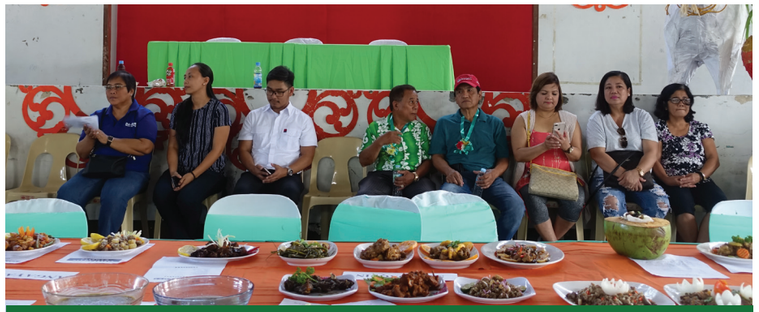
Pangasinan town celebrates 14th Annual Goat Festival

Balungao, Pangasinan is among the municipalities benefiting from projects on rural enterprise development for goat raising funded by the Bureau of Agricultural Research (BAR). These research initiatives implemented by the Department of Agriculture-Regional Field Office (DA-RFO) 1 have helped jumpstart lucrative goat and goat's meat production in areas where corn and rice production were previously the main agricultural practices.

Balungao, Pangasinan prides itself as the goat capital of the Ilocos Region and is where it has become an annual event to hold a Goat Festival where locals would parade goats in costume and host street dancing competitions.

Since 2010, the municipality has also held a festival cooking contest that pits its 20 barangays against one another in cooking the most innovative and delicious dishes from goat's meat. "This competition is our way of showcasing Balungao to the rest of the world," said Riza Rodrigez Peralta, vice chairman of the organizing committee for this year's festival. "These recipes are easy, doable, and makes use of readily available ingredients," she added.

This year, among the judges for the cooking competition were Ms. Julia A. Lapitan, head of BAR-Applied Communication Division; and Ms. Cathy Pastor, senior science research specialist of DA-RFO 1. The dishes were 100 recipes. Aside from the traditional *kaldereta*, *kilawin*, and *pinapaitan*, other contending goat dishes were curry, l*umpiang shanghai*, *adobo*, and even *nachos*. This year's champion was the dish cooked by Chef Ariel Flores of Barangay Mabini, Balungao whose entrée featured herb-encrusted, roasted goat's rib.



Ms. Julia Lapitan (leftmost), BAR-Applied Communication Division head, and Ms. Cathy Pastor (2nd from left), senior science research specialist from DA-RFO 1 are part of the panel of judges for this year's cooking competition. PHOTO: LAESPIRITU

To further the municipality's initiative in promoting chevon-based cooking, BAR and DA-RFO 1 have been providing technical assistance to the local government unit on a recipe book that will highlight the dishes presented during this year's cooking competition. According to Balungao Mayor Philipp G. Peralta, this publication is intended not only for the promotion of goat raising as a viable source of livelihood, but also as a way to make agri-tourism sustainable.

"We are also looking into how to commercialize chevon dishes cooked here in Balungao for greater market reach. One way we can achieve that is by developing food processing and packaging systems which will increase the availability of the products in other areas of Luzon," said Cathy Pastor. ### ***(Ephraim John J. Gestupa)***

BAR, UPLB lead...from page 5

Ryan Rodrigo Tayabong, Mr. Michael Kerby Bejo, Ms. France Mae Sanchez, Ms. Jennica Amielle Mora, and Mr. Jomar Macaliyag. They conducted lectures on the mechanics, elements and designs of EL technology, including maintenance of the garden that will produce enough edible plants of high quality and variety. The actual implementation activity was also done where the participants turned a part of an undeveloped land in the NPRCRTC into an edible landscaped garden.

Meanwhile, the team from BAR-TCD was composed of Dr. Andrea Agillon, Ms. Maria Elena Garces, Ms. Jennilyn Castañeto, and Ms. Gladys Gammad who assisted the UPLB-EL during the conduct of the training. ### ***(Maria Elena M. Garces)***

BARChronicle
BUREAU OF AGRICULTURAL RESEARCH

RDMIC Bldg., Visayas Ave., cor. Elliptical Rd.
Diliman, Quezon City 1104
PHILIPPINES

Entered as second class mail at the Quezon City Central Post Office under permit no. 2C-14-01-148 NCR

ISSN 1655-3942

BARChronicle
BUREAU OF AGRICULTURAL RESEARCH
www.bar.gov.ph @DABAROfficial

Volume 19 Issue No. 3 | A monthly publication of the Bureau of Agricultural Research | March 2018

BAR-funded R&D initiatives presented during 2018 Garlic Summit

INSET: DA Usec. Evelyn G. Laviña, keynote speaker during the 2018 Garlic Summit, encourages farmers to get involved with garlic production while Mr. Joell H. Lales, chief of BAR's Program Development Division presents the bureau's R&D initiatives on garlic. PHOTOS: DLBATTAD

The Bureau of Agricultural Research's (BAR) research and development (R&D) initiatives on garlic were presented to more than a thousand participants composed of farmers, small traders, researchers, extension workers, members of the local government units (LGUs) and staff of Department of Agriculture (DA) attached agencies and regional field offices during the Garlic Summit held at the Centennial Arena, Laoag City, Ilocos Norte on 14 March 2018.

Under the DA-High Value Crops Development Program (HVCDP), BAR has been supporting various R&D interventions on garlic which so far, generated significant technologies for the garlic industry. Among these include the application of Gibberellic Acid (GA3) to enhance growth and yield of garlic cultivars; production of true-to-type and certified virus-free planting materials of garlic through tissue culture; standard indexing protocol for virus-free certification of garlic; management

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IN THIS ISSUE...

Eleazar leads inauguration of research facilities in DA-RFO 1

Bureau of Agricultural Research (BAR) Director Nicomedes P. Eleazar led the ceremonial inauguration of two research facilities of the Department of Agriculture-Regional Field Office (DA-RFO) 1 on 7 March 2018 at the Ilocos Norte Research and Experiment Station (INREC)-Dingras and Batac, Ilocos Norte. The two research facilities include: Organic Agriculture R&D Center, and the Garlic Storage Facility that were funded under BAR's Institutional Development Grant (IDG) program.

Joining Dr. Eleazar were Ms. Digna L. Sandoval, head of BAR-Institutional Development Division (IDD); and Ms. Marjorie M. Mosende, assistant head of BAR-IDD. Welcoming the BAR officials and staff were Dr. Lucrecio R. Alviar, Jr., regional executive director of DA-RFO

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Eleazar visits Spanish Red Pineapple project site in Bicol

Dr. Nicomedes P. Eleazar, director of the Bureau of Agricultural Research (BAR) went to the Camarines Norte Lowland, Rainfed Research-Outreach Station in Calasgasan, Daet, Camarines Norte on 2 March 2018 to visit the site of the Spanish Red Pineapple (SRP) project. He was updated on the progress of the BAR-funded project titled, "Fruit Size and Quality Enhancement of Spanish Red Pineapple through Cultural Management Practices," that is being implemented by Department of Agriculture-Regional Field Office (DA-RFO) 5.

Dr. Nicomedes P. Eleazar, BAR director (3rd from L), Ms. Luz R. Marcelino, research division chief of DA-RFO 5 (4th from L), and Engr. Bella Frias, superintendent of the Camarines Norte Lowland, Rainfed Research Station (3rd from R) visit the site of the Spanish red pineapple project. PHOTO: MEAQUINO

The SRP project aims to come up with package of technologies (POTs) on fertilizer management, planting density, and time and quantity of leaf harvest per plant. The combination of these POTs is projected to enhance the fruit size and quality of the SRP variety thereby increasing the income of pineapple growers in the area.

