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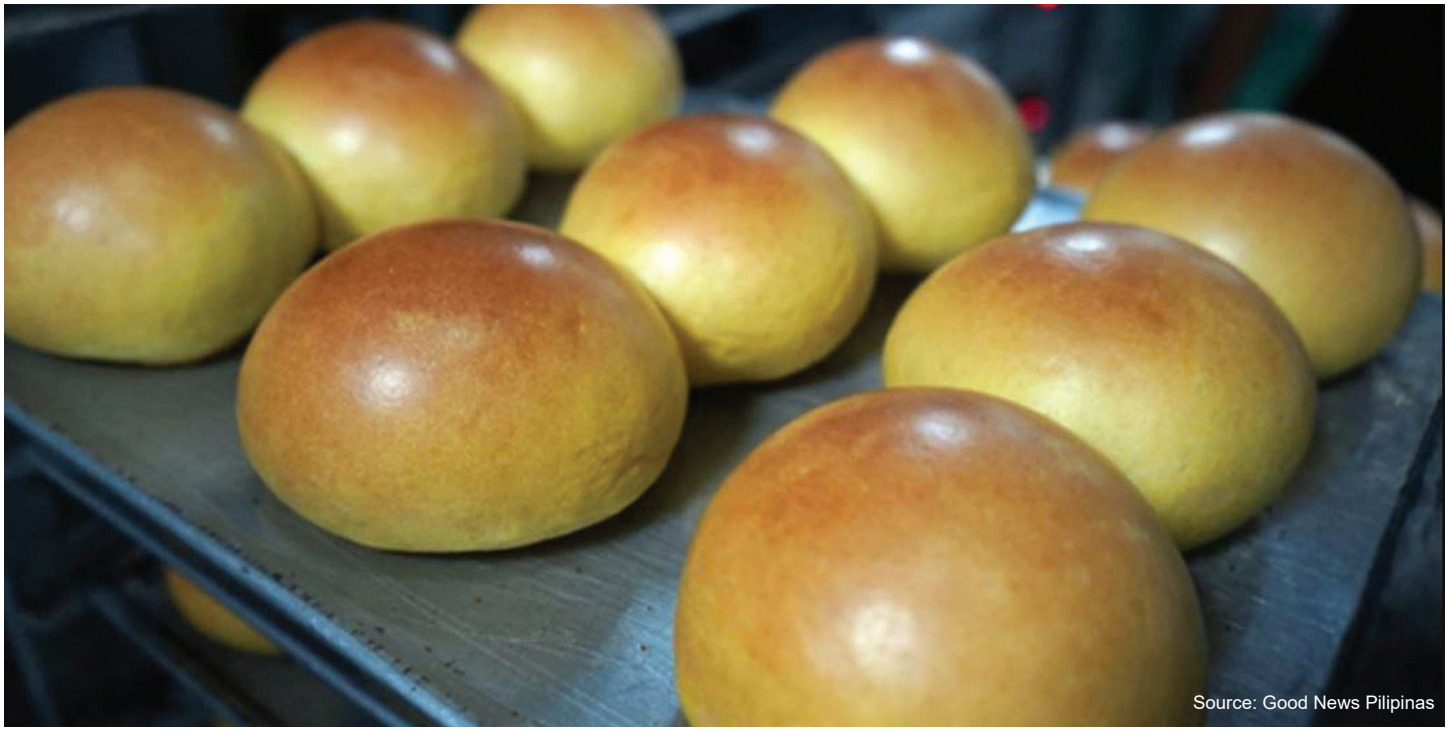
14 years of bringing S&T good news

Inside

Bakeshops in Pangasinan adopt DOST-FNRI's Enhanced Nutribun

By Bernalyn P. Martinez, *DOST-PSTC-Pangasinan*



Source: Good News Pilipinas

LINGAYEN, PANGASINAN—Two bakeshops in Pangasinan have already adopted the Enhanced Nutribun developed by the Department of Science and Technology-Food and Nutrition Research Institute (DOST-FNRI) through the signing of a Technology Licensing Agreement (TLA) with the latter.

