



Off-season mangosteen now possible with R&D



PHOTO: RDELACRUZ

Agapito Regulacion, project leader, showing a mature off-season mangosteen.

Mangosteen (*Garcinia mangostana*), a tropical fruit known for its white, juicy flesh, and dark purple rind, is usually in season from August to September only. But with the off-season mangosteen production and management technology developed by the Department of Agriculture-Regional Field Office (DA-RFO) 11, mangosteen can now be enjoyed all year-round.

Funded by the Bureau of Agricultural Research (BAR), the production of off-season mangosteen was made possible through a project titled, "Development of Package of Technologies for Off-Season Production of Mangosteen."

The research project was conducted from January 2015 to January 2019 at Davao Agricultural Research Central Experiment Station (DARCES) in Manambulan, Tugbok District, Davao City, yielding favourable results that will benefit

turn to page 3

BAR officially launches implementation of ISO 9001:2015

To further strengthen its commitment towards providing quality service for its clients and stakeholders, the Bureau of Agricultural Research (BAR) formally launched the implementation of the International Organization for Standardization (ISO) 9001:2015 Quality Management System (QMS) on 22 April 2019.

Leading the launching

ceremony was BAR Director Nicomedes P. Eleazar and was joined by the Technical Working Group (TWG) for BAR ISO 9001:2015 QMS led by the Quality Management Representative Alexander Arizabal, Jr., staff from different divisions and units of the bureau. ISO Consultant Jo Ann Chavez from Synergized Macro Solutions, Inc. also graced the

turn to page 6

IN THIS ISSUE...

Off-season mangosteen now.....	1
BAR officially launches implementation....	1
BAR Chief visits Sorsogon.....	2
Eleazar urges BUGC graduates.....	3
Reg. 11's RRDEN conducts meeting.....	4
Bangladesh official visit BAR.....	4
GSL, IEC dev't workshop.....	5
BAR, SEARCA conduct IKM.....	6
BAR capacitates DA-RFO 5.....	7
BAR reviews 25 rice.....	8
Soybean R&D projects reviewed.....	8
Livestock and fisheries projects.....	9
2019 AgriTalk Palawan features.....	10
Mushroom processing offers.....	11
Promotion of coco sugar.....	12
BAR, BSU launch bio-organic.....	13
CPAR on water saving.....	14
Testing of organic sweet potato.....	15
BAR features cacao wine.....	16

BAR Chief visits Sorsogon Dairy Production and Tech Center



Dr. Dolores Ricafranca (right), center chief of DA-Sorsogon Dairy Farm, discusses the cattle production system to Dr. Nicomedes Eleazar (center), BAR director.

PHOTO: MEAQUINO

Bureau of Agricultural Research (BAR) Director Nicomedes P. Eleazar visited the Sorsogon Dairy Production and Technology Center of the DA-Regional Field Office 5 in Cabid-an, Sorsogon City on 12 April 2019.

Dr. Dolores Ricafranca, center chief of the DA-Sorsogon Dairy Production and Technology Center, welcomed the bureau chief providing him a tour and updates on the established facilities and projects being implemented by the station.

Joining her were Eufrecinia Labitag, dairy plant in-charge; and Celia Tan, dairy technician.

One of BAR's active research partner in technology generation, the Center has been implementing various research projects on soybean and garlic production which the bureau is supporting. Furthermore, BAR, through its Institutional Development Grant (IDG) program, has been supporting the establishment and upgrading of research facilities including the

Sorsogon Dairy Processing Plant and Laboratory, Multi-Purpose R&D Facility, and Sorsogon Dairy Processing Plant and Laboratory, among others.

The establishment of the Multi-purpose R&D Facility intends to provide a showroom of on-going and completed research projects, thereby promoting the different farming and processing technologies of the station. Likewise, it encourages visitors to venture into crop-livestock farming. ### (Ma. Eloisa H. Aquino)



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BUREAU OF AGRICULTURAL RESEARCH

PRODUCTION TEAM

Editor:
Consulting Editor:
Managing Editor/Layout:
Writers:

Rita T. dela Cruz
Julia A. Lapitan
Rena S. Hermoso
Clarisse Mae N. Abao, Ma. Eloisa H. Aquino,
Daryl Lou A. Battad, Rita T. dela Cruz,
Leoveliza C. Fontanil, Maria Elena M. Garces
Ephraim John J. Gestupa, Rena S. Hermoso,
Patrick Raymund A. Lesaca, Jhon Marvin R. Surio
Ricardo G. Bernardo and Lino Norman D. Reyes
Lyn D. Pardilla
Julia A. Lapitan
Dr. Nicomedes P. Eleazar, *CESO IV, Director*
Digna L. Sandoval, *OIC-Assistant Director*

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ACD Head:
Advisers:

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For subscription and inquiries, please contact us at: Tel. Nos. +63 (2) 461-2800 or 461-2900 local nos. 1136, 1143, 1139, 1138 Fax No. +63 (2) 927-5691 Email: acd@bar.gov.ph

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Eleazar urges BUGC graduates to consider a career in agriculture



PHOTOS: FGRETTCHIN

INSET: BAR Director Nicomedes P. Eleazar delivers his keynote message during the graduation ceremony of BUGC on 11 April 2019.

“We need to change the mindset of this generation and make farming as a profession more appealing. The future of this country is in agriculture. And you, the young people of this generation, have a huge role to play in securing our future,” urged Dr. Nicomedes P. Eleazar, director of the Bureau of Agricultural Research (BAR), who served as the keynote speaker during the 16th Commencement Exercises of the Bicol University Gubat Campus (BUGC) on 11 April 2019.

