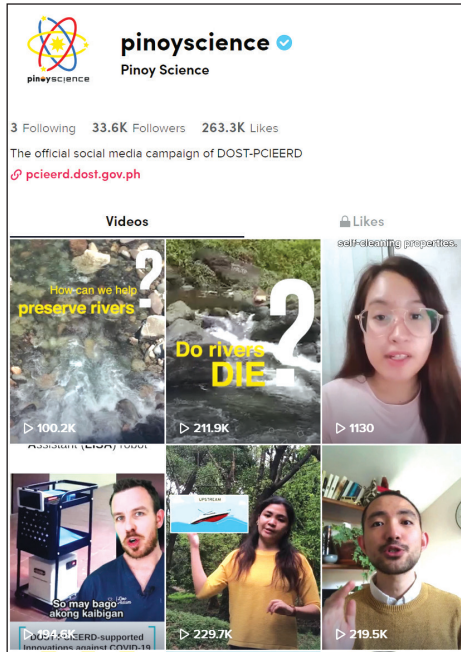




14 years of bringing
S&T good news

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Pinoy Science TikTok Account (tiktok.com/@pinoyscience)

DOST-PCIEERD, TikTok ink partnership to strengthen Pinoy innovation promotion

Text and photos from DOST-PCIEERD

Filipino TikTok users will now learn more Filipino scientific achievements and developments as the Department of Science and Technology Research and Development – Philippine Council for Industry, Energy and Emerging Technology Research and Development (DOST-PCIEERD) partnered with TikTok to boost promotion of Filipino-made technologies.

During the virtual launch, DOST-PCIEERD inked a Memorandum of Understanding with

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DOST's textile institute opens collaborative space for designers, textile innovators

By Jachin Jane O. Aberilla, DOST-STII



The DOST-PTRI Textile Gallery, Design and Innovation Hub is envisioned to become a maker's space where fashion designers, textile manufacturers and marketing professionals, researchers, and students can create, experiment, and execute their ideas that will bolster and revitalize the local textile and fiber industry.

The Department of Science and Technology-Philippine Textile Research Institute (DOST-PTRI) has officially launched its PTRI Textile Gallery, Design and Innovation Hub and the Philippine Textile e-portal as part of the 2021 Tela Conference with the theme "Fashioning Philippine Textiles in the Now Normal and in the Year of the Creative Economy" on 28 January 2021.

The newly launched textile hub is the place-to-be for all those who need workspace and who want to collaborate with other textile innovators where they can take advantage of the DOST-PTRI's facilities and expertise.

The hub will not only showcase the latest innovation in the textile industry, but it will also be opened for designers, micro, small, and medium enterprises (MSMEs), and start-up

companies as a collaborative hub where they can come together and showcase the talent and designs, enabling them to develop innovative Philippine textile products.

Miss Universe PH 2nd runner-up, also a textile advocate, Michelle Gumabao personally gave a tour of the textile hub that showcased its many features. It has an exhibition space where DOST-PTRI's products such as naturally dyed textiles and woven fabrics from all over the country are displayed.

Likewise, its wide space can also be used by fashion designers and entrepreneurs for product and collection presentations. While its conference room is ideal for more intimate and virtual meetings. The hub also has co-working spaces that are ideal for product prototyping and technical consultations.

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DOST's textile...
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Textile goes digital

The DOST-PTRI also launched its e-portal called the Philippine Textiles Portal (<http://philippinetextiles.com/>), a project initiated after the Great Women Project II, a collaboration with the Philippine Commission for Women (PCW).

The online platform aims to connect people with the handloom weaving and natural dyeing communities. The website houses relevant information such as the history of the Philippines' weaving and dyeing culture, a color library, and a directory of communities and producers of local fabrics that can be matched with both domestic and international buyers.

"This is a physical and also virtual space for collaboration among our various textile stakeholders, whether they be in the National Capital Region or they are designers, social enterprises, entrepreneurs, or our weaving communities and dyeing communities in the provinces and other regions," says DOST-PTRI Director Celia B. Elumba in her opening remarks.



