After six weeks of treatment, gliricidia-treated dogs had 100% cure rate based on reduction of mites, reduction of gross skin lesions and normalization of hematologic values. Gross evaluation revealed a significant reduction of skin lesions in gliricidia-treated dogs compared with non-treated animals. However, microscopic evaluation revealed no significant reduction of skin lesions among the three groups. Hematologic evaluation revealed a significant improvement (normalization) in gliricidia-treated animals. The results of the study suggest that both soap and decoction preparations of gliricidia are effective in treating sarcoptic mange in dogs. (Author's abstract)

Keywords: Veterinary medicine, Dog, Gliricidia, Mange, Sarcoptes

Philippine Journal of Veterinary and Animal Sciences, Volume No. 26 Issue No. 2, 153-168 2000, (Filipiniana Analytics) NP

0436

Detection and identification of bacterial carriage of subclinical mastitis cases in backyard dairy cows

Hikiba, Masanori, Sarmago, Ione G., Gordoncillo, Mary Joy N., Bautista, Jose Arceo N., Haguingan, Juzie

Individual quarters of dairy cows from backyard farms in Laguna and Batangas were subjected to California mastitis test (CMT) to detect subclinical mastitis in individual cows and quarters. Teats identified as positive for mastitis were further evaluated for microbial carriage through bacterial isolation and identification using conventional methods and BBL Crystal ID®. A total of 97 cows from Batangas and Laguna were tested, of which 46 cows (49.5%) had at least one teat having a CMT score of trace, 1, 2 or 3. From 88 CMT-positive teats, a total of 132 organisms were recovered. The most common isolate in both Laguna and Batangas was Staphylococcus aureus (41 or 31% of isolates). Other common isolates in both provinces included Escherichia coli (12.9%), Pseudomonas stutzeri (10.6%), Bacillus cereus (7.6%), and Staphylococcus hemolyticus (6.8%). Less frequently recovered bacteria in either province were Aerococcus viridians (4%), Klebsiella pneumoniae (4%), Staphylococcus warneri (4%), Lactococcus lactis ssp cremoris (3%), Streptococcus agalactiae (3%), Staphylococcus albus (3%), Aerococcus urinae (1.5%), Staphylococcus capitis (1.5%), Streptococcus spp. (1.5%), Acinetobacter iwoffi (0.5%), Corynebacterium striatum (0.5%), Micrococcus kristinae (0.5%), Micrococcus luteum (0.5%), Micrococcus sp. (0.5%), Pseudomonas aeruginosa (0.5%), Shigella sp. (0.5%), and Streptococcus pyogenes (0.5%). This study established that subclinical mastitis remains to be a common problem in backyard dairy farms in Laguna and Batangas and that Staphylococcus aureus appears to be the most predominant bacteria in such cases from both provinces. (Author's abstract)

Keywords: Veterinary medicine, Bacterial identification, Bacterial isolation, Backyard dairy cows, California mastitis test (CMT), Subclinical mastitis

Philippine Journal of Veterinary Medicine, Volume No. 47 Issue No. 1, 21-25 2010, (Filipiniana Analytics) NP

0437

Detection of antibiotic residues in dressed chicken from commercial and backyard producers using four plate test Raymundo, Asuncion K., Baldrias, Loinda R., Gatchalian-Yee, Mari

Using the Four Plate Test (FPT), 64.2% (104/162) of liver samples from freshly dressed chickens at dressing plants of commercial chicken producers and backyard raisers were detected to contain antibiotic residues. Chickens from backyard raisers had a significantly higher proportion of positives (p < 0.05) at 80.8% (63/78), as compared to 48.8% (41/84) of commercial producers, indicating more frequent indiscriminate use of antibacterials in backyard poultry operations, either through improper dosing or non-observance of the appropriate withdrawal period. On the frequency of detection of suspect type of antimicrobials in chickens as inferred by the FPT, penicillin type ranked highest in occurrence for chickens of both backyard and commercial producers, followed by aminoglycosides. The least frequent type of antibiotic detected for both producers was the macrolides. The number of chickens, positive for penicillin, tetracycline, sulfonamide, and aminoglycoside types of antibiotics, was significantly higher (p < 0.05) for backyard raisers than for commercial producers. Results are relevant as they indicated that antibiotics may be improperly used by producers, and that there is a strong need for heightened surveillance through regular mandatory testing of chickens sold for human consumption. (Author's abstract)

Keywords: Four plate test, Veterinary medicine, Antibiotic residues, Backyard raisers, Commercial producers, Dressed chicken

Philippine Journal of Veterinary Medicine, Volume No. 45 Issue No. 1, 39-48 2008, (Filipiniana Analytics) NP

0438

Detection of common parasites in freshwater fish sold at the Public Market, Kabacan, Cotabato, Philippines

Gonzaga, Elsa A., Garduque, Rolando J., Jimenez, Vingelle B., Panes, Teresita S., Salcedo, Na

The objective of the study was to determine the prevalence of common parasites in freshwater fish sold at theKabacan Public Market with respect to their place of origin. It was conducted from April, 2008 to July, 2009 at theCVMParasitologyLaboratory,USM,KabacanCotabato.

A total of 500 freshwater fish were examined. These included a hundred heads each of tilapia (*Oreochromis niloticus*), gourami (*Osphomenus olfax*), catfish (*Clarias batrachus*), mudfish (*Ophiciphalus striatus*), and pupuyo (*Anabas* testulineus). The

external and internal parts of the fish were examined thoroughly for the presence of parasites. Fish were necropsied and the internal organs removed and dissected for the examination of nematodes, cestodes, and trematodes.

Percentage occurrence of parasites in fish samples were: pupuyo, 50%; african hito, 13%; tilapia, 11%; gourami, 6%, and mudfish, 2%; of the total number of fish examined, 12.6% were positive of trematodes, 7% for nematodes, and 2.4% for cestodes. Based on the place of origin (source) of the experimental fish, prevalence rates were Lake Sebu, 55.55%; Pawas, 22.03%; Cuyapon, 21.05%; Pulangi River, 6.97%; and Liguasan Marsh, 1.87%. All of the fish examined were negative of external parasites and plerocercoid of *Diphyllobothrium latum*. (Authors' abstract)

Keywords: Veterinary medicine, Catfish, Gourami, Mudfish, Origin, Parasites of tilapia, Prevalence, Pupuyo

USM R&D Journal, Volume No. 17 Issue No. 2, 147-149 2009, (Filipiniana Analytics) NP

0439

Detection of virulence associated genes of Pasteurella multocida isolated from pig farms of India

Rahman, Habibur, Sharma, Rajeev Kumar, Sarma, Dilip Kumar, Rajkhowa,

Progressive atrophic rhinitis and pneumonic pasteurellosis caused by *Pasteurella multocida* are recognized as economically important diseases of swine having a significant impact on pig industry throughout the world. A total of 87 (8.40%) *P. multocida* isolates were recovered from 1035 samples collected from diseased and apparently healthy pigs. *P. multocida* was the fourth most frequent pathogenic bacterium recovered from the samples after *Escherichia coli, Streptococcus* species and *Staphylococcus aureus. P. multocida* isolates were examined for capsule synthesis genes (*capA*, B, D, E and F) and eleven virulence associated genes (*ompH*, *oma87*, *ompA*, *plpB*, *ptfA*, *pfhA*, *tonB*, *hgbA*, *nanB*, *nanH* and *toxA*) by PCR. Of 87 *P. multocida* isolates, 54.02% isolates belonged to capsular type A, 43.67% to capsular type D, 2.29% isolates were untypeable whereas none of these isolates belonged to capsular type B, E and F. Virulence associated genes investigated were present in more than 90% of *P. multocida* isolates, except for the genes *ptfA*, *pfhA* and *toxA*. The study revealed a strong positive association of genes such as *toxA* (P<0.05), *oma87* (P<0.05) and *ptfA* (P<0.01) with diseased animals in comparison with healthy animals. These findings provide novel insights into the epidemiological characteristics of porcine *P. multocida* isolates circulating in Indian piggeries and can form the basis for devising control strategy against *Pasteurella* infection in pigs. **(Author's abstract)**

Keywords: Veterinary medicine, India, Pasteurella multocida, PCR, Pigs, Virulence factors

Philippine Journal of Veterinary Medicine, Volume No. 52 Issue No. 1, 30-38 2015, (Filipiniana Analytics) NP

Determination of body weight in Philippine Carabao-Murrah Crossbred Buffaloes using external body measurements

del Pilar, Elva R., del Barrio, Arnel N., Flor, Jesus Augustus Cesar G., Valdez, Conr

Fifty-nine female and fifty male Philippine Carabao-Murrah crossbred buffaloes with age ranging from 6 months to 15 years were weighed and measured to determine the relationship between body weight and body measurements. Measurements were taken on heart girth, midriff girth, flank girth, height at withers and rump, and width of shoulders and hips. The objective of the study was to develop a formula that could be used to estimate the body weight of crossbred buffaloes by using certain body measurements. Statistical analysis showed that for all sample population, heart girth (r = 0.91), flank girth (r = 0.87) and midriff girth (r = 0.86) were highly correlated to body weight Prediction equation for the estimation of weight was derived using simple and multiple regression analyses. Simple regression analysis for all animal samples regardless of sex: and age shows that heart girth ($r_2 = 0.83$) when used in an equation alone can predict the actual weight of an animal with certain degree of accuracy. If two parameters were considered in estimation of weight the best parameter to use are heart girth and flank girth (R2 =0.84). For Simplicity and practicality, the equation derived from simple regression analysis is preferred. This will require less tedious work because only one body measurement is required. Body Weight = -522.73 + 4.93. Heart Girth is the most preferred equation for estimation of body weight for both sex groups with r2 = 0.83. Certain factors must be considered in using this equation. The predicted model may be satisfactorily applied only within the observed range of values and can be used to estimate the body weight of Philippine Carabao-Murrah crossbred buffaloes in the absence of a suitable weighing scale. (Author's abstract)

Keywords: Veterinary medicine

Philippine Journal of Veterinary and Animal Sciences, Volume No. 28 Issue No. 1, 2002, (Filipiniana Analytics) NP

0441

Development of a TaqMan allelic discrimination assay between wild-type and vaccine isolates of Porcine Epidemic Diarrhea Virus (PEDV) *Cho, Ho-Seong , Kim,*

A one-step reverse-transcription polymerase chain reaction (RT-PCR) assay using TaqMan minor-groovebinding (MGB) probes was developed to distinguish between the oral vaccine and other strains (wild-type and conventional vaccine type) of porcine epidemic diarrhea virus (PEDV) in Korea. Although an attenuated DR13 strain has been used in animal vaccinations in Korea, porcine epidemic diarrhea (PED) remains a serious problem and a practical approach to differentiate oral vaccine and other field strains in fecal samples is needed. We examined the fluorescence of nine wild-type strains (three conventional vaccine strains [KPED9, SM98P and DR13] and six field strains) and one attenuated DR13 oral vaccine. Three clusters of the samples could be distinguished: those with fluorescence of only the oral vaccine-specific probe, VIC; those with fluorescence of only the wild-type and conventional vaccine-specific probe, NED; and those with both VIC and NED fluorescence. The RT-PCR assay with TaqMan MGB probes is sensitive and accurate, and is therefore useful for differentiating the oral vaccine from other strains of PEDV in Korea. (Author's abstract)

Keywords: Veterinary medicine, Allelic discrimination assay, Porcine Epidemic Diarrhea Virus (PEDV), Pig, RT-PCR

Philippine Journal of Veterinary Medicine, Volume No. 50 Issue No. 1, 51-54 2013,

(Filipiniana Analytics) NP

Development of an antibody-based elisa for detection of Fasciola gigantica infection in water buffaloes

Ilagan, Rizalito P., Aligui, Fe F., Acosta, Luz P., Tiu, Wilfred U., Padilla, Mild

In this paper, the development of an antibody-based enzyme-linked immunosorbent assay (ELISA) to detect antibodies to Fasciola gigantica in sera from 49 water buffaloes is described. The excretory-secretory products of adult F. gigantica Philippine strain, was used as the antigen in the ELISA. The overall sensitivity and specificity of the ELISA were 78.8% and 62.5%, respectively. ELISA correlated poorly with fecalysis currently used to diagnose fasciolosis in ruminants (Pearson's r= 0.267; P>0.05; 2-tailed). There was cross reactivity in sera from buffaloes infected with amphistomes. The results demonstrate the limitations of the indirect ELISA for detecting antibodies in the sera from buffaloes naturally infected with F. gigantica. (Author's abstract)

Keywords: Veterinary medicine

Philippine Journal of Veterinary and Animal Sciences, Volume No. 27 Issue No. 2, 2001, (Filipiniana Analytics) NP

Development of an antigen microarray for the detection of antibodies against porcine respiratory disease complex-related pathogens Masangkay, Joseph S., Masangkay, Jordan I., Cho, Ho-

An antigen microarray system was developed for the serodiagnosis of swine antibodies against porcine respiratory disease complex (PRDC)-related pathogens. PRDC is an economically significant respiratory disorder that is found mainly in 16-22-week old pigs and that is characterized by slow growth, decreased feed efficiency, lethargy, anorexia, fever, cough and dyspnea. The applicability of the microarray was evaluated using 210 swine sera samples from ten farms, and the results were compared with those obtained via enzyme-linked immunosorbent assay (ELISA) tests. A high correlation between the antigen microarray and ELISA was achieved when pig sera were tested for the presence of antibodies against PCV 2 (r = 0.920, p < 0.01), PRRSV (r = 0.884, p < 0.01), APP (r = 0.793, p < 0.01) and M. hyo (r = 0.853, p < 0.01). These results indicate that the antigen microarray is a suitable assay for the detection of pathogens with a performance equivalent to that of ELISA. Moreover, the additional advantages of high throughput and reduced time and cost are significant features necessary for the diagnosis and routine herd screening of multifactorial diseases such as PRDC. (Author's abstract)

Keywords: Veterinary medicine, Antibody, Antigen microarray, Pig, Porcine respiratory disease complex, Protein chip

Philippine Journal of Veterinary Medicine, Volume No. 48 Issue No. 1, 17-21 2011, (Filipiniana Analytics) NP

Developmental pattern of the digestive organs of male and female quails (Coturnix coturnix japonica)developmental pattern of the digestive organs of male and female quails (Coturnix coturnix japonica)

Ugtol, Irene A., Roxas, Ninfa P., Dagaas, Clar

A study to determine the growth pattern and development of digestive organs of male and female quails was conducted using a total of 420 day-old Japanese Seattle quails. The birds were weighed weekly for growth monitoring. Two birds were sacrificed from each of the 6 replicates every 3 days from day 1 to day 79. Results showed that female quails were heavier (P

Keywords: Veterinary medicine

Philippine Journal of Veterinary and Animal Sciences, Volume No. 28 Issue No. 2, 2002, (Filipiniana Analytics) NP

0446

Duck egg production in the Philippines: results from a farm survey de Castro, Nenita L., Velasco, Ma. Lourdes, Villano, Rene, Chang, Hui-Shung (Christie), Lambio, Ange

Two hundred and five duck (205) egg producers in four provinces (Iloilo, Nueva Ecija, Pampanga, and Quezon) of the Philippines, were surveyed in 2003 using a pre-tested questionnaire. They were asked about their socio demographic and farm characteristics, their income sources and problems encountered in the production and marketing of duck eggs, as well as their access to capital and awareness of government programs and participation in extension services through farmers' organizations. Results showed that farm sizes, farm management practices, a nd performance in duck farming varied among the respondents across different areas covered by the study. Further, duck farmers in the Philippines generally lacked the technical know how and access to capital and extension services, and have encountered serious problems in production and marketing of duck products. One policy recommendation is that the training of extension workers to further enhance their technical know how on duck raising and the provision of extension services to duck farmers can help avoid production constraints and improve productivity. Secondly, the emphasis on egg and "*balut*" production means that the future prospects of the industry depend heavily on the future demand for "*balut*" and the ability of the duck sector to compete with other products in terms of price and product quality. This means that better understanding of the market demand for "*balut*" through research is as important as avoiding technical constraints in duck egg production. (Author's abstract)

Keywords: Veterinary medicine, Duck farming, Farm survey, Production constraints, Social capital

Philippine Journal of Veterinary Medicine, Volume No. 45 Issue No. 2, 95-108 2008, (Filipiniana Analytics) NP

The ear canal microflora in Domestic rabbits (*Oryctolagus cuniculus*) with particular reference to staphylococci

Adetosoye, Adeyemi I., Ajuwape, Adebowale T.P., Onoja, Bernar

A cross-sectional bacteriological study or ear canal of rabbits was undertaken to determine the occurrence of bacteria in healthy rabbits in Ibadan. Thirty rabbits, managed intensively, were sampled. A total of 62 bacterial isolates were recovered from 28 rabbits. *Staphylococcus aureus* showed the highest occurrence of 53.2%. This was followed by *Staphylococcus epidermidis* and *Streptococcus zooepidermicus* with an occurrence of 12.9% each. Other microbes are *Escherichia coli* with an occurrence 8.1% and Micrococcus luteus with 6.5 %. *Streptococcus morbillorum* and *Pasteurella multocida* showed an occurrence of 3.2%. All the 41 staphylococcal isolates were positive for slide coagulase test using human plasma, while 32/41 (78.1%) were positive for the same test using sheep plasma. However, when the isolates were subjected to tube coagulase test, only 33/41 (80.5%) of the isolates were positive with human plasma while all the isolates were positive for bound coagulase activity using sheep plasma. The microflora pattern underscores the need for surveillance and the need to screen the rabbits for biomedical research as these latent organisms have the potential to produce clinical conditions. (Author's abstract)

Keywords: Veterinary medicine, Rabbits, Staphylococci, Coagulase test, Microflora

Philippine Journal of Veterinary Medicine, Volume No. 43 Issue No. 1, 13-17 2006, (Filipiniana Analytics) NP

Echocardiographic and hepatic ultrasound features of captive red-eared slider turtle, *Trachemys scripta elegans* (Wied, 1839) â€"(Reptilia: Testudines: Emydidae) *King, Isabella Rae L. , Tapay, Arnie A. , Lastica-Ternura, Emilia A. , Acorda, Je*

Echocardiography and hepatic ultrasonography were conducted on 24 (7 males and 17 females) adult apparently healthy captive-maintained red-eared slider turtles, with average weight of 1.52 kg, in order to determine the ultrasound features of the heart and liver. The examination was done using an ultrasound machine equipped with an 8.5 MHz linear array scanner and a 5.5 MHz micro-convex scanner. The heart and the liver were examined through the cervicobrachial acoustic window. Ultrasound appearance, measurements and echo mean values of the different cardiac and hepatic structures were obtained. The left atrium, right atrium and ventricle were visualized, the lumen appearing as anechoic and the walls seen as hyperechoic structures. The liver appeared as a homogenous hypoechoic structure with hepatic vein having an anechoic lumen and hyperechoic walls. No significant differences in the measurements and echo mean values between male and female slider turtles were observed. The results of this study can be used as a basis for ascertaining the condition of the heart and liver of red-eared slider turtles for possible diagnosis of diseases. (Author's abstract)

Keywords: Heart, Veterinary medicine, Echo mean, Echocardiography, Liver, Red-eared slider turtle, Ultrasound

Some ectoparasites from Philippine owls (Strigiformes: Strigidae) with description of a new louse species, *Kurodaia (Conciella) theresamunditae* Desamero & Eduardo (Amblycera: Menoponidae)

Eduardo, Salcedo L., Desamero, Mark Jos

Two species of Philippine owls, *Otus megalotis* Walden, 1875 (Philippine scops-owl) and *Bubo philippensis* Kaup, 1851 (Philippine eagle-owl) (Strigidae), kept at the Rescue Center of the Protected Areas and Wildlife Bureau (PAWB), Quezon City, Philippines were examined for ectoparasites during the period June 2009-February 2010. Lice and mites were found on the two species of owls. Identification of the lice specimens revealed four species, three previously known and one new to science. These were *Strigiphilus heterogenitalis* from *Otus megalotis, Colpocephalum turbinatum* from both *Otus megalotis* and *Bubo philippensis* and *Strigiphilus ketupae* from the latter owl species. *Kurodaia (Conciella) theresamunditae* Desamero & Eduardo is described and illustrated as a new species from Otus megalotis. It is characterized by having male genitalia and the associated genital sclerite different from those of the other species of the genus and subgenus to which it belongs. The mite specimens consisted of a single species identified as *Dermonoton longiventer*. The occurrence of *S. heterogenitalis* and *H. ketupae* on *Otus megalotis* and *Bubo philippensis*, respectively constitutes new host records for the species in the Philippines. The presence of *Colpocephalum turbinatum* on both owl species in this study extends the host range of the species. *Dermonoton longiventer* is reported for the first time in the Philippines. **(Author's abstract)**

Keywords: Veterinary medicine, Colpocephalum turbinatum, Dermonoton longiventer, Ectoparasites, Kurodaia (Conciella) theresamunditae, Philippine owls, Strigiphilus spp.

Philippine Journal of Veterinary Medicine, Volume No. 48 Issue No. 1, 27-34 2011, (Filipiniana Analytics) NP

0450

Some ectoparasites of the common Rousette bat (*Rousettus amplexicaudatus* Geofroy, 1810) (Mammalia: Chiroptera: Pteropodidae) from colonies in Batangas and Rizal, Philippines *Zabat, Apolonio G., Eduardo, Salced*

Colonies of the common rousette bat (*Rousettus amplexicaudatus*) from the provinces of Batangas and Rizal, Luzon, Philippines were examined for ectoparasites. Ectoparasites were collected and fixed and stored in 70% ethyl alcohol until further study. Collected specimens consisted of batflies, fleas, mites and tick larvae. These were processed for examination by cleaning in 5% potassium hydroxide solution, washing in distilled water, dehydrating in increasing grades of ethyl alcohol, clearing in oil of cloves and mounting in Canada balsam. The ectoparasites were identified as follows: Two species of batflies, *Eucampsipoda sundaicum* and *Megastrebla parvior* belonging to the families Streblidae and Nycteribidae, respectively; a species of flea, *Thaumapsylla breviceps* of the family Ceratophyllidae, two species of mites, *Meristapis lateralis* and *Ancystropus zelleborii* both belonging to the family Spinturnicidae and an undentified tick larvae belonging to the family Ixodidae. Photographs of these species based on the present collection are provided. (Author's abstract)

Keywords: Veterinary medicine, Batflies, Ectoparasites, Flea, Mite, Rousettus amplexicaudatus, Philippines

Philippine Journal of Veterinary Medicine, Volume No. 48 Issue No. 1, 53-2011, (Filipiniana Analytics)

0451

Effect of Chitosan oligosaccharide on non-specific immune parameters in catfish (*Silurus asotus*) *Shin, Geewook , Heo, Ga*

We examined the effects of a single intraperitoneal injection of four different concentrations (0, 50, 100, 150, 200 mg/kg) of chitosan oligosaccharide on superoxide anion, plasma lysozyme and anti-protease in catfish (*Silurus asotus*). The groups injected with 100 and 150 mg/kg chitosan had significantly enhanced superoxide anion levels in leukocytes, plasma lysozyme and anti-protease compared to the mock-injected group (0 mg/kg). Based on these results, chitosan oligosaccharide is thought to stimulate and/or modulate the non-specific immune response in catfish. (Author's abstract)

Keywords: Veterinary medicine, Anti-protease, Chitosan oligosaccharide, Catfish (Silurus asotus), Lysozyme, Superoxide anion

Philippine Journal of Veterinary Medicine, Volume No. 48 Issue No. 1, 22-26 2011, (Filipiniana Analytics) NP

0452

The effect of cysteamine on glutathione level, male pronucleus formation and developmental capacity of Swamp buffalo oocytes matured in vitro Mendoza, Everlito A., Shimizu, Hiroshi, Mori, Tadashi, Venturina, Emma V., Ocampo, Marlon B., Ocampo, Lerma C., Mamuad, Felom

The study was carried out to detennine if the addition of cysteamine to the culture medium buffalo oocytes would improve its intracytoplasmic glutathione (GSH) levels and if such changes would translate an improvement in the male pronucleus (MPN) and developmental capacity. In Experiment 1, buffalo oocytes were cultured in basic maturation medium composed of TCM 199 + FCS (10%v/v) + gonadotropins with or without cysteamine. The addition of 50 mM and 100 mM cysteamine resulted in 75% and 81% MPN formation, respectively, of the in vitro fertilized oocytes. In Experiment 2, the proportion of cleavage stage embryos was greater for oocytes that were matured In the presence of cysteamine (46/96) compared to the control (27/90). The percentage of cleaved embryos developing up to the blastocyst stage was 19.3% with cysteamine and 11.1% without cysteamine supplementation. In Experiment 3, intracytoplasmic glutathione levels were measured for oocytes matured in maturation conditions supplemental with cystamine. However, the values were lowered compared to the GSH levels of large follicles representing the In vivo matured oocytes. The results of the present study suggest that an increase in the intracellular condition to support fertilization and embryonic development of oocytes in vitro. (Author's abstract)

Keywords: Veterinary medicine

NP

Philippine Journal of Veterinary and Animal Sciences, Volume No. 28 Issue No. 2, 2002, (Filipiniana Analytics) NP

The effect of different levels of an acidifier in the diet on the performance of broilers Mangabat, Catherine G., Luis, Edwin S., Olarve, Jos

A five-week feeding trial was conducted to determine the effect of different inclusion rates of an acidifier in the diet on the performance of broilers. A total of 280 eight days old straight run broiler chicks were randomly distributed to four treatments following a Complete Randomized Design (CRD). Chicks in treatment 1 were fed with basal diet (control) w bile those in treatments 2, 3, and 4 were given basal diets with 0.3%, 0.4% and 0.5% acidifier, respectively. Each treatment was replicated seven (7) times with ten chicks per replicate. The feeding trial was conducted from the 8th to 42nd day of age of the broilers. The basal starter and finisher diets were formulated to contain metabolizable energy of about 3000 kcal/kg and crude protein of 20% and 18.50%, respectively. The acidifier used was a blend of formic, fumaric, lactic, propionic and phosphoric acids, mixed in basal diets. The results showed significant effects (P<0.05) on body weight gain and feed efficiency of the broilers from 28 to 42 and 8 to 42 days of age at 0.3% and 0.4% acidifier in basal diets. Feed consumption, livability and dressing percentage of the broilers were not significantly influenced by inclusion of an acidifier. Income over feed and chick cost of broilers was increased with inclusion of 0.3% and 0.4% acidifier. This study indicates that supplementation of acidifier in diets at 0.3% is economically more advantageous to use in broiler production. **(Author's abstract)**

Keywords: Veterinary medicine, Acidifier, Broiler production, Feed efficiency, Inclusion rates, Weight gain

Philippine Journal of Veterinary Medicine, Volume No. 44 Issue No. 1, 14-19 2007, (Filipiniana Analytics) NP

0454

Effect of intrauterine infusion of 2% povidone iodine solution on the reproductive performance of repeat breeder cows Rayos, Antonio A. | Marcial, Jr., Demetrio B. | Escueta, Haidee DR., Torres, Edua

The effect of intrauterine infusion of 2% povidone iodine solution on the reproductive performance of repeat breeder cows was examined. Sixty (50) repeat breeder dairy cows were randomly divided into two groups: (a) the treatment group was given intrauterine infusion of 50 ml of 2% povidone iodine 24 hr after insemination, and (b) the control group was left untreated. Results showed that in the treated group, the average number of days open was 169.84 days; the number of services per conception was 1.54; conception rate at first treatment after service was 53.3%, and overall conception rate was 86.7%. The corresponding figures in the control group were 207.9 days, 2.05, 16% and 66.7%. AU reproductive indices used were superior in the treatment group than that of the control group, and were statistically significant (P

Keywords: Veterinary medicine, Aspirin, Goat, Histology, Kidney

Philippine Journal of Veterinary Medicine, Volume No. 45 Issue No. 2, 118-126 2008, (Filipiniana Analytics) NP

Effect of time on maturation and embryo development rates of buffalo oocytes in vitro Garillo, Ernesto P., Hufana, Rogelio D., Hufana, Bernadette B., Cruz, Libertado C., Duran, Danilda H.,

Duran, Peregrin

Two studies were conducted to examine the effect of time on buffalo oocytes in vitro maturation (IVM) and embryo development after in vitro fertilization (IVF). The general objective is to come up with a concrete basis for technical procedure on collection and length of preservation of ovaries and oocytes IVM for improved rate of in vitro embryo production. Study 1 examined the effects of short (3-4 hr) and long (5-6 hr) periods of ovary collection and preservation on the subsequent development potential of buffalo oocytes after IVF. A total of 132 oocytes were randomly distributed into two groups - long period and short period. Results revealed that cleavage and blastocyst development rates are higher in the short period than in the long period, 58.57% vs. 46.77% and 21.43% vs.12.9%, respectively (P

Keywords: Veterinary medicine, Epithelial growth factor, Submandibular glands, Bulbourethral gland, Total submandibular sialoadenectomy

Philippine Journal of Veterinary Medicine, Volume No. 46 Issue No. 2, 102-112 2009, (Filipiniana Analytics) NP

0458

Effect of varying energy levels on the performance of landrace and large white barrows and gilts *Pinkihan, Appin D. , Alcantara, Plac*

Two experiments were conducted to determine the responses of growing pigs to different energy levels (2900, 3000, 3100 and 3200 kcal/kg ME). In the first experiment, 160 Large White (LW) x Landrace (LD) crossbred barrows and gilts were used in a 4 x 2 factorial experiment (energy level x sex). At 40-75 kg live weight, there was an increasing growth rate, energy intake, back fat thickness and P2 measurement and decreasing average daily feed intake, energy efficiency and feed conversion ratio of both barrows and gilts with Increasing energy level (P<0.05). At 75-90 kg live weight, both barrows and gilts followed a linear-plateau response on growth rate while back fat thickness and P2 measurement increased with increasing energy level. At 40-90 kg live weight, LWx LD pigs responded significantly to increasing energy level with increasing average daily gain and energy intake.

In the second experiment, 72 purebred LD gilts and 72 purebred LW gilts were used in a 4 x 2 factorial experiment (energy x breed). At 40-75 kg live weight, both LD and LW gilts had increasing rate of gain, energy intake, back fat thickness and P2 measurement with increasing energy level. At 75-90 kg live weight, both LD and LW gilts had increasing average daily gain, back fat thickness and P2 measurement (P<0.05). LW gilts had higher growth rate, energy intake, protein deposition rate, energy efficiency and lower feed efficiency, back fat thickness and P2 measurements than LW gilts. LW gilts had higher average daily gain, lower energy intake, shorter days to

reach 90-kg live weight and are more efficient energy converters compared with LD gilts (P<0.05). (Authors' abstract)

Keywords: Veterinary medicine, Energy, Back fat, Pig, Protein, P2

Philippine Journal of Veterinary and Animal Sciences, Volume No. 26 Issue No. 1, 51-67 2000, (Filipiniana Analytics) NP

0459

Effect of Vitamin E on the immune system of broilers subjected to heat stress Lim, Ian Paul O., Morillo, Teresa Asuncion B., Endaya, Berw

Eighteen commercial hybrid broiler chickens were raised for a period of six weeks and assigned to either one of three treatment groups: treatment 1 was given a basal ration without additional vitamin E supplementation while treatments 2 and 3 were fed with the same basal rations supplemented with 50 IU and 150 IU vitamin E per kilogram of feed, respectively. All birds were vaccinated at day 14 against Newcastle's Disease (NCO) and subjected to two weeks of heat stress starting four weeks up to six weeks of age by exposure to temperature of 32-34°C using 100-watt incandescent bulbs from 11 in the morning to 4 in the afternoon. Serum samples were collected at days 21 and 35 to determine antibody titer against NCO while blood samples for total and absolute white blood (WBC) collected cell counts were davs 35 on and 42

The groups supplemented with vitamin E have a relatively high WBC, lymphocyte, heterophil, eosinophil, basophil, monocyte counts, and antibody titers compared to control but differences were not significant (P>0.05). Qualitative examination of the spleen's histology revealed no difference between groups in terms of follicular hyperplasia. Examination of the cloacal bursa histologically revealed a relatively high incidence of follicular regression and cellular deaths in the control group. Incidence of follicular regression in the unsupplemented group was significantly higher (P<0.05) compared to the group supplemented with 150 IU vitamin E. (Authors' abstract)

Keywords: Veterinary medicine, Broiler, Heat stress, Vitamin E

Philippine Journal of Veterinary and Animal Sciences, Volume No. 27 Issue No. 1, 42-52 2001, (Filipiniana Analytics) NP

0460

Effects of equilibration time, thawing temperature and time on pre-freezing and post-thaw morphology of Water Buffalo (*Bubalus bubalis* Linnaeus, 1758) Spermatozoa Cryopreserved in Ethylene Glycol *Valdez, Conrado A.*, *Tom, Christop*

This study was undertaken to examine the morphology of frozen bubaline spermatozoa subjected to different equilibration time and then thawed at various thawing temperature and time. Four semen samples collected from each of three Murrah buffalo bulls were diluted in a Tris-egg yolk extender with 7% ethylene glycol. The diluted
samples were equilibrated at 20, 40 and 60 min, packaged into 0.5 ml French straws, suspended in liquid nitrogen vapor for 7 min, then stored in liquid nitrogen at -196°C for 7-14 days. After storage, the spermatozoa were thawed at 37°C, 41°C or 45°C for 12 or 17 sec. Semen subjected to 40 min equilibration time and thawed at 37°C for 17 sec or at 41°C for 12 sec had lower total sperm abnormality percentage than semen equilibrated for 20 and 60 min and subjected to the same thawing temperature and time. A comparable low abnormality percentage was also observed for semen equilibrated for 20 min thawed at 41°C for 17 sec. There was a significantly higher percentage of tertiary sperm abnormality for semen equilibrated for 20 min and thawed at 37°C for 12 sec compared to other treatment groups. Shortening the equilibration time to 40 or 20 min and thawing at 41°C for 12 or 17 sec generally resulted to low total percentage sperm abnormality. **(Author's abstract)**

Keywords: Veterinary medicine, Cryopreservation, Morphology, Spermatozoa, Water buffalo

Philippine Journal of Veterinary Medicine, Volume No. 52 Issue No. 1, 59-64 2015, (Filipiniana Analytics) NP

0461

Effects of green tea and ginseng on villus length and crypt depth and on the distribution of mast and goblet cells in the small intestine of rats with streptozotocin (STZ)-induced diabetes

Yörük, Mecit, Uslu, Sema, Karaca,

Diabetes is characterised by abnormally high plasma glucose concentration and causes functional and morphological changes in many organs. This study investigated the effects of green tea extract, ginseng root, and green tea extract plus ginseng root on the micromorphology of and distribution of mast cells and goblet cells in the intestine of rats with streptozotocin (STZ)-induced diabetes. Thirty healthy Wistar albino rats were used, six in each of five groups as follows: Group A (without diabetes): as control, Group B: STZinduced diabetes without treatment, Group C: STZ-induced diabetes treated with green tea extract alone (100 mg/kg/daily), Group D: STZ-induced diabetes treated with ginseng root alone (400 mg/kg/daily) and Group E: STZ-induced diabetes treated with a combination of green tea extract and ginseng root (dosage as in group C and D). Blood samples were analysed for blood glucose at the end of the six week experiment period. A significant decrease (P < 0.05) in serum glucose was observed in treated diabetic groups C, D and E compared with untreated diabetic group B. Mast cell number was significantly lower (P<0.05) in the lamina propria and submucosa of the small intestines, but the number of goblet cells in the duodenum and jejunum was higher in the diabetic groups than in other groups (P < 0.05). Goblet cell density in the small intestine tended to be higher in the untreated diabetic group than in the other groups. Green tea extract and ginseng root had no influence on villus height in the duodenum and crypt depth in the ileum of diabetic rats but both had an effect which is characterized by a lower villus height in the jejenum. Green tea extract and ginseng root promoted micromorphology of the small intestine and also caused changes in the distribution of mast and goblet cells of the intestine of diabetic rats. (Author's abstract)

Keywords: Veterinary medicine, Diabetes, Mast cell, Ginseng, Goblet cell, Green tea, Small intestine, Streptozotocin, Rat

Philippine Journal of Veterinary Medicine, Volume No. 48 Issue No. 2, 86-93 2011, (Filipiniana Analytics) NP

Effects of Leucaena leucocephala and Gliricidia sepium supplementation on outflow rate, microbial protein yield and growth of sheep fed with ammoniated rice straw *Ichinohe, Toshiyoshi*, *Cruz, Emilio M.*, *Orden, Edgar A., Fujihara, Tsu*

The objective of this study is to determine the effects of Leucaena leucocephala (Leucaena) and Gliricidia sepium (Gliricidia) supplementation on the outflow rate and microbial protein yield of sheep fed with ammoniated rice straw (ARS) diet. Twenty-four growing native sheep with mean body weight of 13.48 kg were equally distributed to three treatment groups following a Completely Randomized Design (CRD). They were fed ad libitum with ARS alone or supplemented with either Leucaena or Gliricidia that accounted for 20% of the daily dry matter (OM) intake. ARS consumption remains the same among treatments, but the addition of Leucaena and Gliricidia increased total OM consumption which eventually resulted to higher (P< 0.05) flow rate of rumen digesta, 5.1 and 4.8%/hr, for the Leucaena and Gliricidia, respectively, compared to 3.8 %/hr in the ARS group. The significant improvement in N utilization and more digestible organic matter intake (DOMI) brought about by the inclusion of Leucaena and Gliricidia to ARS resulted in increased (P

Keywords: Veterinary medicine, Mycotoxin-deactivating agent, Ochratoxin, Zearalenone, Feed conversion ratio

Philippine Journal of Veterinary Medicine, Volume No. 45 Issue No. 1, 14-21 2008, (Filipiniana Analytics) NP

0464

Effects of O₂-hydrogel on wound healing in diabetic mice Kwon, Jungkee, Baik, Sang-Ho, Nho, Young-Chang, Park, Jong Seok, Gwon, Hui-Jeong, Lim, Youn-Mook, Shin, Eun-Hye, Kim, Sokho, Choi, Dae

Foot ulcers and wound healing are problematic for patients with diabetes. At present, many therapies are directed at accelerating wound healing, such as applying electric currents, living skin equivalents, and pharmacological manipulation of factors that modulate the wound healing process. Oxygen (O_2) is a very important mediator associated with wound treatment, and its availability can limit healing rate. The effects of O_2 -hydrogel therapy on wound healing and regeneration were tested on diabetic mice. O_2 -hydrogels were prepared with the third sheet incorporated with glucose, glucose oxidase and peroxidase. Two round wounds of full-thickness were made on the dorsal side of each diabetic (db/db) mice (n=84) and the mice were divided into three groups: non-treated, water-hydrogel treated and O_2 -hydrogel treated. O_2 -hydrogel treatment resulted in accelerated wound closure and formation of granulation tissue in the wound area compared with those in water-hydrogel treated mice. These data suggest that O_2 -hydrogels may provide a better therapy for accelerating wound healing in patients with diabetes. (Author's abstract)

Keywords: Veterinary medicine, Diabetes, Hydrogel, Mice, Oxygen (O2), Wound healing

Effects of total mandibular sialoadenectomy on the biometry and histologic features of the ovary of rats

Collantes, Therese Marie A., Uychoco, Janice Mary Honeylette J., Estacio, Maria Amelita C., Bariuan, Jussi

The effect of total surgical removal of the mandibular salivary glands (total mandibular sialoadenectomy) on the biometry and histologic features of the ovary was studied using 60 sexually mature Sprague-Dawley rats. The rats were randomly divided into three groups: intact, sham-operated and sialoadenectomized. Sixty days after sham operation and total mandibular sialoadenectomy of the second and third groups of rats, respectively, all the animals were sacrificed and the ovaries were collected in toto, measured for weight and diameter, fixed in 10% buffered formalin solution and processed using the paraffin technique. The tissue samples were cut at 5 µm and stained with H & E, Masson's trichrome and Weigert's stain. Results showed that the rat ovary is basically similar in structure to its counterpart in most mammals except for the sparse tunica albuginea and the deeper location of the primordial and primary follicles. Comparison of the three animal groups showed that the weight and diameter of the ovary did not vary significantly. Histologically, the ovary in the sialoadenectomized group showed distinct differences from the intact and sham-operated groups. These included a thicker medulla; and significantly higher number of primordial follicles, primary follicles and corpora lutea. It is concluded that total mandibular sialoadenectomy in sexually mature virgin rats affected the histological features of the ovary. (Author's abstract)

Keywords: Veterinary medicine, Epidermal growth factor, Mandibular salivary glands, Ovary, Mandibular sialoadenectomy, Ovarian follicles

Philippine Journal of Veterinary Medicine, Volume No. 50 Issue No. 2, 90-96 2013, (Filipiniana Analytics) NP

0466

Effects of total submandibular sialoadenectomy on pregnancy and parturition of sprague dawley rats Zambo, Joan Riza P., Maligaya, Rhea L., Estacio, Maria Amel

The influence of the submandibular salivary glands on pregnancy and parturition was determined by examining the effect of total submandibular sialoadenectomy on the pregnancy rate, abortion rate and parturition parameters such as duration of pup expulsion, duration of placental expulsion, duration of expulsion between pups and the total duration of parturition in Sprague-Dawley rats. Sixty sexually mature female Sprague-Dawley rats were divided into three groups: intact, sham-operated and sialoadenectomized. Sixty days post-removal of the submandibular salivary glands, all the female rats were mated with sexually mature male rats of the same strain.