To date, approximately 2,500 sq. m. open area at DA-Camarines Norte Lowland Rainfed Research Station, Calasgasan, Daet, Camarines Norte was selected as experiment site and are planted with SRP. Fertilizer application was done based on the identified treatment. The planting materials were sourced from Aklan State University (ASU).

In 2017, Agriculture Secretary Emmanuel Piñol tasked BAR and the Bureau of Plant Industry (BPI) to lead research initiatives on how to improve the size and the quality of the SRP fruits so that farmers will make additional income.

BAR, as the lead agency for research in agriculture, has formulated an R&D program for SRP covering profiling and market research, cultural management studies for the production of large and sweet SRP, and enhancement of textile fiber production from leaves of SRP in cooperation with other agencies such as BPI, Philippine Fiber Industry Development Authority, DA-RFO 5, and ASU.

Engr. Bella Frias, superintendent of the Camarines Norte Lowland, Rainfed Research Station, led the project site visit of Dir. Eleazar. Ms. Maria Christina C. Zaballa, study leader discussed the different planting density and rate of fertilizer application for each plot. Plot signs are labeled according to replication, planting density, and leaf harvesting.

Ms. Luz R. Marcelino, research division chief of DA-RFO 5; and Ms. Faye Medeleine U. Carranza, research staff, gave an overview and status of the SRP project being implemented by DA-RFO 5. Dir. Eleazar shared his ideas and recommendations on the implementation of the project.

To date, fertilizer application commenced at five months after planting. The project team is also in the process of gathering agronomic data including plant height, number of leaves, length of leaves, and width of leaves. Furthermore, the prevalence of pests and diseases in the site are being monitored and controlled. ### ***(Ma. Eloisa H. Aquino)***

BARChronicle
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BAR CHRONICLE is published monthly by the Applied Communication Division of the Department of Agriculture - Bureau of Agricultural Research, RDMIC Building, Visayas Avenue, cor. Elliptical Road, Diliman, Quezon City 1104 Philippines.

This publication provides regular updates on DA-BAR's activities as the country's national coordinator for agriculture and fisheries R&D. It also highlights features and news articles concerning NaRDSAF-member institutions.

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ISSN 1655-3942

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Harmonizing...from page 10

from the members of the community, particularly information on how the CPAR project was able to assist them since the project has already been completed. He also emphasized the importance of having an organized group to sustain the project and to avail of other government's support.

The original CPAR farmer-cooperators shared their experiences during the meeting. One of them was Eliseo Manggalis who adopted the CPAR intervention in Brgy. Dilong through the encouragement of their municipal agriculturist, Daniel Daagdag. "We used to buy fingerlings from Pangasinan but when BFAR provided the fingerlings, through the CPAR project, we are able to maintain our own hatchery and use that for our own tilapia production," said Manggalis. He added that, as one of the beneficiary of the CPAR project, "*Masaya ako kasi kung gusto mong kumain ng tilapia, kukuha ka lang 'di mo bibilhin. Hindi kailangang pumunta sa* market."

Another testimony came from Paulo Pacdiw, one of the five original CPAR farmer-cooperators in Brgy. Dilong, Tuba. He owns around 500 sq.m. of land which is being occupied by five tilapia ponds. He reported to the group that since the CPAR project was implemented in 2012, he was able to sustain his tilapia pond production providing food for his family and additional income. "*Bukod sa* ready *na pagkain, ang* advantage *na may sarili kang tilapia* pond, in terms of income, *kapag kailangan ng matrikula ng mga anak ko, mayroong mapagkukunan*," he said. ###

Beans and peas for...from page 13

Bokod, Cali, Contender, and Landmark); 8 varieties of pole snap beans (Kapangan, Mabunga, Tublay, Itogon,Kibungan, Tuba, Wangal, and Alno); and 5 varieties of garden pea (Betag, Boniero,Chinese Light Green or CLG, Trinidad, and CGP 59).

These selected improved varieties were entered into the BAR-BSU project for pilot testing and seed multiplication. Test areas were done in five regions (CAR, 2, 4A, 7, and 10) both for on-station and on-farm areas.

"We have to try the suitability of these crops in each region with available supplies and materials which they can use as organic fertilizer, biopesticides, and other inputs to manage the crops under organic production system," Dr. Tandang explained.

Results of the project

Dr. Tandang explained that, "out of these five selected improved varieties that we subjected in this study, we were able to identify 2-3 best varieties under organic production system for each region. However, results for each region vary."

Results conducted in CAR showed that all the varieties of bush and pole snap beans and garden pea tested were technically feasible, economically viable, and socially acceptable. However, for bush snap bean, varieties including Contender, Sablan, and Bokod significantly produced the highest marketable fresh pod yield per plot. For snap bean varieties, the top three are: Kapangan, Tublay, and Kibungan while for garden pea varieties: Betag, CGP 13, and Boniero ranked on the top under organic production system.

In Region 2, specifically in Nueva Vizcaya, the top 3 varieties for bush snap beans are: Contender, Bokod, and Sablan while for pole snap bean, the top three are: Tublay, Kibungan, and Kapangan. For garden pea varieties, CLG, Boniero, and Betag were identified to be suitable under organic production system.

In Region 4, specifically in Quezon, results revealed that for pole snap bean, the top varieties are: Wangal, Kibungan, and Tublay; and for bush snap bean varieties: Contender, Bokod and Cali. For garden pea, varieties such as CGP 13, Betag, and Boniero were identified most productive, economically-viable and preferred by the farmers. In Batangas, only bush snap bean was observed to successfully grow under organic production system. Varieties such as Contender, Cali, and Sablan were identified adapted and preferred by farmers. Garden pea varieties were not adapted under Batangas condition.

For Region 7, specifically in Negros Occidental, the best three varieties for bush snap beans were Contender, Sablan, and Bokod; while for pole snap bean, Kibungan, Tublay, and Wangal. For the garden pea varieties: CLG, CGP 59, and Boniero. In Negros Oriental, the best three varieties for each crop are Contender, Bokod, and Cali for bush snap beans; Alno, Wangal, and Kibungan for pole snap beans; and CLG, CGP 13, and CGP 11 for garden pea.

In Region 10, specifically in Bukidnon, new varieties of bush and pole snap beans and garden pea were identified for commercialization and dissemination under organic production systems. These are: Landmark, Bokod, and Cali for bush snap bean varieties; Kapangan, Alno, and Wangal for pole snapbean varieties; and Betag, CGP 110, and CGP 13 for the garden pea varieties.

Foundation seeds of these potential varieties were produced for further multiplication and distribution.

With this project, Dr. Tandang concluded that, this led to the identification and selection of the best varieties that are technically-viable, economically-feasible and socially-acceptable for organic production system throughout the Philippines contributing to growth and development of the high-value vegetable program in different regions. She hoped that with the package of technology (POT) for organic production now available, on-farm technology demonstration, with the involvement of local government units, must be conducted so that more farmers who are into organic farming will be able to avail of this technology. "Organic seed multiplication of suitable varieties for organic agriculture production system in different regions must be sustained for efficient seed supply chain in the country," said Dr. Tandang. ###

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A look inside the minds of millenial farmers

Text and photos by Ephraim John J. Gestupa

Pearly Gersaniva is a researcher from CPU Iloilo City who manages a hatchery facility of over 8000 native chicken eggs. She perceives her work in agriculture as a path to becoming more altruistic.

At 23 years old, Kristine, Donna, and Johanne are already managing R&D activities on native chicken in their university. The technologies they developed are now being used by 4Ps family-beneficiaries at Isla Higantes.

Danna Marie Gabasa, a B.S. Agriculture student from the Central Philippine University (CPU) in Iloilo City, began studying for her college degree with a few innocent misconceptions of what it means to be a farmer. "S*a totoo lang, kahit noon pa, kapag narinig namin ang* 'agriculture,' *yung naiisip namin ay yung pagdidilig at pag-aani gamit ng kalabaw, pero hindi pa namin alam noon na ang* agriculture *ay isang science na marami pa itong ibang aspeto*."