The new adopters are Luis O. Sebastian of Louis Roy Bakeshop based in Mangatarem and Benedicto Planas of Planas Bakeshop and Store in Sual, both in the province of Pangasinan. Both adopters are beneficiaries of assistance from DOST Region I under the Small Enterprises Technology Upgrading Program (SETUP). It is one of the flagship programs of the DOST that provides technical and financial assistance to micro, small, and medium enterprises (MSMEs) to help improve their production and increase market competitiveness.

The Enhanced Nutribun in squash variant was developed by DOST-FNRI in response to the need for more nutritious food products in support of the supplementary feeding program of the government during the community quarantine as stipulated in Department of Social Welfare and Development Memorandum Circular No. 12 Series of 2020.

A 160 gram of the squash variant of Enhanced Nutribun contains 504 calories, 17.8 grams protein, 6.08 milligrams iron, and 244 micrograms of vitamin A. Similarly, a 160 grams of the new carrot variant, which was launched last 28 April 2021 has 500 calories, 18 grams protein, 6 milligrams iron, and 350 micrograms of vitamin A.

To ensure the technology standards are followed, the adopters underwent a technology adoption training and project onboarding requirements to DOST-FNRI. Moreover, a virtual ocular inspection of the adopters' production areas was conducted and followed by a virtual technology transfer training on the production of the Enhanced Nutribun.

During the virtual training, DOST-FNRI discussed the modules on Food Safety, 5S, Good Manufacturing Practices, and as capped by product demonstration.

The DOST Provincial Science and Technology Center-Pangasinan will continuously monitor the two technology adopters to ensure that their production of the Enhanced Nutribun complies with DOST-FNRI's standards and will provide them with the needed technical assistance.

Interested parties on the Enhanced Nutribun technology may contact the DOST or its regional offices for details.

DOST-PNRI makes nuke educational materials more accessible to high school teachers, students

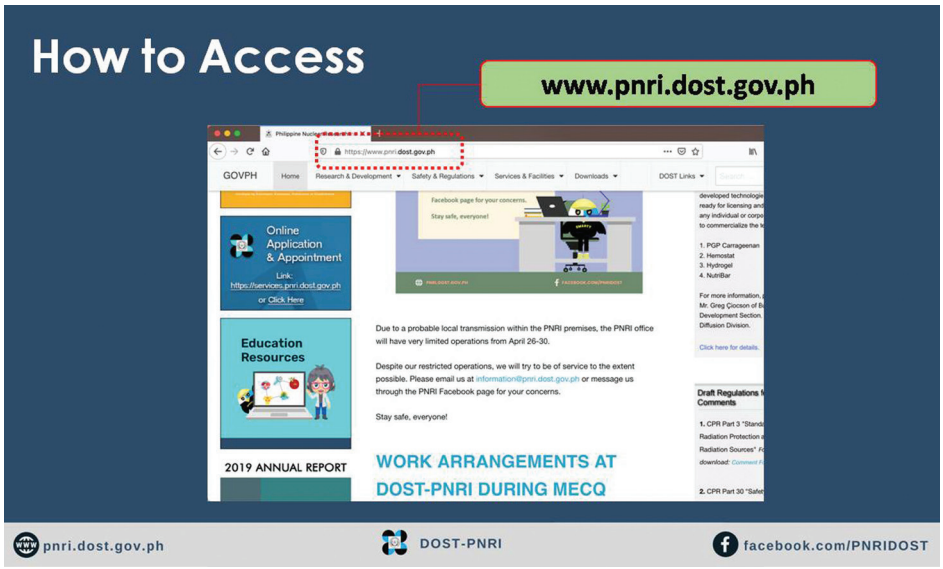
By Allan Mauro V. Marfal, *DOST-STII*

High school teachers in the country will now have better tools and gain easy access to educational materials in teaching the concept and the benefits of nuclear science and technology, particularly its positive impact on the lives of Filipinos.

The Department of Science and Technology-Philippine Nuclear Research Institute (DOST-PNRI), with support from the Department of Energy (DOE) and the Department of Education (DepEd), introduced to the public their recently developed Educational Resource Materials on Nuclear Science and Technology on 6 May 2021 via Facebook Live.

The resource materials cover various topics that include: basics of atomic structure and radioactivity to its applications in agriculture, industry, and the environment; its potential as an energy source; and radiation safety and protection. Furthermore, these materials will encourage students to pursue careers related to nuclear science and technology.