The sialoadenectomized females had a significantly lower pregnancy rate compared with the intact and shamoperated females. Occurrence of abortion was also observed in sialoadenectomized females but not in intact and sham-operated females. Parturition was also significantly delayed in sialoadenectomized females as reflected in the longer duration of expulsion of pups and placenta, time interval between expulsion of pups and total duration of parturition compared with the intact and sham-operated females. Based on our results, the submandibular salivary glands are involved in maintenance of pregnancy and facilitates parturition. (Authors' abstract)

Keywords: Veterinary medicine, Epithelial growth factor, Submandibular salivary glands, Parturition, Pregnancy, Sialoadenectomy

Philippine Journal of Veterinary Medicine, Volume No. 47 Issue No. 2, 92-97 2010, (Filipiniana Analytics) NP

Effects of using tiletamine-zolazepam with or without ketamine and/or xylazine for anesthesia in cats Manigbas, Elaine P., Abalos, Jovencio Hubert A., Palmones, Patricia

Three anesthetic regimens - Tiletamine-zolazepam (T) used as sole anesthetic agent, and bolus administration of tiletamine-zolazepam-ketamine (TK) and tiletamine-zolazepam-ketamine-xylazine (TKX) - were evaluated in six domestic shorthair cats using a repeated measures design with one week treatment interval, with the time of onset of anesthesia, duration of anesthesia, time to sternal recovery and standing recovery, vital signs, reflexes, pain response, and ECG findings as parameters. Onset of anesthesia was similar in all three treatments. TKX provided a significantly prolonged duration of anesthesia and recovery time compared to T and (p<0.0001). The vital signs were within normal for an anesthetized cat in all treatments. The heart r ate was significantly lower with TKX compared to T and TK (p<0.0001) but an initial increase was observed in all three treatments eventually declining with T and TKX while it remained elevated with TK. The respiratory rate tended to decrease with time in all three treatments. Reflexes and flank pain response were also absent for a significantly longer period with TKX compared to T and TK (p<0.0001). Isolated ECG parameters were outside normal limits however, no cardiac arrhythmias were observed in all three treatments. The results of the study point to the possible use of TKX where prolonged anesthesia using parenteral anesthetics is desired although this also results to a prolonged recovery period. (Author's abstract)

Keywords: Veterinary medicine, Tiletamine-zolazepam, Ketamine, Xylazine, Anesthesia, Cat

Philippine Journal of Veterinary Medicine, Volume No. 46 Issue No. 1, 53-60 2009, (Filipiniana Analytics) NP

0468

Effects of waterborne exposure to 0.5 and 2 ppm coconut fatty alcohol sulfate on Zebrafish (*Danio rerio*) reproduction

Collado, Gian Francis S., Librojo-Basilio, Nieva T., Paraso, Michelle Grace V., Ramos, Jazzi

Sexually mature zebrafish (*Danio rerio*) were exposed for 21 days to low concentrations (0.5 and 2 ppm) of the coconut oil-based surfactant fatty alcohol sulfate (CFAS). Using a static renewal system with replacement every 24 h, the effect on the following were recorded: mortality rate, number of viable eggs, gonadal morphology, median hatching time and percent hatchability. No significant differences were noted between the control and those exposed to the test concentrations in most of the observed parameters. These findings suggest that sublethal concentrations of CFAS do not adversely affect zebrafish survival and reproduction. (Author's abstract)

Keywords: Veterinary medicine, Coconut fatty, Alcohol sulfate, Fish reproduction, Zebrafish

Philippine Journal of Veterinary Medicine, Volume No. 45 Issue No. 2, 127-132 2008, (Filipiniana Analytics) NP

Enterotoxigenic and attaching and effacing *Escherichia coli* strains in diarrheic piglets and their antibiogram

Sarma, Dilip Kumar , Kalita, Chandana , Rajkhowa,

Enterotoxigenic *Escherichia coli* (ETEC) is a major cause of illness and death in neonatal and recently weaned pigs. Attaching and effacing *Escherichia coli* (AEEC) strains were also identified as a cause of diarrhea in pigs. A total of 157 *Escherichia coli* strains isolated from 137 pre-weaning and 101 post-weaning pigs with diarrhea were tested for the presence of genes representing ETEC and AEEC by PCR. Of these 157 isolates, 29.93% isolates were found to be ETEC and 2.54% as AEEC. Among the ETEC isolates, 48.93% and 40.42% were positive for genes est1 and elt1, respectively, and in 10.63% isolates both genes were present. Out of the four isolates that carried eaeA gene, none of the isolates was positive for genes like stx1, stx2e and bfpA. This is the first report of detection of AEEC in pigs from India. Most of the *E. coli* isolates schibited resistance to streptomycin (95%), tetracycline (92%) and nalidixic acid (89%) and 69% of the isolates showed resistance to more than two antimicrobials. The present study throws light on the prevalence of ETEC and AEEC strains in diarrheic piglets and their antibiogram. (Author's abstract)

Keywords: Veterinary medicine, Antibiogram, Diarrhea Escherichia coli, Pig

Philippine Journal of Veterinary Medicine, Volume No. 51 Issue No. 1, 30-37 2014, (Filipiniana Analytics) NP

0470

Enzyme supplementation of soybean meal in milkfish diet Arboleda, Florida C., Mateo, Carmencita D., Luis, Edwin S., Guerrero, Rafae

A digestibility study and a growth feeding trial were conducted to study the effect of enzyme supplementation of soybean meal in milkfish diets. Three diets were formulated, namely: diet 1 - a high protein diet (HP) containing 40% crude protein (CP); diet 2 - a low protein diet (LP) containing 30% CP; and diet 3 - is diet 2 plus feed enzyme (LPE). The feed enzyme was a protease to aid soybean digestion in the diet and was added at the rate of 1 kg/ton of feed. Study 1 was undertaken in tanks to determine the milkfish carcass composition, digestibility d the different diets fed to milkfish fingerlings and growth performance of milkfish in tanks. Study 2 was concluded in earthen ponds to determine the effect of the test diets on the growth performance of milkfish after a month culture period. In general, the milkfish carcass on LP diets had higher dry matter content than those on HP diet. However, there was no significant difference in (P, gross energy and phosphorus contents on the carcass of milkfish fed with HP, LP and LPE diets. (Author's abstract)

Keywords: Veterinary medicine

Philippine Journal of Veterinary and Animal Sciences, Volume No. 28 Issue No. 1, 2002, (Filipiniana Analytics) NP

Estimation of safe and effective sedative concentration of Ground clove (*Syzygium* aromaticum) buds using 96-hour Lethal Concentration 50 (LC50) test in the Zebrafish, Danio rerio (F. Hamilton, 1822) (Cypriniformes: Cyprinidae) Umali, Dennis V., De Ocampo, Grace D., Olalia, Ja

A 96-hour lethal concentration 50 (LC50) test was performed in 210 sexually immature zebrafish (*Danio rerio*) to determine the safe and effective sedative concentration of ground clove (*Syzygium aromaticum*) buds (GCB). Fish exposed to 0 and 10 ppm GCB (w/v) did not exhibit signs of sedation and irritation and appeared to be swimming normally throughout the experiment. Fish exposed to 20 and 50 ppm GCB showed mild sedation with no signs of irritation and recovery was observed at 48 hours of exposure. Fish exposed to 100, 200 and 400 ppm GCB exhibited irritation, narcosis and subsequent loss of balance and swimming ability. Deep sedation occurred instantaneously in fish exposed to 400 ppm with signs similar to anesthetic induction. Histopathologic changes were dose-dependent. Exposure to higher GCB concentrations resulted to gill lesions which range from congestion of the primary lamellae (100 to 400 ppm) to lifting of lamellar epithelia (100 ppm). LC50 was identified at 198.23 ppm while effective and safe sedative concentration was estimated at 19.52 ppm using linear regression analysis (P<0.05). This indicates that at this concentration, fish were in mild sedation for at least 48 hours without any signs of neither irritation nor histopathological lesions and without causing any mortality within 96 hours of exposure to GCB. (Author's abstract)

Keywords: Veterinary medicine, Danio rerio, Ground clove, Sedative, Lethal concentration 50 (LC50), Syzygium aromaticum, Zebrafish

Philippine Journal of Veterinary Medicine, Volume No. 50 Issue No. 2, 82-89 2013, (Filipiniana Analytics) NP

0472

Eucoleus halcyonus, a new species of lungworm (Nematoda: Capillariidae) from the whitecollared kingfisher, *Halcyon chloris collaris* (Scopoli, 1786) in the Philippines *Lastica, Emilia A.*, *Eduardo, Salc*

A new species of the genus *Eucoleus* Dujardin, 1845, *Eucoleus halcyonus* is described and illustrated from the lungs and air sacs of a white-collared kingfisher (*Halcyon chloris collaris* (Scopoli, 1786) from Danjugan Island, off Negros, Philippines. The bird was a downer that suffered from extreme respiratory distress and died 3 h later. Specimens were recovered at necropsy, fixed in 70% ethyl alcohol solution until further study. These were either examined as temporary mounts in lacto-phenol solution or as semi-permanent mounts by clearing in glycerin after a slow evaporation of the alcohol in an alcohol-glycerin solution. The new species is characterized mainly by having a wavy muscular part of esophagus, stichosome part of esophagus 15 or more times longer than the muscular part;

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stichocytes gradually increasing in size towards the posterior end, longer than broad in the anterior half and broader than long in the posterior half of the entire length of the stichosome; presence of spines on spicular sheath, absence of bacillary band and spicule, and larger size of egg. It is differentiated from species of the genus occurring in birds. *E. halcyonus* may have been the main cause of the respiratory distress resulting to the death of the bird. Diagnosis of infection with the species is accomplished by demonstrating the presence of its egg in the feces. A list of the parasites so far recorded from the Philippine white-collared kingfisher is provided. (Author's abstract)

Keywords: Veterinary medicine, Eucoleus halcyonus new species, Halcyon chloris collaris, Kingfisher, Lungworm, Nematode parasite

Philippine Journal of Veterinary Medicine, Volume No. 47 Issue No. 2, 85-91 2010, (Filipiniana Analytics) NP

Evaluation of a fish meal analog as a replacement for peruvian fish meal in tilapia (Oreochromis niloticus) diets Guerrero, Luzviminda A., Mateo, Carmencita D., Carandang, Ne

Six hundred sex-reversed male Nile tilapia (Oreochromis niloticus) fingerlings were used in a four month freshwater cage culture to demonstrate the utilization of a fish meal analog (FMA) as a replacement for Peruvian fish meal in tilapia diets. The control diet was formulated to contain 23% Peruvian fish meal. The FMA replaced 50% and 100% of the fishmeal on an equal weight basis (kg per kg) to make up the two remaining experimental diets.

No significant differences (P>0.05) were noted on the average weight gain and feed efficiency of tilapia fed the control diet (100% Peruvian fish meal) and those tilapia fed the 50% and 100% FMA based diets, respectively. A complete replacement of Peruvian fishmeal with FMA did not support acceptable fish performance. Although body measurements and feed efficiency were lower for tilapia fed the 100% analog based diet, these were not significantly different from those fed the control and 50% FMA based diets, respectively. Based on this study, growth performance of tilapia is affected by the total absence of fishmeal in the diet. However, a 50% replacement of Peruvian fishmeal with FMA is a potential replacement value to minimize the use of fish meal in tilapia diets and, therefore, lower feed costs. (Authors' abstract)

Keywords: Veterinary medicine, Feed, Fish meal, Tilapia

Philippine Journal of Veterinary and Animal Sciences, Volume No. 27 Issue No. 1, 53-60 2001, (Filipiniana Analytics) NP

0474

Evaluation of brucellosis from 2001 to 2007 in a small ruminant population vaccinated with a live freeze-dried *B. mellitensis* Rev-1 Vaccine in Northeast Portugal *Coelho, Adosinda Maria, Coelho, Ana Claudia , de Lurdes Pinto, Maria , GarcÃa-DÃez, Ju* *B. mellitensis* Rev-1 vaccination is considered the most successful and cost-effective method for prevention and control of brucellosis in small ruminants. The region of Trás-os-Montes e Alto Douro (Northeast Portugal) presented the highest prevalence of brucellosis of the small ruminant population of Portugal. A *B. mellitensis* Rev-1 mass-vaccination program was carried out from 2001 to 2004 and the effectiveness of this program was evaluated. Brucellosis prevalence in flocks decreased over 20% and positive sheep and goats were reduced by 43%. The prevalence of brucellosis in large flocks was ten times higher than in small ones, higher for sheep than in goats and higher in dairy than in meat flocks. According to flock size, the prevalence of brucellosis may be associated with the absence of biosecurity measures. The high prevalence in sheep was compatible to their predominance because they constitute, on average, 75% of the total of small ruminant population each year. Moreover, the prevalence of brucellosis was higher in flocks with both sheep and goat and intended for dairy production. The results of this work can be used to improve the efficiency of the national eradication program for brucellosis according to the production management of sheep and goats in the vaccinated areas. (Author's abstract)

Keywords: Veterinary medicine, Brucellosis, Flock, Goat, Rev-1, Sheep, Vaccination

Philippine Journal of Veterinary Medicine, Volume No. 52 Issue No. 1, 21-29 2015, (Filipiniana Analytics) NP

0475

Evaluation of growth performance of quails subjected to different feeding and lighting regimens *Torio, Thelma M.*, *Dagaas, Clar*

The study was conducted to determine the effects of different feeding and lighting regimens on the growth performance of quails. A total of 360 day-old quails were randomly distributed to four treatments, namely: continuous light and ad libitum feeding, continuous light and restricted feeding, restricted light and ad libitum feeding. Each treatment was replicated three times with thirty birds per replicate. The quail's body weight, body weight gain, feed consumption and feed efficiency were significantly lower (P0.05) weight of first egg. The cost of producing ready-to-lay pullet quails was lowest when birds were raised under restricted light and ad libitum feeding. (Author's abstract)

Keywords: Veterinary medicine

Philippine Journal of Veterinary and Animal Sciences, Volume No. 27 Issue No. 2, 2001, (Filipiniana Analytics) NP

0476

Evaluation of nematode larval load on forage pastures at Philippine Carabao Center at University of Southern Mindanao (PCC at USM) *Corpuz, Jed Marlowe G.*, *Molina, Elizab* The study was conducted from November 2006 to July 2007 at the Philippine Carabao Center at the University of Southern Mindanao (PCC at USM) and at the CVM-USM Parasitology Laboratory. The main objective of the study was to evaluate the gastrointestinal nematode larval load on herbage from the forage pastures of PCC at USM. The pasture areas that were sampled had larvae of the common gastrointestinal nematodes that infest ruminants. Specifically, third-stage larvae of *Trichostrongylus, Haemonchus, Cooperia,* and *Oesophagostomum* were observed. Fluctuations in counts of infective larvae (L3s) of these parasites were noted from November 2006 to July 2007 and the highest larval load occurred in April. *Trichostrongylus* was the dominant nematode seen from the herbage. **(Author's abstract)**

Keywords: Veterinary medicine, Gastrointestinal nematodes, Infective larvae, Larval load, Parasitology

USM R&D Journal, Volume No. 17 Issue No. 1, 25-29 2009, (Filipiniana Analytics) NP

Evaluation of the efficacy and safety of ground clove (*Eugenia aromatica*) buds, clove oil and 2-Phenoxyethanol as anesthetic agents for Zebrafish (*Danio rerio*) Olalia, Jason L., De Ocampo, Grace D., Umali, Den

A dose-response trial was performed using 210 sexually immature zebrafish (*Danio rerio*) to determine the effective anesthetic concentration of ground clove (*Eugenia aromatica*) buds (GCB) comparable to 100 ppm of 10% clove oil (CO) and 300 ppm of 2-phenoxyethanol (2-PE), with regard to induction and recovery times, behavioral changes and histopathological lesions, if any, in the gill, kidney and liver. GCB at 1500 ppm showed comparably similar induction time (53.70 sec) as the 100 ppm CO (46.43 sec) while the 1000 ppm GCO exhibited induction time (121.97 sec) comparable to that with 300 ppm 2-PE (128.98 sec). The average recovery time (192 sec) to stage 3 anesthesia did not differ significantly (P>0.05) between various concentrations of GCB and 100 ppm CO but was significantly longer (P<0.05) than the 118 sec recovery time of fish exposed to 300 ppm 2-PE which caused irritation and excitation on the fish immediately after immersion. No mortality was observed. Histopathological examination revealed absence of lesions in the kidney and liver in all treatment groups. The gill, however, showed mild congestion in fish exposed to GCB at 500, 1000 and 1500 ppm; moderate congestion with 2000 ppm GCB and 300 ppm 2-PE; and severe congestion with or without lamellar erosion and epithelial denudation in those exposed to 2500 ppm GCB and 100 ppm CO. Results indicated that the effective and safe anesthetic concentration of GCB comparable to 100 ppm CO was 1500 ppm and that comparable to 300 ppm 2-PE was 1000 ppm. **(Author's abstract)**

Keywords: Veterinary medicine, Anesthesia, Danio rerio, Eugenia aromatica, Ground clove, Zebrafish

Philippine Journal of Veterinary Medicine, Volume No. 48 Issue No. 1, 35-42 2011, (Filipiniana Analytics) NP

An experimental study on the efficacy and safety of short-segment intracolonic bypass tubes in dogs Roxas, Manuel Francisco, Natividad, Gabriel

The study aims to "determine the safety and efficacy of an inexpensive and readily-available short-segment, intracolonic bypass latex tube in colonic anastomosis." This research was done in an attempt to have a locally available "intracolonic tube," something that is as efficient and as safe as the Coloshield patented by Ravo in 1988. The Ravo Coloshield is a tube which aids in preventing anastomotic leakage. The two-part experimental test was carried out involving a total of 30 mongrel dogs, as subjects of this study. In contrast to Ravo's coloshields, however, which proved to be effective in healing and preventing leakage in colonal anastomosis, the locally devised intracolonic bypass latex tubes did not exhibit neither significantly "harmful" nor "beneficial" effects.

Keywords: intracolonic bypass tubes, intracolonic, Veterinary medicine, Ravoâ \in^{TM} s coloshields

The Medical Journal of De La Salle University, Volume No. 11 Issue No. 2, 21-26 2008, (Filipiniana Analytics) Fil(S) R935 M468 11/2 1995

0479

Expression of androgen receptors in ruptured canine anterior cruciate ligament Oyamada, Toshifumi, Mutoh, Ken-ichiro, Goto, Shunsuke, Ohmomo, Ryoko, Ohno, Hideki, Yoshioka, Kazuki , Owaki, M

In this study, expression of androgen receptor (AR) in ruptured canine anterior cruciate ligament (ACL) was immunohistochemically investigated. The samples used in the study were ACLs obtained from 16 dogs (six males and ten females) with ruptured ACL and nine healthy beagles (five males and four females). Blood samples were collected and serum testosterone level was determined. Ligament tissue at the proximal femur was sampled from the site of rupture in each dog and subjected to immunohistochemistry and immunofluorescent antibody test. The intensity of AR expression in the samples from dogs with ruptured ACL, particularly castrated males and spayed females, was lower in comparison with that in samples from the healthy dogs, suggesting its relationship with serum testosterone level. It was also revealed that androgen acted on ligament fibroblasts, activated cell proliferation and stimulated type I procollagen synthesis. The results of this study suggest that the intensity of AR expression in the incidence of ruptured ACL. (Author's abstract)

Keywords: Veterinary medicine, Androgen receptor, Anterior cruciate ligament, Dog

Philippine Journal of Veterinary Medicine, Volume No. 51 Issue No. 2, 131-136 2014, (Filipiniana Analytics) NP

0480

Fecal shedding, organ distribution and observed pathological changes over a 150-hour period in BALB/c mice orally-infected with locally isolated salmonella species *Ramirez, Teresita J. , Masangkay, Joseph S. , Baldrias, Loinda R. , Gordoncillo, Mary Joy N. , Caraballe, Ma*

This study investigated the earliest shedding time, systemic spread and pathological damage produced by *Salmonella* spp. after oral infection of mice. Polymerase chain reaction and conventional bacterial isolation were performed using fecal and organ samples collected at specified time intervals. BALB/c mice were orally infected with 0.5 ml of 103 CFU Salmonella spp. in broth. Preenrichment of samples was done using both tetrathionate and brain heart infusion (BHI) broths. Samples incubated in tetrathionate broth were subjected to conventional tube biochemical testing for characterization of *Salmonella* spp. isolates, while those incubated in BHI were used for DNA extraction and molecular detection using lhe DASTM Salmonella kit of BIOTECH, UPLB. *Salmonella* spp. were shed at 2 h post infection (pi) and last isolated at 84 h post infection from the droppings. *Salmonella* was present in the lymph node at 2 h pi, in the liver, spleen, kidney, heart and small intestines at both 12 and 18 h pi. Sloughing of the microvilli, edema and lymphocytic infiltration in the enterocytes of the intestines were observed. Tubular atrophy progressing to glomerulopathy was evident in the kidney. There was also cloudy swelling and fatty degeneration in the liver and lymphocytic hyperplasia in the spleen. (Author's abstract)

Keywords: Veterinary medicine, Bacterial isolation, Mice, Polymerase chain reaction, Salmonella

Philippine Journal of Veterinary Medicine, Volume No. 47 Issue No. 1, 41-48 2010, (Filipiniana Analytics) NP

0481

Feeding value of corn stover-swine waste silage for beef cattle Valdez, Ma. Teresa SJ., Demo-os, Rodo

This study was conducted to determine the physical characteristics, nutritive value, acceptability and digestibility of corn stover-swine waste silage. Feedlot performance of beef cattle fed this silage was investigated. Corn stover was ensiled with fresh swine waste and 5% molasses solution. Corn stover and swine waste were mixed at a proportion of 60:40 based on 90% dry matter and ensiled for three weeks at a pH of 4.3-4.6. The silage was evaluated in terms of physical appearance, nutrient composition, and digestibility. Research station and barangay-based feeding trials were conducted using 10 beef cattle each; 5 animals were fed corn stover-swine waste silage and 5 were fed pure corn stover.

Corn stover-swine waste silage had a pleasant smell, smooth texture and a golden yellow appearance which resembles that of good quality grass silage. There was marked improvement in the nutritive value of the silage compared to pure corn stover after ensilage. The addition of swine waste and molasses improved the nutrient composition of silage. Moreover, the cell wall components of corn stover decreased when ensiled with swine waste and molasses. The silage was highly acceptable and palatable to beef cattle as shown by the voluntary dry matter intake value of test animals. Results of the digestion trial revealed that corn stover-swine waste silage had higher digestibility values than pure corn stover. Beef cattle fed with corn stover-swine waste silage had an average daily gain of 310-720 g while those on pure corn stover had an average daily gain of 85-130 g. (Author's abstract)

Keywords: Veterinary medicine, Beef cattle, Corn stover, Manure, Pig, Silage

Philippine Journal of Veterinary and Animal Sciences, Volume No. 26 Issue No. 2, 169-174 2000, (Filipiniana Analytics) NP

Feeding value of protein-enriched sweet potato pulp for broilers Valdez, Ma. Teresa SJ., Demo-os, Rodolfo A., Mapili, Jr., Marian

The study was conducted to develop a feed product from sweet potato pulp through the adoption of protein enrichment technology modified to suit farm level conditions. Specifically, the most appropriate degree of wetness of the pulp, fungal culture used in fermentation, non-protein nitrogen source/s for the nutrient mixture and technique of sterilizing the fermentation substrate to produce a protein-rich broiler feed from sweet potato pulp were investigated.

Sweet potato pulp (fiber), a solid waste from starch processing, was gathered from two commercial plants in the towns of Calasiao and Rosales, in Pangasinan. Protein-enriched sweet potato pulp was produced using three non-protein nitrogen sources (urea, ammonium phosphate, ammonium sulfate) in the preparation of nutrient mixture for the substrate; three fungal cultures (*Trichoderma harzianum, Aspergillus niger, Rhizopus oligosporus*) for substrate fermentation; two degrees of wetness (low-moisture vs. high-moisture) of the pulp; and two substrate sterilization techniques (aseptic vs. semi-aseptic). The protein-rich feed products resulting from various treatments were sampled for determination of proximate composition and test-fed to broilers through feeding trials.

There were 17 to 20-fold increases in the crude protein content of sweet potato pulp after protein enrichment, compared to the original material. High-moisture sweet potato pulp contained higher percentage of crude protein than low-moisture pulp. *T. harzianum*-fermented sweet potato pulp contained 7-9% more crude protein than proteinenriched sweet potato pulp fermented by *R. oligosporus* or *A. niger*.

Feeding trial results showed 0.7-3.8% improvement in gain in weight and 6.4-15.8% improvement in feed conversion when protein-enriched sweet potato pulp was incorporated in the finisher ration. Cost efficiency analysis revealed that savings on feed cost range from PhP2.54-3.81 per bird (finishing stage) and PhP0.49-3.06 per bird (growing-finishing stage). (Authors' abstract)

Keywords: Veterinary medicine, Broiler, Feed, Pulp, Sweet potato

Philippine Journal of Veterinary and Animal Sciences, Volume No. 26 Issue No. 1, 41-50 2000, (Filipiniana Analytics) NP

Fischoederius emiljavieri, a new species of pouched amphistome from ruminants in the Philippines and Indonesia and redescription of Fischoederius cobboldi (Poirier, 1883) Stiles & Goldberger, 1910 (Trematoda: Gastrothylacidae) Eduardo. Salc

Collections of pouched amphistomes from ruminants in the Philippines and Indonesia were examined. These were fixed in either 70% ethyl alcohol or 10% formalin. Specimens were hand-sectioned in the sagittal plane, stained in aceto-alum-carmine, cleared in oil of cloves and mounted in Canada balsam. Representative specimens were sectioned by the paraffm method, in the cross and sagittal planes, stained in Delafield's hematoxylin and eosin, cleared. in xylene and mounted in Canada balsam. *F. emiljavieri* is described as a new species and illustrated by drawings and microphotographs. It is characterized by its elongate size, short ceca about 28% as long as the body length and posterior testis more ventral in location between acetabulum and bottom of ventral pouch but not forming a bulge on the latter; and ventral pouch triangular in cross section with the apex directed ventrally. In median sagittal

section, its acetabulum, pharynx, and terminal genitalium are of the carmyerius, paramphistomum and bubalis types, respectively. *Fischoederius cobboldi* is redescribed based on the present materials. Drawings and microphotographs of the species are also provided. *Fischoederius cobboldi* is characterized by having long ceca that form dorso-ventral bends with their blind ends directed ventrally and reaching the posterior testis; esophagus having two types of lining, anterior part by a hyaline layer and posterior part by ciliated epithelium; and acetabulum, pharym, and terminal genitalium in median sagittal section of the gas trothylax, paramphis tomum and cobboldi types, respectively. Both species are differ entiated from closely related species of the genus. **(Author's abstract)**

Keywords: Veterinary medicine, Fischoederius cobboldi, Fischoederius emiljavieri, Indonesia, Philippines, Pouched amphistome, Ruminant parasite

Philippine Journal of Veterinary Medicine, Volume No. 46 Issue No. 1, 44-52 2009, (Filipiniana Analytics) NP

Fischoederius upiensis new species from ruminants in the Philippines with remarks on other species of the genus fischoederius Stiles & Goldberger, 1910 (Trematoda: Paramphistomoidea: Gastrothylacidae) Javellana, Ma. Cesar Ramon H., Eduardo, Salc

Pouched amphistomes from ruminants in the Philippines were collected and examined. These were fixed and stored in 70% ethyl alcohol. Specimens were hand-sectioned in the sagittal plane, stained in aceto-alum-carmine, cleared in oil of cloves and mounted in Canada balsam. Representative specimens were sectioned by the paraffin method, in the cross and sagittal planes, stained in Delafield's hematoxylin and eosin, cleared in xylene and mounted in Canada balsam. Among four other previously known species (*Gastrothylax crumenifer*, *G. boyangensis*, *Carmyerius synethes* and *Fischoederius cobboldi*), a new species *Fischoederius upiensis* from *Bubalus bubalis* and *Bos taurus* is identified, described and illustrated. F. upiensis is characterized by its small and almost oval size, ceca in median field with length of about 48% of the body length, anterior testis forming a bulge at the bottom of the ventral pouch and anterior to acetabulum, and ventral pouch nearly rounded in cross section. In median sagittal section, its pharynx is of the paramphistomum type, acetabulum of the fischoederius type and terminal genitalium of the leydeni type. It is differentiated from closely related species of the genus. On account of insufficient descriptions which are based on flattened specimens and lack of information on the features of the muscular organs, the following are considered species inquirendae: *Fischoederius ovatus*, *F. boyangensis*, *F. compresus*, *F. explanatus*, *F. sichuanensis*, *F. ovis* and *F. bubalis*. The taxonomic value of the pharynx, acetabulum and terminal genitalium as seen in median sagittal section for the family Gastrothylacidae is discussed. (Author's abstract)

Keywords: Fischoederius upiensis, Gastrothylax crumenifer, Bubalus bubalis, Veterinary medicine, Fischoederius cobboldi

Philippine Journal of Veterinary Medicine, Volume No. 45 Issue No. 1, 22-29 2008, (Filipiniana Analytics) NP

Flukes of the family microscaphidiidae looss, 1900 (Trematoda: Digenea) from the Green sea turtle, *Chelonia mydas* L. (Reptilia: Chelonia) in the Philippines with description of three new species *Diaz, Jose L.*, *Eduardo, Salc*

A total of 15 green sea turtles, Chelonia mydas L. were examined at various times forparasites from the coastal areas of Bohol and Zamboanga, Philippines. Among others, trematodes belonging to the family Microscaphidiidae Looss, 1900 were recovered following the concentration sedimentation decantation technique. Specimens were stained in borax carmine, cleared in oil of cloves and mounted in Canada balsam for microscopic examination. Twelve species including 3 new species of trematodes representing 6 genera of the family Microscaphidiidae Looss, 1900 were identified. These are: Microscaphidium reticulare (van Beneden, 1854) Looss, 190L Microscaphidium aberans Looss, 1902, Microscaphidium warui Blair, 1986; Deuterobaris proteus (Brandes, 1891) Looss, 1900; Angiodictyum parallelum (Looss, 1901) Looss, 1902; Angiodictyum glossoides Blair, 1986; Angiodictyum longum Blair, 1986; Angiodictyum undulatum n . sp.; Angiodictyum dejesusi n. sp .; Polyangium manueli n. sp.; Octagium sagitta (Looss, 1899) Looss, 1902 and Polygorgyra choladus Blair, 1986. Angiodictyum undulatum, A. dejesusi and Polyangium manueli were described and illustrated as new species. A. undulatum differs from all species of the genus by its late1 al margin thrown into folds giving an undulating appearance of the worm, vitellaria present only in the median area and their absence in lateral fields. A. dejesusi is differentiated from the closely related species, A. longum by its vitellaria extending anteriorly to level of anterior testis and not beyond it, the pharyngeal position of the genital pore and the relatively short esophagus. P manueli differs from P linguatulum, the only valid species of the genus, by its ovoid shape, the limited extent of vitellaria which is behind the testes and the more anterior location of the genital pore just behind the pharynx. This is the first report of these trematodes in the Philippines constituting a new locality record for these species. Keys to separate the genera of the family Microscaphidiidae and species of the genera Microscaphidium and Angiodictvum occurring in marine turtles in the Philippines are provided. (Author's abstract)

Keywords: Veterinary medicine, Angiodictyum dejesusi, Angiodictyum undulatum, Chelonia mydas, Microscaphidiidae, Philippines, Polyangium manueli

Philippine Journal of Veterinary Medicine, Volume No. 45 Issue No. 2, 75-85 2008, (Filipiniana Analytics) NP

0486

Freyana anatina (Koch, 1844) (Acarina: Freyanoidea) from the wandering whistling-duck, *Dendrocygna arcuata arcuata* (Horsfield, 1824) (Anseriformes: Anatidae) in the Philippines *Eduardo, Salc*

Freyana anatina (Koch, 1844) is identified from two collections of mites from the wandering whistling-duck, *Dendrocygna arcuata arcuata* in the Philippines. The species, both male (heteromorphic) and female are described and photographs are provided based on the Philippine materials. Data on dorsal and ventral idiosomal chaetotaxy and leg chaetotaxy are provided. *Freyana anatina* is recorded for the first time in the Philippines and from the wandering whistling-duck constituting a new locality and host records respectively, for the species. (Author's abstract)

Keywords: Veterinary medicine, Dendrocygna arcuata, Feather mite, Freyana anatina, Philippines, Wild duck

Philippine Journal of Veterinary Medicine, Volume No. 52 Issue No. 2, 125-130 2015,

(Filipiniana Analytics) NP

0487

Gastric Helicobacter species in Philippine dogs Roque, Ryan B., Park, Heejin, Masangkay, Joseph S., Camer, Ge

Helicobacters are spiral-shaped microbes with a number of recently identified species known to cause gastric ulceration, gastritis and gastric carcinoma in animals and humans. To demonstrate the occurrence of *Helicobacter* organisms in non-human host in the country, ten stray dogs from Northern Samar, Philippines were tested for the presence of *Helicobacter* species by invasive methods using urease test and brush cytology. Eight out of ten sampled animals consistently yielded positive urease activities *Helicobacter* like spiral organisms were discerned when examined by brush cytology. All the gastric sites of the fundic, cardiac and the pyloric regions yielded variably positive results. Positive samples were further tested and confirmed for *Helicobacter* spp. Identification using polymerase chain reaction method. Amplified DNA extracted yielded positively to *Helicobacter* spp. identification that corresponded to a 1,099 bp product. Current findings indicate that dogs may serve as sentinel for endemic presence of *Helicobacter* organisms that are of veterinary medical and public health importance. This study documented the presence of *Helicobacter* spp. in the stomach of an animal host in the country for the first time. **(Author's abstract)**

Keywords: Veterinary medicine, Brush cytology, Dogs, Helicobacter species, PCR, Urease

Philippine Journal of Veterinary Medicine, Volume No. 47 Issue No. 1, 49-53 2010, (Filipiniana Analytics) NP

0488

Generalized alopecia in a murrah buffalo (*Bubalus bubalis*) calf Dayal, Shanker, Kumar, Neeraj, Kumar, Sanjiv, Dey, Amitav, Kumar,

Unusual generalized alopecia was observed in a 3-month old weaned male Murrah buffalo calf. Clinical symptoms were non-specific with normal vital indices, inappetence, abnormal gait, excessive salivation and jaw champing. Based on the probable causes of alopecia, investigation was undertaken for fungal infection, mange, liver function test, thyroid hormone profile and plasma mineral analysis. The results showed that the calf had low concentration of plasma zinc while thyroid hormones, tri-idothyroxine and tetra-idothyroxine were within normal ranges. Based on the results and clinical symptoms, the calf was supplemented with commercial mineral mixture at 25 g daily for 30 days, zinc sulphate pentahydrate at 3 gm/day in drinking water for 15 days and parenteral liver extract with Vitamin B12 given intramuscularly at 3 ml daily for 5 days. The calf responded to therapy and showed improvement based on clinical symptoms and plasma biochemical parameters post 30 days of therapy. Thus, the presented case of generalized alopecia in male buffalo calf may be attributed to zinc deficiency. (Author's abstract)

Keywords: Veterinary medicine, Alopecia, Mineral imbalance, Murrah buffalo, Zinc

Philippine Journal of Veterinary Medicine, Volume No. 51 Issue No. 2, 137-141 2014, (Filipiniana Analytics)

Genetic diversity analysis of water buffalo (*Bubalus bubalis* L.) populations in the Philippines using Bovine microsatellite markers

Song, Ki-Duk, Seong, Jiyeon, Oh, Jae-Don, Herrera, Jesus Rommel V., Han, Jung Min, Cruz, Libertado C., Cacho, Roxan Grace C., Kong, Hong Sik, Lee, Hak

A set of 110 cattle microsatellites primer pairs was evaluated for their usefulness in genetic diversity of water buffaloes in the Philippines i.e. American Murrah buffalo (AMB), Bulgarian Murrah buffalo (BMB), Philippine carabao (PC) and Crossbred (CB) of PC and BMB. All the four water buffalo samples were provided and maintained by the Philippine Carabao Center. Forty-five primer pairs amplified discrete products. Ten of the 45 pairs gave polymorphic band patterns in water buffaloes. We used these 10 microsatellites primers for genetic structure analysis of water buffaloes. The mean number of alleles per locus was 5.45, ranging from 4.60 to 6.4., and observed heterozygosity averaged 0.5024 from 0.4385 to 0.5810. The mean observed and expected heterozygosity of the 10 microsatellite markers were 0.56 and 0.50, respectively, in water buffaloes that were used in this study. The mean of polymorphic information content (PIC) of water buffaloes was 0.5174, ranging from 0.0192 to 0.7445. Phylogenetic analysis with these markers showed that AMB and BMB clustered more closely than PC, indicating marked differentiation between the swamp and river buffalo populations. CB clustered in between PC and Murrah buffaloes, reflecting breeding breeding history.

