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DOST'S fertilizer additive from Seaweed to reach more farms

By **Luisa S. Lumioan**
S&T Media Service, DOST-STII



www.greenpeace.org

After the promising result of multi-location field trials of a carrageenan fertilizer additive, the Department of Science and Technology (DOST) will be partnering with the Department of Agriculture (DA) to further expand its use according to DOST Secretary Mario G. Montejo.

The said field trials showed that carrageenan, when added to fertilizer, can help make rice crops stronger, give more yield, and more resistant to diseases, among others. Carrageenan is a substance extracted from edible seaweed.

This research on using carrageenan as fertilizer additive was based on an earlier study conducted by the DOST's Philippine Nuclear Research Institute (DOST-PNRI).

In the said research, carrageenan was subjected to irradiation to degrade the

substance into minute particles so that it can be absorbed by the plants optimally.

The DOST and DA target to further test the technology in around 4,000 has. of farms for the next cropping season.

Montejo also revealed that DOST-PNRI is developing precision farming methods using nuclear techniques to determine the right amount and timing of fertilizer application at different growth stages of crops, as well as optimizing irrigation scheduling to help lessen cost of inputs for the farmers.

DOST-PNRI's studies have shown that timely and proper fertilizer application can increase fertilizer efficiency by up to 70 percent. In addition, appropriate irrigation scheduling can minimize losses by around 25 percent.

"These are just two samples of how atoms or nuclear technology can be harnessed for peace and development," said Montejo.

DOST awards two schools as Best Implementers of Inquiry-Based Science Lessons

By **Marco Melgar**
S&T Media Service, DOST-SEI

The Science Education Institute (SEI) of the Department of Science and Technology (DOST) named Taguig Integrated School and CP Sta. Teresa Elementary School as two of the Most Promising School for Implementers of Project HOTS or Hands on Teaching and Learning of Science.

Project HOTS is a professional development program of SEI which aims to enable teachers to design and develop science lessons incorporating an inquiry-based activity, facilitate an inquiry-based activity, and improve the lesson based on pupil's response or lesson study. It is a means to change the focus of teaching from a teacher-centered classroom to one that is student-centered.

The two schools emerged as winners among 10 participating schools in a three-day Seminar-Workshop on Development of Inquiry-based Science Lessons conducted by SEI in the Taguig City-Pateros Division in May 2015.

Two teachers from each school participated in the said seminar. At the start of the school year, the teachers collaborated in developing lessons based on what they learned from the workshop. During the lesson implementation of the first teacher, the other teacher observed and noted the students' response. The teachers then discussed how the lesson was received by the students and revised the lesson based on their observations. The revised lesson was implemented by the second teacher. After the second implementation and post-lesson discussion, the teachers finalized the lesson. The second cycle of the same lesson would start again this year.

Representatives from SEI and University of the Philippines-National Institute of Science and Mathematics Education Development observed how the teachers implemented inquiry-based lessons in their schools.

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DOST Negros Oriental holds seminars to prop craft and furniture industry

By Sean Adrian T. Guardiano
S&T Media Service, DOST-VII

The Department of Science and Technology - Negros Oriental Provincial S&T Center (DOST NegOr PSTC), in cooperation with Foundation University, conducted a four-part materials innovation seminar series for selected homegrown designers and representatives of some micro, small, and medium enterprises (MSMEs) in Dumaguete City, Negros Oriental.

"The seminar series is aimed at equipping local designers with some technical knowledge on various types and properties of materials so that their designs become more suitable to specific types of materials," said DOST NegOr PSTC Director Gilbert R. Arbon, adding that the activity hopes to create a pool of local industrial designers to support the province's craft and furniture industry.

Five experts on materials innovation from the different DOST Research and Development Institutes (RDIs) came to share their knowledge and expertise, representing the following agencies: Philippine Textile Research Institute (PTRI), Forest Products Research and Development Institute (FPRDI), Metals Industry Research and Development Institute (MIRDC) and Industrial Technology Development Institute (ITDI).



DOST Negros Oriental Provincial Director Gilbert R. Arbon (extreme left) is flanked by (2nd from L--R) PTRI expert, Engr. Adela H. Montalvo; FPRDI Foresters Robert A. Natividad and Moreno L. Santander (center), and Mr. Rommel L. Romagos of DOST-Negros Oriental.

Engr. Adela H. Montalvo of PTRI discussed natural and synthetic fibers as materials for craft industries. Josefina R. Celorico, an expert from ITDI explained the use of plastic, ceramics and fiberglass as essential materials for the craft industry, while Engr. Edilbert M. de la Peña of MIRDC talked about metals and related resources. Foresters Robert A. Natividad and Moreno L. Santander of FPRDI lectured on wood, bamboo and other forest products.

"We ensure the global competitiveness of environment-friendly forest-based products and enhance the efficiency and effectiveness of existing forest-based industries and assist in the establishment of new enterprises," said Natividad.

Most of the participants came from the MSME sector, which included manufacturers of furniture, gifts and decors, handicrafts, and fashion accessories. Potential product designers also attended the two-day activity.



Engr. Edilbert M. de la Peña, an MIRDC expert receives the Certificate of Appreciation from DOST NegOr PSTC Training Coordinator Rommel L. Romagos

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DOST-awards...
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The two most promising schools received a laptop, projector, all-in-one printer, and a pocket WiFi from SEI as an incentive.

Other schools from the Taguig-Pateros Division which participated in the program were BagongTanyag Elementary School-Main,

Daanghari Elementary School, Enlisted Men's Signal Village Elementary School, Maharlika Elementary School, Kapitan Eddie Reyes Memorial Elementary School -Main, Pateros Elementary School, Silangan Elementary School, and Tipas Elementary School.