Today, Danna is among the research staff at CPU's College of Agriculture, Resources, and Environmental Sciences (CARES). She helps in the management and development of agricultural R&D and consults with other students concerning their undergraduate thesis.

Among the projects Danna was involved in were research initiatives funded by and supported by the Bureau of Agricultural Research (BAR), specifically on the development of organic feeds for native chicken and integrated farming systems.

During the whole month of March, portraits of Danna and her colleagues from CPU-CARES were featured during the 2018 National Women's Month Photo Exhibit held at BAR's lobby.

On the day of the photo's taking, Danna along with her colleagues, Pearly Gersaniva, Johanne Paulette Defiño, and Kristine Anne Rosbero shared their insights on what it means to be among a group of millennials who are taking up the call to become the country's next generation of farmers.

Agriculture is a multi-faceted vocation

Contrary to popular belief or the lack thereof, studying agriculture requires a person to be a jack-of-all-trades, a trait exhibited by a lot of millennials today.

According to Kristine, "you don't need to have a background in farming to become a farmer. You may have previously studied architecture, business, or even medicine, all these you will be able to use in agriculture."

"*Natutunan namin na ang* agriculture ay *hindi lang* science it also encourages us to be creative, innovative, and business minded," adds Danna.

Agriculture encourages altruism

When asked about how they can further invite the youth in pursuing agriculture as a profession, Pearly shared how farming can quickly shift from a personal pursuit to an effort of getting others to engage in agriculture themselves.

"It begins with yourself, but it doesn't stay that way. When you get your harvest, you are compelled to gladly bless others because you want them to also start their journey in practicing agriculture even if its just in their backyard," she adds.

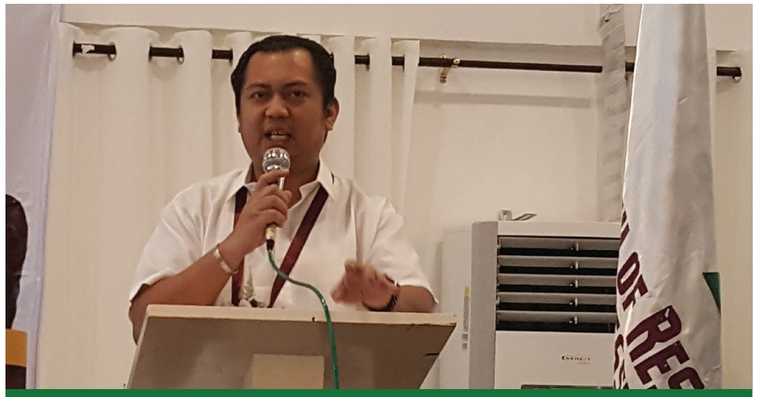
Danna also talks of how altruism is what becomes of agriculture when it goes from just being studied as theory to being a hands-on experience. "As an agriculture student, what you learn in school must also reach to your community's farmers and in return they may also add more insight to the practices of your profession."

One of Pearly's fondest memories as a working student was she along with her colleagues visited 4Ps family beneficiaries in Islas de Gigantes. The trip to the island is part of a project by the Department of Agriculture and Department of Social Welfare and Development that aims to provide rural communities with the training and resources needed to start their own native chicken production. It was there that she witnessed how a collective effort at the university can make a great impact in empowering women by providing ways for them to generate additional income for the family.

Today, Danna and her colleagues are currently working on projects aimed at improving the native chicken production in their region. Their involvement in agricultural research is a key factor in paving the way to the development and promotion of native chicken production in Region 6.

Witnessing the consistent and increasing interest of older generations, engaging in agricultural practices, Danna, Pearly, Katrine, and Johanne are motivated and more sure now that they are on the right path. "We sometimes help train older folks who are retired doctors or seamen, they come visit the campus to attend seminars on agriculture. Indeed *sa huli, babalik at babalik parin tayo lahat sa farmer*," says Kristine. ###

BAR's RDEAP presented during 5th UP REPSS Scientific Conference



BAR-PDD Head Joell H. Lales presents the topic, "Opportunities for UP Research Extension and Professional Staff for Filling the RDE Gaps in Agricultural Research" during the conference. PHOTO: MEAQUINO

With the theme, "*The Role of REPS in Transforming UP into a World-Class Research University through Science and Innovation*," the UP Society of Research, Extension and Professional Staff, Inc. (REPSS) conducted its 5th Annual Scientific Conference and 9th General Assembly Meeting on 21-23 March 2018 at Shercon Resort and Ecology Park, Mataas na Kahoy, Batangas. The three-day conference aims to promote exchange of ideas as well as interactions among UP REPSS members by presenting results of various researches.

The Bureau of Agricultural Research (BAR) was invited to provide information that will help researchers and professional staff in packaging research proposals in line with the agenda of the Department of Agriculture (DA).

Mr. Joell H. Lales, head of the BAR-Planning Development Division (PDD), represented Director Nicomedes P. Eleazar in the plenary session. In the plenary, the topic, "Opportunities for UP Research, Extension and Professional Staff for Filling the RDE Gaps in Agricultural Research" was discussed by Mr. Lales.

As the research coordinating agency of the DA, he stressed that all submitted proposals and funded projects of the bureau are thoroughly reviewed and must align with the Research, Development, Extension and Agenda (RDEAP) 2016-2020. The publication serves as a reference material, not only for BAR, but primarily for all partner implementing agencies and researchers on what R&D activities must be pursued consistent with the major thrusts set by the Department.

"We categorized the researchable areas into the essential stages of the value chain from production, postharvest, processing up to marketing to ensure that all aspects are systematically given priority," Mr. Lales said.

Researchable areas for crops cover: 1) varietal improvement (adaptable and high-yielding); 2) appropriate machineries and mechanization protocols; 3) irrigation design systems improvement; water harvesting technologies; 4) soil conservation and rejuvenation practices (e.g. soil amendments); 5) decision support

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BAR-funded R&D...from page 1

of purple blotch of garlic; production, processing, enterprise development, and market strategies of garlic in Region 1.

Currently, BAR is supporting on-going projects on the selection, purification, and multiplication of garlic cultivars for multi-location trials in regions 1, 2, 3, 4, 5, 6, and CAR. Further, BAR under the Institutional Development Grant program is also funding one tissue culture laboratory for sustained production of planting materials targeting an increase in tissue-cultured cultivars from 25,000 to 50,000 bulblets per year and funded the establishment of Garlic Storage Facility of DA-RFO 1 in Batac, Ilocos Norte.

Evelyn G. Laviña, undersecretary for High Value Crops and Rural Credit of DA, served as the keynote speaker on behalf of Agriculture Secretary Emmanuel F. Piñol. In her message, she emphasized the Department's goal in crafting a five-year roadmap for the Philippine garlic industry development which targets to increase production and income of local garlic farmers. Laviña said that through the summit, DA can directly involve the farmers in the entire value chain as important conduits to improve the country's garlic industry.

Usec. Laviña furthered that the current demand of about 126,000 metric tons of garlic in the local market alone still yields uncertainty given the high cost of production in which smallhold farmers can barely keep up with.

Being a major impediment to the garlic industry, DA remains confident that through the on-going efforts of the agriculture sector, the country's garlic production can fairly compete with the export markets.

In support to this, DA has allocated Php50 M for the establishment of model farms which will engage 100 farmers across the country to boost production and post production of garlic, possibly involving all regions.

Adding the value of R&D in this undertaking, Usec. Laviña emphasized that a thorough research on the improvement of garlic cultivars, soil health, pest and disease management, and climate change adaptation of garlic is essential to achieve the DA's goal in revitalizing the industry. ### ***(Daryl Lou A. Battad)***

BAR celebrates National Women's Month

The Bureau of Agricultural Research (BAR) joined other national government agencies and local government units in the observance of the National Women's Month (NWM). With the theme, "WE Make Change Work for Women," this year's celebration highlights the achievements of women and girls in various fields and recognizes their contributions in the society. BAR, through its Gender and Development Focal Point System (GAD FPS) prepared a series of activities for the month-long celebration.