In this study, we successfully selected cattle microsatellite primer pairs that shows appropriate polymorphisms which can be used for further genome analysis of water buffaloes in the Philippines. (Author's abstract)

Keywords: Veterinary medicine, Heterozygosity, Microsatellite, Philippines, Phylogenetic tree, Polymorphism

Philippine Journal of Veterinary Medicine, Volume No. 50 Issue No. 1, 7-15 2013, (Filipiniana Analytics) NP

0490

Genetic diversity and relationships of domestic goat and sheep breeds (Artiodactyla: Bovidae: Caprinae) in the Philippines based on DNA barcodes *Cerbito, Wilson A.*, *Bondoc, Orvi*

DNA barcodes (i.e. cytochrome c oxidase subunit I or COI in the mitochondrial genome) obtained from fourteen (14) domestic goat and sheep breeds (Subfamily Caprinae) in the Philippines were analyzed using the Neighbour-Joining method based on Kimura 2-parameter model in MEGA5. Mean genetic diversity in COI sequences was higher among goat breeds (62.6%) than sheep breeds (32.9%). Average genetic distance between goats and sheep was 0.831 ± 0.042 units.

Based on 589 COI positions, average genetic distance among native goat breeds (i.e. $d = 0.286 \pm 0.020$) was higher than among pure (exotic) breeds (i.e. $d = 0.111 \pm 0.012$). Average genetic distance between goat groups was 0.911 ± 0.062 units, suggesting that the origin and evolution of native goat breeds sampled from different islands in the Philippines were independent of exotic breeds such as Anglo Nubian, Boer and Saanen. Based on 674 COI positions, average genetic distance among wool-type breeds (i.e. $d = 0.378 \pm 0.019$) was higher than among hair-

type breeds (i.e. $d = 0.250 \pm 0.016$). Average genetic distance between sheep groups was 0.312 ± 0.013 units. The Philippine sheep is genetically closer to Merino (d=0.161) than recently imported wool-type breeds (Dorper, Dorset, and Suffolk) and hair-type breeds (Damara, Katahdin, and St. Croix). Our analyses indicated that DNA barcodes can be effective to identify and differentiate between breeds within goat and sheep species. Further analysis is required to clarify large COI differences between breeds of goats.

DNA barcode analysis is recommended as a quick screening, reliable, cost-effective, and accessible tool for the identification, assessment, and cataloguing of domestic goats and sheep biodiversity in the country. It could also provide useful information to support decisions on the genetic improvement and conservation of important breeds of small ruminants. (Authors' abstract)

Keywords: Veterinary medicine, DNA barcodes, Genetic diversity, Goat breeds, Sheep breeds, Evolutionary analysis

Philippine Journal of Veterinary Medicine, Volume No. 50 Issue No. 2, 64-74 2013, (Filipiniana Analytics) NP

Genetic testing for porcine stress syndrome using mutagenically separated-polymerase chain reaction

Rafanan, Jocelyn G., Gamboa, Domina Flor L., Paraguison-Alili, Rubigilda, Mingala, Claro N., Manalaysay, Jess

Porcine Stress Syndrome (PSS) is a defect in the Halothane (Hal) gene that produces pale, soft and exudative meat of inferior quality that results to significant losses in the meat industry. This study was conducted to detect PSS in pigs from seven farms in Luzon, Philippines which are used for breeding purposes. They were classified as normal (NN), stress carrier (Nn) and mutant (nn). This classification will help to form a new breeding system to be developed ensuring that all offspring are free of the stress gene. Characterization of the Hal gene was done by collecting blood samples subjected to DNA extraction and genotyping using mutagenically separated-polymerase chairn reaction (MS-PCR) which is an optimized one step process of PSS detection. Out of 427 samples, 22 were found to be mutant, 34 were carrier, and 371 were normal. Results for genotypic frequency showed that 87% pigs are normal (NN); 8% are heterozygotes (Nn) and only 5% are stress-positive (nn). Results were validated through DNA sequencing which showed the same results with MS-PCR. A genetic screening using this developed method for the Philippine setting is recommended to be able to minimize the effect of PSS. (Author's abstract)

Keywords: Veterinary medicine, Halothane gene, MS-PCR, Pig, Porcine stress syndrome

Philippine Journal of Veterinary Medicine, Volume No. 51 Issue No. 2, 125-130 2014, (Filipiniana Analytics) NP *Blastocystisis* a common gut-dwelling protozoan found in animal and human hosts. *Blastocystis* organisms from nonhuman hosts are morphologically similar to *Blastocystis* hominis, hence, molecular characterization of this organism will contribute to the clearer understanding of its biology and transmission. In this study, a total of274 stool samples from animal and human hosts were collected from farms, animal holding facilities, and public health institutions. One hundred samples (36.5%) were positive for *Blastocystis* by microscopy of fecal smear preparations. Restriction-fragment length polymorphism (RFLP) analysis of the small subunit ribosomal DNA (SSU rDNA) of 50 *Blastocystis* isolates revealed six different genotypes (ribodemes). Five *Blastocystis* genotypes (subtypes) were also identified by polymerase chain reaction (PCR) using sequence-tagged site (STS) primers. A certain degree of host specificity can be suggested for some strains of *Blastocystis* was also observed in some of the isolates. This study contributes to the assessment of the extent of genetic variability of *Blastocystis* isolates in the Philippines and provides data that may support the zoonotic potential and host specificity of certain *Blastocystis* strains. **(Author's abstract)**

Keywords: Veterinary medicine, Blastocystis, Polymerase chain reaction (PCR), Restriction-fragment length polymorphism (RFLP), Riboprinting, Small subunit ribosomal DNA (SSU rDNA)

Philippine Journal of Veterinary Medicine, Volume No. 45 Issue No. 2, 86-94 2008, (Filipiniana Analytics) NP

0493

The gross anatomy of the hard palate and palatine printing in cattle *Rizon, Joseph A.*, *Ducusin, Rio John T.*, *Maala, Cefer*

The gross anatomy and imprints of the hard palate of 100 slaughtered cattle were described. The hard palate was significantly longer in male than in female animals (P<0.05). The mucosa of the hard palate was modified into an incisive papilla and two columns of variable number of transversely oriented palatine ridges. The palatine ridges in 67 (67%) specimens met at the midline in an end-to-end mannerand in alternate fashion in 28 (28%) specimens. There were more palatine ridges on the right column in male than in female animals (P<0.05). Incomplete palatine raphe was observed in 11 (11%) specimens because of fusion of some palatine ridges. The rostral region of the hard palate was wider in the male than in the female (P<0.05). Mucosal pigmentation was variable. Various degrees of pigmentation were observed in 85 (85%) specimens. Complete pigmentation was observed in 10 (10%) specimens, and a non-pigmented mucosa in 5 (5%) specimens. Imprints can be obtained from the hard palate of cattle and these showed clear images of the dental pads, incisive papilla, palatine ridges and the median palatine raphe. No two imprints were completely identical. It is suggested that palatine printing be tried in live cattle as a possible Adjunct in the identification of valuable animals. (Author's abstract)

Keywords: Veterinary medicine, Cattle, Gross anatomy, Hard palate, Palatine print

Philippine Journal of Veterinary Medicine, Volume No. 44 Issue No. 1, 1-7 2007, (Filipiniana Analytics) NP

Gross and microscopic characterization of the trachea of the Philippine water buffalo (Bubalus bubalis) and cattle Telada, Heidi H., Maala, Cefer

The gross and microscopic structures of the trachea were described in 20 Philippine water buffaloes and 15 cattle. Grossly, the similarities between the two species included the relations of the trachea to adjacent structures in the neck and thorax; the number of tracheal cartilages; partial or complete fusion of tracheal cartilage, with the former occurring more frequently and involving two cartilages and the origin of the tracheal bronchus. The differences included a longer trachea with greater diameters and thicker cartilage, and a longer and thicker tracheal carina in Philippine water buffalo. Histologically, both species showed a tracheal wall composed of, from without inward, tunica adventitia, cartilage, tunica submucosa and tunica mucosa. The mucosa was generally smooth and consisted of a pseudostratified columnar ciliated epithelium with many goblet cells particularly in the lateral and ventral walls of the trachea, and a thin highly cellulal, lymphocyte-infiltrated lamina propria. Other epithelial cells were the basal cells and lymphocytes. The tunica submucosa was dense with many collagen fibers and simple coiled, branched tubuloalveolar predominantly mucous tracheal glands that secreted neutral and sulfated mucins; and a smooth trachealis muscle, which was thicker in Philippine water buffalo. The cartilage layer presented C-shaped hyaline cartilages. The tunica adventitia was loose connective tissue with adipose cells, blood vessels and nerves, and appeared more developed in Philippine water buffalo. The gross and microscopic morphology of the trachea of the Philippine water buffalo and cattle were basically similar and could be used as baseline data in these animals. (Author's abstract)

Keywords: Veterinary medicine, Cattle, Gross anatomy, Microscopic anatomy, Philippine water buffalo, Trachea

Philippine Journal of Veterinary Medicine, Volume No. 46 Issue No. 1, 16-25 2009, (Filipiniana Analytics) NP

0495

Gross and microscopic characterization of the zygomatic salivary gland of the Philippine non-descript dog Ureta, Josephine V., De Ocampo, Grace D., Maala, Cefer

The gross and microscopic characteristics of the zygomatic salivary gland of Philippine non-descript dogs of both sexes were studied in embalmed cadavers and stained tissue sections, respectively. Grossly, the gland was intraorbital in location and irregular in shape with a thick, rounded rostral part and a thin, flattened caudal part. The lateral surface of the gland was distinctly lobulated and thinly encapsulated while the medial surface was flat, smooth and thickly encapsulated. The gland was vascularized by a branch of infraorbital artery, innervated by a branch of buccal nerve, and measured 2.3 - 3.5 em long, 1.5 - 2.6 em wide, 0.8- 1.5 em thick and weighed 1.54 - 4.71 g. Histologically, the gland showed a well-developed capsule of mostly collagen fibers, interlobular ducts, intralobular ducts without basal striations and branched tubuloalveolar secretory acini. The intercalated ducts were absent. Mucous, mixed with serous demilunes, and serous acini were observed. The mucous and mixed acini were larger and more numerous than the serous acini. Histochemically, the acini reacted strongly positive to mucicarmine, periodic acid-Schiff, und ulcian blue pH 2.5 but weakly positive to alcian blue pH 1.0, suggesting the presence of mixed (predominantly neutral and weakly acidic) mucins. Results indicated that the zygomatic gland of the Philippine nondescript dog was a small, irregular, minor, compound, branched, tubuloalveolar, and mixed (chiefly mucous) salivary gland that secreted predominantly neutral and weakly acidic mucins. (Author's abstract)

Keywords: Veterinary medicine, Dog, Dorsal buccal gland, Orbital gland, Zygomatic salivary gland

Philippine Journal of Veterinary Medicine, Volume No. 45 Issue No. 1, 1-6 2008, (Filipiniana Analytics) NP

Growth performance of brahman in feedlot supplemented with molasses fortifying concentrate with rumensin (MFC+R) Fernandez, Valentina S., Supangco, Enr

The effect of molasses fortifying concentrate with rumensin (MFC+R) supplementation on the average daily gain (ADG) and cost effectiveness of Brahman in feedlot was evaluated at South Davao Development Project (SODACO), Davao City for 6 months. Thirty-eight (38) Brahman feeder stocks were randomly assigned to the Treatment and Control groups using a Randomized Complete Block Design (RCBD). The animals in the Treatment group were supplemented with molasses mixed with MFC+R at a ratio of 1 kg MFC+R to 15 kg molasses. Animals in the Control group were provided with the same amount of molasses but without MFC+R. The result showed that MFC+R supplementation had a positive effect on the average daily gain (ADG) of the animals. The ADG of the Treatment group was significantly higher (P

Keywords: Broiler, Cloaca, Veterinary medicine, Comfort zone, Relative humidity, Temperature

Philippine Journal of Veterinary and Animal Sciences, Volume No. 26 Issue No. 2, 185-196 2000. (Filipiniana Analytics) NP

0498

Growth performance of pigs fed copra meal diets with or without non-starch polysaccharide-degrading enzyme

Atinyao, Marlene B., Roxas, Ninfa P., Alcantara, Plac

his study was conducted to determine the effect of varying levels of copra meal and non-starch polysaccharide (NSP)-degrading enzyme supplementation on feed and nutrient intakes, growth rate, feed efficiency and backfat thickness of pigs fed diets containing copra meal in pigs. The two factors considered in the study were the levels of copra meal (0, 15 and 30%) and (NSP)-degrading enzyme supplementation resulting to six treatment combinations. The total, insoluble and soluble NSP contents of copra meal were 29.56%, 25.79% and 3.77%, respectively. The reduced gain in weight as the level of copra meal was raised could be attributed to the adverse effect of copra meal. The improved feed: gain ration at 30% copra meal with enzyme supplementation indicated that the NSP-degrading enzyme was effective in diets with high NSP. However, this effect was not translated as improved gain. The higher daily intakes of crude fiber and total and insoluble NSP in rats and pigs at 30% copra meal diet with enzyme supplement was likewise attributed to the effect of the enzyme supplement. (Author's abstract)

Keywords: Veterinary medicine

Philippine Journal of Veterinary and Animal Sciences, Volume No. 27 Issue No. 2, 2001. (Filipiniana Analytics)

Guard hair morphology of the greater musky fruit bat (*Ptenochirus jagori* Peters, 1861) (Chiroptera: Pteropodidae) and the lesser dog-faced fruit bat (*Cynopterus brachyotis* Muller, 1838) (Chiroptera: Pteropodidae)

Abuton, Johanna Benissa C., Murphy, Michael E., Maala, Ceferino P., Masangkay, Joseph S., Santiago-Flores, Marianne Le

Hair has been used in forensic science for species identification, but no study has yet been done in greater musky fruit bat (*Ptenochirus jagori*) and lesser dog-faced fruit bat (*Cynopterus brachyotis*). Thus, the current study was conducted to identify sexual dimorphism and interspecies variation. The hair samples were manually plucked from five different body regions of five male and five female adult animals of each species and examined grossly, under light microscopy for the medulla and scanning electron microscopy for the cuticle. Majority of the hairs exhibited simple ovate discontinuous medulla, except for the female of both species' foreheads having an additional elongate medullary cells mixed in, while the dorsum of the female *C. brachyotis* had simple flattened discontinuous medulla. Only coronal cuticular pattern was seen with simple or serrate dorsal scales that were oriented transversely or obliquely. The males of both species can be differentiated by the cuticular characteristics of the hair from the forehead and hindlimb, while the females of both species had dissimilar cuticular features in their forelimbs. Guard hair morphology can be used to distinguish the frugivores under study from each other, with enough variability for sexual dimorphism. (Author's abstract)

Keywords: Veterinary medicine, Cynopterus brachyotis, Guard hair, Morphology, Ptenochirus jagori

Philippine Journal of Veterinary Medicine, Volume No. 51 Issue No. 1, 8-14 2014, (Filipiniana Analytics) NP

0500

Haemoproteus lanii de Mello, 1937(Apicomplexa: Haemoproteidae) from the long-tailed shrike and two species of chewing lice (Mallophaga) from the Philippine cockatoo (Aves: Laniidae; Cacatuidae) Eduardo, Salcedo L., Lucas, Samu

Long-tailed shrikes, *Lanius schach nasutus* ScopoJi, 1787 and Philippine cockatoos (P.L.S. Muller. 1776), *Cacatua haematuropygia* were examined for blood and ectoparasites at different periods. *Haemoproteus lanii* de Mello, 1937 is reported parasitizing the red blood cells (RBC) of the long-tailed shrike in U.P Los Banos Campus Philippines. Mature gametocytes of this species are of medium size, halteridial in form with entire margins and occupy about 70-75 % of the host's red blood cells. There is little hypertrophy or distortion of the infected host red blood cell and the nucleus of the latter is only slightly displaced by the gametocyte. Cytoplasm of gametocytes appeared granular with large, pronounced, rod-like to broadly ovoid-shaped and yellow brown pigment granules numbering 9-14 which are scattered throughout the cytoplasm but have a tendency to concentrate at each pole or at the middle. Nucleus of gametocytes stained very faintly and is not discernible. Chewing lice (Mallophaga) were collected from three of five Philippine cockatoos examined from Palawan and Mindanao. The collections consisted of two species belonging to two genera as follows: *Psittoecus hoogstraali* Guimaraes. 1974 (Ischnocera) and

Franciscoloa thompsoni Price & Beer, 1966. This paper constitutes a new host record for *Haemoproteus lanii* and the only record for *Psittoecus hoogstraali* and *Franciscoloa thompsoni* since their discovery. The three parasite species are briefly described and photographs of them are provided based on the present specimens. The parasites so far reported from t he long-tailed shrike and cockatoo in the Philippines are given. (Author's abstract)

Keywords: Veterinary medicine, Cacatua haematuropygia, Haemoproteus lanii, Franciscoloa thompsoni, Lanius schach nasutus, Philippines, Psittoecus hoogstraali

Philippine Journal of Veterinary Medicine, Volume No. 46 Issue No. 2, 95-101 2009, (Filipiniana Analytics) NP

0501

Haemoproteus spp. (Protozoa: Haemoproteidae) and a new species of Acanthocephala, Pseudolueheia tongsoni from the Philippine scops-owl, Otus megalotis megalotis (Walden, 1875) (Aves: Strigiformes) Eduardo, Salcedo L., Celis, Russell

Two species of *Haemoproteus*, *H. noctuae* Celli & Sanfelice, 1891 and *H. syrnii* (Mayer & Keysselitz, 1909) Bishop & Bennett, 1989 and a new species of Acanthocephala, *Pseudolueheia tongsoni* are reported from the Philippine scops-owl, *Otus megalotis megalotis* (Walden, 1875). The gametogenic stages of *H. noctuae* and *H. syrnii* were demonstrated from the peripheral blood of live birds through examination of stained blood smears (bema-quick stain set). Both species are recorded for the first time from this bird host constituting a new host record for the species and further the Philippines is a new locality record for the latter species. Both *Haemoproteus* are briefly described and illustrated by microphotographs based on the Philippine specimens including morphological changes in the infected red blood cells. *Pseudolueheia tongsoni* was recovered from the intestine at necropsy, processed and stained in aceto-alum-carmine, cleared in terpineol and mounted in Canada balsam for microscopic examination. It is described and illustrated by drawings and photomicrographs. It is characterized by the proboscis armed with 27 -28longitudinal rows of 10-11 hooks, the cement glands emanating at a distance from the posterior testis and not close to it and absence of anterior manubrium of the small hooks of the proboscis, a relatively muscular male bursa with rays and an irregular outline of the posterior end in the female. It is differentiated from the closely related species of the genus *Pseudolueheia* Schmidt and Kuntz, 1967. The possible effects of these parasites on the host are discussed. **(Author's abstract)**

Keywords: Veterinary medicine, Acanthocephala, Haemoproteus noctuae, Haemoproteus syrnii, Otus megalotis megalotis, Philippine scops-owl, Pseudolueheia tongsoni

Philippine Journal of Veterinary Medicine, Volume No. 44 Issue No. 1, 20-28 2007, (Filipiniana Analytics) NP

Heat stress-induced changes in serum antioxidants of pregnant and non- pregnant Murrah Buffaloes (*Bubalus bubalis* L.) in India *Kataria, Anil Kumar , Kataria, Nalini, Khan, Sh*

Pregnant and non pregnant Murrah buffaloes were investigated for oxidative stress due to heat stress by determining changes in blood antioxidant levels. Blood samples were collected from 300 healthy adult females during moderate (Maximum ambient temperature from 25 to 27oC) and hot ambient temperature (Maximum ambient temperature from 45 to 47oC) periods. Serum antioxidants i.e. glutathione, vitamin A and β carotene were determined using a spectrophotometer and the control mean values (μ mol L-1) were 5.50±0.03, 2.13±0.02 and 2.49±0.03, respectively. The mean value of each antioxidant in non-pregnant was higher ($p \le 0.05$) than in pregnant animals in moderate ambient temperature period. Heat stress resulted in significant ($p \le 0.05$) decline in the glutathione, vitamin A and β carotene levels in both pregnant and non pregnant animals. However, the magnitude of decrease was greater significantly ($p \le 0.05$) in pregnant animals. This study has shown that heat stress induced oxidative stress in pregnant and non pregnant buffaloes with greater intensity in pregnant animals. The depletion in the levels of antioxidants was perhaps to oppose free radicals generated due to heat stress. This study suggests the need for supplementation of antioxidants in both pregnant and non pregnant buffaloes during heat stress. (Author's abstract)

Keywords: Veterinary medicine, β carotene, Glutathione, Heat stress, Murrah buffalo, Vitamin A

Philippine Journal of Veterinary Medicine, Volume No. 50 Issue No. 1, 47-50 2013, (Filipiniana Analytics) NP

Hematological values of Chestnut mannikin (Lonchura malacca) caught in Laguna Marte, Benjamin Reuel G., Mercurio, Dexter Dario G., Cruzana, Bell

Twenty-nine samples (18 males and 11 females) of chestnut mannikin (*Lonchura Malacca*) were collected from Los Banos, Laguna. The birds were tested for blood value parameters. The parameters tested for were the red blood cell count, hemoglobin value, hematocrit, white blood cell count, and differential leukocyte count. Secondary values such as mean cell volume, mean cell hemoglobin concentration were calculated from the red blood cell count, hemoglobin value and hematocrit. The mean values obtained for each parameter are the following: 4.967 million cells/mm3 red blood cells, 43.75% PCV, 14.37 g/dL hemoglobin, 88.12 pg MCV, 28.97£1 MCH and 32.915 g/L MCHC. Total and differential white blood cell counts are the following: 10120.69 cells/mm3, 8130.170 heterophils, 1943.966 lymphocytes, 13.62 monocytes, 34 eosinophils and no basophils were found. The study reveals that there is no significant difference on the values obtained between male and female chestnut mannikins. (Author's abstract)

Keywords: Veterinary medicine, Chestnut mannikin, Blood, Hematological values, Laguna

Philippine Journal of Veterinary Medicine, Volume No. 45 Issue No. 1, 63-66 2008, (Filipiniana Analytics) NP

Hematology and cytopathology of *Ehrlichia* spp. infection in bomb sniffing Belgian Mallinois dogs in the Philippines *Baticados, Waren N. , Morales, Abig*

Blood samples of 45 Belgian Mallinois dogs were collected from Cavite and Manila, Philippines and examined to determine hematological counts and to assess whether these values were significant predictors of *Ehrlichia* spp. infection. Main hematological findings for the total population were thrombocytopenia (84.44%), monocytosis (42.22%), and lymphopenia (40%). Diff-Quik-stained peripheral blood smears of the study population were observed for the presence of Ehrlichia spp. In 16 out of 45 (35.5%) blood smears, *Ehrlichia* spp. morulae were observed in peripheral blood leukocytes. Specifically, intracytoplasmic morulae located in mononuclear cells were seen in 13/16 (81.25%) blood samples while 3/16 (18. 75%) of the positive blood samples were observed in polymorphonuclear cells. Moreover, the presence of large granular atypical lymphocytes was observed to be associated with the presence of *Ehrlichia* spp. morulae. These findings emphasize the value of cytopathology in early detection and inexpensive diagnosis in tick-borne infections in dogs. Results also indicate that patterns exist in the hematological profile of canines that could lead to a presumptive diagnosis of *Ehrlichia* spp. infection. To the authors' knowledge this is the first report of granulocytic *Ehrlichia* spp. infection in Belgian Mallinois bomb sniffing dogs in the Philippines. (Author's abstract)

Keywords: Veterinary medicine, Belgian Mallinois, Cytopathology, Ehrlichia spp., Hematology, Thrombocytopenia

Philippine Journal of Veterinary Medicine, Volume No. 44 Issue No. 2, 76-84 2007, (Filipiniana Analytics) NP

Some hemoprotozoa (Apicomplexa) of two Philippine owl species (Strigiformes) with description of a new species, *Haemoproteus topacioi* Desamero & Eduardo (Haemoproteidae) *Eduardo, Salcedo L. , Desamero, Mark Jos*

Two species of owls, *Otus megalotis* Walden, 1875 (Philippine scops-owl) and *Bubo-philippensis* Kaup, 1851 (Philippine eagle-owl) (Strigidae), kept at the Ninoy Aquino Parks and Wildlife (PAWB), DENR, Quezon City, Philippines were examined for blood parasites during the period June 2009-February 2010. Blood smears were prepared, stained in Giemsa and examined under the microscope. Three species of hemoprotozoa representing the genus *Haemoproteus* and *Hepatozoon* were identified; one previously known, another unidentified to species level and the last a new species. These are *Haemoproteus syrnii* and *Hepatozoon* sp. from *Otus megalotis* and *Haemoproteus topacioi* Desamero & Eduardo, new species from *Bubo philippensis*. The gametocyte of *Haemoproteus topacioi* is characterized by being microsomal to halteridial but never close to or touching the nucleus of the infected RBC, having finely rough margins, the abundance of fine vacuoles and in the fewer number and different distribution of pigmented granules. *H. topacioi* is differentiated from the valid species of the genus *Haemoproteus* occurring in the Strigiformes. *Hepatozoon* sp. was found concomitant with *Haemoproteus syrnii* infection. *H. topacioi* apart from being a species new to science, its occurrence in *Bubo philippensis* is a new host record for *Haemoproteus* in the Philippines. The genus *Hepatozoon* is also reported for the first time in owls. (Author's abstract)

Keywords: Veterinary medicine, Haemoproteus syrnii, Haemoproteus topacioi n. sp., Hemoprotozoa, Hepatozoon sp., Owls, Philippines

Philippine Journal of Veterinary Medicine, Volume No. 47 Issue No. 1, 34-40 2010, (Filipiniana Analytics) NP

Herd-level prevalence and factors for risk of endoparasite infection in smallholder pig farms in Sariaya, Quezon, Philippines Ducusin, Rio John T., Padilla, Mild

A cross-sectional study was conducted to determine the prevalence of endoparasites and the factors associated with the risk of infection in smallholder pig farms in Sariaya, Quezon. From a convenient sample of 36 farms in three rural villages, freshly voided feces were collected and examined microscopically for parasites. In addition, interviews using a pre-tested structured questionnaire were conducted to collect data on factors likely affecting the risk of infection. Thirty-one farms (86.1%) were infected with one or more types of endoparasites. Six helminths and four protozoan species were identified. Four of these parasites had zoonotic potential namely, *Balantidium coli, Ascarissuum, Fasciola* sp. and *Trichurissuis. Stephanurus dentatus* was the most common species recorded (25.8%). Multiple infections with two to five parasite species were more common (58.1%) than single infections. None of the factors studied was associated with the presence of endoparasites. Nevertheless, the high infection rate and wide spectrum of parasites that are of economic and/or public health importance point to the need for prior fecalysis and regular treatment of animals with appropriate and effective anti- parasite drugs combined with adequate sanitation and farmers' education. (Author's abstract)

Keywords: Veterinary medicine, Endoparasite, Philippines, Pig, Prevalence, Risk factors

Philippine Journal of Veterinary Medicine, Volume No. 52 Issue No. 2, 99-106 2015, (Filipiniana Analytics) NP

0507

Heterosis and combining abilities in crosses among three genetic groups of Philippine Native Chickens (Gallus gallus domesticus, Linn.) Lumatauw, Sintje, Lambio, Angel L., Dagaas, Clarita T., Arboleda, Cecili

A total of 162 head of Philippine native chickens (Banaba, Paraoakan, and Bolinao) and their crosses were used in this study. The three genetic groups were subjected to a 3 x 3 full diallel cross design to determine heterosis and combining abilities for body weight and age at sexual maturity. Among genetic groups, Paraoakan showed the highest body weight. The F1 progenies of the Banaba x Paraoakan cross had higher body weights than that of the other hybrids. Percent heterosis ranged from 3.66% to 6.43% on the Banaba x Paraoakan cross while the highest value was observed on the 16-week body weight of the progenies of the Banaba x Bolinao cross. Both Paraoakan and Banaba groups showed relatively high positive values for general combining ability indicating that body weight at ages considered are governed primarily by additive gene action. The highest on Paraoakan was at 16 weeks old (84.52). Percent heterosis was highest in the progenies of the Banaba x Bolinao cross (13.41%). The progenies of the Banaba x Paraoakan cross showed almost equal heterosis effect at 12, 14 and 16 weeks of age. Age at sexual

maturity ranged from 150 days (Paraoakan) to 177 days (Bolinao). Percent heterosis for age at sexual maturity was 6.24% for the progenies of the Paraoakan x Banaba mating. (Authors' abstract)

Keywords: Veterinary medicine

Philippine Journal of Veterinary and Animal Sciences, Volume No. 28 Issue No. 1, 2002, (Filipiniana Analytics) NP

0508

Histological and histochemical characterization of the lingual glands of the Philippine water buffalo, *Bubalus bubalis* (Linnaeus, 1758) (Artiodactyla: Bovidae) *Llanto, Elma F. , Maala, Cefer*

This is the first report on the histological and histochemical characteristics of the lingual glands in Philippine water buffaloes. Well-developed lingual glands were found in the lamina propria-submucosa and in between muscle bundles of the tongue. The glands in the lamina propria-submucosa were serous, mucous and mixed (but predominantly serous). The glands near vallate papillae were serous. There were no glands associated with the fungiform papillae. The glands in between muscle bundles were mucous. The duct system of the lingual glands consisted of numerous intralobular and interlobular (large excretory) ducts. No striated and intercalated ducts were observed. The excretory ducts of the serous glands in the lamina propria-submucosa opened into the cleft surrounding the vallate papillae. The connective tissue framework was made up mainly of collagen fibers. No elastic fibers were observed. The secretory units of the mucous lingual glands reacted positively to Humason's mucicarmine, PAS, alcian blue pH 1.0 and 2.5 stains indicating the presence of mucin, neutral mucopolysaccharides, sulfated mucopolysaccharides and weak acidic mucopolysaccharides, respectively. The present findings on the histology and histochemistry of the lingual glands of the Philippine water buffaloes conform to earlier reports on the palatine and buccal glands of the same animal. (Author's abstract)

Keywords: Veterinary medicine, Histochemistry, Histology, Lingual glands, Philippine water buffalo, Bubalus bubalis

Philippine Journal of Veterinary Medicine, Volume No. 48 Issue No. 2, 57-62 2011, (Filipiniana Analytics) NP

0509

Histological and histochemical features of the lingual glands of hybrid pig and Philippine native pig Sus scrofa domesticus (Linnaeus, 1758) (Artiodactyla: Suidae) Hisole, Aron Roy C., Ducusin, Rio John T., Maala, Cefer

The histological and histochemical features of the lingual glands in hybrid and Philippine native pigs were studied using tissue sections stained with Hematoxylin-Eosin and special tissue stains. In both breeds, glands were observed in the lamina propria-submucosa and tunica muscularis near the vallate papillae, dorsolateral border of the body of the tongue rostral to the region of the vallate papillae and at the dorsal surface where fungiform papillae were abundant. Glands were more developed in the tunica muscularis than those in the lamina propria-submucosa. Glands were predominantly mucous, except the serous glands near the vallate papillae. Glands at the dorsolateral aspect of the body of the tongue were smaller than those at the region of the vallate papillae and at the dorsal surface of the root of the tongue. Striated ducts were observed in both breeds. The connective tissue framework was poorly developed, consisting mainly of collagen fibers. The mucous secretory units of the lingual glands reacted strongly to Humason's mucicarmine, periodic acid-Schiff and alcian blue pH 1.0 and 2.5 stains. The histology and histochemistry of the lingual glands in both breeds were similar to what have been reported in veterinary literature for domestic animals. (Author's abstract)

Keywords: Lingual glands, Philippine native pig, Veterinary medicine, Histochemistry, Histology, Sus scrofa domesticus

Philippine Journal of Veterinary Medicine, Volume No. 51 Issue No. 2, 63-70 2014, (Filipiniana Analytics) NP

0510

Histological and some histochemical features and morphometrics of the nasolabial glands of the Philippine water buffalo (*Bubalus bubalis* L.) and Cattle (*Bos taurus* L.) (Artiodactyla: Bovidae) *Maala, Ceferino P. , Pagatpatan, Lo*

The histology and some histochemical features and morphometrics of the nasolabial glands of the Philippine water buffalo and cattle were described and compared using sections stained with hematoxylin and eosin (H & E), periodic acid-Schiff (PAS) and alcian blue (AB) pH 1.0. In both species well-developed nasolabial glands were found in the hypodermis of the muzzle. In the Philippine water buffalo, however, the glands may extend into the reticular layer of the dermis. The histomorphology of the nasolabial glands were basically similar in both species except that in the Philippine water buffalo the lobules were more distinct because of thicker interlobular connective tissue septae. Intralobular and intralobar ducts were also more numerous in Philippine water buffaloes. Slightly coiled and straight excretory ducts were observed in both species. Based on the type of secretion, the nasolabial glands in both species were predominantly mucous. The reactions of the secretory acini to the PAS and AB pH 1.0 stains were identical in both species. Morphometrically, the only significant difference observed between the two species was on the height of the intralobular duct epithelium. The intralobular duct epithelium was highest in male Philippine water buffaloes and lowest in female Philippine water buffaloes. (Author's abstract)

Keywords: Veterinary medicine, Bubalus bubalis, Bos taurus, Histology, Histochemistry, Morphometry, Nasolabial gland, Philippine water buffalo