To make learning more interesting to young students, the materials are packaged both in booklet and video format, that will be accessible online and distributed later on to secondary schools in the Philippines.



Researchers from the DOST-Philippine Nuclear Research Institute, with support from the Department of Energy and Department of Education, developed a series of educational resources for high school students. These materials, both in ebook and video formats are accessible online and will later be distributed to secondary schools in the Philippines.

According to its project leader, Dr. Jasmine Angelie Albelda of DOST-PNRI, the Educational Resource Materials on Nuclear Science and Technology has connections to competencies in the K-12 curriculum so teachers can use it to supplement teaching using the 7Es (elicit, engage, explore, explain, elaborate, extend, and evaluate) as guide in creating their lesson plans.

It consists of ten booklets, namely: Radiation Around Us, Describing Radiation, Ionizing Radiation and Matter, Careers in Nuclear Science and Technology, Nuclear Science and the Environment, Nuclear Science and the Industry, Nuclear Science and Health, Nuclear Science and Agriculture, Nuclear Science and Energy, and Nuclear Science and Disaster Preparedness. Each booklet is complemented by one animated video.

"It is important for us to understand the value of nuclear in society. The biggest obstacle to the appreciation of nuclear is ignorance of its applications. Nuclear has been beneficial to the whole world, not only in energy but also in many areas. To overcome the huge obstacle in misunderstanding nuclear, we need to educate people by providing reliable and accessible educational materials to our K-12 students and teachers," said DOST-PNRI Director Carlo A. Arcilla.

Meanwhile, in his message, DedEd Undersecretary for Curriculum and Instruction Diosdado M. San Antonio said that the resource materials that cover topics on radiation, ionizing radiation, and careers in nuclear science and technology and its relevance to the environment, industry, health, agriculture, and disaster preparedness complement their effort in DepEd. The learning materials also provide the cultivation of relevant information and advanced economic development and peace and order in the time of the pandemic.

"Nuclear science and technology and its related research and services have played vital roles in improving the capabilities of different sectors in the country. It is very crucial, at a young age, that our Filipino students will be able to appreciate and understand it. I am very confident that these learning materials would help a lot to attain it," said DOST Secretary Fortunato T. de la Peña.

On the other hand, DOE Secretary Alfonso G. Cusi said that even in this information age, there is still a misconception when it comes to nuclear energy and utilization. To increase the public's positive perception of nuclear science, proper education would make a huge difference, particularly if we show the young students how nuclear S&T and its applications work for the people and community.

To access the recently launched Educational Resource Materials on Nuclear Science and Technology, the public can visit this link https://services.pnri.dost.gov.ph/nstep/ at the DOST-PNRI official website (www.pnri.dost.gov.ph)

ABOUT US

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Joy M. Lazcano
EDITOR-IN-CHIEF
Allan Mauro V. Marfal
MANAGING EDITOR
James B. Intia
LAYOUT & GRAPHIC ARTIST
David Matthew C. Gopilan
PROOFREADER
Ferdinand D. Cartas
CIRCULATION

Department of Science and Technology
Science and Technology Information Institute
Bicutan, Taguig City 1631
Metro Manila
Philippines