On 8 March 2018, the celebration kicked-off with the launching of 19 photo entries for the NWM Photo Contest. With the theme "*Malasakit at Pagbabago para sa Pag-unlad ng Agrikultura at Pangisdaan*," the photo contest is open to all BAR staff. This was followed by a seminar series on workplace harassment as experienced by the Filipino women and mental health and the Filipino Woman. Atty. Jeff Kevin Carbonel, assistant program manager for the Drug Abuse Treatment and Rehabilitation Center Project Management Office of the Department of Interior and Local Government; and, Ms. Sally Bongalonta, officer-in-charge of the Philippine Mental Health Association, Inc. served as the resource speakers, respectively.

A film showing activity featuring Ramona Diaz' "Motherland" was held on 21 March 2018. The award-winning documentary is a vérité portrait of the mothers who flock to Manila's busiest maternity ward in the predominantly Catholic country and reportedly in the world—Jose Fabella Memorial Hospital. The screening was followed by a discussion to synthesize the insights on the film. It was facilitated by Ms. Maria Daryl Leyesa, national coordinator for Self Help Group Approach, Kindernothlife (KNH) Philippines.

Serving as the resource speakers during the Women's Month Seminar Series on 22 March 2018 were Mr. Eljay Bernardo, community paralegal program associate of the Rainbow Rights Philippines and Ms. Thea Arcella Bohol, gender specialist for the Food and Agriculture Office of the United Nations in the Philippines. Mr. Bernardo talked about "SOGIE and Diversity in the Workplace" while Ms. Bohol discussed "Recognizing Signs of Abuse."

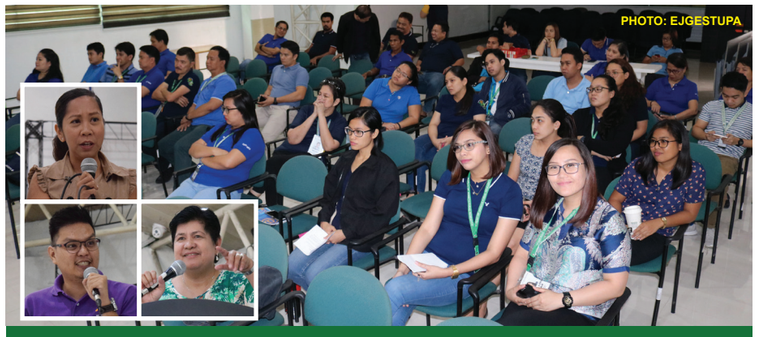
BAR concluded its month-long celebration with the awarding of the winners of the NWM Photo Contest on 26 March 2018. Ms. Rita dela Cruz of the Applied Communication Division (ACD) won the best photo with her entry "Sun-kissed Women." Mr. Juan Nikolas Paller of the Program Monitoring and Evaluation Division took both the second best photo and the "People's Choice" award for his entry "Keeping Safe the Future." The third best photo was won by Mr. Ricardo Bernardo of ACD for his entry "Holy Grain." The fourth and fifth best photos were awarded to Ms. Candice Guilaran of the Program Development Division for her entry "The Bayanihan Spirit" and to Ms. Rita dela Cruz of ACD for her entry "Every Grain Counts", respectively.

The observance of Women's Month is in compliance with Presidential Proclamation Nos. 224 and 227 series of 1988 and Republic Act No. 6469, declaring the month of March as the national observation to recognize the role and contributions of women to the society. ### ***(Rena S. Hermoso)***

"Sun-kissed Women" by Ms. Rita T. dela Cruz
Photo Contest Winner

Ms. Evelyn Juanillo, BAR-Administrative Division head, together with Atty. Jeff Kevin Carbonel, launches the NWM Photo Contest exhibit.

INSET: Ms. Maria Daryl Leyesa facilitates the discussion to synthesize the participants insights on the film "Motherland."



INSET: Ms. Thea Arcella Bohol (top), Mr. Eljay Bernardo (left), and Ms. Sally Bongalonta (right) serve as the resource speakers during the two-part Women's Month seminar series.

Beans and peas for organic production

Text and photos by Rita T. dela Cruz

Snap bean (*Phaseolus vulgaris* L.) or "Baguio bean" and garden pea (*Pisum sativum* L.) or "Chicharo" are two of the most important vegetable legumes grown in the Philippines. In fact, cooking Filipino's favorite dish, *pancit* will never be complete without these two crops.

Snap bean and garden pea are semi-temperate crops that are mostly grown in the cooler parts of the country, particularly in the northern highlands and in mid-elevation areas. Due to their economic importance, these legumes have been among the top vegetable crops being produced in the Cordillera region.

However, areas planted to snap bean and garden pea went on a declining trend, particularly from 2004 to 2009 due to lack of improved varieties. Farmers have been clamoring for improved varieties that are not only high-yielding, with resistance to pests and diseases, but have good quality pods. And with the growing concern for "safe vegetables", consumers prefer buying vegetables that are pesticide-free.

With this in mind, Dr. Leoncia Tandang of the Highland Crops Research Station of the Benguet State University (BSU), implemented a project that will pilot test the adaptability of improved varieties of bush and pole snap beans, and garden pea in various locations of the country and multiply the seeds suited under different conditions for commercialization. The project, "Pilot Testing and Seed Multiplication of Potential Varieties of Snap Beans and Garden Pea under Organic Production System in the Philippines" was implemented in 2012 with funding support from the Bureau of Agricultural Research under its National Organic Agriculture Program.

"At BSU, we have developed several varieties of vegetable legumes such as snap beans and garden peas and so far, we are the only one working on these crops, which are also priority crops in the country as source of protein. So while we have already developed the available varieties, we have to share its production to other legume farmers in other parts of the country. So that they too can produce highland vegetable crops like snap beans and garden peas," said Dr. Tandang.

She mentioned that, while these crops are commercially-available under conventional method, farmers have an option to grow them under organic production system. "We also want to encourage people to produce their own crops in their backyard so that even in smallscale, they will be able to produce," Dr. Tandang added.

Implementation of the project

Prior to the implementation of the BAR-BSU project, Dr. Tandang explained that "we already had preliminary results at BSU. We found potential varieties suitable under organic production. That is why we set it up in a wider-scale in different locations of the country, through this project."

During the preliminary studies, all the potential varieties developed by BSU were tested. From there, Dr. Tandang identified 5 potential varieties of bush snap beans (Sablan,

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Restoring the glimmer...from page 9

industry as reflected in the statistics, Ibea and her team considered that the immediate and major concern is at the production system by which research and development (R&D) interventions can significantly contribute to. Thus the project, "Selection, Purification, and Multiplication of Garlic Cultivars for Planting Materials in Region 1."

The project, which started in December 2017, dealt with collecting garlic cultivars and strains grown in the provinces of Ilocos Norte, Ilocos Sur, La Union, and Pangasinan. Once collected, these were then characterized and evaluated based on yield performances. These data now serve as the primary basis for producing the best yielding, high quality planting materials made available for garlic seed growers.

The Ilocos White, Ilocos Pink, Tan Bolters, Mexican, VFTA 275 M76, and Miracle were the six garlic cultivars planted for seed multiplication at the INREC experimental farm.

The produced garlic will be used for the multi-location trials for garlic expansion in La Union and Pangasinan.

To be certain of the quality of the produce, an enhanced package of technology was used as blanket application for the seed multiplication setup. These include appropriate soil type, damage-free cloves, proper seed treatment and land preparation, correct fertilization and planting distance, pest management practices, irrigation, application of Gibberellic acid (GA3), harvesting, drying, and storage.

Garlic farmer-partners

The project has been a success story for Alberto Florentino, one of the farmer-beneficiaries.