Philippine Journal of Veterinary Medicine, Volume No. 50 Issue No. 2, 59-63 2013, (Filipiniana Analytics) NP

Histological and some histochemical features of the labial and pharyngeal glands of the Philippine Water Buffalo (*Bubalus bubalis* L.) *Petilla, Jeffrey Carl D. , Maala, Cefer*

The histological and histochemical features of the labial and pharyngeal glands of the Philippine water buffalo were described using hematoxylin-eosin, periodic acid-Schiff (PAS), mucicarmine and alcian blue (AB) pH 1.0 and 2.5 stains. The predominantly mucous labial glands of the Philippine water buffalo were moderately developed. They were found in the lamina propria-submucosa and tunica muscularis as loosely arranged lobes and lobules surrounded by collagen fibers. The duct system consisted of a few intercalated and striated ducts and numerous interlobular and excretory ducts. The secretory units of the labial glands reacted positively to mucicarmine, PAS, AB pH 1.0 and pH 2.5 stains. The pharyngeal glands, on the other hand, were large, consisting of compact lobes and lobules, which were distinctly separated by thick collagen fibers. The glands were purely mucous in the oropharynx and predominantly mucous in the nasopharynx and laryngopharynx. Striated ducts were absent. The glands reacted positively to mucicarmine, PAS, AB pH 1.0 and pH 2.5. Histologically and histochemically, the labial and pharyngeal glands of the Philippine water buffalo resembled, to some extent, those of other species of domestic animals. (Author's abstract)

Keywords: Veterinary medicine, Bubalus bubalis, Labial glands, Pharyngeal glands, Histology, Histochemistry

Philippine Journal of Veterinary Medicine, Volume No. 51 Issue No. 1, 1-7 2015, (Filipiniana Analytics) NP

0512

Identification and antibiotic sensitivity of aerobic bacterial isolates from small animal veterinary operating rooms

Domingo, Ronnie D., Flores, Marianne Leila S., Baldrias, Loinda R., Nombre, Margaux G., Oronan, R

In the Philippines, no published information is available on the common bacteria isolated from veterinary operating rooms. The identification of the bacteria is important in order to identify appropriate antimicrobial agents to use on patients and prevent nosocomial infection. Bacteria isolated from different sites within four operating rooms were identified through routine primary and secondary biochemical tests, classified according to pathogenicity, and their sensitivity to antibiotics was determined via Kirby-Bauer Disc Diffusion Test. Thirtyseven aerobic distinct colonies, made up of 17 different bacteria identified via Gram staining and biochemical tests and three unidentified bacteria, were isolated. Among these, two were potentially major pathogenic (*Escherichia coli* and *Listeria monocytogenes*), six were opportunistic (*Corynebacterium bovis, Corynebacterium jeikeium, Enterobacter aerogenes, Pseudomonas sp., Staphylococcus haemolyticus* and *Staphylococcus schleiferi*), and nine were non-pathogenic bacteria. High number of bacterial isolates, especially from the wall and ventilation system were seen compared with the surface of operating table and its drain, and top of instrument table. Antibiotic sensitivity testing showed that gentamicin, enrofloxacin, and tetracycline were effective against the two major pathogens isolated and, thus, can be used as prophylactic antibiotics. (Author's abstract)

Keywords: Veterinary medicine, Aerobic bacteria, Animal hospital, Antibiotic sensitivity, Operating rooms

Identification of domesticated duck breeds, strains, and hybrids(Anatiformes: Anatidae) in the Philippines using DNA barcodes Santiago, Rene C., Bondoc, Orvi

DNA barcodes (i.e. cytochrome c oxidase subunit I or COI in the mitochondrial genome) obtained from fourteen (14) domesticated duck breeds, strains, and hybrids (Anatidae) in the Philippines were analyzed using the Neighbour-Joining method based on Kimura 2-parameter model in MEGA5. Based on 642 COI positions, overall genetic diversity was 14.6%. Average genetic variation within duck groups was highest among introduced mallard breeds (17.6%), intermediate among hybrid ducks (16.2%), and lowest among Philippine mallard strains (15.4%). Our analyses indicated that DNA barcodes can be effective to identify and differentiate duck breeds, strains, and hybrids. Closer genetic distance between Laguna "mule" duck with Pekin and Philippine mallard strains was observed, than with Muscovy. DNA barcoding also provided insights into evolutionary processes in the development of egg-type mallard strains and their relationships with introduced mallard breeds. COI sequences should be determined from more duck breeds, strains, and hybrids to catalogue domesticated duck biodiversity and benefit breed traceability as well as breed definition for conservation issues. Genetic diversity information from DNA barcodes in addition to phenotypic performance standards and pedigree records may be used to set conservation and improvement priorities and determine which breed or strain needing more detailed phylogenetic analysis. **(Author's abstract)**

Keywords: Veterinary medicine, DNA barcodes, Evolutionary analysis, Hybrid duck, Mallard, Muscovy, Philippines

Philippine Journal of Veterinary Medicine, Volume No. 49 Issue No. 2, 57-66 2012, (Filipiniana Analytics) NP

0514

Immunoglobulin and total protein concentrations of fresh bubaline colostrum Olarve, Joseph P., Abalos, Jovencio Huber

Colostral immunoglobulin (lg) and total protein concentrations were analyzed among ten water buffalo cows that gave birth from October 2003 to February 2004 at the PCC-UPLB. Colostrum samples (250 ml) from the first ten milkings (or the first 5 days after parturation) were obtained from each water buffalo and analyzed for lg concentration using a colostrometer. Total protein concentration was also determined during the first five milkings pospartum using a refractometer. Results showed that concentrations of immunoglobulin and total protein in the first milking colostrum (within 12 hrs postpartum) of water buffalo cows were highly variable, with 90.5 + 26.71 mg/ml immunoglobulin and total protein content of 121.6+34.4 mg/ml. Significant differences (P<0.01) in 1g concentration in colostrum can be detected only up to the seventh postpartum milking (or 3 1/2 days after pasturition) and most of the animals had zero colostrometer readings in the eighth and ninth milking postportum (or 4 and 4 1/2 days postpartum, respectively). (Author's abstract)

Keywords: Veterinary medicine, Buffalo colostrum, Immunoglobulins, Total protein, Colostrometer, Refractometer

Philippine Journal of Veterinary Medicine, Volume No. 43 Issue No. 1, 51-54 2006, (Filipiniana Analytics) NP

Immunohistochemical demonstration of S100 protein in the ovary of the Philippine Water Buffalo (*Bubalus bubalis* Linnaeus, 1758) (Artiodactyla: Bovidae)

Collantes, Therese Marie A., Bariuan, Jussiaea V., De Ocampo, Grace D., Estacio, Maria Amelita C., Desamero, Mark Joseph M., Delgado, Ruth Ann

S100, a multigenic family of low molecular weight protein exclusively found in vertebrates, has been involved in the regulation of a variety of intracellular and extracellular biological functions mediated by its calcium modulating activity. This study investigated the location of S100 immunoreactive structures in the ovary of 5-8 years old, 10 apparently healthy, nonpregnant Philippine water buffalo (*Bubalus bubalis*) using polyclonal rabbit anti-S100. S100 immunoreactivity was observed in the endothelium and subendothelial layer of the wall of arteries, endothelial lining of veins and capillaries, erythrocytes and interstitial endocrine cells. Negative immunoreactive structures in the ovary of the Philippine water buffalo underline assumptions suggesting its multifunctional role, especially in the regulation of angiogenesis and vascular tone, and its distinct expression from that in bovine and other domestic species of animals implying high tissue and cell specificity in vertebrate animals. (Author's abstract)

Keywords: Veterinary medicine, Bubalus bubalis, Immunohistochemistry, Ovary, S-100 protein, Water buffalo

Philippine Journal of Veterinary Medicine, Volume No. 52 Issue No. 1, 47-52 2015, (Filipiniana Analytics) NP

0516

Immunohistochemical detection of S-100 in the spleen of the Philippine swamp buffalo (Bubalus bubalis carabanensis Castillo, 1998) (Artiodactyla: Bovidae) Estacio, Maria Amelita C., De Ocampo, Grace D., Vitor, II, Rodel Jonat

The localization of S-100 protein in the spleen of Philippine swamp buffalo was demonstrated by immunostaining of 14 spleen sections from seven male and seven female 2-year-old Philippine swamp buffaloes. It has been observed that this substance was present in the nerve elements, and in the endothelial cells lining the capsular arteries, trabecular arteries, penicillar arterioles and sheathed capillaries in the red pulp, and splenic arterioles in the white pulp, as well as in the macrophages and reticular cells that formed a sleeve around the penicillar arterioles and sheathed capillaries of the spleen. S-100 was absent in the lymphoid follicles and PALS of the white pulp. The localization of S-100 in the endothelial cells of sheathed capillaries is suggestive of its function in regulating the semi-permeability of the blood vessels while the demonstration of S-100 in the nerves may indicate that it is transported from gliocytes secreting it to the target cells. Absence of S-100-immunoreactive dendritic cells in the white pulp of the Philippine swamp buffalo suggests that they are not present in normal tissues and may be used as a marker of immunity. The present observations are basically similar to those in the bovine and sheep spleens except for some differences mentioned earlier. (Author's abstract) **Keywords:** Veterinary medicine, Bubalus bubalis carabanensis, Immunohistochemistry, Philippines, S-100, Spleen, Swamp buffalo

Philippine Journal of Veterinary Medicine, Volume No. 50 Issue No. 1, 1-6 2013, (Filipiniana Analytics) NP

0517

Influence of fever on the disposition of florfenicol in cross-bred calves Singh, Inderdeep, Dumka, Vinod

Pharmacokinetics of florfenicol after intravenous administration at 20 mg/kg⁻¹ was investigated in afebrile and febrile (*Echerichia coli* endotoxin-induced) calves. The drug was estimated in plasma by microbiological assay technique using E. coli as test organism. Florfenicol was detected above MIC in plasma up to 10 h in healthy and 12 h in febrile calves and the disposition pattern followed two-compartment open model. In healthy calves, the distribution and elimination half-lives, AUC, Vd_{area} and C1_B were 0.47 ± 0.07 h, 2.76 ± 0.06 h, $40.3 \pm 1.7 \mu g/ ml^{-1}/h$, $1.99 \pm 0.16 L/kg^{-1}$ and $0.5 \pm 0.02 L/kg^{-1}/h^{-1}$. A significant increase was observed in the values of Cp^o, $t_{\nu_{2}\beta}$ and MRT in febrile calves. The required dose of florfenicol was reduced during febrile condition and an appropriate intravenous dosage regimen of florfenicol would be 15 mg/ kg⁻¹ repeated at 12 h intervals for bacterial infections manifested with fever in calves. (Author's abstract)

Keywords: Veterinary medicine, Calves, Dosage, Fever, Florfenicol, Pharmacokinetics

Philippine Journal of Veterinary Medicine, Volume No. 50 Issue No. 1, 16-23 2013, (Filipiniana Analytics) NP

0518

Influence of the submandibular salivary gland on the lactating mammary gland of rats Guillermo, Karina Marie S., De Ocampo, Grace D., Estacio, Maria Amel

The influence of the submandibular salivary glands on the lactating mammary gland was determined by examining the effect of total surgical removal of the submandibular salivary glands (total submandibular sialoadenectomy) on the measurements and morphology of the lactating mammary gland of rats. Thirty sexually mature female Sprague-Dawley rats were used in this study. They were divided into three experimental groups namely: intact, sham operated and sialoadenectomized. The mammary glands of lactating intact, sham-operated and sialoadenectomized, measured (weighting, length and width in mm), processed using the paraffin technique and stained with H & E, Masson's trichrome and Weigert's stain to observe their morphologic characteristics. Measurements showed that the mammary gland of sialoadenectomized rats only differed significantly in length from those of the intact and sham-operated rats. Histological examination also revealed that the sialoadenectomized rats presented a distinctly different morphology of the mammary gland such as the presence of a thicker capsule, abundant adipose tissue and a less extensive parenchyma with very few secretory alveoli devoid of milk secretion and corpora amylacea. Furthermore, the lumens of the secretory tubules and interlobular ducts of the sialoadenectomized rats were constricted. The results of this study suggest that the submandibular salivary

glands, the major source of EGF in rats, influence the morphologic development of the mammary gland for lactation. (Author's abstract)

Keywords: Veterinary medicine, Mammary gland, Morphology, Rat, Salivary gland, Sialoadenectomy

Philippine Journal of Veterinary Medicine, Volume No. 44 Issue No. 2, 107-113 2007, (Filipiniana Analytics) NP

0519

Inorganic lead concentration in mineral salt mix for beef cattle supplements in Sao Paulo, Brazil

Ortunho, Vanessa V., Fortes, Maira S., de Oliveira, Jr., Braz C., do Nascimento, Marcos Roberto L., Marcal, Wil

The inorganic lead concentration in mineral mixtures used in various cities in beer cattle in the state of Sao Paulo, Brazil was measured by inductively coupled plasma atomic emission spectrometry. Of the 45 analyzed samples (range 3.0 to 4,386 ppm), 34 sample had lead concentration above 10 ppm, which is the proposed acceptable maximum limit. These findings show the necessity for careful industrial monitoring in Brazil, as some mineral mixtures may contain sufficient concentrations that can cause toxicity in animals. (Author's abstract)

Keywords: Veterinary medicine, Beef cattle, Lead, Mineral salt, Xenobiotic

Philippine Journal of Veterinary Medicine, Volume No. 43 Issue No. 1, 8-12 2006, (Filipiniana Analytics) NP

0520

Intrasonographic features of the liver and associated structures in female water buffaloes (Bubalus bubalis) Alejandro, Venus B., Acorda, Je

The study was conducted to determine the normal features of the liver and associated structures as examined ultrasonographically in water buffaloes. Ultrasonographic examination of six crossbred female water buffaloes, 5-16 yrs old, was done from the 7th – 12th intercostals spaces and the area behind the last rib of the right flank using an ultrasound machine equipped with a 3.5 MHz scanner. Postmortem examination was conducted to confirm the anatomical location of the liver and to examine for any gross abnormalities. Hepatic dimensions were obtained during ultrasonography and after slaughter. Liver samples were collected and processed for histological examination. The recommended acoustic window for ultrasonographic examination, the liver is the area occupied by the last four intercostal spaces, i.e., 9th – 12th. Upon ultrasound examination, the liver showed uniform hypoechoic parenchyma evenly distributed throughout the entire organ. Vascular structures appeared as circular or irregularly rounded anechoic structures which were readily identified starting from 10th – 12th intercostals spaces. Portal veins had hypoechoic walls while hepatic veins had hypoechoic walls. The gall bladder appeared as an anechoic structure with echogenic walls between the 11th and 12th intercostal spaces, adjacent to the hepatic

parenchyma. Liver thickness obtained through ill vivo ultrasonography was significantly different from those obtained through gross measurement. The above findings can be used as a reference for diagnosis of diseases and disorders of the liver and associated structures in water buffaloes. (Author's abstract)

Keywords: Veterinary medicine, Caudal vena cava, Hepatic vein, Liver, Portal vein, Ultrasonography, Water buffalo

Philippine Journal of Veterinary Medicine, Volume No. 44 Issue No. 2, 85-90 2007, (Filipiniana Analytics) NP

0521

Intussusception in two puppies with intestinal lymphangiectasia

Molinar, Laura A., RÃos, Mirna I., Rivera, RamÃ³n, MartÃn, Ubicelio, Beristain-Ruiz, Diana M., RodrÃguez-AlarcÃ³n, Carlos A., ItzÃ_i, M

Two female puppies - a two-month-old female Golden Retriever (Case 1) and a three-monthold German Shepherd (Case 2) - with concomitant conditions of intussusception and intestinal lymphangiectasia (IL) are presented. Both puppies had acute gastroenteritis and evidence of intussusceptions as revealed by ultrasonography. In Case 1, intestinal resection/anastomosis and intestinal biopsies were performed. After being diagnosed with IL and intussusception, she was returned home under immunomodulatory doses of prednisone and a low-fat diet. To date (3 years since surgery) the patient has shown no recurrence of diarrhea. Case 2 had a spontaneous reduction of intussusception. Intestinal and mesenteric lymph node biopsies were performed. She also showed lipogranulomatous lymphangitis and developed intussusception six days after. Prednisone was administered but the patient did not respond to it and therefore was changed to azathioprine. Although the patient in Case 2 had intussusception, the owner opted for euthanasia due to the possibility of the dog developing short bowel syndrome. The simultaneous occurrence of these two conditions is uncommon in veterinary medicine. Although there is insufficient evidence to demonstrate that IL causes intussusception, we believe that it can also be considered a possible cause of this pathologic condition. (Author's abstract)

Keywords: Veterinary medicine, Intestinal lymphangiectasia, Intussusception, Lipogranulomatous lymphangitis, Puppies

Philippine Journal of Veterinary Medicine, Volume No. 50 Issue No. 1, 34-41 2013, (Filipiniana Analytics) NP

0522

Isolation and detection of *Campylobacter jejuni* from ceca of dressed chickens of commercial and smallhold raisers by polymerase chain reaction *Garcia, Manuel M.*, *Baldrias, Loinda R., Raymundo, Asuncion K.*, *Sedano, Susan*

The aim of this study is to recover putative *Campylobacter* spp. from cecal samples of chickens from commercial and smallhold raisers and to identify the *Campylobacter jejuni* isolates using polymerase chain reaction (PCR). *C. jejuni* was isolated from 125 cecal samples of chickens at dressing plants: 60 from commercial raisers and 65 from

smallhold raisers. These were confirmed using PCR as *C. jejuni* by the formation of 402bp band with primers CL1 and CR2. Using the enrichment protocol, 4 (6.7%) *C. jejuni* isolates from 60 cecal samples of freshly dressed chickens from commercial producers were recovered. From smallhold raisers, one putative *Campylobacter* isolate (1.7%, 1/65) was isolated using enrichment protocol, while 14 isolates (70%, 14/20) were recovered by the application of the direct method (using three different selective agar media, without prior enrichment), of which 11/20 (55%) were identified as *C. jejuni*. The enrichment protocol and direct method with microaerobic environment conditions were used to recover the organism from the cecal samples. This study reports that *C. jejuni* is present in both commercial and smallhold raised chickens and that the direct method of isolation allowed for a higher rate of recovery compared to the enrichment method. (Author's abstract)

Keywords: Veterinary medicine, Campylobacter jejuni, Dressing plant, Enrichment, Poultry raisers, PCR

Philippine Journal of Veterinary Medicine, Volume No. 51 Issue No. 2, 97-106 2014, (Filipiniana Analytics) NP

0523

Isolation and molecular detection of *Salmonella* spp. from the feces of apparently healthy dogs

Ramirez, Teresa J., Baldrias, Loinda R., Gordoncillo, Mary Joy N., Parungao, San

Salmonella spp. is considered to be the most common bacterial zoonoses but although its significance and prevalence in food animals have been well-studied, its role in companion animals is less elucidated. To determine whether apparently healthy dogs can carry and shed salmonellae, a total of 62 fecal swabs were collected and tested for the presence of *Salmonella* spp. using conventional isolation procedures and polymerase chain reaction (PCR). Each sample was initially enriched in brain heart infusion (BHI) broth at 42°C. For conventional isolation, these were subsequently plated on xylose lysine deoxycholate (XLD) agar and incubated at 37°C for 24 h. Alkaline colonies with jet black center were picked, purified and biochemically tested. For PCR, DNA from each sample was extracted and the target sequence was subsequently amplified using the *Salmonella* DAS KitTM (BIOTECH, UPLB). *Salmonella* spp. were detected in both conventional microbiological procedures (1 out of 62 or 1.6%) and PCR (26 out of 62 or 42%) of the samples tested. These results indicate that apparently healthy dogs can be carriers and shedders of potentially zoonotic salmonellae, and that PCR can be an effective means of detecting the said pathogen in canine fecal samples. Further work on isolation, serotyping, and molecular characterization of isolates are recommended to confirm the viability and nature of salmonellae carried by dogs and establish the role of this species in the epidemiology of the disease. **(Author's abstract)**

Keywords: Veterinary medicine, Salmonella spp., Dog, Bacterial isolation, Polymerase chain reaction

Philippine Journal of Veterinary Medicine, Volume No. 47 Issue No. 2, 73-77 2010, (Filipiniana Analytics) NP A comprehensive review of crossbreeding studies in farm animals yielded 3,670 estimates of heterosis, which were classified into 6 farm species, 334 individual traits, 4 character groups, 193 breeds, 7 levels of a breed's contribution to the blood composition of crossbred progeny, and 66 countries where heterosis was reported. Results of the least square analysis revealed no significant differences (P > 0.05) in heterosis estimates between farm species (S) and between breed's contribution to the blood composition of crossbred progeny as a measure of heterozygosity in different crossbreeding systems. Heterosis reports in the Philippines and other countries also do not vary significantly (P > 0.05). However, heterosis values were significantly influenced (P < 0.01) by the type of formula used to estimate heterosis (F) and character group (C). Heterosis based on one parent only were overestimates of heterosis based on mid parent average. Growth and yield traits exhibited substantially higher heterosis than product quality and cost reduction traits. The high heterosis values in highly heritable traits may be attributed to the "additive x additive" epistatic term in the many loci model described by Willham and Pollak (1984) or a result of improving the average genetic merit of the foundation breeds used in the cross, as suggested by Warwick and Legates (1979). Significant interaction effects (P < 0.01) were also found for FxS, FxC, and SxC. Caution must therefore be made when predicting heterosis depending on the farm species, type of formula used to estimate hetorosis, and character group contribution for the breeding objective. (Author's abstract)

Keywords: Veterinary medicine, Crossbreeding, Farm animals, Heterosis, Least-square analysis

Philippine Journal of Veterinary and Animal Sciences, Volume No. 27 Issue No. 1, 12-26 2001, (Filipiniana Analytics) NP

0525

Live weight estimation of locally raised adult purebred brahman cattle using external body measurements

Valdez, Conrado A., Bagui, Nino Je

A total of 94 (34 males and 60 females) apparently healthy locally raised purebred Brahman cattle (2-9 years old) were weighed and different external body measurements such as heart girth, midriff girth, flank girth, height, width of shoulder, width of hip, body length 1 (the distance from the base of the tail to the point before the hump) and body length 2 (the distance from the shoulder to the hind leg which is perpendicular to base of the tail) were obtained primarily to establish formulas for weight determination using body measurements. Correlation analysis revealed that a strong linear relationship exists between body weight and the different external body measurements. Heart girth was found to be the best single predictor of weight regardless of sex as shown by stepwise regression analysis. In using two parameters in estimating weight, heart girth and width of shoulder appeared to be the most accurate external parameters. A dummy regression analysis was also carried out and results showed that there was marked sexual dimorphism which favored the male. Actual weights were then compared to predicted weights using the new developed formulas. Results of the paired t-test revealed that there were no significant differences between actual and predicted weights, which suggest that all of the equations could be used in predicting weight even though marked sexual dimorphism was observed using the formulas based on heart girth (R2 = 0.943) and combination of heart girth and width of shoulder (R2 = 0.953), the bodyweight of locally-raised adult purebred Brahman cattle could be estimated. These formulas could be used to estimate the bodyweight of Brahman cattle in farms or areas without accurate weighing facilities. (Author's abstract)

Keywords: Veterinary medicine, Body measurements, Brahman cattle, Correlation, Live weight, Regression analysis

Macroscopic, histological and histochemical characterization of the lacrimal gland of the Philippine water buffalo (*Bubalus bubalis*) Cartagena, Ruth A., De Ocampo, Grace D., Maala, Cefer

The gross, histological and histochemical features of the lacrimal gland of the Philippine water buffalo were described. The lacrimal gland of the Philippine water buffalo was flattened and situated along the dorsolateral aspect of the eyeball. It was enclosed by the periorbita, distinctly lobulated, and pink to red in color. Its orbital surface was convex. The capsule composed chiefly of collagen fibers, detached connective tissue septa which divided the gland into lobules of various sizes. Profiles of interlobular and blood vessels were found in the connective tissue septa. The interlobular ducts in the interlobular connective tissue septum were lined by tall simple to stratified columnar epithelium. Each lobule was made up of several round to oval-shaped secretory acini. Each acinus was composed of several secretory columnar cells arranged radially around a relatively small lumen. A few basally located myoepithelial cells were observed. Distributed among the secretory acini were intercalated and intralobular ducts. Majority of the secrelery acini reacted strongly to the mucicarmine, periodic acid Schiff and alcian blue pH 2.5 stains. However, only a weak reaction was observed with alcian blue pH 1.0 stain. The duels reacted negatively to the special tissue stains. The secretory acini of the female Philippine water buffaloes showed stronger reaction to the Mayer's mucicarmine, periodic acid Schiff and alcian blue pH 2.5 than those of the male Philippine water buffaloes. Based on the microscopic features observed in the hematoxylin and eosin stained sections and the reactions to the various special stains, the lacrimal gland of the Philippine water buffalo was a mixed but predominantly mucous compound tubuloacinar gland. The gross anatomy and histology of the lacrimal gland of the Philippine water buffalo observed in the present study are basically in agreement with what have already been reported for cattle in veterinary literature. (Author's abstract)

Keywords: Veterinary medicine, Lacrimal gland, Philippine water buffalo, Macroscopic characterization, Histological characterization, Histochemical characterization

Philippine Journal of Veterinary Medicine, Volume No. 44 Issue No. 2, 69-75 2007, (Filipiniana Analytics) NP

Melanomacrophage centers and hepatosomatic index in the Common carp (*Cyprinus carpio* Linnaeus, 1758) (Actinopterigii: Cyprinidae) introduced to the east and west sites of Laguna de Bay, Philippines

Vega, Renato S.A., Ocampo, Pablo P., Ibarra, Perlito I., Librojo-Basilio, Nieva T., Rebancos, Carmelita M., Paraso, Michelle Gr

The importance of Laguna de Bay in Luzon, Philippines as a natural resource necessitates routine monitoring of its environmental quality. In addition to water quality tests, however, there should also be a focus on the impact of existing conditions on the aquatic biota. There is currently a paucity of published data on the biologic impact of pollutants in the lake. The present study measured the biomarkers of exposure to pollution, namely, hepatic melanomacrophage centers (MMCs) and hepatosomatic index (HSI), in male common carps (*Cyprinus carpio*, Linnaeus, 1758) caged for 30 days along the east and west bay of the lake. In comparison to the reference group,
caged fish exhibited a greater number of MMCs (p<0.01) that were also of bigger size (p<0.05). Further evaluation revealed the presence of lipofuscin, hemosiderin and melanin pigments in the treatment groups although a greater percentage of the last two pigments was noted in caged fish. HSI, which is also used as an indicator of nutritional and energy status in fish, was also low in this group (p<0.05). The results suggest differences in the environmental quality to which the treatment groups have been subjected with observations in caged fish potentially attributable to pollutant exposure. (Author's abstract)

Keywords: Veterinary medicine, Common carp, Cyprinus carpio, Hepatosomatic index, Melanomacrophage centers, Laguna de Bay, Philippines

Philippine Journal of Veterinary Medicine, Volume No. 48 Issue No. 2, 95-100 2011, (Filipiniana Analytics) NP

0528

Milk production, butterfat content and bodyweight of lactating dairy cows fed with trace mineral supplement with urea (TMS+U)

Supangco, Enrico S., Matias, Job M., Dalisay, Brenda E., Acorda, Jezie A., Rayos, Anto

The study was conducted to determine the effects of Trace Mineral Supplement with Urea (TMS+U) on milk production, butterfat content of milk and body weight change of lactating dairy cows. Thirty-five (35) lactating crossbred dairy cows were randomly assigned into two groups 9Control and Treatment) using Randomized Complete Block Design. Mineral blocks containing TMS+U were provided to the Treatment group were subjected to similar management practices. Better persistency of the milk curve was observed in the Treatment group compared to the Control group. There was a significant increase (P<0.05) in butterfat content of milk in the Treatment group. However, body weight in the Treatment group was not affected by the supplementation. TMS+U supplementation improved animal productivity as evidenced by a good persistency in milk production, Increase in butterfat content of milk and increase in net profit in the Treatment group compared to the control group. (Author's abstract)

Keywords: Veterinary medicine, Butterfat, Dairy cattle, Lactation, Trace mineral, Urea

Philippine Journal of Veterinary and Animal Sciences, Volume No. 26 Issue No. 1, 35-40 2000, (Filipiniana Analytics) NP

0529

M-mode echocardiographic values in male and female Philippine sheep (*Ovis aries*) (Artiodactyla: Bovidae) by age and status of lactation and pregnancy *Pajas, Arville Mar Gregorio A.*, *Acorda, Je*

The Philippine native sheep has potential as an alternative livestock resource and as a model for cardiac disorders. To establish baseline echocardiographic parameters for use in disease diagnosis and investigation of cardiovascular disorders, 43 apparently healthy Philippine sheep, 18 male and 25 female, were utilized. The animals

were grouped by age into <1 year old, 1-2 years old and >2 years old. The females were further classified into pregnant and non-pregnant, lactating and non-lactating. The heart was examined on the right thorax using an ultrasound machine equipped with a 5.0 MHz micro-convex scanner. The cardiac structures were identified using Bmode and measurements were made using M-mode echocardiography. Significant differences in several parameters were observed between male and female Philippine native sheep and among different ages in both male and female animals. Differences were also observed between lactating and non-lactating and between pregnant and nonpregnant Philippine sheep. High correlations were found between most echocardiographic parameters and body weight in both male and female Philippine sheep. The echocardiographic values obtained in the study can be helpful in disease diagnosis and for utilizing the Philippine native sheep as a model for cardiac disorders considering sex, age and status of lactation and pregnancy. **(Author's abstract)**

Keywords: Veterinary medicine, Echocardiography, Heart, Sheep, Ultrasound

Philippine Journal of Veterinary Medicine, Volume No. 52 Issue No. 1, 11-20 2015, (Filipiniana Analytics) NP

0530

Molecular detection and treatment of equine piroplasmosis Mandhotra, Ajay, Das Singla, Lachhman, Sumbria,

The purpose of the study is to describe the first confirmed case of *Theileria equi* based on molecular detection in a mare along with complete clinico-hemato- biochemical response during the process of progression and treatment of the disease from Punjab State in India. A case presented at the Teaching Veterinary Clinical Complex, Guru Angad Dev Veterinary and Animal Sciences University, Ludhiana was diagnosed based on typical parachute shaped piroplasms in a stained blood smear and confirmed based on PCR targeting the 18S rRNA gene. The phylogenetic analysis of sequenced PCR product revealed 100% nucleotide identity with *T. equi* strain from Ludhiana (LC008132.1). Treatment with buparvaquone at 2.5 mg/kg body weight by deep intramuscular route at two different sites along with other supportive drugs showed marked improvement in vital hemato-biochemical parameters. This case divulges the endemicity of equine theileriosis in Punjab along with its molecular detection and response to treatment. (Author's abstract)

Keywords: Veterinary medicine, Buparvaquone, Equine piroplasmosis, Polymerase chain reaction, Theileria equi

Philippine Journal of Veterinary Medicine, Volume No. 52 Issue No. 2, 131-136 2015, (Filipiniana Analytics) NP

0531

Motility, livability and fertility of cock spermatozoa as influenced by day of collection, dilution and cryopreservation *Capitan, Severino S.*, *Baguio, Sy*

Three factorial experiments were conducted to study the motility, livability and fertility of cock spermatozoa as affected by day of collection, dilution and cryopreservation. Diluent influenced significantly the sperm motility and

livability of Philippine native chicken semen. Sperm motility of fresh undiluted semen (81.7%) was highest (P<0.05), followed by that of semen diluted with LFSE (71.2%), and then by those diluted with LFSE containing either 4.5% DMSO (53.8%) or 4.5% DMA (51.2%). Livability of fresh undiluted semen (85.4%) was higher (P<0.05) than that of diluted semen (73.3%), and the lowest were those of diluted semen with either DMSO (56.1%) or DMA (54.6%). The results demonstrated the deleterious effects of diluents and cryoprotectants on motility and livability of rooster spermatozoa.