www.stii.dost.gov.ph

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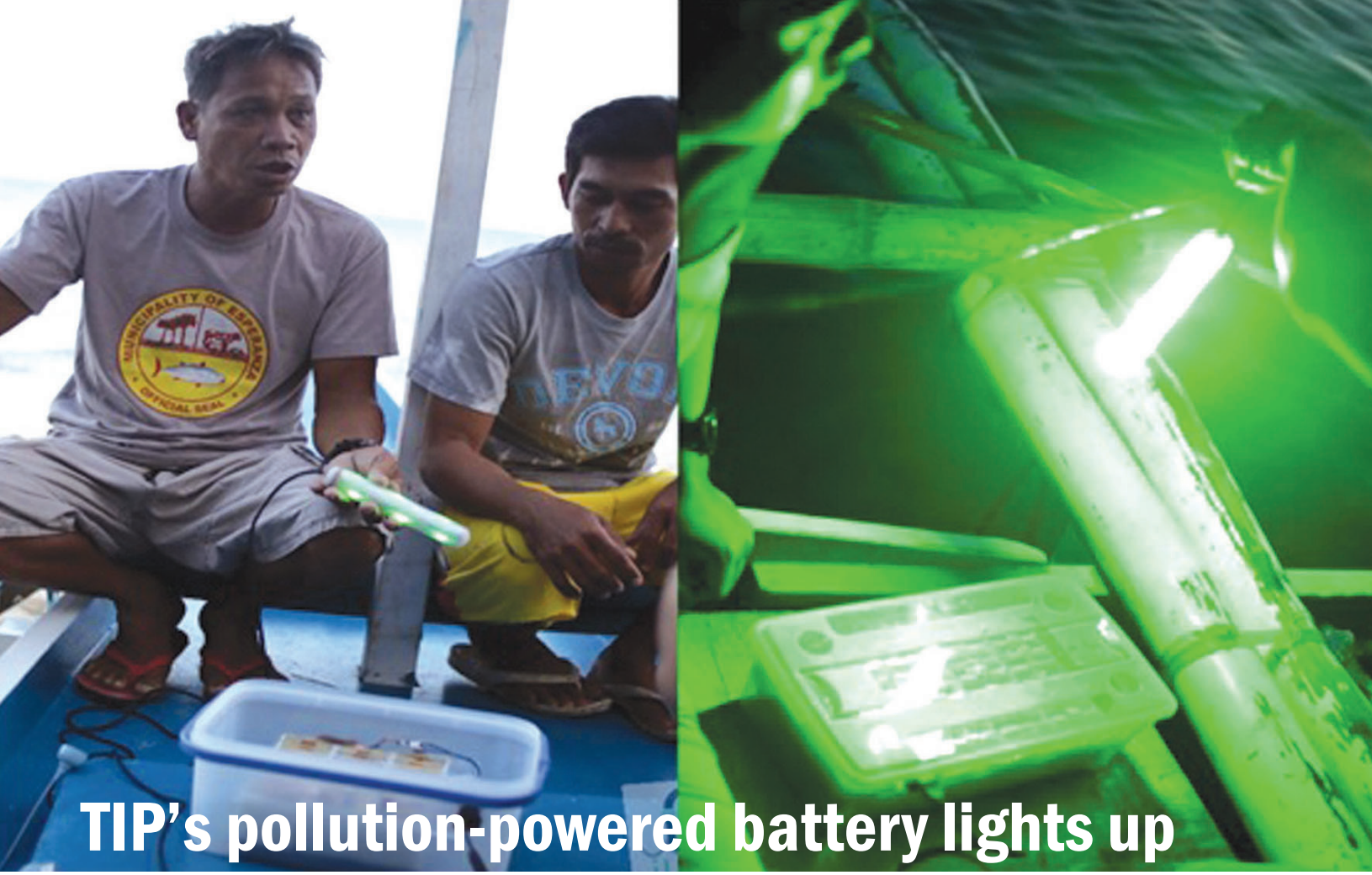

TIP's pollution-powered battery lights up the way for a cleaner lake

Photos from the market testing of the iLawà in Masbate

When we use light to signify hope, the fisherfolks in Laguna Lake knew this only too well since a novel source of light has fueled their aspirations for a better catch and a brighter future.

Researchers from the Technological Institute of the Philippines (TIP) have developed a battery that literally lights up the path of fisherfolk and cleans the polluted water from where they get their livelihood, at the same time.

Dubbed iLawa, derived from the Filipino phrase, "Ilaw mula sa lawa" (light from the lake), the battery was developed from recycled aluminum like cans, to help light the path of fisherfolks and clean the lake when submerged underwater.

The researchers explained that the battery gets its power from the electrolytes in the water due to the presence of electric charges.

The battery then cleans the water by removing its phosphate content. Phospates in lake waters come from agricultural and residential runoffs, dissipating as the cell operates in the water.

The TIP team, composed of engineers Niel Jon Carl Aguel, Ana Luz Callao, Paul Vincent Nonat, and Rowel Facunla led by Dr. Drandreb Earl O. Juanico, first conceptualized iLawà in 2016 to address energy-related problems that the Talim Island, which is in the middle of Laguna Lake, has been experiencing.

Their earliest prototype received recognition in 2017, bagging them an award from a non-government organization advocating sustainable energy.