Are you a fashion designer, an entrepreneur, or a start-up with new ideas for textile innovation? Get your best design because DOST-PTRI is weaving something exciting starting this year.

"The goal is to reach all textile innovators from all over the country."

The e-portal will also serve as online one-stop-shop for customers, suppliers, weavers especially Women's Micro enterprises/Women Micro Entrepreneurs (WMEs) to network with



Philippine Textiles e-portal is now accessible online through <http://philippinetextiles.com/>.

each other, thereby widening the market reach of WMEs to help them increase their sales.

To know more about the TELA Gallery, Textile Design and Innovation Hub and Philippine Textile e-Portal, interested parties can send their inquiries through ptri@ptri.dost.com.ph.

DOST-PCIEERD tiktok...
from page 1



Ceremonial signing of the Memorandum of Understanding led by DOST-PCIEERD Executive Director Dr. Enrico Paringit (lower right) and TikTok Philippine Public Policy Head Mr. Kristoff Rada (lower left).

TikTok to promote Filipino technologies through its science communication TikTok account @pinoyscience.

DOST-PCIEERD Executive Director Enrico Paringit said this collaboration is a big boost for the scientific community as it continues to reach out to Filipino netizens and garner support to innovations developed by Filipino researchers.

"Communicating science to the public has always been a challenge for our researchers. As

a leader and partner in enabling innovations, we are excited with this collaboration with TikTok as a new avenue for us to share distinctly pinoy innovations through this social media platform," he said.

This partnership with TikTok is a six-month collaboration where TikTok will be providing training for researchers on how to use the platform for science communication, promotion of Filipino technologies, and conduct contests for the Filipino TikTok community.

The first contest is through the #PinoyInnovator hashtag challenge which intends to show how creative and resourceful Filipinos are. Through this challenge, common household items will be creatively used to develop a nifty innovation. The winners of the challenge will be hailed as the "Pinoy Science Innovator 2021." They will be announced in April 2021.

Another contest that will be launched is the #PinoyScience hashtag challenge which challenges TikTok users to explain the science behind DOST-PCIEERD's supported scientific projects.

The #PinoyScience hashtag challenge will run from April to July 2021. Three winners will be announced every month starting May 2021.

"We are grateful for the opportunity to partner with the DOST-PCIEERD to help promote awareness and understanding for science and innovation, as well as inspire the Filipino youth to discover their creativity and talents. Inspiring creativity and bringing joy is at the heart of what we do at TikTok," said Kristoffer Rada, TikTok Head for Public Policy.

"TikTok is committed to helping facilitate education and learning in the Philippines. Through our #LearnOnTikTok series, we will be working with creators to produce more educational content on the platform," he added.

Follow DOST-PCIEERD at <https://www.tiktok.com/@pinoyscience>. For inquiries on this partnership or request for collaborations, send an email to pinoyscience.dostpcieerd@gmail.com.

Study explains possible danger of low nitrite in skinless longganisa

By Geraldine B. Ducusin, DOST-STII

Sakto lang! No more, no less is the way to go in processing food and the exact recommended measurements of preservatives must be strictly followed to keep our food safe for consumption.

Studies have shown that nitrite plays a key role in the preservation of meat products such as tocino and longganisa. While the consumption of too much nitrite over long periods of time could have carcinogenic risks, its underapplication, on the other hand, may also pose another health risk, as this could shorten the product's shelf life and compromise the integrity of the meat products.

Nitrite used in meat curing adds a distinct color and flavor, and enhances the antioxidant activity of processed meat products. It helps prevent the product from turning rancid, and it controls the growth of foodborne pathogens, such as *Clostridium botulinum*, the bacterium which causes botulism. Botulism is a rare and potentially fatal illness caused by the toxin produced by the bacterium *C. botulinum*, which may result in weakness, blurred vision, fatigue, and difficulty in speaking and in breathing.