Florentino, a farmer of 40 years has almost five hectares of garlic production area. Although a considered 'expert' in farming, he still deals with common issues that sometimes discourage him such as high production cost, market, and lack of knowledge on new technologies.

When he was chosen to be part of the project, he was provided with 200 kilos of seeds along with the package of technology that assured him of a better yield. True enough, he was able to harvest three tons of garlic out of the inputs provided, and was able to link directly to a buyer based in Metro Manila. He is now a regular supplier of the Ilocos White Gold in the metro.

Another farmer-cooperator, Noel Quemado, is more than grateful for his involvement in the project. Like Florentino, he made it big in producing the Ilocos White Gold, which enabled him to harvest 500 kilos from his 2,800 square meter production area.

"*Gusto kong iparating sa kapwa magsasaka ko na unti-unti na nating mababalikan ang* "White Gold" *sa* Ilocos *dahil unti-unti na ring bumabalik ang ganda ng bawang sa atin, sa pamamagitan ng tulong na mula sa ating gobyerno*," Quemado said. With this, he had high hopes for the future of the Ilocos White Gold being the region's champion commodity.

With the distinct pungent taste that is said to be a no-match to the imported varieties, the Ilocos White Gold is up for a brighter future. ###

Preventing pests...from page 11

communication materials.

"*Sa katunayan 'yong [isang]* farmer cooperator *namin ay nagpro-produce na ng kanyang sariling* microbial *o Trichoderma na 'yon din ang ginagamit niyang pang*-control *do'n sa mga sakit sa* field *niya. Ito rin [ipinapamahagi] niya sa mga kasama niyang farmers*," said Ms. Oloan.

This farmer cooperator is Ms. Geraldine Bascos from Bauko, Mt. Province. She has been using *Trichoderma* in her farm since October 2015. The use of the said microbial was introduced to her by the BPI-BNCRDC. After a year of using *Trichoderma* on her farm, she started to notice the improvement on her crops. She said, "*may pagbabago naman sa tanim namin na patatas, maganda na 'yong tubo at saka 'yong mga* [stunted] *na patatas lumaki na*."

In 2017, she already started producing her own *Trichoderma* using the pure culture that she outsourced from BPI-BNCRDPSC after attending a seminar conducted by them. She said, "*iyong ginagamit ko ngayon na Trichoderma ako na ang gumagawa pero kapag naubusan ako ng oras na gumawa [ng Trichoderma] humihingi ako sa* BPI."

She also encourages fellow farmers in the region to use this microbial in their farm by saying that, "*sipag at tiyaga ang ating gugulin kasi talagang matrabaho siya* [pertaining to the production and application of *Trichoderma*]. *Pero kung talagang may tiyaga ka male*-lessen '*yong mga problema sa farm na ating tinatamnan*."

The impact of the research in Cordillera

After disseminating the generated technologies, the research team was able to notice that more farmers are now aware on how to use these BCAs on their farms.

According to Ms. Oloan, they are now more aware especially those who have organic farms on how to manage pests and diseases. She also added that through this research, there are already other organic growers in the region who could produce their own *Trichoderma*. In addition, she said, "*iyong ibang* farmers n*apansin nila na unti-unti nang tumataas ang kita nila. [Ang] paggamit naman ng* microbial *ay hindi* instant *'yan*." ###

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BAR, UPLB lead hands-on training on edible landscaping at BSU

The Bureau of Agricultural Research (BAR), through its Technology Commercialization Division (TCD), in partnership with the University of the Philippines Los Baños (UPLB) Edible Landscaping (EL) Team, conducted a hands-on training on EL technology on 14-15 March 2018 at the Northern Philippine Root Crop Research and Training Center (NPRCRTC), Benguet State University (BSU), La Trinidad, Benguet.

Participants doing the actual landscaping of the area. PHOTO: MEGARCES

The UPLB-EL Team defines EL as "a new approach that merges science and creativity together to form a revolutionary crop production system giving a twist in the conventional crop production as the basic tenets of landscape designing becoming its guiding principle."

BAR and UPLB-EL Team are promoting EL as a simple and creative crop production system that appeals to various sectors of the society thereby addressing some of the current concerns including food availability, environment enhancement, health and nutrition improvement, and provision of extra livelihood and income.

More than 100 participants composed of faculty, staff, students, including private groups and individuals, were welcomed by BSU President Dr. Feliciano Calora, Jr., who mentioned that EL is repackaging agriculture in a way that it highlights the aspect of agriculture that is not necessarily traditional but through partnership with other agencies so that smallhold farmers could sustain agricultural production. He hoped that this technology will also be implemented in different communities of other municipalities.

BAR-TCD Head Anthony Obligado represented and delivered a message in behalf of Director Nicomedes Eleazar. In his message, he commended the UPLB-EL Team for being the bureau's active partner and for its initiatives on edible landscaping since 2010, and for assisting communities in implementing and establishing an EL garden in their very own backyard.

Trainers from UPLB-EL team were composed of Ms. Norma Medina, Ms. Maria Charito Balladares, Mr.

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BAR's RDEAP...from page 3

and diagnostic tools; 6) cost-reducing management practices; 7) pest and disease management (biocontrol); 8) and efficient and cost-effective handling and storage systems.

Special emphasis were also given to vegetables, legumes, and rootcrops. Researchable areas cover soil amendment technologies; bio-control agents; sustainable seed system; low-cost protective structures and water/fertilizer application recommendations; off-season production and cultivation; and development/improvement of processing technologies and processed products.

For poultry, livestock and feedstock, and fisheries, researchable areas cover: 1) profiling and evaluation of indigenous and locally available feedstuff and ingredients; 2) feed processing procedures for increased digestibility and bioavailability; 3) genetic improvement of native animals; 4) profiling and validation of endemic and prevalent and endemic diseases; 5) development of rapid detection methods; 6) product development including standards, packaging and shelf life; 7) disease management strategies; 8) traceability studies for fish feeds and other related inputs; 9) refinement of site specific protocols for improving productivity; and 10) assessment of carrying capacities.

On this note, he further encouraged the members of the UP REPSS to submit quality proposals guided by the RDEAP. He also commended UPLB for being one of the bureau's active partners in research generation and development of technologies, hence, home of many of the country's dedicated and competent researchers and experts.

Composed of researchers, extension personnel, and professional staff from UPLB's academic units and research centers, UP REPSS aims to unify and organize UP's research, extension, and professional staff in the pursuit of common social, economic and political interests and to develop and promote science, technology and the arts for the people through sustainable activities. ### ***(Ma. Eloisa H. Aquino)***

Eleazar leads...from page 1

1; Dir. Orlando J. Lorenzana, regional technical director for Research and Regulations; Dr. Jovita Datuin, research division chief; and Ms. Wilma Ibea, center chief.

The OA R&D facility will house a soils laboratory and a conference hall for training and demonstration activities both for organic practitioners and future organic farmers; LGU technicians, and RDE staff in the region. There will also be a one-stop shop of agricultural products developed by the station.

Meanwhile, the garlic storage facility targets to meet the demands during the lean months and sufficient source of quality planting materials during planting seasons. This will also serve as a pilot facility for bulb crop growers that can maintain the quality and prevent postharvest losses.

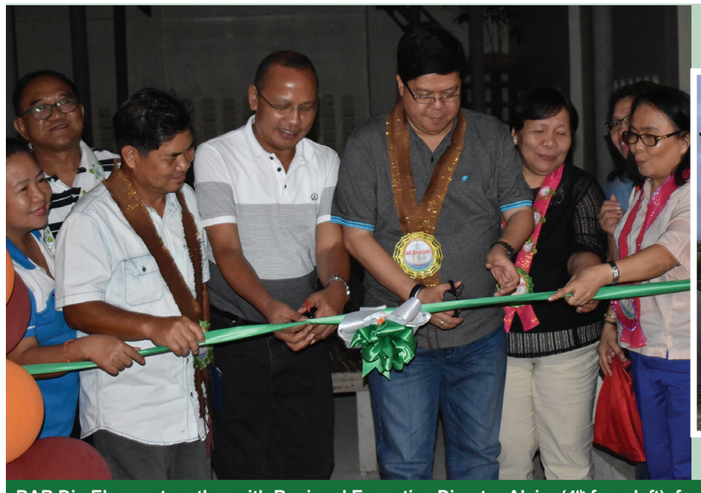
The IDG program caters to the growing development needs for a more responsive delivery of services and technological interventions in the agri-fishery sector. Furthermore, it aims to strengthen the institutional capacities of RDE network members with the upgrading and acquisition of priority agriculture and fisheries R&D facilities and equipment.