Freezing significantly depressed cock sperm motility and livability. Motility (52.5%) of fresh semen diluted with LFSE with either 4.5% DMSO or 4.5% DMA was (P<0.05) higher compared to that of frozen-thawed semen (18.5%). Livability of fresh extended semen (55.34%) was also higher (P<0.05) than that of frozen-thawed semen (11.1%). Likewise, freezing significantly reduced the fertilizing capacity of spermatozoa. Fertility of fresh extended semen (76.3%) was significantly (P<0.01) higher than that of frozen-thawed semen with either DMSO (1.4%) or DMA (0.8%) as cryoprotectant. Despite low fertilizing capacity of frozen semen, the study demonstrated the possibility of conserving Philippine native chicken genetic materials through cryopreservation. (Authors' abstract)

Keywords: Veterinary medicine, Cock spermatozoa, Cryopreservation, Cryoprotectant, Diluent

Philippine Journal of Veterinary Medicine, Volume No. 45 Issue No. 2, 109-117 2008, (Filipiniana Analytics) NP

0532

Neural pathway of estrogen receptor a expression during stress-induced suppression of luteinizing hormone secretion

de Luna, Maria Catalina T., Tsukamura, Hiroko, Estacio, Maria Amelita C., Maeda, Kei-Ic

This review article describes the role and regulatory mechanism of estrogen receptor a (ERa) expression in specific brain areas to give further insights on the brain mechanism of estrogen-enhancement of suppression of luteinizing hormone (LH) secretion by certain stressors in female rats. It shows that, (1) certain metabolic i.e. fasting, 2DG-induced glucoprivation, and physical (immobilization) stress induced an increase in ERa expression . in specific hypothalamic and brainstem areas, (2) the increased number of ERa in the hypothalamic para ventricular nucleus (PVN) and A, and/or A2 brainstem region(s) during fasting and glucoprivation is required for estrogen potentiation of LH suppression by these stressors, (3) vagal input is needed for the induction of ERa expression in the brainstem A2 region that may trigger the neural pathway of LH suppression during fasting, (4) brainstem A, and/or A2 catecholaminergic inputs to the PVN stimulates the increase in ERa in the PVN during glucoprivation and fasting, respectively, so that estrogen can enhance the sensitivity of the PVN corticotropin releasing hormone (CRH) neurons to the catecholaminergic stimulus needed for the suppression of LH secretion, (5) activation of the Az catecholaminergic input to the PVN is a common pathway utilized by certain metabolic and physical stressors for the induction of neural ERa expression and suppression of pulsatile LH secretion. (Author's abstract)

Keywords: Veterinary medicine, Estrogen, Estrogen receptor, Fasting, Glucoprivation, Stress

Philippine Journal of Veterinary Medicine, Volume No. 46 Issue No. 1, 61-72 2009, (Filipiniana Analytics) NP

Neurocysticercosis in a pig Annapurna, Pillutla , Kumar, Putcha Anand , Ramadevi, Vemuri , Sreedevi, Ch

A case of neurocysticercosis in a pig that was not exhibiting any neurological signs is reported. Necropsy findings showed viable metacestodes exclusively in the brain. However, serological examination of blood was negative for cysticercus antibodies. Histopathological examination revealed cysts with invaginated scolex in the bladder wall. Metacestodes from the brain yielded a positive PCR result with *T. solium* specific primers. Based on the histopathological findings and confirmed by the PCR, the diagnosis of *T. solium* neurocysticercosis is established. (Author's abstract)

Keywords: Veterinary medicine, Histopathology, Metacestode, Neurocysticercosis, PCR, Pig, Zoonotic disease

Philippine Journal of Veterinary Medicine, Volume No. 48 Issue No. 2, 114-117 2011, (Filipiniana Analytics) NP

0534

A new species of *Procyrnea* chabaud 1975 (Nematoda: Habronematidae) and redescription of two chewing lice (Mallophaga) from the Palawan Hill Myna, *Gracula religiosa palawanensis* (Passeriformes: Sturnidae), Philippines *Villa, Fidelia D. , Eduardo, Salc*

Thirty four live and 30 dead Palawan hill mynas, Gracula religiosa palawanensis were examined for ecto- and endoparasites, respectively at different periods. Specimens of nematodes from the dead birds and chewing lice (Mallophaga) from the live birds were collected. Specimens were fixed and stored in 70% ethyl alcohol until further study. Nematode specimens were examined in lacto-phenol as temporary mounts. Lice were processed for examination by cleaning in 5% potassium hydroxide solution, washing in distilled water, dehydrating in increasing grades of ethyl alcohol, clearing in terpineol and mounting in Canada balsam. Representative specimens of lice were stained with Ziehl-Neelsen (carbol-fuchsin) in absolute ethyl alcohol before clearing in terpineol and mounting in Canada balsam. The nematode specimens consisted of three species. One of which proved to be new to science and is named, described and illustrated as Procyrnea graculae with prevalence rate of 20%. It is differentiated from closely related species of the genus. The other two were provisionally identified as Synhimantus (Dispharynx) sp. and Tetrameres (Tetrameres) sp. with prevalence rates of 10% and 3.3 % respectively, due to insufficient number of specimens for examination. The lice collection consisted of two species namely, Myrsidea invadens (Kellogg & Chapman, 1902) of the order Amblycera, family Menoponidae and Brueelia chayanh Ansari 1955 of the order Ischnocera of the family Philopteridae with prevalence rates of 11.76% and 23.52%, respectively. They are redescribed and illustrated based on the present materials, and reported for the first time in the Philippines constituting new locality records for the species. (Author's abstract)

Keywords: Veterinary medicine, Brucelia chayanh, Mallophaga, Myrsidea invadens, Palawan hill myna, Procyrnea graculae, Nematodes, Gracula religiosa palawanensis

Organoleptic test and chemical analyses of meats of Philippine chicken (Darag Type) and commercial broiler

Casiple, Celma G., Roxas, George Fredrick A., Cocjin, Bernabe B., Arenga, Ra

There were two groups of birds used as experimental treatments, namely: commercial broilers and Darag chickens. One hundred broiler birds were divided into two groups. One group of 50 birds were raised in battery brooders and the other group of 50 birds were raised on litter floor. The same treatments were also done for the 100 chicks of Darag chickens. Feeding and other standard management practices in raising broilers were applied on all treatments. Eight birds per treatment were dressed at eight weeks of age as representative samples. The breast muscles were excised and halved. One half of the breast muscles were used for proximate analyses and the other half was steamed separately and submitted to the taste panel for organoleptic tastes. Six birds per treatment were dressed on the 8th, 12th and 16th week of age. Five g of the steamed cubed meat samples per treatment were presented to each member of the taste panel. There were significant differences (P

Keywords: Veterinary medicine

Philippine Journal of Veterinary and Animal Sciences, Volume No. 27 Issue No. 2, 2001, (Filipiniana Analytics) NP

0536

Orthocoelium arambuloi Eduardo (Paramphistomidae: Orthocoeliinae), a new species of rumen fluke from cattle and water buffaloes (Artiodactyla: Ruminantia) with remarks on and a key to the species of the Genus Orthocoelium (Stiles & G Eduardo, Salc

Orthocoelium arambuloi n. sp. is described and illustrated from the rumen of cattle and water buffaloes in Indonesia and the Philippines, respectively. It is characterized by a small conical body, the presence of tegumental papillae around oral and genital openings, an acetabulum of the streptocoelium type, 1:4.9-8.8 ratio of acetabulum to body length, a pharynx of the dicranocoelium type (i.e. with anterior sphincter), 1:1.36-1.7 ratio of pharynx to acetabulum, a posterior muscular bulbous esophagus constituting about 62- 74% of its entire length, and a terminal genitalium of the leydeni type. It is differentiated from the valid species of the genus Orthocoelium (Stiles & Goldberger, 1910). Orthocoelium parastreptocoelium (Wang, 1959) and O. sinuocoelium (Wang, 1959) are considered species inquirenda. A key to the species of the genus Orthocoelium is provided. (Author's abstract)

Keywords: Veterinary medicine, Indonesia, Orthocoelium arambuloi, Philippines, Rumen fluke, Ruminants

Ovarian changes from days 20 to 90 of gestation observed through ultrasonography in locally raised holstein -sahiwal dairy cows

Rayos, Antonio A., Torres, Eduardo B., Valdez, Conrado A., de Ramos, Michael S., Acorda, Jez

The study was conducted to determine structural changes, ultrasound features and measurements of the ovaries from days 20 to 90 of pregnancy. Four crossbred pregnant dairy cows starting at day 20 post breeding were used in the experiment. Bmode ultrasonography of the ovaries was conducted per rectum. Ultrasound densities were classified into hypoechoic, hyperechoic and anechoic. Upon diagnosis of pregnancy, ovaries were classified into ipsilateral and contralateral sides. Presence of wave-like pattern of increase and decrease in the number of subordinate follicles was observed on both ovaries, suggesting the presence of follicular wave development. Dominant follicle appeared as circular anechoic area that was observed in the contralateral ovary of some of the animals on days 27 to 33 of gestation. The corpus luteum appeared as a hypoechoic structure which usually dominates the ipsilateral ovary during the latter part of gestation. Subordinate follicles appeared as small anechoic areas that were usually located near the periphery of the ovary that changed in number during each examination. Both ovaries differ mainly due to the presence of large corpus luteum and several numbers of subordinate follicles and dominant follicle. Ovarian follicular cycle continues even after conception and both ovaries were in different stages of follicular cycle as suggested by different numbers of subordinate follicles during each examination. **(Author's abstract)**

Keywords: Veterinary medicine, Follicle, Ovary, Pregnancy, Ultrasound

Philippine Journal of Veterinary Medicine, Volume No. 45 Issue No. 2, 67-74 2008, (Filipiniana Analytics) NP

0538

Parasites recovered from a Downer white-collared kingfisher, *Halcyon chloris collaris* (Scopoli, 1786) Caves: Alcedinidae) from Danjugan Island, off Negros, Philippines *Eduardo, Salcedo L., Lastica, Emili*

Nematodes and lice (Mallophaga) were collected from a downer white-collared Kingfisher (*Halcyon chloris collaris* (Scopoli, 1786), at necropsy in Danjugan Island off Negros, Philippines. Nematodes were examined as temporary mounts in lacto-phenol solution while lice were cleaned in 5% potassium hydroxide solution, washed in distilled water, dehydrated in increasing grades of ethyl alcohol, cleared in terpineol and mounted in Canada balsam for examination. Some lice were stained in Ziehl-Neelsen (carbol fuchsin) in absolute ethyl alcohol. Four species of nematodes namely, *Aprocta lepidogrammi, Hamatospiculum Jeticiae, Skrjabinoclava halcyoni* and an unidentified species, and a species of chewing louse, *Alcedoecus latigenitalis* were identified from the collection. Photographs of these parasites are provided and their organ location and occurrence in other avian hosts and geographical areas are presented. The probable cause of death of the bird is discussed. This report constitutes new 'host and locality records for *Aprocta lepidogrammi*, and *Skrjabinocla va halcyoni* and *Alcedoecus latigenitalis*, respectively. (Author's abstract)

Keywords: Veterinary medicine, Alcedoecus latigenitalis, Aprocta lepidogrammi, Halcyon chloris collaris, Parasites, Skrjabinoclava halcyoni

Philippine Journal of Veterinary Medicine, Volume No. 45 Issue No. 2, 133-136 2008,

(Filipiniana Analytics) NP

Pathologic effects of different biological oxygen demand levels on the juvenile catfish (*Clarias gariepinus*)

Paraso, Michelle Grace V., Mamacus, Ronan B., Marte, Benjamin Re

A total of 40 catfish (*Clarias gariepinus*) were exposed for 96 h to natural BOD (biological oxygen demand) levels of the wastewater treatment lagoons of swine farm (control lagoon, 1.3 mg/L; lagoon 1, 719 \pm 94 mg/L; lagoon 2, 190 mg/L; lagoon 3, 57 \pm 19 mg/L). After exposure, the gills, liver, spleen and kidney were examined and scored for lesions. Gill alterations included congestion, hemorrhage, basal cell hyperplasia, fusion of secondary lamellae and necrosis. Gill lesions were found to be highest in fishes exposed to the highest BOD level, which produced 100% mortality within 14 h. The lesions appeared to be consistent with that of acute tissue response to hypoxic and toxic conditions. Few to no lesions were observed in the gills of fish exposed to lower BOD levels. The liver of fishes at the highest BOD level showed congestion, hemorrhage, fatty degeneration, cloudy swelling, increased granularity of the cytoplasm and necrosis. Lower BOD levels on the other hand, elicited less severe cellular changes. The kidney and spleen showed considerable changes at the highest BOD level. In the kidney, congestion, hemorrhage, vacuolation and necrosis were observed whereas necrosis and an increase in the number and size of melanomacrophage centers were found in the spleen. Results of the study revealed an increasing lesion score with the rise in the BOD level which is suggestive of the deleterious effects of high BOD levels on these organs. (Author's abstract)

Keywords: Veterinary medicine, Biological oxygen demand (BOD), Catfish, Swine farm, Wastewater

Philippine Journal of Veterinary Medicine, Volume No. 44 Issue No. 1, 29-35 2007. (Filipiniana Analytics) NP

0540

Performance of broilers under different levels of feed restriction at an early age Dagaas, Clarita T., Bustria, Ron Ryan V

The experiment determined the effects of different levels of feed restriction (20%, 30%, 40% and 50% less than normal feed intake) on young male and female broilers. A total of 180 Arbor Acre chicks, 90 for each sex, were randomly distributed to five treatments with three replications using the completely randomized design. Full body weight recovery was observed as early as the 4th week of age. Moreover, feed restriction at an early age improved feed efficiency of broilers immediately after feed restriction. Overall feed efficiency was not affected by feed restriction applied during the 5th day to 11th day of age. Likewise, the feed restriction program did not affect dressing percentage and abdominal fat content. Male broilers performed significantly better than female broilers in terms of final body weight and gain in weight but not in overall feed efficiency. Five percent mortality was incurred during the period of study. Income over feed and chick cost analysis showed that feed restriction at an early age with 40% less than normal feed intake is most profitable and is, therefore, recommended. However, there is still need to improve the method and level of restriction in order to see whether feed restriction could affect dressing percentage, reduce abdominal fat content and further improve feed efficiency. (Author's abstract)

Keywords: Veterinary medicine, Broiler, Compensatory growth, Feed restriction

Philippine Journal of Veterinary and Animal Sciences, Volume No. 27 Issue No. 1, 61-74 2001, (Filipiniana Analytics) NP

0541

Performance of sheep (*Ovis Aries* L.) raised in confinement and grazed under coconut (*Cocos Nucifera* L.) plantation with or without concentrate supplementation

Robles, Alberto Y., Gonzales, Vivian A., Obedoza, Romeo B., Ozaraga, Bede P., Lustria, Ulysses M., Sevilla,

Се

The study showed that grazing of sheep on native pasture under coconut plantation resulted in decreased herbage yield and regrowth of grasses and legumes, and increase in the proportion of broadleaves and shrubs. In vitro dry matter digestibility (IVDMD) of samples from grazed pasture was significantly higher than ungrazed pasture in the middle of the study. However, there were no significant differences (P>0.05) in IVDMD of the experimental ration before and after the experiment. Sheep grazed under coconut plantation had significantly higher liveweight (P<0.05) than confined sheep from the second to the fourth month. Concentrate supplementation significantly improved liveweight (P<0.05) of ewes during the same period. At estrus, sheep grazed under coconut plantation resulted in heavier liveweight (P<0.05) than the confined animals. Concentrate supplementation significantly (P<0.01) resulted in higher conception rate, lambing rate, birth and weaning weights. Grazing sheep with or without concentrate supplementation under coconut plantation did not affect (P>0.05) the yield of nuts. (Author's abstract)

Keywords: Veterinary medicine, Coconut, Concentrate, Grazing, Sheep

Philippine Journal of Veterinary and Animal Sciences, Volume No. 27 Issue No. 1, 75-83 2001, (Filipiniana Analytics) NP

0542

Pharmacokinetics and urinary excretion of cefpirome following single intravenous administration in cross bred calves Sandhu, Harpal Singh, Dumka, Vinod Kumar, Rajput,

Pharmacokinetics and urinary excretion of cefpirome (10 mg/kg, given intravenously) were performed in five male cross-bred calves (Holstein Friesian X Sahiwal). Cefpirome was detected in plasma up to 14 h and rapidly distributed from blood to peripheral compartment as evidenced by high values of α and K12. Volume of distribution (Vdarea) of 0.55 ± 0.02 l/ kg revealed moderate drug distribution. Short elimination half-life and high body clearance indicated rapid elimination of the drug, while 62.6 % of administered dose of cefpirome was eliminated in urine within 24 h. The study suggests that a dose of 10 mg/kg, given intravenously at 12 h interval would be effective against bacterial pathogens with MIC values $\leq 1.0 \ \mu g/ml$. (Author's abstract)

Keywords: Veterinary medicine, Calves, Cefpirome, Pharmacokinetics, Urinary excretion

Philippine Journal of Veterinary Medicine, Volume No. 52 Issue No. 1, 39-46 2015, (Filipiniana Analytics) NP

Pharmacokinetics of ceftazidime in water buffalo (*Bubalus bubalis* L.) calves with hepatic dysfunction

Ul Haq, Shah Ahsan , Sharma, Suresh

The pharmacokinetic properties and urinary excretion of ceftazidime, a third generation cephalosporin, were investigated in water buffalo calves with hepatic dysfunction (n=4) after single IV administration at a dose rate of 10 mg/kg BW. Hepatic-dysfunction was induced by intramuscular administration of paracetamol (250 mg/kg BW on day 1, followed by two subsequent doses of 50 mg/kg BW on day 3 and 5). Ceftazidime concentrations in plasma and urine were determined by microbiological assay. Ceftazidime disposition was best fitted by a bi-compartmental open model with first-order elimination. At 2.5 min, the concentration of ceftazidime in plasma of animals with hepatic dysfunction was 150.8 \pm 0.77 µg/ml and the drug was detected up to 14 h. The elimination half-life and volume of distribution were 3.58 \pm 0.19 h and 0.30 \pm 0.01 L/kg, respectively. The distribution half-life, area under the curve (AUC) and total body clearance (Cl_B) were 0.27±0.04 h, 172.4±5.08 µg/ml/h and 58.2 \pm 1.64 ml/kg/h, respectively. Urinary excretion of ceftazidime was less than 31% after 32 h of administration of the drug in animals with hepatic dysfunction. To maintain a minimum therapeutic concentration of 4 µg/ml, a satisfactory dosage regimen of ceftazidime in buffalo calves with hepatic dysfunction would be 11.6 mg/kg, followed by 10.4 mg/kg at 12 h. interval. An efficacy predictor, measured as the time over which the active drug exceeds the bacterial minimum inhibitory concentration (T > MIC), was calculated. T > MIC was 54% of the recommended dosing interval (12 h) for bacteria with a MIC₉₀≤4µg/ml. (Author's abstract)

Keywords: Veterinary medicine, Buffalo calf, Ceftazidime, Dosage regimen, Hepatic dysfunction, Pharmacokinetics

Philippine Journal of Veterinary Medicine, Volume No. 49 Issue No. 2, 88-95 2012, (Filipiniana Analytics) NP

0544

Pharmacokinetics, urinary excretion and plasma protein binding of azithromycin in water buffalo (*Bubalus bubalis* L.) calves *Ola, Ajay Kumar*, *Dumka, Vinod Kumar*, *Ranjan, B*

Pharmacokinetics and urinary excretion following 10 mg/kg⁻¹ intravenous dose and in vitro plasma protein binding of azithromycin were investigated in water buffalo (*Bubalus bubalis* L.) calves. Plasma concentrations of azithromycin were determined by microbiological assay using *Koccoria rhizophia* as test organism. The drug levels above MIC were detected up to 36 h in plasma and the disposition followed three compartment open model. Azithromycin was rapidly distributed from central to peripheral compartment as evidenced by short distribution half-life ($\alpha_1=0.04 \pm 0.002$ h) and high values of K₁₂ (6.44 ± 0.30 h⁻¹) and K₁₃ (7.36 ± 0.34 h⁻¹). Large steady state volume of distribution (6.18 ± 0.17 L/kg⁻¹) obtained in this study indicated excellent distribution of azithromycin in this animal. The elimination half-life, AUC and total body clearance were 35.5 ± 1.25 h, 71.9 ± 0.65 g/ml⁻¹/h and $0.14 \pm 0.001 \text{ L/kg-1/h}^{-1}$, respectively. About 11.5 ± 2.49 % of administered drug was bound to plasma proteins and approximately 5.64 ± 2.51 % of the administered dose was recovered in urine within 24 h. A convenient intravenous (I.V.) dosage regimen for azithromycin in water buffalo calves would be 14 mg/kg⁻¹ repeated by 11 mg/kg⁻¹ at 72 h intervals. (Author's abstract)

Keywords: Veterinary medicine, Azithromycin, Pharmacokinetics, Protein binding, Urinary excretion, Water buffalo

Philippine Journal of Veterinary Medicine, Volume No. 49 Issue No. 1, 36-43 2012, (Filipiniana Analytics) NP

0545

Phenotypic characterization of the guard hair from different body regions of the Visayan leopard cat (*Prionailurus bengalensis rabori*) and the Palawan leopard cat (*Prionailurus bengalensis heaneyi*)

Cardano, Conrado C., Maala, Ceferino P., Santiago-Flores, Marianne Leila A., Tin, Kathleen Gay

The Visayan leopard cat (*Prionailurus bengalensis rabori*) and the Palawan leopard cat (*Prionailurus bengalensis rabori*), the two subspecies of leopard cats in the Philippines, are nearly indistinguishable from each other because of their almost identical pelage. However, a close examination of their hair showed some differences which could be of value in differentiating the two subspecies. For example, the cuticular scales were all transversely oriented except those from the dorsum and hindlimb of female Visayan leopard cat where the scales were arranged obliquely. Various forms of imbricate cuticular patterns were demonstrated; serrate coronal cuticular patterns were seen only on hairs from the dorsum and hindlimb of female Visayan leopard cat and dentate coronal from the forehead of male Visayan leopard cat. The distance between cuticular margins and hair shaft diameter were also measured. Generally, the transverse sectional shape of the medulla followed that of the hair. The medullary pattern of the hair from the ventrum of the Visayan leopard cat and from all body regions of the Palawan leopard cat showed wide nodose continuous pattern. The hair from the ventrum of the Visayan leopard cat and from all body regions of the Palawan leopard cat showed wide nodose continuous pattern. The hair from the ventrum of the Visayan leopard cat showed absent pigmentation; while in the rest of the body regions examined, the hairs either had pigments distributed within and around the medulla or even and diffused within the cortex. (Author's abstract)

Keywords: Veterinary medicine, Guard hair, Medulla, Prionailurus bengalensis rabori, Prionailurus bengalensis heaneyi

Philippine Journal of Veterinary Medicine, Volume No. 47 Issue No. 1, 1-12 2010, (Filipiniana Analytics) NP

0546

Physical characteristics of the Bile of Philippine water buffalo (*Bubalus bubalis*) and Cattle (*Bos taurus*) *Maala, Ceferino P. , Cortez, Eve* The bile volume, color, pH, specific gravity, viscosity and percent of solids were determined from the bile of freshly slaughtered, apparently healthy 30 Philippine water buffaloes and 30 cattle. The study showed that bile volume was largest (P<0.05) in male Philippine water buffaloes; pH was highest (P<0.05) in male cattle; and, the specific gravity, viscosity and percent solids were not different between Philippine water buffalo and cattle. As to bile color, light olive green was the most common color observed in cattle (33.0%) and Philippine water buffalo (20.0%). Color, pH, specific gravity, viscosity and percent solids should also be determined in gallbladder bile collected from live animals because these physical characteristics are greatly affected by several factors such as freshness of bile sample. (Author's abstract)

Keywords: Veterinary medicine, Bile, Gall bladder, Philippine water buffalo, Cattle

Philippine Journal of Veterinary Medicine, Volume No. 48 Issue No. 1, 49-52 2011, (Filipiniana Analytics) NP

Plasma transferrin variation in locally raised breeds of goats (Capra Hircus) employing polyacrylamide gel electrophoresis Bondoc, Orville L., Solis, Chester D., Mandocdoc, Poch Bene

Plasma transferrin polymorphism was examined from 120 goat blood plasma samples from the Anglo Nubian (AN), Boer (BOR), Natlve Black (NATBI), Native Brown (NATBR), and Native Mixed Color (NATM) breeds, utilizing polyacrylamide gel electrophoresis (PAGE) technique. Three Tf alleles (TfA, TfB and TfC) were identified. The Anglo Nubian and Boer breed groups revealed three transferrin genotypes (TfAA, TfAB, TfBB), while the Native goats exhibited a total of five genotypes (TfAA, TfAB, TfAC, TfBB, and TfBC). Among the goat breeds studied, estimate of heterozygosity was found to be highest (0.605 ± 0.045) in the Native Mixed Color and lowest ($0.362 \pm$ 0.094) in the Anglo Nubian breed. Genetic distances among breed groups studied ranged from 0.00098, between Native Black and Native Brown subgroups, to 0.05122, between Anglo Nubian and Native Mixed Color. The constructed dendrogram showed a cluster between the Native Black and Brown, and another between Boer and Native Mixed Color. The two clusters are distantly related to the Anglo Nubian breed. (Author's abstract)

Keywords: Veterinary medicine

Philippine Journal of Veterinary and Animal Sciences, Volume No. 28 Issue No. 2, 2002, (Filipiniana Analytics) NP

0548

Potential use of pediococcus acidilactici in processed meat Rapisora, Mary Katherine H., San Luis, Odessa B., Obsioma, Virgi

The inhibitory capacity of Pediococcus acidilactici against coliforms and Staphylococcus aureus was tested in vitro. The test organisms were either cultured singly or in combination with P. acidilactici. Colony forming (units/ml) of each bacterial culture was determined after 24 hours of incubation. Results indicate that P. acidilactici was able to reduce the growth of the coliforms and S. aureus by 1.10 and 1.30 log cycles, respectively. Addition of P.

acidilactici in "tocino" did not significantly alter the color, flavor, tenderness, juiciness and general acceptability of the product and hence, can be used to control the possible pathogens in the product. It was also found that this lactic acid bacterium (LAB) could satisfactorily be grown in formulated Meat and Bone Dust (MBD) broth consisting of 6% MBD, 5% glucose and 0.1% salt mixture. MBD broth is cheaper by about P125/liter compared to MRS broth, which is the usual medium used for growing lactic acid bacterium. (Author's abstract)

Keywords: Veterinary medicine

Philippine Journal of Veterinary and Animal Sciences, Volume No. 28 Issue No. 1, 2002, (Filipiniana Analytics) NP

0549

Pre-storage semen tests and comparative use of skimmed milk-based extender to preserve semen of Philippine native and Anglo nubian goat *dela Cruz, Joseph F. , Serrano, Darrel Dane B. , Bondoc, Orvi*

Semen from Philippine native and Anglo Nubian goats were initially evaluated using centrifugation test, cold shock treatment, and methylene blue reduction test. After centrifugation, the increase in sperm motility, mass activity, and percent live sperm after centrifugation was significantly higher in Philippine native than Anglo Nubian. Cold shock treatment resulted to lower sperm motility, mass activity, and percent live sperm. Reduction in sperm motility due to cold shock was higher in Philippine native than Anglo Nubian. Decrease in mass activity and percent live sperm was however, higher in Anglo Nubian than Philippine native. Reduction time of methylene blue dye was faster in Anglo Nubian than Philippine native, indicating better semen quality. Sperm motility and percent live sperm were significantly higher (P<0.05) for the skimmed milk-based extender than the egg yolk extender when stored at room (27°C) and refrigeration (5°C) temperatures. There was no significant difference (P>0.05) in motility and percent live sperm in extended semen of Philippine native and Anglo Nubian breeds. Based on a minimum motility rating of 40% and 30%, live sperm cells, storage time for extended semen under refrigeration temperature was slightly longer for Anglo Nubian (3 to 4 days) than Philippine native (2 to 3 days). **(Author's abstract)**

Keywords: Veterinary medicine, Anglo nubian, Philippine native goats, Percent live sperm, Skimmed milk-based extender, Sperm motility

Philippine Journal of Veterinary Medicine, Volume No. 44 Issue No. 1, 43-50 2007, (Filipiniana Analytics) NP

0550

Prevalence and virulence genes of *Escherichia coli* O157:H7/NM isolated from the feces of water buffaloes, camels, cattle, sheep and goats in Iran *Rahimi, E*

The prevalence of *Escherichia coli* O157:H7/NM was investigated in 327 fecal samples collected from apparently healthy water buffaloes (43), camels (40), cattle (103), sheep (86), and goats (55) in Isfahan,

Chaharmahal & Bakhtyari, and Khuzestan provinces of Iran, between August 2010 and February 2011. Overall, 25 of 327 fecal samples (7.6%) were found to be contaminated with *E. coli* O157. The highest prevalence of E. coli O157 was found in the water buffalo (18.6%), followed by cattle (11.7%), sheep (4.7%), and the goat (1.8%). *E. coli* O157 was not isolated from camel fecal samples. Of 25 *E. coli* O157 isolates, 7 were serotype O157:H7 and 18 were serotype O157:NM. Five of the O157:H7 were isolated from the water buffalo and 2 were from cattle feces. All of the *E. coli* O157:H7 isolates were positive for *eaeA*, *ehlyA* and *stx1* and *stx2*, except one isolate that was *ehlyA* negative. The highest prevalence of *E. coli* O157 occurred in summer (16.7%) followed by fall (6.3%). The results of this study show that cattle and buffaloes can be a significant source of human infection with enterohemorrhagic *E. coli* O157 serotype in Iran. (Author's abstract)

Keywords: Veterinary medicine, Escherichia coli O157, Feces, Ruminant, Virulence genes

Philippine Journal of Veterinary Medicine, Volume No. 49 Issue No. 2, 96-102 2012, (Filipiniana Analytics) NP

Primary antibody response of water buffaloes immunized with autogenous hemorrhagic septicemia bacterin

Andaya, Noriel T., Velasco, Ivy M., Camer, Gerry A., Torres, Ma. Immaculada P., Molina, Hele

An enzyme-linked immunosorbent assay (ELISA) was done to evaluate the antibody response of water buffaloes given autogenous hemorrhagic septicemia vaccine. Antibody rise using two types of vaccine preparation was compared: aluminum hydroxide (AIOH) absorbed, adjuvanted and double emulsion (DE) adjuvanted bacterins. Statistical analysis yielded a significant difference in the antibody rise before and after administration of the two types of vaccine (P

Keywords: Veterinary medicine, Cassava, Ensiling, Foliage, Hydrocyanic acid, Water buffalo

Philippine Journal of Veterinary and Animal Sciences, Volume No. 26 Issue No. 1, 68-80 2000, (Filipiniana Analytics) NP

0553

Production of whole chicken egg powder through freeze-drying and oven-drying Bueno, Cristy M., Lauricio, Agatha Khrist

Freeze-drying and oven-drying methods were used in the production of whole chicken egg powder. Sensory attributes of whole egg powders and egg soup from egg powders were analyzed through panel evaluation. Analysis of the proximate composition showed significant differences in terms of moisture, ether extract and chlorine content. Freeze-dried egg powder had the highest mean composition for crude protein (51.53%) and ash (3.21%). On the other hand, oven-dried had the highest mean composition for chlorine content (3.12%) and moisture (6.42%). No significant difference in ether extract, crude protein and crude fiber was observed from freeze-dried and oven-dried egg powder. Analysis of the sensory evaluation of the egg powder revealed significant difference in color and odor. Results showed no significant difference in terms of general acceptability between freeze-dried and oven-dried

methods for whole egg powders and egg soup. However, results of the sensory evaluation of egg powder and egg soup for general acceptability showed that the fresh egg sample obtained the highest mean score. (Author's abstract)

Keywords: Veterinary medicine

Philippine Journal of Veterinary and Animal Sciences, Volume No. 27 Issue No. 2, 2001, (Filipiniana Analytics) NP

0554

Pulmonary edema secondary to acute pancreatitis in a dog Cho, Ho-Seong, Masangkay, Joseph S., Kim, Yun-hye, Park,

A 9-year-old male Yorkshire terrier weighing 2.28 kg was admitted to the Veterinary Teaching Hospital with a one-day history of vomiting and melena. On the basis of clinical history, physical examination, laboratory tests, diagnostic imaging, and c-PLI kit, the dog was diagnosed with acute pancreatitis. The dog was treated with antibiotics, proton pump inhibitors, and analgesia agents with fluid therapy. However, the following day, pulmonary edema was diagnosed on radiography without any evidence of heart disease. The dog was administrated with diuretics, fresh plasma, and additionally 20% human albumin and responded well to the treatment. This report of a pulmonary edema as a complication of acute pancreatitis is a rare case in veterinary medicine. (Author's abstract)

Keywords: Veterinary medicine, Dog, Acute pancreatitis, Pulmonary edema

Philippine Journal of Veterinary Medicine, Volume No. 50 Issue No. 2, 116-121 2013, (Filipiniana Analytics) NP

0555

Rallicola Johnston and Harrison 1911 and Eulaemobothrion Ewing 1929 Species (Mallophaga) found on some Philippine Rallidae (Aves: Gruiformes) with description of a new species Eduardo, Salc

Five species of the avian family Rallidae namely: *Amaurornis phoenicurus javanicus, Gallicrex cinerea, Gallinula chloropus lozanoi, Gallirallus p. philippensis* and *Gallirallus t. torquatus* were examined for lice at irregular intervals between the periods January 2010 to September 2012. Lice were fixed and stored in 70% ethanol, cleaned in 5% potassium hydroxide solution, dehydrated in increasing grades of ethanol, cleared in terpineol and mounted in Canada balsam. Representative specimens were stained with carbol-fuchsin in absolute ethanol. Four species, two of the genus *Rallicola* and two of the genus *Eulaemobothrion*, including a new species, were identified namely: *Rallicola minutus* and *R. philippensis, Eulaemobothrion atrum* and *E. deocampoae n.sp. Eulaemobothrion deocampoae* is described and illustrated as a new species and differentiated from closely related species of the genus *Eulaemobothrion. Rallicola minutus* occurred on all birds examined and *Eulaemobothrion deocampoae* n.sp. on *G. p. philippensis* and *G. t. torquatus*. The occurrence of *R. minutus* on *G. p. philippensis* and *G. t. torquatus* and *R. philippensis* new hosts records for the two louse species. The species of

Rallicola and Eulaemobothrion so far recorded from Philippine Rallidae are summarized in a table provided. (Author's abstract)

Keywords: Veterinary medicine, Eulaemobothrion spp., Mallophaga, Philippines, Rallicola spp, Rallidae

Philippine Journal of Veterinary Medicine, Volume No. 51 Issue No. 2, 107-116 2014, (Filipiniana Analytics) NP

0556

New records of four digenean (Platyhelminthes) species parasitic in sea turtles (Reptilia: Chelonia) in the Philippines Diaz, Jose L., Eduardo, Salc

Four species of Digenea from sea turtles are reported for the first time in the Philippines constituting new locality record for the species. The species with their respective superfamilies and families are: *Schizamphistomum scleroporum* (Creplin, 1844) and *S. erratum* Blair, 1983; (Paramphistomatoidea, Cladorchiidae); *Rhytidodes gelatinosus* Looss, 1901 (Echinostomatoidea, Rhytidodidae) and *Enodiotrema reductum* Looss, 1901 (Plagiorchioidea: Plagiorchiidae). The first two species were from the stomach and intestines of *Chelonia mydas* (green sea turtle) and the latter two species were recovered from the intestines of *Eretmochelys imbricata* (hawksbill sea turtle). They are here discussed and photomicrographs of them are provided based on the present materials. (Author's abstract)

Keywords: Veterinary medicine, Digenea, Enodiotrema reductum, Parasites, Philippines, Rhytidodes gelatinosus, Schizamphistomum spp.,, Sea turtle

Philippine Journal of Veterinary Medicine, Volume No. 50 Issue No. 2, 112-115 2013, (Filipiniana Analytics) NP

0557

Regression equations to predict mature weight of different breeds of goats (Capra hircus) based on external body measurements

Beltran, Elizabeth D., Garcia, Beatriz R., Lambio, Ivy Amor F., Tec, John Daniel P., Bondoc, Orvi

Simple regression analyses of a large data set revealed that the best predictor of mature body weight of goats is midriff girth for Native (R2=.97) and Boer breeds (R2=.95), body length for the Anglo Nubian (R2=.96), and heart girth for the F1 (Nubian x Native) cross (R2=.95). Because of the relatively low R2 values (and high Cp statistics), head length and head width are considered as poor predictors of mature body weight in goats. Multiple regression equations were also developed and recommended for use in Native goats (black, brown or mixed color). An extra degree of accuracy can however, be attained when adding available external body measurements in the multiple regression equations is applied to the Anglo Nubian, Boer, and Fl (Nubian x Native) cross. In the absence of a weighing scale on-farm, the regression equations presented in this study offer a practical and reliable alternative to predict mature body weight of goats known to belong to a particular breed group. (Authors abstract)

Keywords: Veterinary medicine

Philippine Journal of Veterinary and Animal Sciences, Volume No. 28 Issue No. 1, 2002, (Filipiniana Analytics) NP

0558

Relationship between multi-resistance of Philippine isolates of *Campylobacter jejuni* (Jones et al., 1931) Veron & Chatelain, 1973 (Campylobacterales: Campylobacteraceae) and antimicrobial usage in poultry Baldrias, Loi

The antimicrobial profiles of 12 Philippine isolates of *Campylobacter jejuni* recovered from poultry ceca were determined using the Kirby Bauer method. All isolates showed multi-resistance, being resistant to more than 7 out of 14 different antibiotics tested, and came from chickens detected to be positive for antibiotic residues. Observed multi-resistance among *C. jejuni* isolates contributes to the evidence on emergence of resistant bacteria in animals following administration with antibiotics, either prophylactically or therapeutically. The growing resistance to different antibiotics, which is being observed to be higher in developing countries, appears to be a similar trend in the Philippines, where the use of antimicrobial drugs in humans and animals is relatively unrestricted. Statistical analysis also showed a significant relationship between antibiotic resistance among bacteria from foods of animal origin may have an impact on antibiotic–associated bacterial infection of humans. (Author's abstract)

Keywords: Veterinary medicine, Antimicrobial usage, Campylobacter jejuni, Multi-resistance, Philippines, Poultry

Philippine Journal of Veterinary Medicine, Volume No. 50 Issue No. 2, 104-111 2013, (Filipiniana Analytics) NP

0559

The relationship of body weight to certain external body measurements in adult fighting cocks

Bernardo, Francis Andrew Eugene M., Grona, Sheila G., Valdez, Conrado

This study was conducted to investigate the relationship of body weight to external body measurements such as body length, thoracic girth, abdominal girth, tibiotarsal, tarsometatarsal, wing length, and height from ground to the top of the back in adult, fighting cocks and to formulate possible equations to determine body weight. A total of 500 apparently healthy adult fighting cocks with age grouped into <12 mos and > 12 mos of different blood lines were used in this study. Results of correlation analysis showed a weak linear relationship between body weight and external body measurements. Simple regression analysis to identify a formula with a single best determinant of weight was not achieved. Multiple regression equations revealed that the combination of body length, abdominal girth, tibiotarsal length, and height were found to be the best predictor of weight among the parameters studied. However, a very low R2 value at 29% hinders its application on actual practice. Thus, further studies are recommended to identify the unaccounted factors that would give the best estimation of weight. (Author's abstract)

Keywords: Veterinary medicine, Body measurements, Body weight, Fighting cocks

Philippine Journal of Veterinary Medicine, Volume No. 46 Issue No. 2, 113-118 2009, (Filipiniana Analytics) NP

0560

Relative economic values of some heritable traits in selected breeds of cattle, water buffalo, goat and pig

Maguire, Thelma S., Santiago, Consuelo Amor T., Tec, John Daniel P., Bondoc, Orvi

Using simple cost-benefit analyses, the local costs of producing 1 kg live weight of cattle, water buffalo, goat and pig were found to be PhP89.14, 73.37, 63.40, and 70.74, respectively. Variable costs (i.e. feeds, medicines and vaccines, utilities, repairs and maintenance, salaries and wages) generally contributed more to total costs of production than fixed costs (i.e. stocks, buildings and equipment, depreciation). Profit per animal was highest for the production and sale of yearling cattle (PhP1, 430.24), followed by two-year-old water buffaloes (PhP355.10), 170-day-old pigs (PhP221.04) and 180-day-old goats (PhP56.88).

Relative economic values (REVs) of traits were derived from partial derivatives of their respective profit functions. The REVs for these traits were - 1.00, 1.02, and 0.16 for birth weight (BWt), adjusted 210-day weaning weight and post weaning average daily gain (PoADG), respectively for cattle; -1.00, 6.93, and 3.44 for BWt, 6-mo weight and PoADG, respectively for water buffaloes; -1.00, 0.30, and 0.27 for BWt, 90-day weight and PoADG, respectively for goats; and 1.00, 1.83, and 0.40 for ADG, feed conversion ratio and backfat thickness, respectively for pigs.