According to the World Health Organization, foodborne botulism, which is caused by the consumption of improperly processed food, is rare but can be potentially fatal if not diagnosed immediately and treated accordingly.



UP Mindanao research team conducts a survey among longganisa vendor-processors in a typical public market in Davao City.

A team of researchers from the University of the Philippines Mindanao (UP Mindanao) conducted a study "Linking Socio-demographics of Meat Vendor-processors to Residual Nitrite in Skinless Native Sausage Sold in a Typical Public Market in the Philippines," which examined 90 cured skinless longganisa packs weighing 120–320 grams per pack, collected from the vendor-processors at a typical public market in Davao City.

"The study results demonstrated that all skinless longganisa samples gathered had residual nitrite levels ranging from 0.005–1.031 mg/kg, which is way below the minimum required amount of 50 mg/kg for the inhibition of *Clostridium botulinum*," says Dr. Virginia P. Obsioma, Professor at the Department of Food Science and Chemistry, College of Science and Mathematics, UP Mindanao.

Earlier studies explained that the underapplication or lack of nitrite used may, on the one hand, compromise the microbiological safety of cured meat. It was also found previously that, traditionally, Filipino market vendors primarily used nitrite more for color, texture, and flavor functions,

rather than as a preservative or antimicrobial agent.

The current study, however, finds that the extreme precaution of the vendor processors, which may have led to their underapplication of nitrite in skinless longganisa, may have been a result of their fear of the ill effects of overapplication of nitrite.

The study also revealed that those with higher educational attainment tend to apply less residual nitrite levels for food preservation, with the values falling way below the recommended limit. The skinless longganisa processed by the vendor-processors who reached high school was found to have lower residual nitrite compared to that processed by those who attained elementary education.

Furthermore, the study revealed that skinless longganisa vendor processors who are married tend to incorporate more nitrite into their products, compared to their unmarried counterparts. The same result was observed among longganisa processors with children in the household, as they tend to increase the application of nitrite to make the color and flavor more pleasing to the consumers.

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ABOUT US

The DOST Digest is published by the Department of Science and Technology-Science and Technology Information Institute. For comments, suggestions or queries, contact: (632) 8837-2071 ext. 2148/Telefax: (632) 8837-2195 or email: dost.digest@gmail.com

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AIM harnesses AI to curb water shortage in Metro Manila

Text and photo from DOST-PCIEERD

Researchers from the Asian Institute of Management (AIM) are harnessing the power of artificial intelligence (AI) and machine learning to help curb water shortages in the east service area of Metro Manila.

The research team, led by Dr. Christopher Monterola under the AIM-Analytics, Computing, and Complex Systems Laboratory (ACCeSs), developed a simulation modeling software to enhance Manila Water Company's (MWC) capability in forecasting the water supply system of Angat-Ipo-La Mesa Dams and its treatment plants and storage reservoir.

"The forecast models will serve as a tool in day-to-day operations of the MWC for the enhanced distribution of water supply in the Manila East Zone to cater the needs of its consumers—household, business, and industries," said Monterola.