Director Eleazar, in his turn-over message, reminded everyone that all the facilities funded by the bureau must be functional and operational. In response, Regional Executive Director Alviar, during his acceptance speech, challenged the station managers to give meaning to the facility and develop it to be the Center of Organic Agriculture for R&D.

During the visit, Dr. Eleazar provided copies of the Compendium of BAR-funded Organic Agriculture Completed Projects; Research, Development, Extension and Agenda (RDEAP) 2016-2022, and other information materials. ### ***(Ma. Eloisa H. Aquino)***

DA-RFO 1's Organic Agriculture R&D Center

BAR Dir. Nicomedes P. Eleazar (center) leads the ribbon cutting ceremony of DA-RFO 1's Organic Agriculture R&D Center with Regional Executive Director Lucrecio Alviar (2nd from right), Regional Technical Director Orlando Lorenzana (right), and BAR-IDD Head Digna Sandoval (2nd from left). PHOTOS:MEAQUINO



BAR Dir. Eleazar, together with Regional Executive Director Alviar (4th from left), former BAR Assistant Director Teodoro Solsoloy (3rd from left), and Research Divsion Chief Jovita Datuin (3rd from left), leads the ribbon cutting ceremony of DA-RFO 1's Garlic Storage Facility. PHOTOS:MEAQUINO

Preventing pests and diseases through *Trichoderma*

Text and photos by Rena S. Hermoso

In an effort to mitigate the hazardous effects of using chemical pesticides in agriculture, the government institutionalized the practice of organic farming through Republic Act No. 10068 otherwise known as the Organic Agriculture Act of 2010.

Organic agriculture is a "holistic production management system which promotes and enhances agro-ecosystem health, including biodiversity, biological cycles, and soil biological activity," according to the Food and Agriculture Organization of the United Nations. Thus, biological control agents (BCA) are used in place of chemical pesticides in managing pests and diseases in organic crops. BCA are insects or organisms that suppress pest or pathogen. An example of this are microbials which are composed of microorgarnisms such as fungi, bacteria and viruses that suppress the effects of pests and diseases.

In Cordillera, the Bureau of Plant Industry-Baguio National Crop Research, Development and Production Support Center (BPI-BNCRDPSC) conducted a study titled "Enhancing the Utilization of Microbials and Botanicals for Organic Agriculture in support to Organic Stakeholders in the Cordillera Administrative Region." Funded by the Bureau of Agricultural Research, the project was aimed to identify the most suitable BCA and botanicals in the region that would increase the income of their farmers.

What is *Trichoderma*?

One of the biocontrol agents that they studied is the *Trichoderma*. These are "free-living fungi that are common in soil and root ecosystems," according to Harman et. al. (2004). It "comprises a great number of fungal strains that act as biological control agents, the antagonistic properties of which are based on the activation of multiple mechanisms.

Trichoderma strains exert biocontrol against fungal phytopathogens either indirectly, by competing for nutrients and space, modifying the environmental conditions, or promoting plant growth and plant defensive mechanisms and antibiosis, or directly, by mechanisms such as mycoparasitism," as explained by Benítez et. al. (2004).

Trichoderma can be used for different vegetables such as potato, cabbage, garden peas, bush beans, etc., according to Ms. Rhonda M. Oloan, a member of the research team. She also clarified that it can be used to suppress or manage most of the soil borne diseases of highland vegetables.

Producing *Trichoderma* at the village level

After the evaluation trials on-station and on-farm, the research team started to mass produce the microbials (e.g. *Trichoderma*) for distribution to farmers whose land were infected with soil borne diseases and infested with potato cyst nematode. More so, the technologies generated through their research were disseminated to the farmers through conduct of trainings and field days and distribution of information, education and

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To produce their own *Trichoderma* at the village level, farmers need rice, rice hull, and pure culture of *Trichoderma*. The pure culture of *Trichoderma* can be outsourced from institutions that produces it (e.g. BPI-BNCRDC, Benguet State University).

Harmonizing indigenous knowledge with CPAR in Tubo, Abra

Text and photo by Rita T. dela Cruz

Farmer cooperators of the BAR-funded project titled "Community Participatory Action Research (CPAR) on Tilapia Production in Fishponds" in Tubo, Abra casting net to catch tilapia.

In a place as distant and remote as Tubo, Abra, where the people are bound by their instinctive desire to conserve and protect their natural resource, introducing a technology that is different from their usual practice of farming and fishing, seemed a far-fetch idea. That was likely the case when a Community-based Participatory Action Research (CPAR) was introduced in the area in 2012.

In today's fast-changing times, the risk that much of the indigenous knowledge may be lost along with the valuable practices it has on living sustainably is becoming more evident.

One indigenous practice that has survived through time is the "Lapat System" of the Maeng Tribe. "Lapat" literally means "to prohibit" or "to regulate" is a century old system of regulating the use of natural resources and its biodiversity.

Funded by the Bureau of Agricultural Research (BAR) and implemented by the Bureau of Fisheries and Aquatic Resources-Cordillera Administrative Region (BFAR-CAR), the "CPAR on Tilapia Production in Fishponds" was established in two barangays of Tubo, Abra, namely: Dilong and Tubtuba.

Part of the intervention of the CPAR project is the introduction of the fishpond culture technology wherein the fingerlings are stocked in the lapat raceway in the river. Raceway also known as a "flow-through system" is one of the earliest methods used to culture freshwater species including tilapia. Raceway usually consists of rectangular basins or canals with an inlet and outlet wherein continuous water flow in and out of providing the required level of water quality. Tilapia is harvested before the rainy season to prevent the fish from being carried away by strong rains.

Another intervention introduced was the introduction of good quality fingerlings and stocks so that the growth of tilapia is ensured. Through the project, BFAR provided a micro-hatchery in Tubtuba which became the source of tilapia fingerlings for the two CPAR sites.

On 13-15 March 2018, a team from BAR, composed of staff from the Program Monitoring and Evaluation Division (PMED) and Applied Communication Division, went to the two CPAR sites to monitor the completed project. Joining them were Ms. Lois June B. Fermin, assistant regional director of BFAR-CAR and CPAR project leader, and staff from BFAR-CAR.

Prior to the visit to the sites, the team from BAR headed by Mr. Ricarte Castro of PMED visited the office of Tubo Mayor Guilbert Ballangan, who in return was appreciative of the efforts of BAR and BFAR. According to Mayor Ballangan, Tubo, a fourth class municipality of Abra with a population of around 6,000 people, is located in a geographically-challenged location which could be rarely reached for projects implemented by the government. He was thankful that CPAR was able to reach their municipality particularly in the two barangays were the project was implemented.

Before the project site visit, the team was formally introduced to the community during one of their meetings in Brgy. Dilong, Tubo, Abra. This is a tradition among the people of Tubo as a formal courtesy to visitors.

"Initially, we introduced the concept of CPAR here with the aim of improving their existing culture of tilapia following a semi-intensive culture system. We would like to introduce an intervention that will not contradict their indigenous practice, which in this case, it's the lapat system," explained Asst. Regional DIrector Fermin.