Based on computed REVs, phenotypic correlations and published estimates of heritability and genetic correlations, selection indices were constructed separately for the local production of yearling cattle, two-year-old water buffaloes, 180-day-old goats and 170-day-old pigs. (Authors' abstract)

Keywords: Veterinary medicine, Buffalo, Cattle, Goat, Pig, Relative economic value

Philippine Journal of Veterinary and Animal Sciences, Volume No. 26 Issue No. 1, 12-19 2000, (Filipiniana Analytics) NP

0561

Renal ultrasound features and echo histograms in captive Bengal tigers (*Panthera tigris*) *tigris*) *Mergilla, Mark Cyrus A.*, *Acorda, Je*

Seven apparently healthy captive Bengal tigers, five females and two males, 5-72 mos old, were used in this study. Ultrasonographic examination of the kidneys was performed in sedated tigers in a lateral recumbent position using an ultrasound machine equipped with a 3.5 MHz convex array transducer. Histogram analysis of the ultrasonograms was conducted and echo mean values were obtained. The kidneys were visualized on both the left

and right flanks, the right kidney between the 1st to 4th lumbar vertebrae and the left kidney between the 2nd to 5th lumbar vertebrae. Both left and right kidneys appeared as smooth, bean-shaped and elongated structures in sagittal section and slightly rounded in transverse scan. The centrally located renal sinus was observed to be hyperechoic. The renal medulla was seen as a hypoechoic to anechoic structure. The renal cortex appeared hypoechoic while the renal capsule was either hyperechoic or less distinct and appeared to blend with the surrounding structures. Measurements of length, width and height of kidneys were made and renal volume was calculated. Histogram analysis showed that the renal sinus had the highest echo mean values, followed by the renal cortex and lastly by the renal medulla. The results of the study could be used as reference for detecting diseases and disorders in the kidneys of tigers through diagnostic ultrasound. (Author's abstract)

Keywords: Veterinary medicine, Bengal tigers, Echo histogram, Kidney, Ultrasound

Philippine Journal of Veterinary Medicine, Volume No. 47 Issue No. 2, 66-72 2010, (Filipiniana Analytics) NP

0562

Scanning electron microscope observations on the tegumental surface of adult *Eurytrema* pancreaticum (Janson, 1889) Looss, 1907 (Trematoda: Dicrocoeliidae), a parasite of ruminants in the Philippines Sy, Henry G., Eduardo, Salc

The tegumental surface of adult Eurytrema pancreaticum from the pancreas of water buffaloes and cattle in the Philippines was studied under the scanning electron microscope (SEM). Specimens were processed following standard procedure of fixation, post-fixation, gradual dehydration, critically-point drying, and coating with gold for examining under the SEM. Adult Eurytrema pancreaticum appeared leaf-like, oval to pyriform in shape, thick at the midregion from anterior to posterior along the region of the oral and ventral suckers and less thick laterally forming a "fringe". Tegument is devoid of spines or scales. Ventral surface is marked with transverse ridges on the anterior region and with irregular folds on the posterior region. Dome-shaped papillae with smooth apical surface are found altered on the ventral surface but were concentrated around the oral and ventral suckers and in concentric rows around the genital pore opening. Irregular and anastomosing networks cover the cirrus surface giving a mesh-like appearance. The dorsal surface except alt he mid-caudal portion is marked with irregularly arranged and transversely directed short ridges giving the surface a rough appearance. Dome-shaped papillae with smooth apical surface but with irregular borders were randomly scattered on the anterior fourth of the dorsal and lateral sides of the body. The mid-caudal portion revealed a small porous surface and few smaller dome-shaped papillae with apical cilia. The tegumental surface of Eurytrema pancreaticum is compared with those of other trematodes examined by SEM especially with respect to the occurrence and distribution of the tegumental papillae. The possible function especially of the tegumental papillae, the porous area on the dorsal side, the network of ridges on the cirrus and lateral "fringe" is discussed. (Author's abstract)

Keywords: Veterinary medicine, Eurytrema pancreaticum, Pancreatic fluke, Scanning electron microscope (SEM), Tegumental surface, Philippines

Philippine Journal of Veterinary Medicine, Volume No. 44 Issue No. 2, 100-106 2007, (Filipiniana Analytics) NP

Selected blood chemistry values of Juvenile ostriches (*Struthio camelus*) raised in Sto. Tomas, Davao Del Norte Jimenez, Lia Ronelle F., Paraso, Michelle Gr

Blood samples were collected from twenty (20) ostriches (*Struthio camelus*) raised in Sto. Tomas, Davao del Norte to determine normal mean values for alanine aminotransferase (ALT), aspartate aminotransferase (AST), blood urea nitrogen (BUN), cholesterol, glucose, and total protein (TP), and also to analyze the influence of age and gender on these variables. Results showed that serum concentrations for ALT, BUN, cholesterol and TP were significantly higher in the female (n=10) than in the male (n=10) (P<0.05). Males had higher AST levels compared to females (P<0.05), while glucose levels did not significantly differ between the two groups. Younger birds (4-5 months old, n=13) had higher ALT, cholesterol and glucose levels, and significantly lower concentrations of BUN and TP than older individuals (12 months of age, n=7). There were no differences between the two age groups in AST levels. These findings could be of help in assessing the health status and in the establishment of the normal serum chemistry profile of locally raised ostriches. **(Author's abstract)**

Keywords: Veterinary medicine, Avian blood, Biochemical values, Ostrich, Ratite, Serum chemistry

Philippine Journal of Veterinary Medicine, Volume No. 44 Issue No. 1, 57-59 2007, (Filipiniana Analytics) NP

0564

Serological response of infectious bursal disease-vaccinated broiler chicks to newcastle disease vaccination Batungbacal, Marcela R., Monleon, Arnolf

The effect of a modified live Infectious bursal disease (IBO) vaccine containing an intermediate strain of IBO virus on the antibody response of broiler chicks to live Newcastle disease (ND) vaccine was evaluated. Seventy chicks from the same breeder flock were randomly divided into four groups. Group A was simultaneously vaccinated against IBO and ND at day-old. Group B was given IBO and ND vaccines at one and seven days old, respectively. Group C was immunized against ND and IBO at seven and ten days of age, respectively. Group D received only the ND vaccine at seven days old, and served as control. All birds were revaccinated for ND at 21 days of age. The bursa of Fabricius was collected from three chicks in groups A, Band C, five days post-IBO vaccination and from 3, 7, 14 and 21 days old chicks in group 0 and examined for gross and histologic changes. Microscopically, lymphocyte degeneration and depletion, cyst formation, interfollicular edema and hemorrhages were found to be more extensive in the bursa of birds vaccinated against IBO at day-old than in those vaccinated at ten days of age. In contrast, bursa of Fabricius taken from day-old chicks prior to IBO vaccination and those from non-IBO vaccinated chicks showed dense bursal follicles populated with normal lymphocytes. Low to moderate levels of maternal antibodies to ND and IBO viruses were detected in sera collected prior to ND and IBO vaccination by HI and ELISA test, respectively. Primary and secondary antibody responses to ND vaccine were consistently and significantly lower in IBO-vaccinated birds than in the control group. Suppression of humoral immunity was more dramatic in birds given the IBO vaccine at day-old than in birds vaccinated at 10 days of age. Results of the study showed the potential of a modified live intermediate IBO vaccine to cause serious damage to the bursa of Fabricius with consequent depression of antibody response to live ND vaccine when given particularly to day-old broiler chicks with low to moderate levels of maternal antibody to IBO virus. (Author's abstract)

Keywords: Veterinary medicine, Bursa, Immunity, Infectious bursal disease, Newcastle disease, Vaccine

Philippine Journal of Veterinary and Animal Sciences, Volume No. 26 Issue No. 1, 20-34 2000, (Filipiniana Analytics) NP

Seroprevalence of *Campylobacter* spp. using enzyme-linked immunosorbent assay in humans and chickens from selected areas of Metro Manila and Laguna, Philippines *Tapay, Lourdes M.*, *Torres, Ma. Immaculada P.*, *Santos, Josefina C.*, *Raymundo, Asuncion K.*, *Baldrias, Loinda R.*, *Manandhar, Poornima, Tsang, Raymond*, *Garcia, Manue*

An enzyme-linked immunosorbent assay (ELISA) was adopted to determine the occurrence of antibodies for *Campylobacter jejuni/coli* and *C.jejuni* 0:19 in 128 human and 128 chicken serum samples. Seroprevalence to *C.jejuni/coli* among humans tested was found very high at 96.1% (123/128), compared to *C. jejuni* 0:19 at 0.6% (2/128). This is the first report on *C. jejuni/coli* seroprevalence in the country. Moreover, it is also the first report for serodiagnosis of *C. jejuni* 0:19 in the Philippines. The prevalence rates for antibodies to *C. jejuni/coli* and *C.jejuni* 0:19 among different age groups and between sexes were not significantly different (P < 0.05). Furthermore, there was also no difference in seroprevalence among exposed (chicken workers) and non-exposed (non-chicken workers) groups for *C. jejuni/coli*. However, the prevalence rate for *C.jejuni* 0:19 antibodies was higher (P<0.05) in the non-exposed group. In chickens, antibodies to *C.jejuni/coli* were also observed to be very high (P<0.01) at 80.5% (103/128) whereas, no antibodies to *C.jejuni* 0:19 was detected. (Author's abstract)

Keywords: Veterinary medicine, Antibodies, Campylobacter, ELISA, Seroprevalence

Philippine Journal of Veterinary Medicine, Volume No. 44 Issue No. 2, 123-129 2007, (Filipiniana Analytics) NP

0566

Seroprevalence of *Neospora caninum* antibodies in selected dairy cattle herds from Laguna and Quezon Provinces, Philippines *Bombio, Ariel M., Divina, Billy*

This study was conducted to determine the prevalence of antibodies to Neospora. caninum in serum samples from different dairy cattle herds in Laguna and Quezon provinces with history of reproductive disorders such as abortion and repeat breeding using immuno stimulating complex-enzyme-linked immunosorbent assay (iscom-ELISA). Nineteen (11 %) out of 172 serum samples showed positivity to N. caninum. The seroprevalence of N. *caninum* in the five dairy herds varied from 0 to 21. 7%. Although iscom-ELISA is not a definitive test, the result indicates the possible occurrence of the organism in the positive herds. Further studies, regular testing and continuous monitoring of N. *caninum* on herds especially with seropositive animals and its relation to reproductive problems are recommended. (Author's abstract)

Keywords: Veterinary medicine, Antibodies, Cattle, iscom ELISA, Neospora caninum, Prevalence, Serum

Philippine Journal of Veterinary Medicine, Volume No. 46 Issue No. 2, 82-86 2009, (Filipiniana Analytics) NP

Seroprevalence of *Neospora caninum* in Bulgarian murrah buffaloes and its detection in domestic dogs from buffalo dairy herds in Nueva Ecija, Philippines *Divina, Billy P. , Abes, Na*

The seroprevalence of *Neospora caninum* in female Bulgarian Murrah buffaloes in Nueva Ecija, relation between seropositivity and age groups (1-3 years, 4-6 years,>7 years) of the animals, and history of abortion, and its serological detection in dogs reared in close contact with seropositive buffaloes were studied. Competitive ELISA was used to test 176 buffalo sera from 36 dairy buffalo herds. IFAT was used for re-testing ELISA-positive samples and for sera-detection of the organism in dogs. Individual and herd-level prevalence based on cELISA were 27.3% (48/176) and 69.4% (25/36), respectively. IFAT detected 43 (90%) positives out of the 48 cELISA-positive samples. Prevalence seemed to increase with age, however, only age group >7 years (35.2%) had significantly higher prevalence than 1-3 years (17.4%) group. Analysis of 42 sera from seven herds showed no significant association between seropositivity and abortion history. However, an odds ratio of 1.5 was obtained suggesting that animals with history of abortion were 1.5 times more likely to become seropositive. As for 38 sera from dogs, IFAT detected 23 (60%) positives. Overall, this study showed the occurrence of antibodies to N caninum in Bulgarian Murrah buffaloes and dogs in the province of Nueva Ecija. It is recommended that further studies be done to determine the extent of the disease in buffaloes in the country and the mechanism of transmission within and among different buffalo herds. **(Author's abstract)**

Keywords: Veterinary medicine, Buffalo, cELISA, Dogs, IFAT, Neospora caninum, Prevalence

Philippine Journal of Veterinary Medicine, Volume No. 45 Issue No. 1, 30-38 2008, (Filipiniana Analytics) NP

0568

In situ digestibiliy evaluation of fresh samples of some potential feed protein sources containing varying levels of tannin Sevilla, Cesar C., Billena, Mylen S., Bejo, Mafeo

Three mature female cattle with an average body weight of 143 kg were surgically fitted with rumen cannula and used to determine the in situ nutrient degradabillty of some potential indigenous feed protein sources in fresh form. Gliricidia (Gliricidia sepium (Jacq.) Kunth ex Walp), binunga (Macaranga tanarius (L.) Muell. Arg.), Leucaena (Leucaena leucocephala (Lamk) de Wit.), anubing (Artocarpus ovatus Blanco), flemingia (Flemingia marcrophylla (Willd.) Merr.) and malaipil (Intia acuminate Merrill) were selected out of 22 fodder species screened, as the potential indigenous feed sources based on crude protein(CP) and condensed tannin (CT) content. Among the species, the degradability of dry matter (DM) and CP was highest in gliricidia and malaipil, but similar with that in flemingia. Extractable CT was negatively correlated with the digestibility of DM, CP and neutral detergent fiber (NDF) in all species in fresh form. Levels of tannin concentration and the physical preparation of the species influenced the relationship between tannin content and the rumen digestion kinetics of DM and CP. It Is concluded

that the presence of high levels of tannin protected the plant proteins from degradation by the rumen microorganisms. (Author's abstract)

Keywords: Veterinary medicine

Philippine Journal of Veterinary and Animal Sciences, Volume No. 28 Issue No. 2, 2002, (Filipiniana Analytics) NP

0569

Species of the Genera *Gastrothylax* Poirier, 1883 and *Carmyerius* Stiles and Goldberger, 1910 (Paramphistomoidea: Gastrothylacidae) Occurring in Philippine Ruminants *Eduardo, Salc*

Two species, including a new one of *Gastrothylax* and two species of *Carmyerius* from ruminants in the Philippines, are identified, described and illustrated based on present materials. These are *Gastrothylax crumenifer*, *Gastrothylax caraphilensis* new species, *Carmyerius gregarius* and *Carmyerius synethes*. The histo-morphology of their muscular organs as seen in median sagittal sections is detailed. *Gastrothylax caraphilensis* is characterized by its small size, ceca extending to the level of the posterior border of the testes or beyond them; pharynx of the paramphistomum type, acetabulum of the carmyerius type, terminal genitalium of the bubalis type in median sagittal section; ventral pouch roughly triangular in cross section with the apex directed dorsally. It is differentiated from two other valid species of the genus namely *G. crumenifer* and *G. compressus*. *Gastrothylax glandiformis*, *G. indicus*, *G. globoformis*, *G. zhonghuaensis* and *G. boyangensis* were inadequately described in literature and features of their muscular organs are not known. Until new specimens are examined for these features as seen in median sagittal sections, they are considered species inquirendae. The value of employing the shape or outline of the ventral pouch as seen in cross section with other characteristics in separating species of the pouched amphistomes is discussed. (Author's abstract)

Keywords: Veterinary medicine, Pouched amphistome, Carmyerius, Gastrothylax, Gastrothylax caraphilensis, Ruminant

Philippine Journal of Veterinary Medicine, Volume No. 52 Issue No. 2, 89-98 2015, (Filipiniana Analytics) NP

0570

Species of the genus *Pseudomenopon* Mjöberg, 1910 (Mallophaga: Amblycera: Menoponidae) occurring on Philippine rallidae (Aves: Gruiformes) with description of a new species, *Pseudomenopon micosai Eduardo, Salc*

Five species of the avian family Rallidae namely *Amaurornis phoenicurus javanicus* (white-breasted waterhen), *Gallicrex cinerea* (watercock), *Gallinula chloropus lozanoi* (common moorhen), *Gallirallus philippensis* philippensis (buff-banded rail) and *Gallirallus torquatus torquatus* were examined live for lice at different periods.

Lice were collected and fixed and stored in 70% ethyl alcohol until further study. Lice were processed for examination by cleaning in 5% potassium hydroxide solution, washing in distilled water, dehydrating in increasing grades of ethyl alcohol, clearing in terpineol and mounting in Canada balsam. Representative specimens of the lice were stained with Ziehl-Neelsen (carbol-fuchsin) in absolute ethyl alcohol before clearing in terpineol and mounting in Canada balsam. Three species of chewing lice of the genus *Pseudomenopon* Mjöberg, 1910 including one new to science were identified from the collection as follows: *Pseudomenopon scopulacorne, P. pilosum* and *P. micosai* new species. These are all illustrated based on the present specimens. *Pseudomenopon pilosum* occurred on all birds examined; *P. scopulacorne* on *Amaurornis phoenicurus javanicus* and *P. micosai*, which is described and illustrated as a new species, on *Gallirallus philippensis philippensis* and *Gallirallus torquatus torquatus*. The new species is characterized by a unique male genitalia especially the roughly rectangular principal genital sclerite, a short head seta 7, absence of a pair of pointed post palpal processes, a very long lateral anal setae in the female, and a different chaetotaxy in terms of distribution, number and size of setae in both the male and female. It is differentiated from species of the genus *Pseudomenopon* especially those occurring on the Rallidae. A summary of *Pseudomenopon* species together with their specific avian hosts, so far recorded from Rallidae in the Philippines is provided. (Author's abstract)

Keywords: Veterinary medicine, Chewing lice, Ectoparasites, Mallophaga, Pseudomenopon pilosum, Pseudomenopon micosai, Pseudomenopon scopulacorne, Philippine rallidae

Philippine Journal of Veterinary Medicine, Volume No. 49 Issue No. 1, 21-29 2012, (Filipiniana Analytics) NP

0571

Streptococcal meningitis and arthritis in a Philippine pig (Sus scrofa domestica) Masangkay, Joseph S., Camer, Ge

Septicemic porcine streptococcal infection is an emerging zoonosis with a published report of human meningeal infection following consumption of raw or undercooked pork following travel to the Philippines. Streptococcal sepsis showing suppurative arthritis and meningitis was clinicopathologically characterized following isolation of *Streptococcus* species from the knee joints, lymph nodes, liver and meninges of affected pig. This study documented streptococcal meningitis and arthritis in a pig in Northern Samar, Philippines. Streptococcal sepsis is suggested to be regularly included in the differential diagnoses of clinical encounters of arthritides and meningitides in pigs. (Author's abstract)

Keywords: Veterinary medicine, Arthritis, Pig, Meningitis, Streptococcus

Philippine Journal of Veterinary Medicine, Volume No. 51 Issue No. 1, 56-58 2014, (Filipiniana Analytics) NP

0572

Subcutaneous administration of L-carnitine is associated with differential expression of genes involved in glucose uptake and glycolysis in Iranian Baluchi Sheep (*Ovis aries*) Ghalehnoo, Mehdi Rashki, Rashki, Ah The study was conducted to determine the effects of subcutaneous administration of L-carnitine on the expression of genes involved in fatty acid, glucose metabolism, glucose uptake and glycolysis in Iranian Baluchi sheep (*Ovis aries*). Twenty adult sheep were randomly divided into equal test and control groups and given subcutaneously 300 mg/75 kg of L-carnitine and 2 ml/75 kg distilled water daily for 28 days, respectively. After 28 days, the experimental and control sheep were all slaughtered for sampling; the total RNA was extracted from the liver samples using TRIzol Reagent method and changes in the transcript levels of selected genes were measured by RT-qPCR. The results showed that under this condition, the levels of expression of genes *DQ174126*, *FBA1*, *FAB4*, *GPD1*, *GLUT1*, *GLUT3*, *G6PD*, *PFK1*, *PGK1*, *PRKAA1* and *PRKAA2* encoding enzymes belonging to the glycolytic and lipogenic pathway in the liver were increased whereas *HSDL1* and *PCK1* were decreased by L-carnitine supplementation compared to the control. In conclusion, subcutaneously administered L-carnitine has beneficial effects on lipid and glucose homeostasis by inducing genes involved in glucose metabolism, fatty acid β -oxidation and glycolysis. (Author's abstract)

Keywords: Veterinary medicine, Gene expression, Glucose uptake, Glycolysis, Iranian Baluchi sheep, L-carnitine

Philippine Journal of Veterinary Medicine, Volume No. 51 Issue No. 1, 44-50 2014, (Filipiniana Analytics) NP

0573

Successful pregnancies in Philippine native bitches artificially inseminated once or twice using frozen-thawed rotweiller somen

Madamba, Alma Michelle T., Marte, Benjamin Reuel G., Valdez, Conrado A., Rubico, Joseph E

This study was undertaken to determine the conception rates after artificially inseminating Philippine native bitches with frozen-thawed canine semen on the first day of estrus (single insemination) or first and fifth days of estrus (double insemination). Semen was collected by digital manipulation from an apparently healthy Rotweiller stud. The collected semen was subjected to gross and microscopic examination to determine its viability for freezing and insemination. Only semen with motility rate of 60% or higher was frozen using a Tris-raffinose-eggyolk extender containing glycerol as cryoprotectant. The frozen semen was stored in liquid nitrogen until use. Frozenthawed semen with a motility rate of 30% or higher was then artificially inseminated into the vagina of adult Philippine native bitches. Sixteen apparently healthy native Philippine bitches were assigned into two treatment groups. Half of the bitches were inseminated only once at the first day of estrus or twice on the first and fifth days of estrus. Heat detection was based on clinical signs and examination of vaginal smears. This study yielded 25% conception rate for single insemination and 50% conception rate for double insemination of frozen-thawed canine semen. All the pregnant bitches were allowed to whelp producing healthy puppies. Based on available literature reviewed, this is the first report on the successful artificial insemination of Philippine native bitches using frozenthawed canine semen. However, based on the results of this study, further research on optimizing the canine freezing protocol, number and timing of insemination and other factors affecting semen quality are warranted. (Author's abstract)

Keywords: Veterinary medicine, Artificial insemination, Dog, Estrus, Frozen spermatozoa

Superovulation response, embryo recovery and transfer in dairy cows using porcine follicle stimulating hormone

Marcial, Jr., Demetrio B., Bautista, Jose Arceo N., Rayos, Antonio A., Oreiro, Conrad

Porcine follicle stimulating hormone (FSH-P) was used to superovulate 22 donor cows utilizing two methods or administration. Nine of eleven donors responded to FSH-P administered in decreasing close while 10 of 11 donors responded to FSH-P in constant close. Although donors given constant dose of FSH-P yielded more corpora lutca, embryos and normal embryos, than donors treated with decreasing dose of FSH-P, a significant difference was not observed. Twenty-six normal embryos were transferred to estrus synchronized recipients resulting in 17 pregnancies and 16 live births. Seventy-five normal embryos recovered were vitrified. Twenty vitrified embryos were subsequently warmed and transferred to recipients resulting in 10 pregnancies and eight live births. (Author's abstract)

Keywords: Veterinary medicine, Embryo, Embryo transfer, Follicle stimulating hormone, Superovulation

Philippine Journal of Veterinary Medicine, Volume No. 43 Issue No. 1, 46-50 2006, (Filipiniana Analytics) NP

0575

Survey of *Ehrlichia canis* infection in dogs in South-West Japan using immunofluorescent antibody test and polymerase chain reaction *Yamamoto, Shizuo , Kuribayashi, Takashi, Seita, Tets*

Blood specimens from dogs in South-West Japan were tested for *Ehrlichia canis* infection using immunofluorescent antibody test (IFA) and polymerase chain reaction (PCR) based on16S rRNA gene. By IFA, 19.2% (186/968) and 2.8% (11/399) of specimens from stray dogs in Okinawa and Kagoshima prefectures, respectively, were positive. For pet dogs in Okinawa and Tokushima prefectures, 10.9% (12/110) and 2.3% (8/341), respectively, were positive. Among dogs infected with *E. canis* in Tokushima prefecture, no significant difference was observed between *Babesia*-positive and *Babesia*-negative animals. Of IFA-positive specimens from stray dogs in Okinawa and Kagoshima prefectures, 4.3% and 19.1%, respectively, were positive for *E. canis* using PCR. These specimens were negative by E. muris and E. platys by PCR the base sequences of partial *E. canis* 16S rRNA gene (389-bp PCR products) from four dog specimens were identical to that observed from a dog in Guangzhou, China. The sequence of 16S rRNA was considered to be needed for the diagnosis of *E. canis* infection in Japan. (Author's abstract)

Keywords: Veterinary medicine, Ehrlichia canis, Immunofluorescent antibody test, Polymerase chain reaction

Philippine Journal of Veterinary Medicine, Volume No. 51 Issue No. 1, 38-43 2014, (Filipiniana Analytics) NP

On three species of chewing lice (Mallophaga: Ischnocera) from the common emerald-dove and the spotted imperial-pigeon (Aves: Columbiformes) in the Philippines *Eduardo, Salc*

Two species of Philippine wild birds, Chalcophaps indica (common emerald-dove) and *Ducula carola carola* (spotted imperial-pigeon) were examined for the presence of chewing lice. Three species of chewing lice of the suborder Ischnocera and belonging to two genera were found and identified. These are *Columbicola guimaraesi* from the former bird, and both *Columbicola cavifrons* and *Auricotes philippinensis* from the latter bird species occurring as a mixed infestation. The female *Auricotes philippinensis* is recorded and described for the first time. Photographs of all three species and illustration of the subgenital plate (genitalia) and posterior end of the female *Auricotes philippinensis* are provided. The occurrence of *Columbicola cavifrons* on *Ducula carola carola* constitutes a new host record for the parasite. (Author's abstract)

Keywords: Veterinary medicine, Auricotes philippinensis, Chewing lice, Columbicola guimaraesi, Columbicola cavifrons, Dove, Pigeon, Philippines

Philippine Journal of Veterinary Medicine, Volume No. 50 Issue No. 1, 2013, (Filipiniana Analytics) NP

0577

Timing of sequential changes on chromosome configurations during the 1st meiosis, 2nd meiosis and ctoplasmic events of Swamp buffalo Oocytes matured and fertilized *in vitro* Shimizu, Hiroshi, Mori, Tadashi, Venturina, Emma V., Ocampo, Marlon B., Ocampo, Lerma C., Mamuad, Felom

Swamp buffalo oocytes were examined to determine the specifics of early events of maturation and fertilization in vitro. A variation in germinal vesicle morphology revealed an asynchronous oocyte population at the time of collection (0 hr culture). Germinal vesicle breakdown was noticed from 8-11.7 hr of culture, Metaphase I stage at 11.7-19.3 hr, Anaphase I and Telophase I stages were seen occasionally between 19.3-21.1 hr and 21.1-22.2 hr, respectively, while Metaphase II stage was prominent between 22.2-24.0 hr of culture. The first evidence of sperm penetration was observed 1 hr after insemination. Attachment of spermatozoa in the ooplasm resulted to the initiation of 2nd meiosis and was seen from 5-8 hr post insemination. Further decondensation of penetrating sperm head in association with female chromosome decondensation, accompanied with nuclear envelope formation was noted between 8-11 hr post insemination. Opposing and apposing pronuclei were frequently seen between 22-23 hr after insemination. Syngamy, prophase stage of 1st mitotic division, including first cleavage, were observed as early as 20 hr insemination. (Author's abstract)

Keywords: Veterinary medicine, Asynchrony, Buffalo, Meiosis, Oocytes, Syngamy

Philippine Journal of Veterinary and Animal Sciences, Volume No. 27 Issue No. 1, 1-11 2001, (Filipiniana Analytics) NP

Total submandibular sialoadenectomy on the histopathological features of non-lactating mammary glands in sexually mature rats

Bariuan, Jussiaea V., Palma, Roanna Zerla E., Estacio, Maria Amelita C., De Ocampo, Grace D., Sacnahon,

Gr

The influence of the submandibular salivary glands on the morphology of the non-lactating mammary gland in rat was examined by determining the effect of total surgical removal of the submandibular salivary gland (total submandibular sialoadenectomy) on this gland's histologic features. A total of 60 sexually mature female Sprague-Dawley rats were divided into three experimental groups: intact (n=20), sham-operated (n=20) and sialoadenectomized (n=20). Sixty days post surgery, all rats under the three experimental groups were sacrificed and mammary glands were collected per animal. The mammary glands were fixed and processed using the routine paraffin technique. Tissue sections of the glands were stained with H & E, Masson's Trichrome and Weigert's stains and examined under the light microscope to describe the structure of the mammary gland's stroma and parenchyma. The secretory alveoli were counted and the mean (\pm SD) were subjected to statistical analysis using the one-way ANOVA with P<0.05.

Results showed that the basic architecture of the non-lactating mammary gland of rat resembled that of mouse and most domestic species except that the gland of rat consisted only of one lobe with six pairs of teats. Comparison of the three experimental groups revealed that the non-lactating mammary gland of sialoadenectomized rats presented a stroma with the thinnest capsule, fine interlobular connective tissue septa and most abundant adipose tissue in the interstitium; and the least developed parenchyma with the significantly lowest number of alveoli, least branching of these alveoli, rare secretory tubules, and fewer and smaller interlobular ducts compared with the nonlactating mammary glands of the intact and sham-operated rats.

It is concluded that total surgical removal of submandibular salivary gland in sexually mature non-lactating female rats adversely affected the amount and composition of stromal and parenchymal elements in the non-lactating mammary gland of rats. (Authors' abstract)

Keywords: Veterinary medicine, Histopathology, Mammary gland, Submandibular sialoadenectomy

Philippine Journal of Veterinary Medicine, Volume No. 49 Issue No. 1, 44-50 2012, (Filipiniana Analytics) NP

0579

Tumor cell death-inducing protein from buffalo milk Chua, Yvette Maureen Y., Gregorio, Richmond L., Deocaris, Cus

To a suckling young animal, milk not only provides nutrients but also a myriad of molecules that prime the neonatal mucosal immune system against bacterial infection (e.g. lysozyme, lactoperoxidase, lactoferrin and immunoglobulins). In this study, the presence of human multimeric alpha lactalbumin (HuMAL) was investigated in an animal source, i.e. buffalo milk. Fresh buffalo milk was processed through a series of salt and isoelectric precipitation steps to obtain the crude lactalbumin fraction, which was then further purified by pooling the 280-nm peak obtained after Sephadex G-50 gel chromatography. Only 9.7 mg of buffalo alpha-lactalbumin (BAL) per liter fresh milk was recovered after the isolation series. BAL has been shown to possess a molecular weight of 15 kOA as determined by SOS-PAGE electrophoresis with silver stain. All SkBr3 breast carcinoma cells were killed at 8.0 mg/ml concentration of BAL, while A549 lung adenocarcinoma is refractory to the treatment. This, however, contrasts with the broad-spectrum toxicity demonstrated by HuMAL during a parallel treatment. The mechanism by which BAL exerts its anti-tumor activity towards breast tumors is presumed to be via a combination of early necrosis through loss of plasma membrane integrity within 8 hr post-treatment and largely through apoptosis

(programmed cell death) as revealed by Terminal d-UTP Nick End Labeling (TUNEL) with FITC-labeled nucleotides. These findings raise the possibility of prospecting for potential anti-cancer agents from dairy products, as well as, in promoting cancer preventive measures by increasing dietary consumption of fresh milk. (Author's abstract)

Keywords: Veterinary medicine, Buffalo, Cancer, Lactalbumin, Milk

Philippine Journal of Veterinary and Animal Sciences, Volume No. 27 Issue No. 1, 84-92 2001, (Filipiniana Analytics) NP

0580

Ultrasonic features of the kidneys and urinary bladder in dogs with clinical signs of urinary disorders Ella, Areva Corazon S., Acorda, Je

Sixty-six (66) dogs, 36 males and 30 females, 2-40 kg, 6 mos to 12 yrs old, of various breeds with clinical signs of urinary disorders were examined ultrasonographically using an ultrasound machine equipped with a 3.5 MHz convex array scanner. The ultrasound features of the kidneys and urinary bladder were noted. Of the 66 dogs, nine (5 male, 4 female) dogs did not show any ultrasound abnormalities in the kidneys and/or urinary bladder, four (2 male, 2 female) dogs showed disorders in the kidneys alone, 34 (19 male, 15 female) dogs showed abnormalities in the urinary bladder alone while 19 (10 male, 9 female) dogs exhibited changes in both kidneys and urinary bladder. Abnormal ultrasound features detected in the kidneys include hyperechoic structures casting distinct acoustic shadows, anechoic areas in the pelvis, anechoic areas in the retroperitoneal space, anechoic round structures with distal enhancement, anechoic to hypoechoic areas scattered throughout the kidney, increased anechoic areas with irregular wall and enlarged kidney. In the urinary bladder, detectable ultrasound abnormalities include hyperechoic structures casting an acoustic shadow, thickened walls with or without increased corpuscular echogenicities, breaks in the thickened bladder wall, irregular-shape hyperechoic to hypoechoic areas in the lumen, hyperechoic or hypoechoic mass attached to the bladder wall and enlarged trigone with distended ureter. The results suggest that diagnostic ultrasound can assist the clinician in arriving at a more accurate diagnosis in dogs with clinical signs of

urinary disorders. (Author's abstract)

Keywords: Veterinary medicine, Dog, Kidneys, Ultrasound, Urinary bladder, Urinary disorder

Philippine Journal of Veterinary Medicine, Volume No. 48 Issue No. 1, 8-16 2011, (Filipiniana Analytics) NP

0581

Ultrasonic imaging and sonographic digital analysis of the kidneys and urinary bladder in the Philippine tarsier, *Carlito syrichta* (Linnaeus, 1758) Shekelle and Groves, 2010 (Mammalia: Primates: Tarsiidae) *Arcamo-Gentica, April May L., Acorda, Jezi* The purpose of this study was to describe the ultrasonographic features and determine the echogenicity of kidneys and urinary bladder according to sex, age and source of Philippine tarsiers (*Carlito syrichta*). The examination was done using a veterinary ultrasound machine equipped with a 7.5 MHz linear-array scanner. Eight apparently healthy Philippine tarsiers (three caught from the wild and five captive-bred) were examined. The kidneys appeared as bean-shaped with anechoic renal medulla, hypoechoic renal cortex, hyperechoic renal pelvis and a thin hyperechoic renal capsule. The dimensions of the kidneys showed larger size in adults, females and wild tarsiers. The echogenicity of the kidney showed that the renal pelvis had the highest echo mean values, followed by the renal cortex and renal medulla. The urinary bladder had anechoic lumen with defined hypoechoic walls. The dimensions of the urinary bladder showed a larger size among adults, females and wild tarsiers. Echo mean values showed that the urinary bladder lumen of juveniles, females and wild tarsiers were more echogenic. Results of the study could be used as baseline data for the ultrasound features of kidneys and urinary bladder for diagnosis of diseases and disorders of these organs in Philippine tarsiers. (Author's abstract)

Keywords: Veterinary medicine, Echo histogram, Kidneys, Philippine tarsier, Ultrasound, Urinary bladder

Philippine Journal of Veterinary Medicine, Volume No. 50 Issue No. 2, 75-81 2013, (Filipiniana Analytics) NP

0582

Ultrasonogram patterns and echo mean values of the liver and gall bladder in dogs with suspected hepatobiliary disorders

Flores, Marianne Leila S., Acorda, Jezie A., Alvina, Larra F

In order to determine the changes that occur in the liver and gall bladder in dogs with suspected hepatobiliary disorders based on clinical signs, hematology and serum biochemistry, 33 dogs of various breeds, ages and sexes were examined ultrasonographically. The ultrasonogram patterns observed in the liver and gall bladder were characterized and echogenicity of the organs with different patterns were determined using digital analysis. The six ultrasonograms patterns observed in the liver include: HP1 - homogenous hypoechoic parenchyma (4 dogs); HP2 anechoic ovoid structures within the hepatic parenchyma with acoustic enhancement (2 dogs); HP3 - liver lobes defined by the presence of fluid with rounded margin and hyperechoic parenchyma (3 dogs); HP4 - homogenous hyperechoic parenchyma (4 dogs); HP5 - multiple hyperechoic areas scattered in the parenchyma (9 dogs); and HP6 - distinct focal masses in the parenchyma with mixed echogenicity (12 dogs). The six ultrasonogram patterns observed in the gall bladder include: GB1 - oval and round shaped with anechoic lumen (3 dogs); GB2 - irregularly shaped with anechoic lumen (1 dog); GB3 - oval shape with hyperechoic structure casting acoustic shadow (1 dog); GB4 - gall bladder with central echogenic bile forming a stellate pattern with anechoic periphery (1 dog); GB5 irregularly shaped with corpuscular echogenicities (4 dogs); and GB6 - thickened wall with corpuscular echogenicities (13 dogs). For echo mean values of the hepatic parenchyma, HP2 showed the lowest echo mean value while HP3. HP4. HP5 and HP6 revealed echo mean values which were higher than that of the normal hepatic parenchyma (HP1). For gallbladder, GB1 and GB2 showed the lowest echo mean values, while GB3 showed the highest echo mean value. GB4, GB5 and GB6 showed higher echo mean values than that of the normal gallbladder lumen (GB1). The above results can be used to characterize the lesions in the liver and gall bladder in dogs with suspected hepatobiliary disorders. (Author's abstract)

Keywords: Veterinary medicine, Dog, Gall bladder, Hepatobiliary disorders, Liver, Ultrasonogram pattern, Ultrasound

Philippine Journal of Veterinary Medicine, Volume No. 49 Issue No. 2, 67-75 2012, (Filipiniana Analytics)

Ultrasonographic features of some visceral organs of the Philippine brown deer, *Rusa* marianna (Desmarest, 1822) (Cetartiodactyla: Cervidae) Acorda, Jezie A., Obedencio, Jr., J

The study was conducted to determine the ultrasonographic features and measurements of the liver, spleen, kidney, stomach and urinary bladder of the Philippine brown deer (*Rusa marianna*). Eight deer were examined using an ultrasound machine equipped with a 5.0 MHz micro-convex scanner. Variations on the ultrasound features and measurements between sex and age were determined. Echo mean values of the liver and spleen were also obtained. The parenchyma of the liver and spleen was homogenously anechoic to hypoechoic. The liver capsule was seen as hypoechoic to hyperechoic while the splenic capsule was hyperechoic. The liver and spleen parenchyma of the adults have higher echo mean values than in juveniles (P<0.05). The renal pelvis and capsule appeared as hyperechoic, whereas the renal medulla was anechoic while the cortex was anechoic to hypoechoic. The walls of the different chambers of the stomach were seen as a hyperechoic line. The adult deer have thicker ruminal wall than juveniles (P<0.05). The urinary bladder was seen as hyperechoic with an anechoic lumen. The results of the study can be used as a reference for the diagnosis of diseases and disorders of the liver, spleen, kidney, stomach and urinary bladder in Philippine brown deer. (Author's abstract)