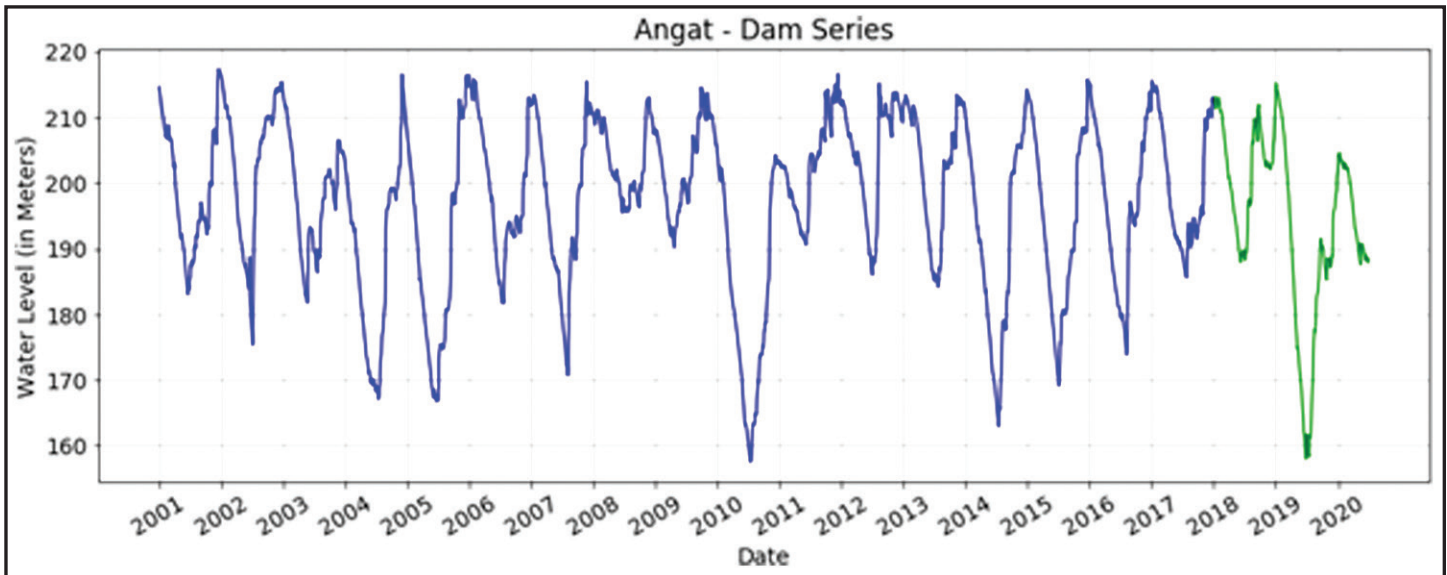
The team shared that they integrated different statistical, machine learning models, and input parameters in the development of reliable forecast models from the water source to the MWC treatment plants.

They have already completed the development of forecasting models for each dam. Currently, the project team is continuously retraining and redesigning the simulation model software by adding more input parameters relevant to the improvement of their methodology and model architectures.

The team is proud to share that their modeling software can also be used to forecast the water supply of other dams in the Philippines, providing more opportunities for other agencies to get the benefit of this tool.

The AIM-ACCeSs team, with MWC, started this project in February 2020 with support from the Department of Science and Technology's Collaborative Research and Development to Leverage Philippine Economy (CRADLE) Program and monitoring efforts from DOST-Philippine Council for Industry, Energy and Emerging Technology Research and Development (PCIEERD).

"With much data that is already out there, it is high time that we maximize the power of emerging technologies like AI and machine learning to improve and affect the daily lives of Filipinos. AIM's forecast modeling fulfills this by seamlessly providing apt agencies with helpful data as basis for decision and policy making on water supply to avoid shortages," said DOST-PCIEERD Executive Director Enrico C. Paringit.



Sample data from the research team: daily historical water levels for Angat Dam, covering a 20-year period from 2001 to 2020. Observations in blue denote the training set, green denote the test set.

Study explains...
from page 3

"There is a need to improve the food safety knowledge and practices of the skinless longganisa vendor-processors, specifically in the application of appropriate nitrite levels to ensure the safety of the processed meat," Kriza Faye A. Calumba, also a member of the research team, said.

The team also recommends that food safety seminars must be regularly conducted to educate food processors and vendors on appropriate amounts of nitrite and emphasize

the correct measurements to apply to avoid the bad effects of both overapplication and underapplication.

Likewise, the researchers suggested that the seminar can be conducted in the vernacular to ensure easy and correct understanding by all participants.

Realizing the practical value of the study, this can serve as a relevant information for local government units and government

agencies mandated to oversee the safety of products sold commercially for the protection of the consuming public.

This study appeared in the Philippine Journal of Science (Vol. 149, No. 4, December 2020), the oldest science journal in the country, published by the Department of Science and Technology. For detailed information on the study, you may visit the link <https://philjournalsci.dost.gov.ph/>.