Mr. Ricarte Castro of BAR discussed to the community the purpose and rationale of the visit which mainly, was to solicit feedback

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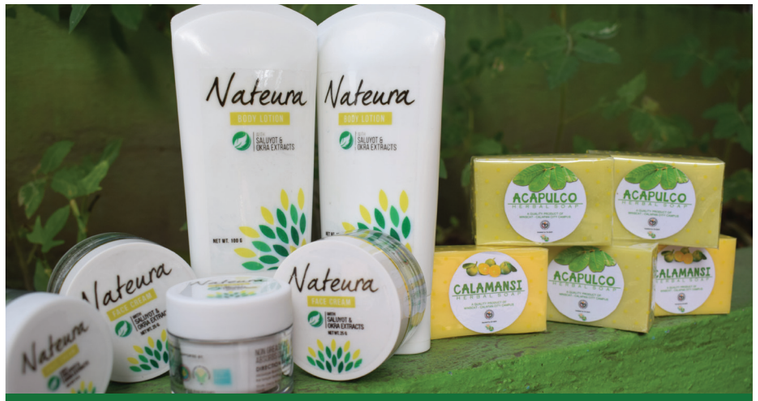
Natural health products

from indigenous plants featured in BAR seminar



Products from indigenous plants (i.e. saluyot and okra extracts, VCO soap with plant extracts) PHOTO: LFONTANIL

In support to the promotion of the Indigenous Plants for Health and Wellness (IPHW) program, the Bureau of Agricultural Research (BAR), through its Applied Communication Division (ACD), held a seminar series on natural health products from indigenous plants on 20 March 2018 at BAR.

The first topic, "Development of Nutraceutical and Cosmeceutical Products from Saluyot (*Corchorus olitorius*) and Okra (*Abelmoschus esculentus*)," was discussed by Prof. Ronaldo T. Bigsang of the Mindanao State University (MSU) – General Santos. The study is a BAR-funded project that aimed to show the potential uses of *saluyot* and okra as protective and preventive alternatives for health and wellness.

According to Prof. Bigsang, the World Health Organization Global Health Observatory (GHO) data stated that, out of 56.4 million global deaths in 2016, 39.5 million or 70 percent was due to non-communicable diseases such as obesity, cardiovascular diseases, diabetes, poor diet, nutrition and lifestyle. "Today's informed consumers are no longer in a purely reactive mode when it comes to their health needs, they are proactive, even progressive in their approaches, and people are now tend to become more health and wellness conscious," he explained. He also mentioned that today's consumers are mostly willing to take initiative on behalf of their well-being and to find alternative products that are natural, non-toxic, has less side-effect, and cost-effective to achieve their goals. "This led our group to conduct an extensive research that

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BAR-funded projects in Bicol monitored

A project monitoring team from the Bureau of Agricultural Research (BAR) conducted project monitoring and evaluation of BAR-funded and supported projects in the Bicol region on 5-9 March 2018.

Part of the activity was a courtesy call made to Regional Executive Director (RED), Dr. Elena delos Santos of the Department of Agriculture-Regional Field Office (DA-RFO)5, who in turn, expressed her appreciation to the team for the efforts of monitoring and evaluating the projects in the region. Assisting the team was Ms. Luz R. Marcelino, research division chief of DA-RFO 5.

Leading the BAR team was Ms. Salvacion M. Ritual, head of BAR-Program Monitoring and Evaluation Division, who acknowledged the progress of the projects monitored and the assistance extended to the team. She likewise expressed gratitude to the region's support to the bureau. Ms. Ritual said the activity was part of BAR's effort in strengthening partnership with the farming communities and to find out how the bureau can further assist in the delivery of high-impact projects to the region through R&D funded projects.

The four-day assessment covered the areas of Camarines Norte, Camarines Sur, and Albay. A total of 10 projects with corresponding R&D thematic themes: one on climate change; four on high value crops; two on corn and cassava; one on Community-based Participatory Action Research (CPAR); and two on Agriculture and Fisheries Modernization Act (AFMA) funded projects were monitored and evaluated.

The drive behind the project assessment was to ensure that all BAR-funded projects are implemented on schedule and that various project objectives are met.

BAR officers and staff likewise discussed with the project-lead and proponents the individual merits of project updates and recommended measures to speed-up project implementation. The group also reminded the proponents for the timely submission of audited financial statements.

The project, "Fruit Size and Quality Enhancement of Spanish Red Pineapple (SRP) through Cultural Management Practices", which is being implemented by DA-RFO 5, through the Camarines Norte Lowland Rainfed Research Station, was re-visited and closely monitored in response to Agriculture Secretary Emmanuel Piñol's instruction to conduct research on how to improve the quality and size of SRP.

The BAR team were composed of Mr. Roberto G. Villa, member of the CPAR-Technical Working Group; Ms. Amavel Velasco, PMED assistant head; Ms. Judith Maghanoy, finance head; Ms. Gretel Rivera, Internal Audit Unit head; Ms. Melissa Resma, Information Management Unit head; and selected technical staff. ### ***(Patrick Raymund A. Lesaca)***

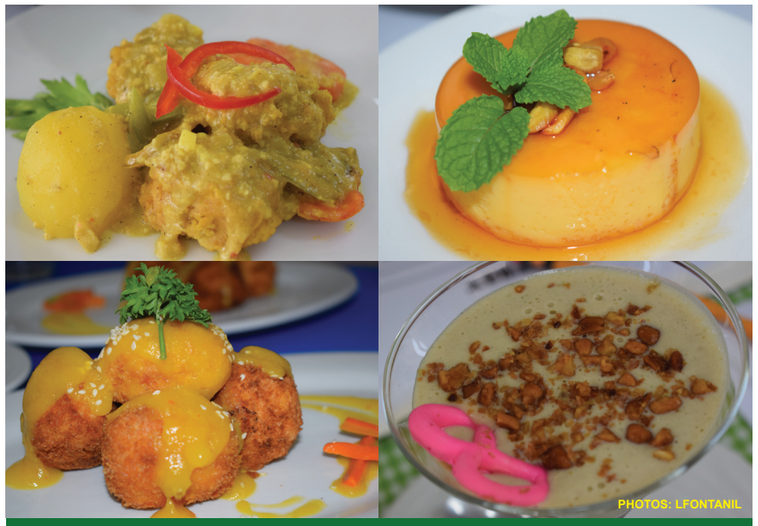
2nd leg of Visayas Soybean Cooking Contest held

Dubbed as "It's Soy Time," the Bureau of Agricultural Research (BAR) through its Technology Commercialization Division (TCD), in partnership with the Western Visayas Integrated Agricultural Research Center (WESVIARC) of the Department of Agriculture-Regional Field Office (DA-RFO) 6, facilitated the conduct of the second leg of the "Soybean Cooking Contest for Visayas" on 7-9 March 2018 at the Carlos Hilado Memorial State College, Bacolod City.

The Visayas leg is a follow-up activity of the Soybean Cooking Contest held in 2016 in Iloilo City. The cookfest was first introduced during the 11th Agriculture and Fisheries Technology Forum and Product Exhibition in 2015 for Luzon. The activity is part of the continuing effort of the bureau to further promote the production, processing and utilization of soybean in the country.

Mr. Anthony B. Obligado, head of BAR-TCD, opened the activity with a message. He emphasized the importance of the activitity to further strengthen the implementation of the soybean programs and projects, which is in line with DA's thrusts and initiatives.

Highlighted during the first day was the seminar series and cooking product. This was followed by the soybean cooking contest proper participated by seven groups of students from Negros Oriental State University, Northern Negros State College of Science, Carlos Hilado Memorial State College and Technology of the Hotel and Restaurant Management and Food Trade Department, Julio Ledesma National High School, Rafael Lacson Memorial High School, and Banago Elementary School, showcasing their culinary skills and competencies in creating their own soybean signature dishes.



PHOTOS: LFONTANIL

The winning recipes for categories 1 and 2 are Julio Ledesma National High School's "Soya Bean Curry and Soy Leche Plan" (top) and Northern Negros State College and Technology's "Sinigan Soya Balls and Fruit Puree and White Chocolate Soya Tofu with Malunggay" (bottom), respectively.