Nueva Ecija Library of Advanced Learning Materials to include DOST's Starbooks

By Allan Mauro V. Marfal
S&T Media Service, DOST-STII

A soon to be established library hub in San Jose West Central School in San Jose City, Nueva Ecija will have STARBOOKS among its array of features and facilities that will provide elementary and high school students in the city with different types of advanced reading and learning materials.

STARBOOKS, or Science and Technology Academic and Research-Based Openly Operated Kiosks, was developed by the Department of Science and Technology-Science and Technology Information Institute (DOST-STII). It is the first digital science library in the country, containing tons of information on science, mathematics, and technology in text, audio, and video formats. It does not require Internet connection in order to be accessed.

During the recent launch and installation of two STARBOOKS in the school, Department of Education (DepEd) Schools Division Superintendent Teresa D. Mababa said that STARBOOKS will certainly be one of the main attractions of the library hub.

"The arrival of STARBOOKS comes at the perfect time for the teachers and students in San Jose City," she said. "Most of the books and other reference materials in our libraries had been wiped out by recent typhoons. Additional to that, most of the time, we have been experiencing unreliable internet connection."

Meanwhile, San Jose City Mayor Marivic V. Belena said that STARBOOKS is an innovation on education that she really



(From right) DOST-STII representative Susana O. Abada and officials from the Department of Education office in San Jose City, Nueva Ecija, headed by Schools Division Superintendent Teresa D. Mababa, Education Program Supervisor Dr. Sherilyn M. Alias, and Assistant Schools Division Superintendent Dante G. Parungao, sign the Memorandum of Understanding at San Jose West Central School. (Text and photo by Allan Mauro V. Marfal, S&T Media Service, DOST-STII).



Lloyd Frederick Mandapat of DOST-STII trains DepEd staff in San Jose City, Nueva Ecija on how to use and operate STARBOOKS. (Text and photo by Allan Mauro V. Marfal, S&T Media Service, DOST-STII)

welcomes because it gives their teachers and students opportunities to learn more about science and technology, without requiring the local government to spend too much money.

"Definitely, STARBOOKS will provide a further boost to our program in education which is my top priority. STARBOOKS offers materials and technology that will help the officials and project implementers in our city to build a sustainable and effective learning environment for our residents. Aside from that, gaining more knowledge on science and technology could be an important ingredient in inclusive development," she added.

Also held during the launching was the signing of a Memorandum of Agreement between DOST-STII, DOST-Region III, and DepEd's division office in San Jose City.

STII has deployed 792 STARBOOKS all over the Philippines since 2011. In July 2015, STARBOOKS received the Presidential Citation for Innovative International Library Projects by the American Library Association. STARBOOKS was also featured during the Kuala Lumpur Engineering Science Fair last October 30-November 1, 2015.

For more information about STARBOOKS and how to avail it, send an email via starbooks@stii.dost.gov.ph and stiiilibrary@gmail.com or call 837-2071 to 85.

DOST launches Int'l ICT business incubator cum Start-Up hub in Palawan

By **Ranjit G. Montalban** and **Athena Colline L. Verdey**
S&T Media Service, *DOST-IVB*

The Department of Science and Technology-MIMAROPA (DOST-MIMAROPA), Palawan State University (PSU), Palaweño ICT Association (PICTA), and Make a Difference (MAD) Industries of Malaysia opened the first ever international Information and Communications Technology (ICT) business incubator in the region recently at the Palawan State University-Main Campus in Puerto Princesa City.

The Palawan International Information and Communications Technology (ICT) Business Incubator cum Start-up Hub or Palawan ITBI will serve as a hub for local technopreneurs to develop their tech-relevant ideas into world-class products. The region is currently seeing a growing number of technology-based startups.

As DOST-MIMAROPA Regional Director Dr. Josefina P. Abilay said in her speech during the launch, the hub is where “ideas can be transformed into products and startups can be guided to become fully-fledged entrepreneurs.”

Palawan ITBI is a step closer to the goals of DOST, PSU, and PICTA, namely, to



DOST-MIMAROPA Regional Director Ma. Josefina P. Abilay (center) during the launch of the Palawan International Information and Communications Technology, which aims to turn local ideas into internationally relevant products and services.

nurture technopreneurship, promote public-private partnership in the development of MIMAROPA, create more jobs, and introduce local technology ventures into the ASEAN Economic Community as well as the East ASEAN Growth Area which consists of Brunei, Indonesia, Malaysia and the Philippines.

It will be operated under the MAD Incubator management framework and a

partnership between a successful MAD Incubator owned by Andrew Wong.

The launching was also attended by outgoing PSU President Jeter Sespeñe, Elliot Hsu of Taiwan-based Hand Link Corporation, City Councilor and ICT Committee Chairman Eleutherius Eudalino, students and faculty members from PSU, and media representatives.



1ST FORUM ON FORECAST-BASED EMERGENCY PREPAREDNESS FOR CLIMATE RISKS. Department of Science and Technology (DOST) Assistant Secretary for Climate Change Adaptation and Disaster Risk Reduction Raymund E. Liboro addresses the participants of the recent 1st Forum on Forecast-Based Emergency Preparedness for Climate Risks at the New World Hotel, Makati City. In his discussion, Asec.Liboro underscored DOST's breakthrough use of the latest science and technology tools and applications in meeting the challenges of severe weather and other potentially destructive natural phenomena, citing Typhoon Lando which posted significantly low casualties despite swamping many parts of Northern and Central Luzon