Keywords: Veterinary medicine, Kidney, Liver, Philippine brown deer, Spleen, Stomach, Ultrasound, Urinary bladder

Philippine Journal of Veterinary Medicine, Volume No. 51 Issue No. 2, 79-88 2014, (Filipiniana Analytics) NP

0584

Ultrasonographic features of the heart in Philippine brown deer, *Rusa marianna* (Desmarest, 1822) (Cetartiodactyla: Cervidae) *Obedencio, Jr., Jose M., Acorda, Jezi*

The study aimed to describe the ultrasonographic features and measurements of the heart of the Philippine brown deer, *Rusa marianna* (Desmarest, 1822) through transcutaneous ultrasonography of eight animals, four males (two adult and two juvenile) and four females (two adult and two juvenile), using an ultrasound machine with a 5.0 MHz micro-convex scanner. Variations on the ultrasound features and measurements between sex and age were also determined. B-mode ultrasonography revealed the lumen of the chambers of the heart as anechoic with hyperechoic pericardium. The ventricular walls, interventricular septum, mitral valve and aortic valve were seen as hypoechoic structures. M-mode ultrasonography revealed the right ventricular wall, interventricular septum and left ventricular wall as low, medium and high amplitude waves, respectively. Mitral valve was seen as a two peaked wave. The adult animals had higher left ventricular diameter and lower heart rate (P<0.05) than the juveniles. Fractional shortening and cardiac dimensions were not significantly different between sexes and age groups. The results of the present study may be used as baseline data and reference for the diagnosis of diseases and disorders of the heart in Philippine brown deer. (Author's abstract)

Keywords: Veterinary medicine, Echocardiography, Heart, Philippine brown deer, Ultrasound

Philippine Journal of Veterinary Medicine, Volume No. 51 Issue No. 1, 23-29 2014, (Filipiniana Analytics) NP

Ultrasonographic features of the liver and associated structures in Philippine native goats (Capra hircus) Maligaya, Rhea L., Acorda, Jezie A., Acebedo, Maresie

Ultrasonography is a valuable tool in evaluating disorders of the liver in animals. However, very limited studies have been conducted in the liver of goats. Bight Philippine native goats, four males and four females, aged one to three years old, were examined to determine the normal features of the liver, hepatic vessels, caudal vena cava and gall bladder under ultrasonography at the right flank from the 5th intercostal space to the area behind the last rib. After ultrasonography, the goats were slaughtered and gross and histological examinations of the liver were conducted. The liver, caudal vena cava, portal vein, and hepatic vein were most effectively examined in the 8th to 12th intercostal spaces, and the gall bladder in the ventral area of the 10th intercostal space. Normal echogenicity of the liver consisted of numerous weak echoes homogeneously distributed on the entire parenchyma. The portal vein and caudal vena cava appeared as structures with anechoic lumen and hyperechoic wall; the letter was seen only outside the hepatic parenchyma. The hepatic vein showed an anechoic: lumen with a hypoechoic wall. The gall bladder appeared as fluid-filled sac with anechoic lumen and hypoechoic margin with variable shapes, depending on its fullness. Measurements of the liver ultrasonographically conformed with gross measurements. Results of this study can be used as a reference when evaluating the liver and its associated hepatic structures in Philippine native goats for early non-invasive diagnosis of pathologic conditions. (Author's abstract)

Keywords: Veterinary medicine, Caudal vena cava, Goat, Hepatic vein, Liver, Portal vein, Ultrasonography

Philippine Journal of Veterinary Medicine, Volume No. 43 Issue No. 1, 1-7 2006, (Filipiniana Analytics) NP

0586

Ultrasonographic features of the ovaries and uterus in dairy water buffaloes (*Bubalus bubalis* L.) at different physiological states

Ortiz, Jessica Gay M., Call, Jennifer L., Constante, Jesalyn L., Acorda, Jezie A., Tandang, Abraha

This study was conducted to describe the ultrasonographic appearance, measurements and echo mean values of the ovaries and uterus of water buffaloes at various physiological states. Twenty-four apparently healthy, purebred and crossbred dairy water buffaloes were grouped as in estrus (7), non-pregnant (11) and pregnant (6). B-mode ultrasonography of the ovaries and uterus was conducted transrectally using an ultrasound machine equipped with a 5.0 MHz linear array scanner. The ovaries in all animals appeared as non-homogenous hypoechoic ovoid structures with anechoic follicles. Ovarian mean measurements in animals in estrus tended to be higher than in pregnant and non-pregnant animals. The uterus of non- pregnant and pregnant animals appeared as thick hyperechoic band while the lumen was homogenously hypoechoic. The uterine wall of animals in estrus appeared hyperechoic and thin while the lumen was nonhomogenous with distinct anechoic areas. Animals in estrus had significantly thinner left

horn wall compared to non-pregnant and pregnant animals. The echo mean values of the ovaries and uterus of buffaloes in estrus were significantly lower than in non-pregnant and pregnant buffaloes. The study suggests that echo mean values of the ovaries and uterus may be considered in determination of the appropriate time for artificial insemination in water buffaloes. (Author's abstract)

Keywords: Veterinary medicine, Estrus, Ovaries, Pregnancy diagnosis, Ultrasound, Uterus, Water buffaloes

Philippine Journal of Veterinary Medicine, Volume No. 52 Issue No. 2, 113-120 2015, (Filipiniana Analytics) NP

0587

Ultrasonographic features of the reproductive organs of captive Asian reticulated pythons, *Python reticulatus* (Schneider, 1801) (Reptilia: Squamata: Pythonidae) *Lastica, Emilia A.*, *Acorda, Jezie A.*, *Enriquez, Kayceel*

The position, ultrasound features, dimension and echogenicity of the ovarian follicles, testes, hemipenes and vaginal sacs were determined in 12 apparently healthy reticulated pythons (8 females; 4 males) using an ultrasound machine equipped with a 5.0 MHz linear array scanner. The ultrasonograms were subjected to digital analysis to obtain the echo mean values for the different organs examined. The ovarian follicles in different stages of development were located laterally on both sides within the caudal half of the body in all female samples. Round, anechoic pre-vitellogenic follicles; homogenous, hypoechoic to hyperechoic vitellogenic follicles; vitellogenic follicles undergoing regression; and hyperechoic postovulatory follicles or eggs in varying degrees of calcification were observed. Ultrasonograpic images of the testes revealed homogenous and moderately echogenic structures with mean length of 5.5±1.30 cm and width of 1.6±0.42 cm. The hemipenes and vaginal sacs appeared as acute triangular, uniformly hyperechoic areas surrounded by anechoic to hypoechoic border. The hemipenes (mean length: 6.36 ± 0.46 cm; mean width: 0.51 ± 0.19 cm) in males appeared longer than the vaginal sacs (mean length: 2.92 ± 0.53 cm; mean width: 0.50±0.15 cm) in females. No differences in the echo mean values between the different organs were observed. The results of this study indicate that ultrasonography can be used for visualization and assessment of the ovarian follicles, testes, hemipenes and vaginal sacs in male and female reticulated pythons. Diagnostic ultrasound scanning can be helpful in detecting abnormalities, determining gender and assessing ovarian status for determination of the best time for breeding. (Author's abstract)

Keywords: Veterinary medicine, Echo mean, Hemipenis, Ovarian follicles, Reticulated python, Testes, Ultrasound

Philippine Journal of Veterinary Medicine, Volume No. 48 Issue No. 2, 70-76 2011, (Filipiniana Analytics) NP

0588

Ultrasound features and echo mean values of the heart, liver and stomach in the Philippine tarsier, *Carlito syrichta* (Linnaeus, 1758) shekelle and groves, 2010 (Mammalia: Primates: Tarsiidae)

Arcamo-Gentica, April May L., Acorda, Jezie

The ultrasound features and echo mean values of the heart, liver and stomach of apparently healthy Philippine tarsiers (*Carlito syrichta*) were determined according to sex (four males and four females), age (four adults and four juveniles) and source (five captive-bred and three wild) using an ultrasound machine equipped with a 7.5 MHz linear-array scanner. The heart appeared as an anechoic, rapidly contracting ovoid structure. Adults had significantly higher mean cardiac dimensions than juvenile tarsiers. Wild tarsiers had significantly higher echo mean values of the heart chamber than captive-bred animals. The liver appeared homogenously hypoechoic with some anechoic areas. The gall bladder, hepatic vein and portal vein were visualized. The stomach had anechoic lumen with hyperechoic wall. Adults had significantly higher stomach mean length than juveniles. Results of the study could be used as baseline data for the ultrasound features of heart, liver, and stomach for diagnosis of diseases and disorders of these organs in Philippine tarsiers. (Author's abstract)

Keywords: Veterinary medicine, Digital analysis, Heart, Liver, Philippine tarsier, Stomach, Ultrasound

Philippine Journal of Veterinary Medicine, Volume No. 51 Issue No. 1, 15-22 2014, (Filipiniana Analytics) NP

0589

Ultrasound features of the liver, gallbladder and spleen of male and female monitor lizards (Varanus marmoratus Weigmann, 1834) (Reptilia: Varanidae) Lastica, Emilia A., Acorda, Jezie A., Gangan, Ja

The study was conducted to determine the ultrasonographic features of the liver, gallbladder and spleen of 12 apparently healthy Philippine monitor lizards (*Varanus marmoratus* Weigmann, 1834) using an ultrasound machine equipped with a 5.0-MHz linear array scanner. The animals were grouped by size (four large and eight small) and sex (eight male and four female). The ultrasound appearance, dimensions and echo mean values of the liver, gall bladder and spleen were determined. The hepatic parenchyma showed a hypoechoic homogenous image with no distinct capsule. Anechoic longitudinal structure with hypoechoic wall representing the central hepatic vein was observed within the liver parenchyma. The gallbladder was recognized as a round or oblong anechoic structure found cranial to the spleen. The spleen was observed to be ovoid in shape and was markedly more echogenic than the liver. No significant differences in the measurements and echo mean values among sex and sizes were observed in the different organs, except for greater size of the liver in larger varanids compared to smaller ones. The results of the study could be used as basis for assessing disorders and diseases of monitor lizards. **(Author's abstract)**

Keywords: Veterinary medicine, Gall bladder, Liver, Monitor lizards, Spleen, Ultrasound

Philippine Journal of Veterinary Medicine, Volume No. 51 Issue No. 2, 89-96 2014, (Filipiniana Analytics) NP

0590

Ultrasound features of the udder and teat of water buffaloes (*Bubalus bubalis* L.) at different stages of lactation *Acorda, Jezie A. , Constante, Jesa* This study was conducted to determine if there are differences in the ultrasound features of the udder and teat of water buffaloes at different stages of lactation. Thirty-three 4-8 yr old lactating Bulgarian Murrah buffaloes with 2-4 parities, weighing 450-600 kg, were allocated into three groups based on the stage of lactation – early (1-3 mon), middle (4-6 mon) and late (7-9 mon) stage of lactation. Examination of the teat and udder was done using an ultrasound machine equipped with a 5 MHz linear array scanner. Digital analysis of the ultrasonograms of the udder and teat was performed and histogram echo means were compared. The udder and teat wall showed three fairly distinct layers in the sonogram and the udder and teat sinuses had homogenous hypoechoic substances contained in the lumen. Teat wall thickness was significantly higher in early stage of lactation compared to the late phase. There were significantly negative correlations between days in lactation and echogenicity of the udder wall, udder parenchyma and teat wall. Results obtained in this study can be used to compare with the features and echogenicity of diseased udder and teat in lactating water buffaloes at different stages of lactation. **(Author's abstract)**

Keywords: Veterinary medicine, Lactation, Teat, Udder, Ultrasound, Water buffalo

Philippine Journal of Veterinary Medicine, Volume No. 49 Issue No. 2, 76-82 2012, (Filipiniana Analytics) NP

0591

The use of rhinolaryngoscopy in the evaluation of upper respiratory tract diseases in thoroughbred racehorses Buencamino, Felipe B., Moises, Sheila F., Torres, Edua

Rhinolaryngoscopy was performed to examine the upper respiratory tract of 29 racehorses showing persistent signs of upper respiratory tract disease. The abnormalities encountered were pharyngeal lymphoid hyperplasia (PLH), laryngeal hemiplegia (LH) and nasal polyps. Twelve horses had PLH I. A small number of white follicles scattered over the dorsal wall of the pharynx was noted. PL II was observed in nine horses. Many small, white follicles with numerous, large, edematous pink follicles in the dorsal wall ofthe pharynx and near the level of the pharyngeal orifices of the guttural pouches were seen. One horse had PLH III. Numerous large, pink follicles were interspersed among a few, shrunken white follicles in the dorsal and lateral pharyngeal walls. One had PLH IV. Large, pink follicles were closely packed together all over the pharyngeal mucosa of this horse. Four horses were found to have LH. Two had LH II and the other two had LH IV. Asynchronous movement of the arytenoid cartilages was observed in LH II. The horses with LH IV had marked asymmetry of the arytenoid cartilages. The left arytenoid cartilage was longer and thinner and with a shorter vocal ligament than the right part. Roaring was the common clinical sign observed. Four horses had a smooth, pedunculated mass in the nasal cavity. (Author's abstract)

Keywords: Veterinary medicine, Horse, Respiratory tract, Rhinolaryngoscopy

Philippine Journal of Veterinary and Animal Sciences, Volume No. 27 Issue No. 1, 27-33 2001, (Filipiniana Analytics) NP

The use of xylanase in wheat-based broiler diets Asma, Alejandro N., Tamisin, Rayvin M., Oliveros, Benedict Paul R., Oliveros, Benito A., Solis, Marlo

A 33-day feeding trial involving 240 seven-day old broiler chicks was conducted to evaluate the effectiveness of a commercially available xylanase in wheat-based broiler diets in terms of production performance and feed cost per kg gain in weight. The five dietary treatments were: (a) Diet 1-com-based diet; (b) Diet 2 \hat{a} ^C wheat-based diet formulated using wheat ME value of 3,086 kcal/ kg; (c) Diet 3 - same as diet 2 plus xylanase; (d) Diet 4 - wheat-based diet formulated using wheat ME value of 3,271 kcal/kgi and (e) Diet 5 - similar to diet 4 plus xylanase. A commercially available xylanase was added to diets 3 and 5 at 200 g/ton of feed. At the end of the feeding trial, four broilers were randomly selected from each treatment for the determination of apparent metabolizable energy (AME) of the finisher diet. Significant improvements in body weight and gain due to xylanase addition were observed during the starter phase. Overall, there was no significant effect of treatments on body weight gain and feed consumption. However, the addition of xylanase to wheat-based diet improved feed efficiency of broilers to a level similar to that fed corn-based diet but better than those fed diets without xylanase. Ukewise, addition of xylanase significantly increased the AME of the finisher diet. The lowest cost to produce a kg gain in weight was observed in wheat-based diets with xylanase. The results indicate that supplementation of wheat-based broiler diets with commercially available xylanase would have positive effect on broiler performance. (Author's abstract)

Keywords: Veterinary medicine

Philippine Journal of Veterinary and Animal Sciences, Volume No. 28 Issue No. 1, 2002, (Filipiniana Analytics) NP

0593

Uterine and embryonic changes from days 20 to 90 of gestation observed through ultrasonography in locally raised Holstein-Sahiwal dairy cows Rayos, Antonio A., Torres, Eduardo B., Valdez, Conrado A., de Ramos, Michael S., Acorda, Jezi

The study was conducted to determine structural changes, ultrasound features nnd measurements of the uterus and developing embryo from days 20 to 90 of pregnancy. Four crossbred pregnant dairy cows starting at day 20 post-breeding were used in the experiment. B-mode ultrasonography of the ovaries was conducted per rectum. Ultrasound densities were classified into hypoechoic, hyperechoic and anechoic. Upon diagnosis of pregnancy, uterine horns were classified into ipsilateral and contralateral sides. Endometrial echotexture was hypoechoic during the early stage of gestation nnd echogenicity increased as the embryonic development progressed. The presence of embryonic fluid in the ipsilateral uterine horn enhanced echogenicity of the surrounding uterine wall as compared to the contralateral uterine horn that contained minimal amount of uterine fluid. Embryonic vesicle and allantoic fluid were first observed on days 27 to 33 of gestation. Allantoic fluid appeared as anechoic structure between the upper and lower uterine wall while amniotic fluids were usually observed between the days 41 to 54 of gestation and appeared as anechoic structure similar to the allantoic fluid. Differences in the time of embryo detection observed could be due to the location of the embryo in the uterus and the location of the uterine horn in the abdomen. Location of the uterus should be considered in pregnancy diagnosis in cattle in addition to the age of the animals since abdominally located uterus at early stage of pregnancy will result to delay in the detection of the embryo. **(Author's abstract)**

Keywords: Veterinary medicine, Cattle, Embryo, Pregnancy, Ultrasound, Uterus

Philippine Journal of Veterinary Medicine, Volume No. 47 Issue No. 1, 13-20 2010,

(Filipiniana Analytics) NP

Uterine prolapse in a mare following normal delivery: clinical case management Gicana, Karlo Romano B., Abalos, Jovencio Hubert A., Torres, Edua

The occurrence and management of uterine prolapse in a native Philippine pony mare after a normal delivery, which is an uncommon occurrence, are described. Examination of the uterus revealed that the body of the uterus was hanging out by about 0.3 m outside the vulva and that it was viable. Epidural anesthesia was administered and the uterus returned manually after thorough cleaning and reduction of edema by applying saturated salt solution. Oxytocin, tetanus antiserum and antibiotics were administered after the procedure however, retention sutures were not used as the uterus was completely returned to its normal position. The mare's recovery was uneventful. It is suspected that the prolapsed occurred possibly as the foal produced may have been larger than normal due to the reported larger size of the sire compared to the mare. Although signs of dystocia were not observed in this case, stretching and extreme relaxation of the reproductive tract during pregnancy and parturition may have occurred leading to eventual prolapse of the uterus. (Author's abstract)

Keywords: Veterinary medicine, Uterus, Prolapse, Mare, Uterine prolapse

Philippine Journal of Veterinary Medicine, Volume No. 46 Issue No. 2, 119-122 2009, (Filipiniana Analytics) NP

0595

Verification studies on the use of biotech PCR-based detection kit for salmonella in animal feeds

Garcia, Ma. Regina C. , Guerra, Marie Antonette Ruth V. , Sedano, Susan A. , Ramirez, Teresita J., Mercado, Susana M. , Perez, Ma. Teres

A detection kit employing polymerase chain reaction (PCR) technology was developed for Salmonella. Its application as Salmonella detection kit was investigated using different kinds of feeds, both in naturally contaminated and artificially spiked feed samples. The kit was compared and validated against standard/traditional culbJral assay involving enrichment step and plating in selective media. The BIOTECH Salmonella detection protocol included short enrichment period that allowed multiplication of Salmonella, DNA extraction and amplification of DNA In a thennal cyder followed by a simple gel electrophoresis procedure. Both the conventional and the BIOTECH PCR-based kit can detect the microorganism In Salmonella-inoculated feed samples, with 1000/0 agreement value. Slightly lower agreement value (960/0) was obtained on natural-contaminated samples due to the low number of Salmonella cells present even after enrichment period. Standard cultural method required 5-7 days to confirm the presence and identity of Salmonella, while the PCR-based kit reduced the detection time to less than 28 hrs. (Authors' abstract)

Keywords: Veterinary medicine

Philippine Journal of Veterinary and Animal Sciences, Volume No. 28 Issue No. 1, 2002,
(Filipiniana Analytics) NP

Viability of frozen goat embryos using a modified minimum drop size technique of vitrification

Silvestre, Juliana Q., Rowell O. Reyes, Ocampo, Marion B., Ocampo, Lerma C., Villar, Edwi

Fifty-seven (four-cell to blastocyst stage) embryos were used to evaluate the effectiveness of using a modified minimum drop size (MOS) technique of cryopreservation of goat's embryo. Also, the possible interaction between embryo developmental stage at the time of cryopreservation and equilibration time in the vitrification solution (Vsa) was investigated. Results of the study showed that morula to blastocyst stage embryos can withstand better the set of conditions for cryopreservation than the 4-to 16- cell stage embryos as evidenced by a significantly higher survival rate of the former than that of the latter. Similarly, equilibrating the embryos for 10 min, regardless of the developmental stage, had a higher survival rate than the embryos exposed in VSa for 3 min. Transfer of fresh and frozen-thawed embryos to recipient does had resulted to live births. The simplicity and effectiveness of the modified MOS technique in the cryopreservation of goat embryos offer new opportunities for eventual preservation of other mammalian species embryos even under field conditions. The technique would require only the need for molar concentrations of cryoprotectant and LN2 for the efficient cryopreservation of embryos. This is the first report of live births derived from fresh or frozen-thawed embryos transferred to surrogate does in the Philippines. (Author's abstract)

Keywords: Veterinary medicine

Philippine Journal of Veterinary and Animal Sciences, Volume No. 28 Issue No. 1, 2002, (Filipiniana Analytics) NP

0597

Weight determination of Philippine native horses using external body measurements Macatangay, M., Valdez, Conr

The relationship between the body weight of the Philippine native horse and its external body measurements such as height, hearth girth, midriff girth, flank girth, and body length was determined. Possible equations for body weight estimation were constructed based on the said parameters. One hundred thirty three (133) female and 33 male apparently healthy Philippine native horses with age ranging from 4 months to 25 years old were used in the study. Regression analysis showed that a linear relationship exists between body weight and external body measurements. For the whole sample population, heart girth was found to be the best single predictor of weight. When combinations of parameters were used for predicting weight of the sample population, heart girth, midriff girth, body length 1 and height were found to be the best predictor of weight. Statistical analysis using t-test showed that a non-significant difference (P>O.05) exists between the actual weights and the estimated weights obtained using the derived formulae. Therefore, these formulae could be used to fairly estimate body weight in the absence of a suitable weighting scale. (Author's abstract)

Keywords: Veterinary medicine

Philippine Journal of Veterinary and Animal Sciences, Volume No. 28 Issue No. 1, 2002, (Filipiniana Analytics) NP

Wound healing rate and blood cellular responses of Rumenotomized goats (*Capra Hircus* Linn.) subjected to aquapuncture *Ubaldo, Marianne R. , Acorda, Je*

Pre-surgical and post-surgical aquapuncture using antibiotics was used to determine whether this can enhance survival rate, wound healing rate and blood cellular responses of goats after rumenotomy. Ten native goats of both sexes were divided randomly into two groups, control and treatment, consisting of five animals each. For the control group, penicillin-streptomycin combination was injected intramuscularly through the gluteal muscle while for the treatment group, the same solution was injected at Acupoints #01 and #34. Administration of the antibiotics for both groups was done one day before surgery and three consecutive days post-operatively. Survival rate, wound healing rate and blood cellular responses were evaluated. All goats remained alive one month after surgery. At the first five days post-surgery, there was a faster wound healing rate in the treatment group compared to the control; at day 15, both groups had 100% healing rate. No significant differences were observed in the blood cellular responses of goats before and after surgery in both control and treatment groups. (Author's abstract)

Keywords: Veterinary medicine, Acupuncture, Goat, Rumenotomy, Wound healing

Philippine Journal of Veterinary and Animal Sciences, Volume No. 26 Issue No. 2, 137-146 2000, (Filipiniana Analytics) NP

0599

Some zoonotic trematodes from the Philippine field rat, *Rattus mindanensis mindanensis* (Mearns, 1905) (Mammalia: Rodentia) in Bay, Laguna, Philippines with redescription and new records of species *Lee, Glenn O.*, *Eduardo, Salc*

Field rats, *Rattus mindanensis mindanensis* (Mearns, 1905) from Bay, Laguna in Luzon, Philippines were examined at various times for parasites. Among other helminths, five trematodes belonging to two families and three genera and known to infect man were recovered namely: Plagiorchis philippinensis Sandground, 1940 and *Plagiorchis potamonides* (Tubangui, 1946) Yamaguti, 1958 of the family Plagiorchidae, and *Artyfechinostomum malayanum* (Leiper. 1911) Mendheim, 1943, *Echinostoma ilocanum* (Garrison, 1908) Odhner, 1911 and *Echinostoma lindoense* Sandground and Bonne, 1940 of the family Echinostomatidae. These are re-described based on the present collection. *Plagiorchis philippinensis* and *Plagiorchis potamonides* are illustrated by both drawings and photomicrographs while *Artyfechinostomum malayanum*, *Echinostoma ilocanum* and *Echinostoma lindoense* were illustrated by photomicrographs. *Plagiorchis philippinensis* is reported for the first time in an animal host since its discovery while *Artyfechinostomum malayanum* is recorded for the first time from naturally infected rats in the Philippines. *Echinostoma lindoense* is recorded for the first time in the Philippines constituting a new locality record

for the species. The intermediate hosts of these species, when known and their transmission to humans are discussed. (Author's abstract)

Keywords: Veterinary medicine, Artyfechinostomum malayanum, Echinostoma spp., Plagiorchis spp., Rattus mindanensis mindanensis

Philippine Journal of Veterinary Medicine, Volume No. 43 Issue No. 1, 33-45 2006, (Filipiniana Analytics) NP

ZOOLOGY

0600

Rapid assessment and feeding guilds of birds in selected rubber and oil palm plantations in North Cotabato

Bretaña, Bryan Lloyd P., Agduma, Angelo R., Tanalgo, Krizler C., Bello, Violeta P., Casim, Lothy F., Achondo, Marion John Michael M., Mancao, Liezl S., Salem, James Gregor

The degradation of tropical rainforests in Mindanao has augmented the interest in the potential value of commercial plantations for the conservation of biodiversity. However, it is not yet apparent how this type of land use affects forest bird fauna since there were no studies conducted yet to document birds in commercial plantations, particularly in North Cotabato. Hence, this study was done to determine occurrence of birds in Carumba Oil Palm Plantation (COPP) and Platinum Rubber Plantation (PRP) in North Cotabato. A combination of mist netting and transect walk technique had recorded 30 birds species belonging to 6 orders, 19 families and 26 genera. Passeriformes was the most represented order having 20 species, six of which were country endemics and two were Mindanao faunal region endemics. Noteworthy was the presence of one threatened species (*Alcedo argentata*) from PRP with a vulnerable conservation status. Results indicate that oil and rubber agro-forestry systems contribute to conservation efforts by serving as habitats to endemic bird species. In addition, major feeding guilds of birds were also determined. Insectivorous species predominated in both areas. This high number of insectivorous species delivers a natural pest control service in the plantations which is beneficial to farmers and owners. (Author's abstract)

Keywords: Zoology, Bird fauna, Endemism, Feeding guilds, Rubber plantation, Oil palm plantation, North Cotabato

Asian Journal of Biodiversity, Volume No. 2 Issue No. 1, 105-122 2011, (Filipiniana Analytics) NP

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Fischoederius upiensis new species from ruminants in the Philippines with remarks 0484 on other species of the genus fischoederius Stiles & Goldberger, 1910 (Trematoda: Paramphistomoidea: Gastrothylacidae)

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 Paraso, Michelle Grace V. Park, Chul Park, Jin-ho Park, Jong Seok Park, Se-Chang Pascua, Gerald Ceasar P. Paul, Vijay Pavia, Carlo Mar M. Pellazar, Dennis Daniel I. Pepelcevic, Nenad Perez, Ma. Teresa M. Podgorac, Jelena Prantilla, Ian Kris I. Pusic, Ivan Quabo, Septchie C. 	0539 0430 0554 0487 0430 0464 0396 0092 0022 0166 0293 0410 0595 0410 0313 0410 0313	Salces, Caro B. Salces, Caro B. Salem, James Gregory S. Sandhu, Harpal Singh Santos, Josefina C. Sarma, M. Sarmago, Ione G. Seita, Tetsurou Seong, Jiyeon Sharma, Rajeev Kumar Shida, Takuo Shimizu, Hiroshi Shin, Gee-Wook Silvestre, Juliana Q. Solis, Marlon C. Song, Ki-Duk Sorio, Lynbelle Rose D.	0552 0600 0542 0565 0386 0428 0436 0429 0439 0439 0429 0439 0429 0452 0396 0596 0596 0592 0489 0097	Umali, Dennis V. Ureta, Josephine V. Uy, Darlene Joy Uychoco, Janice Mary Honeylette J. Vale, Lainie D. Vasig, Sheila May N. Vega, Renato S.A. Velasco, Ivy M. Velasco, Ivy M. Velasco, Ma. Lourdes Venturina, Emma V. Veridiano, Aniway A. Villanueva, Ingrid E. Villar, Edwin C. Vitor, II, Rodel Jonathan S. Vitorillo, Rory P.	0471 0495 0179 0465 0218 0214 0527 0551 0446 0452 0391 0382 0596 0079 0293
 Paraso, Michelle Grace V. Park, Chul Park, Jin-ho Park, Jong Seok Park, Se-Chang Pascua, Gerald Ceasar P. Paul, Vijay Pavia, Carlo Mar M. Pellazar, Dennis Daniel I. Pepelcevic, Nenad Perez, Ma. Teresa M. Podgorac, Jelena Prantilla, Ian Kris I. Pusic, Ivan Quabo, Septchie C. Rahman, Habibur 	0539 0430 0554 0487 0430 0464 0396 0092 0022 0166 0293 0410 0595 0410 0313 0410 0218 0439	Salces, Caro B. Salces, Caro B. Salem, James Gregory S. Sandhu, Harpal Singh Santos, Josefina C. Sarma, M. Sarmago, Ione G. Seita, Tetsurou Seong, Jiyeon Sharma, Rajeev Kumar Shida, Takuo Shimizu, Hiroshi Shin, Gee-Wook Silvestre, Juliana Q. Solis, Marlon C. Song, Ki-Duk Sorio, Lynbelle Rose D. Stojanovic, Dragica	0552 0600 0542 0565 0386 0428 0436 0429 0439 0429 0439 0429 0452 0396 0596 0596 0592 0489 0097 0410	Umali, Dennis V. Ureta, Josephine V. Uy, Darlene Joy Uychoco, Janice Mary Honeylette J. Vale, Lainie D. Vasig, Sheila May N. Vega, Renato S.A. Velasco, Ivy M. Velasco, Ivy M. Velasco, Ma. Lourdes Venturina, Emma V. Veridiano, Aniway A. Villanueva, Ingrid E. Villar, Edwin C. Vitor, II, Rodel Jonathan S. Vitorillo, Rory P. Yamamoto, Shizuo	0471 0495 0179 0465 0218 0214 0527 0551 0446 0452 0391 0382 0596 0079 0293 0429
 Paraso, Michelle Grace V. Park, Chul Park, Jin-ho Park, Jong Seok Park, Se-Chang Pascua, Gerald Ceasar P. Paul, Vijay Pavia, Carlo Mar M. Pellazar, Dennis Daniel I. Pepelcevic, Nenad Perez, Ma. Teresa M. Podgorac, Jelena Prantilla, Ian Kris I. Pusic, Ivan Quabo, Septchie C. Rahman, Habibur Ramirez, Teresa J. 	0539 0430 0554 0487 0430 0464 0396 0092 0022 0166 0293 0410 0595 0410 0313 0410 0218 0439 0523	Salces, Caro B. Salces, Caro B. Salem, James Gregory S. Sandhu, Harpal Singh Santos, Josefina C. Sarma, M. Sarmago, Ione G. Seita, Tetsurou Seong, Jiyeon Sharma, Rajeev Kumar Shida, Takuo Shimizu, Hiroshi Shin, Gee-Wook Silvestre, Juliana Q. Solis, Marlon C. Song, Ki-Duk Sorio, Lynbelle Rose D. Stojanovic, Dragica Sumalpong, Luigi	0552 0600 0542 0565 0386 0428 0436 0429 0439 0429 0439 0429 0452 0396 0596 0596 0592 0489 0097 0410 0200	Umali, Dennis V. Ureta, Josephine V. Uy, Darlene Joy Uychoco, Janice Mary Honeylette J. Vale, Lainie D. Vasig, Sheila May N. Vega, Renato S.A. Velasco, Ivy M. Velasco, Ivy M. Velasco, Ma. Lourdes Venturina, Emma V. Veridiano, Aniway A. Villanueva, Ingrid E. Villar, Edwin C. Vitor, II, Rodel Jonathan S. Vitorillo, Rory P. Yamamoto, Shizuo Yamazaki, Shunsuke	0471 0495 0179 0465 0218 0214 0527 0551 0446 0452 0391 0382 0596 0079 0293 0429 0429

Yordanova, Violeta	0422		0448	Ajuwape, Adebowale	0447
Yoshioka, Kazuki	0479		0520	Т.Р.	
Zambo, Joan Riza P.	0466	Acorda, Jezie A.	0528	Alambra, Jennifer R.	0033
Zarkov, Marija	0410	Acorda, Jezie A.	0529	Alarcon, Nora I.	0098
Cabrera, Lyn A.	0423		0561	Alberti, Gerd	0114
Barcubero, Rudson Czar	0211		0580	Albis, Manuel F.	0381
S.		Acorda, Jezie A.	0581	Alcala, Angel C.	0143
Gaabucayan, Rex	0211	Acorda, Jezie A.	0582	Alcantara, Ernesto	0330
Januarius K.	0215		0583	Alcantara, Placido F.	0388
Jacobe, Jenus I fizian I.	0213	Acorda, Jezie A.	0584		0458
Kwong, Marynet 1.	0211	Acorda, Jezie A.	0585		0498
Leuesina, Ouessa Aui D.	0213		0586	Alcantara, Virgie A.	0110
Lingai, Angela Michaela	0215	Acorda, Jezie A.	0587	Alcausin, Maria Melanie	0276
Lingat Renie M	0215	Acorda, Jezie A.	0588	В.	0207
Medio Diana April R	0213	Acorda, Jezie A.	0589		0287
Role Remedios S	0211	Acorda, Jezie A.	0590	Alejandria, Marissa M.	0240
Sarma Dilin Kumar	0/169	Acorda, Jezie A.	0598	Alejandro, Grecebio	0050
Abalos Jovencio Hubert	0407	Acosta, Rowena	0077	Johadhan D.	0091
A.	0467	Acuesta, Rubie Vicky	0211		0091
Abalos, Jovencio Hubert	0514	Lyn C.	0211		0117
А.	0514	Adalla, C.	0223	Aleiandro Venus B	0520
Abalos, Jovencio Hubert	0594	Adamat, Liza A.	0116	Alfaro, John Cyrus O.	0095
А.	00001	Adehan, Razaki K.	0402	Alfonso, Antonio A.	0028
Abaya, Christian Eric S.	0250	Adetosoye, Adeyemi I.	0447	Alforque. Jose Mari	0020
Abes, Nancy S.	0567	Adeva, Cheryl C.	0011	Louis	0272
Abordo, Ian C.	0263	Adiova, Joden M.	0062	Ali, Gypsy Anne P.	0002
Abugho, Jesyl D.	0283	Adrid, Leah P.	0257	Aliño, Porfirio M.	0076
Acacio, Alexis A.	0174	Africa, Aaron Don M.	0155		0228
Acain, Kate June F.	0211	Agbayani, Efren S.	0100		0232
Acda, Menandro N.	0200	Agdaca, Cheryl D.	0017		0235
Acda, Sonia P.	0463	Aggangan, Nelly S.	0062	Alima, Mark Anthony P.	0187
Achondo, Marion John	0600	Agrasada, Ma. Grace V.	0322	Almajar, James A.	0282
Michael M.	0000	Agrupis, Shirley C.	0001	-	0283
Acma, Florfe M.	0082		0049		0324
Acorda, Jezie A.	0404		0364	Almoneda, Rosalina V.	0330
Acorda, Jezie A.	0405	Aguda, Nancy	0208	Alonzo, Ma. Anna M.	0007
Acorda, Jezie A.	0418	Aguinaldo, Ma. Alicia	0279	Alvarez, Alvin William	0.400
Acorda, Jezie A.	0419			A.	0403
	0420	Aguinaido, Maria Maida S	0237	Alvarez, Virmila B.	0363
Acorda, Jezie A.	0423	D. Aquisanda Sharmin T	0405	Alvero, Rita Grace	0288
Acorda, Jezie A.	0424	Ajuwana Adahawala	0703	Alvina, Larra Faye R.	0582
Acorda, Jezie A.	0426	T.P.	0402	Alviola, Geonyzl L.	0045
	0435	·		-	