Serving as panel of judges were: Chef Alfonso D. Cortez and Chef Leo C. Bunani, senior sous and executive chef of L'Fishers Hotel; Chef Rolly D. Torre, head chef of Natures Village Resort; Engr. Rex Demafelis, vice chancellor of the University of the Philippines Los Banos (UPLB); and Mr. Anthony Obligado, head of TCD.

The first place in Category 1 (elementary and high school levels) was bagged by Julio Ledesma National High School for their main and dessert dish, "Soya Bean Curry and Leche Plan". The second place went to "Soy Con Brocolli de Mellenials and El Tofu Pan De Molde" prepared by Banago Elementary School while the third place was awarded to "Pininyahang Soybean and Crunchy Coated Soybean" prepared by Rafael Lacson Memorial High School.

In Category 2 (college level) the first place was awarded to Northern Negros State College of Science and Technology for their dish, "Sinigayan Soya Balls with Fruit Puree and White Chocolate Soya Tofu with Malunggay". The second place went to "Pan-Grill Tofu Wrapped in Tendrloin with Okara Sauce and Steamed Negrense Soy-tablea" prepared by Negros Oriental State University while the third place goes to "La Crepe Soy Pattles Extreme ala San Carlos" and Soya Caramel Cupcake with a twist" prepared by Carlos Hilado Memorial State College of the Food Trade Department. ### ***(Leoveliza C. Fontanil)***

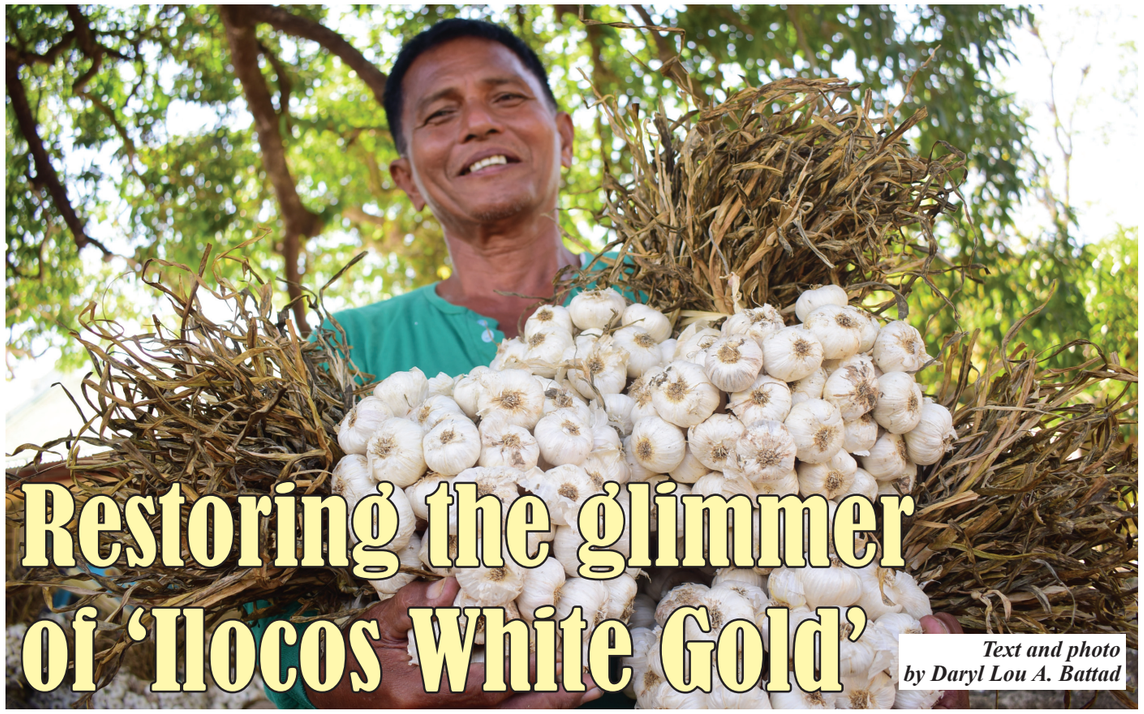
Natural health products..from page 7

look into the potential of the Philippine plant species and conventional food crops with health-promoting potentials such as *saluyot* and okra as nutraceutical and cosmeceutical products," he said.

Nutraceuticals are food (or part of the food) that provides medicinal or health benefits, while the cosmeceuticals are products with active ingredients that impart "first rate" for skin health. "Based on our studies, *saluyot* and okra can be processed into products like supplements in the form of capsules, lotion, and face cream and among others. We already validated each of the antimicrobial, antioxidant and antihyperglycemic properties and determine its safety, quality and biological properties of the developed products," he added. Prof. Bigsang also shared the results to present reduction in blood glucose levels for those treated with saluyot leaf extracts in comparison with the commercially-available supplement. Meanwhile, okra pod extracts showed antimicrobial and antioxidant activities while the face cream and lotion exhibited capacity to retain moisture in a comparable degree to other commercial products.

The second topic, "Do-it-Yourself: A Homemade Virgin Coconut Oil (VCO) Soap Enhanced with Plant Extract", was presented by Dr. Christian Anthony C. Agutaya of the Mindoro State College of Agricultural and Technology (MinSCAT). MinSCAT has a program to impart knowledge and skills in making soap using VCO as the base ingredient, and tomato and carrot as aroma enhancers. According to Dr. Agutaya, no sophisticated equipment is needed to make VCO-based soap, which can make the venture a home-based. He added that the VCO is still considered healthy oil because of its anti-bacterial properties. Since VCO-based soap uses natural ingredients that are enriched with the *Tocopherols* also known as Vitamin E, potentially it has better moisturizing and revitalizing effects on the skin. An actual demonstration on making VCO soap using the different plant extracts like *kalamansi*, *kamias*, and *acapulco* was showed after the lecture.

In the seminar, BAR also took the opportunity to distribute free information materials such as crop calendars and pamphlets showcasing research-generated technologies in agriculture and fisheries that were supported by the bureau. The production of these materials was supported by the Korea-based Asian Food and Agriculture Cooperation Initiative (AFACI). ### ***(Leoveliza C. Fontanil)***



Restoring the glimmer of 'Ilocos White Gold'

Text and photo by Daryl Lou A. Battad

Garlic, one of the country's high-value commercial crops, anticipates a strong comeback as the government continues to intensify efforts in reviving the ailing garlic industry.

Poor quality planting materials, proliferation of pests and diseases, high cost of production, and unstable market prices are considered to be the culprits that caused a major decline in the production of local garlic.

To address this, the Department of Agriculture-Ilocos Norte Research and Experiment Center (DA-INREC), in partnership with the Bureau of Agricultural Research (BAR), embarked on a project that seeks to produce high quality cultivars which will be distributed to the garlic farmers later on. Ms. Wilma Ibea, center chief of DA-INREC and project leader, said that through this initiative, the farmers are expected to multiply and expand garlic production especially in the Ilocos province.

Local garlic industry

In the recent data from the Philippine Statistics Authority (PSA), Ilocos Norte as the major garlic producer in the country showed a 33 percent downtrend in area planted and harvested from 2,620 hectares in 2009 to 1,740 hectares in 2013.

Similarly, the volume of production also plummeted by 24.75 percent from 7,223.74 metric tons (mt) down to 5,435.76 mt. Such decline is influenced by the shifting of Ilocos farmers to other cash crops due to unstable market prices, high cost of planting materials, and high dependence on imported garlic.

In 2015, imports reached 74,000 mt, signifying more than 90 percent of the total supply, which amounted to $25.43 million.

Although the Ilocos region is still the biggest contributor of garlic production in the Philippines, it is still not enough to meet the currently increasing demand for local consumption alone.

Quest for quality planting materials

With the current situation of the

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