Seeing the potential of this renewable energy (RE) innovation, the TIP team enhanced iLAWA further and has successfully received funding support from the Department of Science and Technology's (DOST) TECHNICOM Program for prototype development, field testing, and market validation. The project was monitored by the DOST-Philippine Council for Industry, Energy and Emerging Technology Research and Development (DOST-PCIEERD).

With the ample support for the project, the team successfully optimized the prototype with its cell volume and mass reduced by 90% and 73%, respectively, while increasing power output by 89%. These technical improvements led to greater potential uses that require higher electrical power levels.

To date, the team behind iLAWA has forged several partnerships with material suppliers for the commercialization phase and technology adopters such as the Pederasyon ng Mangingisda ng Bayan ng Binangonan, a fisher folk cooperative that operates in Barangay Ithan, in Binangonan, Rizal.

The TIP team envisions that the widespread adoption of iLawà will consequently promote aluminum recycling and help remediate polluted lake waters. The release of phosphates through chemical reaction in the battery will then improve water quality. Furthermore, it will contribute in minimizing fish kills in lakes and enhance the fishing livelihood in the towns surrounding the lake.

DOST-PCIEERD Executive Director Enrico C. Paringit said, "The conscious efforts of TIP to boost the livelihood of Filipino fisherfolk by developing a durable, cost-effective innovation, not only will produce clean energy but also improve lake environments. We look forward to seeing iLawà light up Philippines' aquacultural areas, rivers, and even coastal waters."

Japanese organization lauds silkworm rearing houses in Misamis Oriental

By Danielle Jeane Quilit, *DOST-Misamis Oriental*

Japanese national, Yukihiro Ishibashi, Resident Representative of the Organization for Industrial, Spiritual and Cultural Advancement (OISCA) International, gladly expressed his satisfaction with the silkworm or sericulture rearing houses in Misamis Oriental. He recently visited two sericulture project sites in Sitio Saguing, Barangay Patag in the Municipality of Opol and Barangay Balubal in Cagayan de Oro City, both in Misamis Oriental.

OISCA is an international organization based in Japan committed and dedicated to promoting international cooperation. One of its programs is on sericulture industry development in the Philippines. In fact, the organization funded the construction of a silkworm rearing house in Barangay Patag.

Misamis Oriental is one of the seven beneficiary provinces for skills training and other assistance for sericulture operations. The other provinces include Benguet, Nueva Vizcaya, Aklan, Iloilo, Antique, and Negros Occidental. The aim is to develop model sericulture farmers with abilities to produce high-quality cocoons at a faster pace.

To further support the initiative, the Department of Science and Technology-Misamis Oriental (DOST-MOR) sourced funds from OISCA worth Php 145,000 for the silkworm rearing house. The agency then linked the farmers to the Philippine Textile Research Institute -Technology Center in Misamis Oriental (PTRI-TCMO) for training and technical assistance in silk cocoon production.

Four members of the Sitio Saguing Community Farmers Association in CNQ Farms have just completed a three-day hands-on training on sericulture at the PTRI-TCMO, Villanueva, Misamis Oriental last 5-7 May 2021. Evaluators of the rearing house in Barangay Patag considered the facility to be suitable for silkworm rearing and functional for silk cocoon production.

Meanwhile, the sericulture project in Barangay Balubal was made possible by the DOST Local Grants-In-Aid program in cooperation with the Local Government Unit of Cagayan de Oro City through the City Housing and Urban Development Department. As a result, the project's beneficiaries were successful in their first and second silk cocoon harvest last 14 February and 28 April of this year, respectively.

Ishibashi was grateful for the building of the rearing houses. He further said that the setup was very ideal considering the distance between the rearing house and the mulberry field of the sericulture site in Barangay Balubal.

"They are very cooperative with our activities in OISCA so I'm very happy and satisfied with the performance of the staff of the government, at the same time [the] cooperation of the community beneficiaries in Misamis Oriental," Ishibashi said as he thanked the government agencies involved in the implementation of the sericulture projects.

Ishibashi vouched that OISCA will continue to support the development of the silk industry in the province and help communities in their livelihood. To know more about the project, please contact Julie Anne H. Baculio, at stpromotions@region10.dost.gov.ph or mobile number 0917-709-3706.

Project monitoring visit to the sericulture rearing house with DOST-MOR, PTRI-TCMO and PAGRO in Sitio Saguing, Brgy. Patag, Opol in Misamis Oriental.