Alviola, Phillip A.	0061	Arsenal, John D.	0095	Balangcod, Teodora D.	0071
Amandoron, Raquel Lea	0150	Arsenio, Jethro S.	0112	Baldrias, Loinda R.	0397
М.	0150	Arugay, Marida Arend	0297		0437
Amarga, Ace Kevin S.	0061	V.	0271	Baldrias, Loinda R.	0512
Amarillo, Maria Lourdes	0240	Asdani, J.	0223	Baldrias, Loinda R.	0522
E.	0057	Asido, Jr., Wenceslao N.	0234		0558
	0257		0236	Baldrias, Loinda R.	0565
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Amoroso, Cecilia B.	0139	Study and Research in	0304		0123
Amoroso, Victor B.	0037	Group			0141
Amoroso, Victor B.	0065	Atabay, Edwin C	0431	Bam, Joken	0022
Amoroso, Victor B.	0078	Atabay, Edwin C	0433	Bangi, Helen Grace P.	0227
Amoroso, Victor B.	0139	Atabay, Eufrocina P	0413	Banico, Ma Pia Tan	0031
	0242	Atabay, Eufrocina P	0431	Bantayan, Nathaniel C.	0199
Ampong, April Kristy C.	0218	Thubuy, Eurocina I.	0433	Barba, Corazon VC.	0326
Ancheta, Patricio B.	0400	AtabayEdwin C	0413	Bariuan, Jussiaea V.	0465
Andal, Teresita T.	0330	Atunan Jereme B	0746	Barraquio, Virginia L.	0043
Anderson, James A.	0018	Austria M S	0153	Barrion, Adelina A.	0116
Andrade, Cristina H.	0335	Azanon Edwin M	0328	Barrion-Dupo, Aimee	0026
Ang-MuA±oz, Cynthia	0308	Azores Gregorio	0520	Lynn A.	0050
D.	0104	Marcelo S.	0275	Barrion-Dupo, Aimee	0116
Angeles, Jr., Isagam P.	0194	Azuelo, Andrea G.	0086	Lynn A.	0010
Aligeles, Mary Kose S.	0029		0138	Bartolata, Francia C.	0010
ADKI, Takasili Apa Jagga Karul P	0039	B.S.M.E.	0255	Basaen, Adelfa M.	0345
Apa, Jessa Karyi K.	0273	Babb, Gina M.	0028		0368
Aquillo, Salliny D.C.	0178	Baclig, Michael O.	0044		0372
Arakama, Nursima K.	0025		0220	Basas, Emmie G.	0215
F.	0254	Baconguis, Rowena dela		Basilio, E. M.	0223
	0295	Torre, Hondrade, Rosa		Baticados, Waren N.	0435
Arcamo-Gentica, April	0200	Fe D., MascariA±as,	0379	Baticados, Waren N.	0504
May L.	0581	Arnulto M., Saz, Efren B. Tabada Ma Aurora		Batungbacal, Marcela R.	0416
	0588	Teresita W.		Batungbacal, Marcela R.	0445
Arcega, Christie Victoria	0109	Bacuso, Paul M.	0348	Batungbacal, Marcela R.	0463
S.	0108	,	0349	Batungbacal, Marcela R.	0564
Arco, Susan D.	0133		0361	Bautista, Jose Arceo N.	0428
Arellano, Christian	0238	Bagui, Nino Jesus G.	0525		0436
Victor L.	0_00	Baguio, Robbie Ringo G.	0296	Bautista, Jose Arceo N.	05/4
Aribal, Lowell G.	0202	Baguio, Synan S.	0531	Bautista, Ramer P.	0177
Aro, Richelle S.	0298	Balaga, Paolo Angelo	0207	Bautista-Jimenez,	0389
Arocena, Rhebner E.	0177	Gica.	0307	r ingene Baya-Dagunto, Ralla	
Arriola, Axel H.	0050	Balagso, Jezzica R.	0001	Marilou	0321
Arrogante, Elvira L.	0125	Balangcod, Kryssa D.	0071	Bayeng, Fermin O.	0348
Arrojado, Donald A.	0219			, •	00.10

	0349	Brion, Marco Alberto	0105	Cal
	0361	Briones, Annabelle V.	0064	Nor
Beachy, Roger N.	0028	Briones, Nicomedes D.	0195	Cal
Beebout, Sarah J.	0025	Briones, Rommel U.	0067	Cal
Belino, Manuel C.	0153	Brown, Rafe M.	0143	Can
Belizario, Jr., Vicente Y.	0257	Buccat, Mariel C.	0398	Car
	0306	Bucol, Abner A.	0034	Car
Belmonte, Christopher J.	0340		0143	Can
Belotindos, Lawrence P.	0088		0189	Can
Beng Hui, Dennis T.	0154	Buctuanon, Eugenia M.	0007	Can
	0179	Bueno, Cristy M.	0553	Can
Beristain-Ruiz, Diana M.	0521	Buerano, Corazon C.	0220	Can
Bernardino, Cado	0156	Bugtai, Nilo T.	0158	Cap
Felicito B.	0150	Bulaong, Manolito C.	0005	Cap
Bhadja, Poonam	0059	Bullecer, Gladys Hope C.	0075	Cap
BiA±as, Francis G.	0129	Bullecer, Rumila C.	0075	Cap
Bigol, Urcila G.	0064	Bumatay, Ernesto	01/19	Car
Billena, Mylen S.	0401	Laforteza	0147	Car
Billena, Mylen S.	0415		0151	San
	0568	Bundoc, Rafael C.	0246	Car
Birginias, Ma.	0049		0254	Car
Concepcion	0001		0295	Car
Bitanga, Glory S.	0001	Buot, Jr., I.E.	0122	~
Boedts, Bruno	0345	Buot, Jr., Inocencio E.	0082	Car
Bolotaulo-Sadava, T.M.	0291	Bustria, Ron Ryan V.	0540	
Bolter, Manfred	0048	Butardo, Elaine	0014	
	0137	Genevive G.		~
Bombio, Ariel M.	0566	Cabansag, Jeannie Lynn	0095	Car
Boncalon, Rhoda Mae V.	0297	J.	0222	Car
Bondoc, Orville L.	0490		0333	Car
	0513		0352	Car
	0524		0359	Cas
Bondoc, Orville L.	0547		03/1	Cas
Bondoc, Orville L.	0549	Cabasag, Carl Benedict	0302	Cas
	0557	Cabauatan, Clarissa R.	0074	Cas
	0560	Cacho, Roxan Grace C.	0489	Cas
Bonifacio, Teresita S.	0125	Cadorna, Edelyn A.	0281	Cas
Bono, Jr., Reynaldo	0406	Cadorna, Erwin F.	0281	Cas
Rafael S.	0100	Cahatian, Purificacion O.	0014	Cas
Borras, Alan M.	0245	Calaguas, M.J.C.	0255	T.
Bozic, Aleksandar	0410	Calantoc, Florence R.	0038	Cas
Brack, Werner	0126	Calica, Dane Mikhael S.	0001	
Brandt, Angelika	0271	Calingacion, Nico	0321	Cas

Calma-Balderrama, Norieta	0305
Calumpong, Hilconida P.	0068
Caluyo, Felicito S.	0181
Camer, Gerry A.	0487
Camer, Gerry A.	0551
Camer, Gerry A.	0571
Camina, Jessica Rei N.	0029
Canama, Alma O.	0027
Canceko-Llego, Cindy D.	0316
Canini, Nelfa D.	0089
Cantre, Chandyllane G.	0378
Capangpangan, Rey Y.	0133
Capistrano, Elmira P.	0046
Capitan, Severino S.	0531
Capitan, Severino S.	0552
Caraballe, Marla F.	0480
Carandang, IV, Jose Santos	0105
Carandang, Nelia F.	0473
Carbon, Niña Marie C.	0282
Cardenas, Virginia R.	0145
	0377
Cariño, Argentina T.	0134
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Cariño, Virgina S.	0063
Caringal, Herminia R.	0226
Carpio, Ryan M.	0167
Carumbana, Esther E.	0189
Casao, Philip	0434
Casero, Roberto O.	0372
Casim, Lothy F.	0144
Casim, Lothy F.	0204
Casim, Lothy F.	0600
Casipit, Gildence L.	0198
Castañeda, Soledad S.	0341
Castillo, Agatha Christie T.	0029
Castillo, Agnes L.	0093
	0274
Castillo-Carandang, Nina	0316

Τ.		Contreras, Gerson C.	0117	Dalisay, Teresita U.	0082
Castro, Romina Gemelyn 0408		Corales, Olga	0258	Dalmacio, Leslie	0244
М.	0408	Coritico, Fulgent P.	0065	Michelle M.	0244
Catap, Elena S.	0035	Coritico, Fulgent P.	0242	Damasco, Crestilyn N.	0119
Catedrilla, Liah C.	0190	Corpuz, Jed Marlowe G.	0476	Damasco, Olivia P.	0026
Cavan, Barbara Charina	0276	Corpuz, Mark Nell C.	0192	Das Singla, Lachhman	0530
V.	0501	Cortes, Nicole Marie A.	0124	David-Padilla,	0250
Cents, Russell B.	0501	Cortez, Evelyn S.	0390	Carmencita	0076
Cena, Ronani B.	0079		0546		02/6
Cerbito, Wilson A.	0490	Crisostomo, Conrado P.	0286		0287
(Christie)	0446	Cruz, Cynthia C.	0330	de Castro, Ma. Normita C.	0310
Chavez, Jayson G.	0117	Cruz, Dennis E.	0180	de Dios, John karl L.	0276
Chavez, Joel	0105	Cruz, Emilio M.	0462	De Francia, Jean L.	0274
Chen, Ying Ying	0183	Cruz, Eric C.	0172	De Guzman, Zenaida I.	0368
Cheng, Christian Bernard	0000	Cruz, Erlinda M.	0325	de La Cruz, Liezel F.	0084
Т.	0092	Cruz, Fenella A.	0309	de Leon, Kristopher P.	0301
Chien, Yew-Hu	0194	Cruz, Libertado C.	0456	De Leon, Marco	015
Chiong, Mary Anne D.	0276	Cruz, Libertado C.	0489	Alejandro D.	0176
Cho, Ho-Seong	0430	Cruz, Rex Victor O.	0378	De Leon, Marites	0358
Cho, Ho-Seong	0441	Cruz-Ramos, Bess	0063	De Leon, Marites S.	0375
Choi, Dae Seong	0464	Cruzana, Bella C.	0455	de Leon, Winifreda U.	0257
Choi, Seesoek	0183	Cua, Irwin Y.	0220	de Luna, Maria Catalina	0457
Chua, Alvin Y.	0156	Cuaresma, Joeped B.	0009	Τ.	0437
	0157	Cuartero, Francisco C.	0166	de Luna, R.M.	0255
Chung, Kuang-Ren	0070	Cue, Pamela Christine C.	0262	De Ocampo, Grace D.	0079
Cia, Bernabe	0003	Cuenco, Joffre Grant C.	0383	De Ocampo, Grace D.	0391
Cinco, Genneline F.	0188	Cueno, Marni E.	0102	De Ocampo, Grace D.	0455
Claveria, Florencia G.	0085	Cuevas, Virginia C.	0071	De Ocampo, Grace D.	0457
Climaco, A.	0223	Culaba, Ivan B.	0181	De Ocampo, Grace D.	0471
Co, Celso B.	0155	Cutiongco-de la Paz, Eva	0250		0477
Co, Stephanie Joy C.	0173	Maria	0076	De Ocampo, Grace D.	0495
Cobacha, Marjorie M.	0188		0276	De Ocampo, Grace D.	0515
Coballes, Arianne	0217		0287		0516
Katrina I.	0217	Dacalos, Felipe Gerard	0215	De Ocampo, Grace D.	0518
Cocjin, Bernabe B.	0535	U. Deceveren Marlite A	0110		0526
Coelho, Adosinda Maria	0474	Dacayallall, Mellita A.	0119	De Ocampo, Grace D.	0578
Colle, Marivi G.	0027	Dagaas, Claina 1.	0444	de Ramos, Michael S.	0537
Conanan, Aida P.	0124		0473		0593
Concepcion, Christian Nicolo Ll.	0096		0540	Decenteceo, Ana Cristina D.	0278
Constante, Jesalyn L.	0586	Dagalea, A.	0223	Defensor, Joel P.	0285
Constante, Jesalyn L.	0590	Daguno, Cristel Lyn R. Dai, Shunhong	0124 0028	Del Barrio, Marilyn C.	0177

Del Cano, Ser Christian	0185	С.		Dy, Jr., Albert U.	0289
R.	0165	Dimitrov, Rosen	0422	Dyjunco, Marylaine U.	0274
del Mundo, Florian R.	0133	Dinglasan, Eric G.	0026	Eduardo, Salcedo L.	0387
del Rosario, Edwin E.	0006	-	0032	Eduardo, Salcedo L.	0449
Del Rosario, Jonas D.	0265	Diola, Anthony Ashly G.	0293		0450
del Rosario, Ricardo	0238	Divina, Billy P.	0566	Eduardo, Salcedo L.	0472
C.H.	0200	Divina, Billy P.	0567		0483
Del Rosario-Daya,	0270	Dizon, Cornelio Q.	0184		0484
Lourdes M.	0029	Dizon, Erlinda I.	0409		0485
dela Cruz, Arlen A.	0028	Dizon, Leticia B.	0196		0486
dela Cruz, Charisse C.	01/3	Dizon, Teodora O.	0006		0500
dela Cruz, Fe M.	0331	Dizon-Mangubat,	0200		0501
Dela Cruz, Jerico S.	0253	Hiyasmine	0299	Eduardo, Salcedo L.	0505
Dela Cueva, Fe M.	0026	do Nascimento, Marcos	0519	Eduardo, Salcedo L.	0534
	0032	Roberto L.	0317		0536
dela Paz, Lilia R.	0328	Domingo, Clarissa	0434		0538
dela Rosa, Francis M.	0134	Y vonne J.	0000		0555
dela Rosa, Tammy L.	0304	Domingo, Doreen D.	0038		0556
Delfin, Evelyn F.	0032	Domingo, Marachel	0001		0562
Delomen, Michael	0090	Domingo Ponnie D	0304		0569
Delos Reves Rosemaria	0345	Donato Nielsen B	0397		0570
Demofelis Rev B	0345	Ducusin Rio John T	0307		0576
Demayo, Casar G	0178	Ducusin, Rio John T.	0392		0599
Demayo, Cesar O.	0075	Ducusin, Rio John T.	0393	Efferth, Thomas	0249
Dama as Radalfa A	0110	Ducusin, Rio John T.	0493	Elazegui, Erwin P.	0111
Demo-os, Rodono A.	0401	Ducusiii, Kio joiiii 1.	0500		0198
Decerie Chaster C	0462	Dulay Ann E	0309		0380
Deocaris, Custor C.	0052	Dulay, Alli L. Dulay, Pich Milton	0170	Elec, Venus H.	0025
Deorai Sourchh	0022	Duray, Kich Minton	0047	Elegado, Francisco B.	0069
Deom, Sourabil	0022	Dumilon Bosite A	0095	Elesango, Maribelle G.	0310
M	0449	Duminoii, Kosha A. Dumka Vinod Kumar	0400	Elio, Angela Corazon B.	0219
	0505	Dunika, Vinod Kumar	0542	Ella, Areva Corazon S.	0580
	0515	Dunika, Vinod Kumar	0544	Ellevera, April Ann A.	0214
Destura, Raul V.	0244	Dunika, vinou Kunai Duqua, Johna C	0028	Emverda, Floricel M.	0264
DeVelez Noel	0033	Duque, Johna C.	0028	Encarnacion, Jose Maria	0.401
Dev Amitav	0488	Duque, Olysses G.	0026	L.	0421
Diaz Jose L	0485	Duran, Dannua H.	0430	Endaya, Berwini B.	0459
Diaz, Jose L.	0556	Duran, Emerenciana D.	0329	Enerva, Lorna T.	0095
Diaz, Ma Genaleen O	0090	Durov M N	0331	Engay, Kathreena G.	0015
Diaz Romielhvne Z	0029	Duray, IVI.IN	0191	Enriquez, Kayceeline L.	0587
Diesmos Arvin C	0143	Duray, Marietta	0193	Escarlos, Jr., Jose A.	0497
Dimayuga Juan Carlos	0080	Durban, Claire Marie C.	0300	Espina, Edzen A.	0296
Emily ugu, suan Carlos	0000	Dy, Damio 1.	0107	Espinoza, Marilen M.	0344

Espiritu, Zoraida R.	0348	Francisco, Karlo Misael	0218	Gobaco, Bryan	0165
	0349 0361	Francisco, Ma. Leonora	0046	Gomez, Gilbert V.	0134
Estacio. Maria Amelita		dL.	0040	Gomez, Norma U.	0012
С.	0465	Franco, Prima Fe R.	0077	Gonzaga, Elsa A.,	
Estacio, Maria Amelita	0466		0103	Garduque, Rolando J.,	0429
C.	0400	Franco, Samuel S.	0103	Jimenez, Vingelle B.,	0438
	0518	Franzblau, Scott G.	0279	Panes, Teresita S.	
	0532	Frondoza, Michael B.	0239	Gopez-Cervantes, Juliet	0044
Estacion, Blessa Bianca	0127	Fukuyo, Yasuwo	0188	Gordoncillo, Mary Joy	0428
C.	0127	Futterer, Dieter	0087	N.	
Estrada, Ronald D.	0213	Gaño, Relet O.	0420	Gordoncillo, Mary Joy	0480
Estrella, Emmanuel P.	0261	Gabule, Jessa May S.	0324	IN.	0522
	0266	Galang, Rosellie L.	0004	Concerno Jacobio S	0325
	0278	Galinato, Primavera B.	0299	Gorospe, Jessie S.	0110
	0292	Galutan, Else F.	0249	Goss, Milagrosa M.	01/8
	0318	Galvez, Hayde F.	0021	Gozo-dy, Estelita	0313
Estrella, Rogelio	0164	·	0027	Graf, Gernard	0048
Estrella, Romulo R.	0125	Ganal-Antonio, Anne	0075		0137
Eusebio, Jameson A.	0132	Kathleen B.	0275	Grecia, Mylene C.	0417
Fajardo, Lindsay Sydney	0220	Gangan, Jason C.	0589	Gregorio, Glenn B.	0025
N.	0220	Ganzon-Naret, Erlinda S.	0190	Gregorio, Richmond L.	0579
Fenoy, Rudy C.	0335	Gao, Yongming	0024	Grobe, Hannes	0205
	0352	Gaoat, Cecile A.	0077	Grona, Sheila G.	0559
	0353		0103	Gruezo, William Sm.	0082
Fernandez, Dasha A.	0129	GarcÃa-DÃez, Juan	0474	Guillermo, Jr., Jose Gil	0105
Fernandez, Lourdes G.	0330	Garcia, Jonyl L.	0128	Gul, Saima	0277
Fernandez, Valentina S.	0496	Garcia, Karlo Roman C.	0157	Gumasing, Leonardo G.	0329
Fernando, Edwino S.	0202	Garcia, Laurence	0251	Gutierrez, Alma Maria	0164
Fernando, Trinidad C.	0004	Garcia, Ronald O.	0041	Jennifer	
	0011	Garcia, Teofilo Y.	0327	Gutierrez, Herminigildo	0169
Ferrolino, Joseline A.	0248	Garcia. Teofilo Y.	0330	Magad Stela Marie C	0365
Flor, Jesus Augustus	0399	Garlitos, Josefa L.	0350	Haguingan Juzie Mae B	0436
Cesar G.	0377	Garzon, Marilyn U.	0146	Hallare Arnold V	0430
	0418	Gascon, Cecilia N.	0041	Hautea Desiree M	0021
Flor, Jesus Augustus Cesar G	0440	Gascon, Mervin G.	0311	Hautea, Desiree M.	0021
Elorece Leonardo M	0082		0312	Hayin, Jovita A.	0350
Florida Kristine Ruth V	0221	Gellada, Lorna D.	0097	Heo, Gang-Joon	0396
Fontanilla Ian Kendrich	0221	Genuino, Maria Lourdes	0280	Heo, Gangjoon	0451
C.	0060	G.		Herbas, Maureen May T.	0382
Foronda, Joseph	0208	Geronilla, Mario B.	0303	Hermoso, T.M.	0255
FPCR	0255	Ghalehnoo, Mehdi	0572	Herradura, Lorna E.	0026
	0310	INA511N1		Herrera, Annabelle	0109
Hirono, Ikuo	0039	Kataria, Anil Kumar	0502	Lauricio, Agatha	0553
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Hollert, Henner	0126	Kataria, Nalini	0502	Khristine C.	0555
Hsu, Hao Wei C.	0091	Kathiresan, Kandasamy	0053	Laurino, Mercy Ygona	0287
Hsu, Hao Yuhn C.	0130	Kawato, Katsuhito	0429	Layaoen, Heraldo L.	0103
Hung, Wei Yi D.C.	0117	Kim, Cheol-Hyun	0396	Lazaro, Jonathan V.	0088
Ibanez, Jayson C.	0045	Kim, Kye-Myeong	0345	Leaño, Jr., Julius L.	0095
Ignacio, Sharon D.	0253	Kim, Won-Il	0441		0134
Inciong, Gaerlan D.	0301	Kim, Yun-hye	0554		0135
Inumpa, Arnold M.	0348	Kohls, Paul	0279		0333
	0349	Kohno, Hiroshi	0193		0334
	0361	Kondo, Hidehiro	0039		0343
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Japos, Genaro V.	0140	Labadan, Rizza Mae L.	0081		0366
	0216	Labatos, Jr., Bonifacio D.	0195	Lee, Ellen Y.	0266
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Jarilla, Flora A.	0007	Labios, Jocelyn D.	0003	Lee, Glenn Q.	0599
Javellana, Ma. Cesar	0484	Labios, Romeo V.	0003	Legaspi, G.C.	0255
Ramon H.	0404	Lagarde, Charlie S.	0310	Legaspi, Gerardo D.	0294
Jimenez, Kay Celine P.	0294	Lalusin, Antonio G.	0006	Li, Richard C.	0165
Jimenez, Lia Ronelle F.	0563	Lambio, Angel L.	0417	Li, Zhikang	0024
Jose, Reizl P.	0054	Lambio, Angel L.	0425	Liao, Lawrence M.	0229
Juan, Norma B.	0327	Lambio, Angel L.	0507	Librojo-Basilio, Nieva T.	0468
Juinio-Meñez, Marie	0225	Lammey, Michael L.	0432	Lidicky, Rolf	0087
Antonette R.	0007	Lampayan, Valentine	0238	Liebezeit, Gerd	0048
	0227	Blez L.	0230	Ligisan, Aileen R.	0005
	0228	Lansang, Mary Ann D.	0240	Liguan, Ronnie M.	0356
	0232	Lanto, Eduardo A.	0125	Lim, Michael P.	0350
Jumawan, Joycelyn	0109	Lapa, Ma. Mayla Imelda	0210	Lim, Tanya	0179
Jungao, E. A.	0158	M.		Listano, Henry R.	0350
Jurado, Rowena Caridad	0337	Lapa, Ma. Mayla Imelda	0251	Lit, Jr., Ireneo L.	0061
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	0369	Lapita, Edzer K.	0183	Llorico, Cora P.	0350
Kabiling Wilfrido D	0154	Lapitan, J., Lonco D.S.	0472	Lluisma, Arturo O.	0224
Kalaw Sofronio P	0047	Lastica, Emilia A.	0538	Lobite, Neil Jun S.	0099
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Kalita Chandana	0/60	A.	0448	Lope, Jose Ernie C.	0238
Kalita S N	0386	Laude, Rita P.	0102	Lopez, Cheryl G.	0356
Kaneez Fatima Shad	0277	Laurena, Antonio C.	0006		0357
Karaca Turan	0461	,	0032		0370
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Lozano, Emiliana J.	0213	Macatangay, M.	0597		0372
Luardo, Kim T.	0382	Macawile, Janet P.	0269		0375
Lubos, Lesley C.	0078	Madayag, Clarence M.	0004	Mangaya-ay, Teresita	0003
	0121	Madriaga, Juanita R.	0325	Manguiat, Proceso	0003
Lubos, Lesley C.	0140	Madrid, E.T.	0255	Manguiat, Proceso H.	0006
Lucagbo, Michael C.	0381	Maga, Janet P., Rosales,		Maningas, Mary Beth B.	0039
Lucas, Samuel F.	0500	Agnes B., Cereno,	0384	Manlusoc, Joanne	0093
Lucena, Mary Ann H.	0101	Roberto, Tapay, Nenita E		Katherine T.	0075
Luczon, Adrian U.	0060	L. Maghoios Carina R	0208	Manongsong, Evelyn B.	0125
Luis, Edwin S.	0416	Magcale-Macandog	0270	Manuel, Ma. Carmina C.	0010
	0427	Damasa B.	0015	Mapa, Dennis S.	0381
Luis, Edwin S.	0445	Magsino, Richard M.	0225	Marante, Rodney P.	0407
Luis, Edwin S.	0453	Magulama, Efren E.	0013	Marasigan, Elizabeth	0380
Luis, Edwin S.	0470		0019	Marcal, Wilmar S.	0519
Lumbao, Jessie	0003	Mahilum, Jofi	0010	Marcelo, Amabelle Lou	0093
Luna, M.	0223	Valdehueza	0212	C.	0200
Lunar, Bernardo C.	0108	Malabanan, Jenice P.	0333	Marcos, Kizzy T.	0309
Lustria, Ulysses M.	0541		0342	Mardan, Faizal 1.	0313
Luzano, Dafoodil O.	0214	Malabrigo, Jr., Pastor L.	0115	Mariano, Crystal Gale	0033
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Maala, Ceferino P.	0385	Defrance	0227	Marte, Benjamin Reuel	0503
Maala, Ceferino P.	0390	Malayang, Dona Bae	0003	O. Marte Benjamin Reuel	
Maala, Ceferino P.	0391	Maligaya, Rhea L.	0466	G.	0539
	0392	Maligaya, Rhea L.	0585	Martinez, A.O.	0291
Maala, Ceferino P.	0393	Mallari, Alexander O.	0306	Martinez, Ruth M.	0306
Maala, Ceferino P.	0411	Mallari, Ma. Yehsa G.	0339	Martonito, Roselle L.	0373
Maala, Ceferino P.	0412	Mallillin, Aida C.	0325	Masa, Dina B.	0052
	0421	Malvar, Ellsa Patricia	0241	Masagca, Jimmy T.	0066
Maala, Ceferino P.	0493	May R.	0.500		0098
	0494	Mamacus, Ronan B.	0539	Masangkay, Jordan I.	0443
	0495	Mamaril, Tracy V.	0093	Masangkay, Joseph S.	0430
Maala, Ceferino P.	0499	Mamuad, Felomino V.	0452	Masangkay, Joseph S.	0443
Maala, Ceferino P.	0508		0577		0487
	0509	Manalang, Evangeline	0135		0554
Maala, Ceferino P.	0510	11011.	0371	Masangkay, Joseph S.	0571
Maala, Ceferino P.	0511	Manalawaay Jassica G	0371	Masiglat-Sales, Jocelyn	0020
	0526	Manalo Carmelita O	0491	D.	0030
Maala, Ceferino P.	0545	Manandhar Doornima	0125	Mateo, Carmencita D.	0401
	0546	Mananagit Milagros P	0303		0415
Macabeo, Allan Patrick	0279	Mancebo Samual T	0376	Mateo, Carmencita D.	0426
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Macapundag, Qamarah R.	0293	ivialigannuali, ivora D.	0362	Mateo, Carmencita D.	0473

Mateo, Zenon	0208	Monicit, Dilbert A.	0252	Ocampo, Pablo P.	0192
Matias, Ronald	0258	Monleon, Arnolfo M.	0564	Oclarit, Jose M.	0101
Matsuo, Masafumi	0250	Monlinong, Jason Paul	0258	Ogabar, Ana Marcelina	0108
Maxino, Theresa C.	0175	C.	0238	Τ.	0190
McGlone, Douglas H.	0226		0273	Ogata, Kazuo,	0201
Mejillano, Michelle	0001	Monzon, Liza	0288	Ogbac, Ruben V.	0317
Samantha S.	0091	Monzon, O.P.	0291	Ohmomo, Ryoko	0479
Mendioro, Merlyn S.	0017	Morales, Abigail B.	0504	Ohno, Hideki	0479
	0024	Morales, Dante D.	0256	Oinam, Gunapati	0104
	0090	Morenos, Lei Angeli S.	0131	Olalia, Jason L.	0471
Mendoza, Evelyn Mae T.	0006	Morillo, Teresa Asuncion	0459	Olarve, Joseph P.	0385
Mendoza, Mark Christian	0093	В.		Olarve, Joseph P.	0453
С.	0070	Moriones, Cecilia R.	0331		0514
Mendoza, Norman DS.	0341	Movillon, Jovita L.	0177	Oliveros, Benedict Paul	0592
Mendoza, Rhulyx	0025		0178	R.	0072
Mendoza, Victor L.	0256	Murillo, Nico S.	0029	Oliveros, Benito A.	0592
Menes, Carmen C.	0034	Nacorda, June Owen O.	0178	Olpenda, Alex S.	0374
Mercado, Ma. Dolores D.	0383	Naga, Maria Vicroria D.	0093	Ompoy, Serenita S.	0354
Mercurio, Dexter Dario	0503	Naguit, Ma. Rio A.	0203		0356
G.	0 = <1	Nancho, Rosa Ma	0270		0357
Mergilla, Mark Cyrus A.	0561	Nas, Tamerlane Mark S.	0017	Omura, Takuo	0188
Messing, Joachim	0011	Natividad, Filipinas F.	0044	ON, Tiwari	0104
Metillo, Ephrime B.	0089		0220	Ong, John	0208
	0101	Natividad, Gabriel	0478	Ong, Perry S.	0060
Miano, Rommel S.	0118	Natural, Marina P.	0032	Ontoy, Dexter S.	0142
Michaylov, Radoslav	0422	Neri, Donna Lou E.	0216	Opiso, Einstene M.	0037
Miguel, Roland Jay	0258	Ng Sinco, Justin W.	0093	Orden, Edgar A.	0462
Mingala, Claro N.	0088	Nishiyama, Kauru	0250	Ordonio, Reynante L.	0011
Mingala, Claro N.	0491	Nombre, Margaux G.	0512	Oreta, Andres Winston	0159
Mingoa-Licuanan, S.	0231	Nuñeza, Olga M.	0094	C.	0107
Suzanne	0020	Nuñeza, Olga M.	0204	Orillaza, Jr., Nathaniel S.	0278
Miranda, Konalyn I.	0028	Nudo, Leonora P.	0035		0304
Mirasol, Joy M.	0042	Obaldo, J.M.	0291	Orong, Denise O.	0150
Mirasol, Jr., Felix S.	0042	Obaldo, Jerry M.	0317		0302
Mitsuke, Koichiro	0131	Obedencio, Jr., Jose M.	0583	Ortiz, Ariel T.	0230
Mohagan, Alma B.	0055		0584	Osi, Marina O.	0274
Mohagan, Alma B.	0056	Obena, Rofeamor P.	0133	Pabico, Jaderick P.	0136
Mohagan, Alma B.	0057	Obsioma, Virginia P.	0427	Pabroa, Preciosa Corazon	0341
Mohagan, Alma B.	0058		0548	В.	0
Mohagan, Dave P.	0058	Ocampo, Lerma C.	0452	Pabuayon, Isabelita M.	0552
Moises, Sheila F.	0591	Ocampo, Lerma C.	0577	Pacheco, Benito M.	0162
Mojica, Alvin P.	0268	Ocampo, Lerma C.	0596	Padayao, Daisy O.	0233
Molina, Elizabeth C.	0476	Ocampo, Marion B.	0596	Padılla, Mildred A.	0442

	0506	Peras, Rose Jane J.	0378	Rajkhowa, Swaraj	0439
Padua, Roberto N.	0142	Perez, Juveneil Eissyd J.	0036		0469
Pagatpatan, Lordy R.	0510	Perez, Maria Teresa M.	0069	Rajput, Neetu	0542
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Pajas, Arville Mar Gregorio A.	0529	Perlas, Marylin B., Tan, Francisca O.	0376	Ramirez, Ray Kristoffer Casio	0056
Palad, Lorna H.	0329	Petilla, Jeffrey Carl D.	0511	Ramirez, Teresita J.	0595
Palattao, Ma. Visitacion	0328	Petrache, Christina A.	0330	Ramos, Angelito F.	0330
В.	0520	Pham, Laura J.	0043	Ramos, Fernan Macrin	0117
Paliza, Arnelfa C.	0262	Pia, Gerrylou Sweet M.	0354	C.	0117
Paller, Vachel Gay V.	0192	Picardal, Jay P.	0118	Ramos, John Donnie A.	0033
Palmones, Patricia Joy B.	0467	Pico, Mirasol D.	0337		0074
Paloma, Jonnel C.	0423	Pilapil, Flor Marie	0404		0274
Palompon, Daisy	0210	Immanuelle R.	0-10-1	Ramos, Marvin A.	0008
Palompon, Daisy	0221	Pinat, Jacquelyn	0236	Ranjan, Bibhuti	0544
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	0320	Pollehne, Falk	0048		0289
Pampolina, Nelson M.	0062		0123	Rashki, Ahmad	0572
Panelo, Carlo Irwin A.	0257		0141	Ravago, Rachel V.	0225
Paragas, Ericson M.	0091	Polly, Jr., David W.	0319	Raymundo, Asuncion K.	0397
Parami, Vangeline K.	0332	Ponce, Eliseo R.	0379	Raymundo, Asuncion K.	0437
Paraso, Michelle Grace	0468	Portilla, Ma. Cristina B.	0273	Raymundo, Asuncion K.	0522
V.	0400	Pring, Cecilia C.	0323	Rayos, Antonio A.	0414
	0527	Pulhin, Juan M.	0378		0424
	0563	Puzon Nacu, Debbie Ann	0163		0528
Paringit, Enrico C.	0374	Que, Norbert S.	0171		0574
Parungao IV, Alfonso G.	0047	Queza, Macario Ireneo P.	0260	Rayos, Antonio A.	
Parungao, Sandra P.	0523	Quibael, Liana Aira V.	0029	Marcial, Jr., Demetrio B.	0454
Pascua, Chelo	0208	Quilala, Peter F.	0274	Escueta, Haidee DR.	
Pascual, Cherrie	0258	Quilang, Jonas P.	0060	Razon, E.C.	0255
Pascual, Cherrie B.	0273		0072	Rebancos, Carmelita M.	0527
Pascual, Felicitas	0193	Quilloy, Reynaldo B.	0027	Reconose, Marina V.	0355
Pasia, Jasmen S.	0146	Quimbo, Maria Ana T.	0147	Redondo, Marie Jeanelle	0414
Patricio, Jose Hermis P.	0187	Quimio, Celsa A.	0025	H.	0001
Patzold, Jurgen	0051	Quimpo, Fra-And	0106	Regalia, Raymond S.	0224
Paz, Sherryl L.	0094	Timothy	0106	Resurreccion, Anna V.A.	0030
Peña, Rolando E.	0207	Rafanan, Jose Bonifacio	0200	Revita Melanie I.	0011
Pechera, Ronald S.	0358	S.	0277	Rey, Jessica D.	0024
Pecho, Jasmin A.,		Rafols, Rocelia A.	0339	Reyes, Alexis L.	0316
Butardo, Elaine	0016		0346	Reyes, Milagros V.	0207
Genevive G.			0347	Reyes, Renato G.	0047
Pelayo, Jerald L.	0263	Rahimi, Ebrahim	0550		0084

Reyles, Ramon	0267	Salmo, III, Severino G.	0228
Rico, May S.	0350		0232
Rigor, Alex T.	0018	Salon, Michael Vincent	0356
Rivera, Tolentino	0028	E.	0550
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	0314	Johnedel P.	0214
Rivera, Windell L.	0492	Salvador, Daile Meek C.	0314
Roco, Irene	0323	Sambot, Jolivette C.	0095
RodrÃguez-AlarcÃ ³ n, Carlos A.	0521	San Diego-McGlone, Maria Lourdes	0233
Rodriguez, Jose	0197	San Luis, Odessa B.	0548
Rodriguez, L.V.	0255	Sang, Dinh Thanh	0201
Rodriguez, Lilian V.	0310	Saniel, Ofelia P.	0259
Rodriguez, Tessie J.	0222	SantiaA±ez, Wilfred	0113
Rola, Agnes C.	0012	John E.	
Romero, Gabriel O.	0004	A Anna Theresa	0085
	0011	Santiago, Arthur Pius P.	0160
Rosales, Avelita	0003	Santiago, Denise Ester O.	0178
Rosete, Irish Joy D.	0002	Santiago, Rene C.	0513
Rosito, Ruby M.	0076	Santiago-Flores.	0010
	0114	Marianne Leila A.	0411
Roslin, Ma. Anya Yasmin A.	0384	Santiago-Flores, Marianne Leila A.	0412
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Α.	0555		0545
Roxas, Manuel Francisco	0478	Santor, Propa Joy R.	0091
Roxas, Ninfa P.	0388	Santos, Brian S.	0072
Roxas, Ninfa P.	0425	Santos, Jr., Gabriel	0330
Roxas, Ninfa P.	0444	Santos, Lorenzo Angelo	0001
Roxas, Ninfa P.	0497	R.	0091
Roxas, Ninfa P.	0498	Sariana, Lalaine G.	0086
Roxas. Ninfa P.	0409		0138
Rubico, Joseph Emil C.	0573	Sarinas, Brian Gil S.	0097
Rubio, Ma. Leah D.	0110	Sarma, Dilip Kumar	0439
Ruelo, Julita S.	0020	Sarma, Kamal	0386
Sacnahon, Grace R.	0578	Sato, Toshinori	0064
Sajise, Andy G.	0025	Schonlau, Christine	0126
Sakthivel, Kollimalai	0053	Sedano, Susan A.	0595
Salcedo, Alan Rodelle	0127	Seita, Tetsurou	0575
M.	0.420	Sekulić, Slobodan	0410
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