BAR Dir. Eleazar encouraged the graduates to consider a career in agriculture mentioning the need for

people, who are receptive to new farming technologies; who can boost yields in the face of uncertainties from the increasingly volatile weather. “Do not look down on agriculture. Much of the successful agriculture of today is science-based. The satisfaction which we derive from it is complemented by individual progress. With an ample number of takers of job opportunities in the agriculture sector, we can lay out options to the world on how we can keep human’s existence going. I call on each of you to press on forward and work harder in order to achieve not just your individual dream but the vision of our

people,” he said.

There were 417 students who graduated from BUGC of which, 90 received their degrees in Bachelor of Agricultural Technology. BUGC is one of the seven campuses of the Bicol University.

BUGC has been an active partner-state university of BAR. To date, BAR is supporting the establishment and upgrading of different R&D facilities at BUGC under the bureau’s Institutional Development Grant program and conduct of research projects on various commodities. ### (Ma. Eloisa H. Aquino)

Off-season mangosteen...from page 1

both the farmers and consumers.

Thinking beyond the perspective of the consumers, the farmers can now set an efficient production schedule wherein they can sell the product from Php 35 per kilo for in-season mangosteen to Php 250 per kilo for off-season mangosteen. This is an estimated 148 percent return of

investment.

Part of the project was also the development of information, education and communication (IEC) materials on the package of technology (POT). These IEC materials were distributed during the farmer’s field day and are available at the Farmers’ Information and Technology Services (FITS) Center of DA-RFO 11, for free to those who are interested.

On 17 May 2019, DA-RFO 11 will be holding a “Grand Farmer’s Fiesta” as part of the celebration of the Farmers and Fisherfolk’s Month. DARCES will be opening its demonstration farm in Manambulan, Tugbok District in Davao City to showcase the off-season mango technology to interested farmers and stakeholders. ### (Clarisse Mae N. Abao)

Reg. 11's RRDEN conducts meeting and planning workshop



L-R: Consortium Dir. Danilo S. Pacoy of SMAARDEC; DA-RFO 11 RTD for Research and Development Angelina S. Pancho; BAR OIC-Asst. Dir. Digna L. Sandoval; and BFAR Region 11 Regional Dir. Fatma M. Idris.

PHOTO: CMABAO

To ensure the smooth implementation of agriculture and fisheries research and development (R&D) in Region 11, the Regional Research Development and Extension Network (RRDEN) conducted its “First Quarter Meeting and Planning Workshop” on 11-12 April 2019 in Davao City.

Among the main points discussed during the meeting were highlights of the 2018 RRDEN Revitalization Meeting, RD&E Agenda and Draft Memorandum of Agreement, plan of activities for CY 2019, and harmonized structure

turn to page 12

Bangladesh officials visit BAR



BAR-PDD Assistant Head Cynthia Remedios de Guia welcomes the officials from various agriculture-related organizations in Bangladesh.

PHOTO: RDELACRUZ

Officials from various agriculture-related organizations in Bangladesh visited the Bureau of Agricultural Research (BAR) on 30 April 2019 for an orientation on the bureau’s functions, thrusts, and research programs particularly, its initiatives on Climate Change Research and Development (R&D).

The delegation, led by Mosharraf Uddin Molla of the Bangladesh Agriculture Research Council, was joined by 11 other officials from

Bangladesh Agriculture Research Institute, Bangladesh Institute of Nuclear Agriculture, Bangladesh Sugar Crop Research Institute, Soil Research Development Institute, Bangladesh Jute Research Institute, and Bangladesh Tea Research Institute.

To better understand the structure, function, thrusts, and various programs of BAR, an audio-video primer was shown to the visitors. This was followed by a presentation from Cynthia Remedios

de Guia, assistant head of the BAR-Program Development Division and focal of Climate Change R&D Program, on the various climate change R&D initiatives of the bureau. She also discussed the Research Development and Extension Agenda and Program for 2016-2022; and the implementation of the Adaptation and Mitigation Initiatives in Agriculture Program of the Department of Agriculture-Systems-wide Climate Change Office (DA-SWCCO).

After the orientation meeting, the delegates were brought to the R&D Technology Commercialization Center for a briefing on the various research products on display funded under the bureau’s National Technology Commercialization Program.

The visit was part of a short-term training on climate-smart agriculture. Aside from BAR, the Bangladeshi officials also visited other DA agencies including SWCCO, Bureau of Soils and Water Management, Sugar Regulatory Administration, and Agricultural Training Institute. ### (Rita T. dela Cruz)

GSL, IEC dev't workshop held



INSET: Vichel Rse E. Juguilon-Pangan (top), independent GAD consultant, and Rita T. dela Cruz (bottom), ACD assistant head, serve as the resource speakers for the GSL workshop and BAR IEC Development and Production, respectively.

ACD Head Julia A. Lapitan welcomes the participants to the training workshop on GSL and IEC development.

PHOTOS: DLBATTAD

The Bureau of Agricultural Research (BAR), through its Applied Communication Division (ACD), spearheaded a “Workshop on Gender Sensitive Language (GSL) and BAR Information, Education, and Communication (IEC) Development and Production” on 2-5 April 2019 in Baguio City.

Vichel Rse E. Juguilon-Pangan, independent gender and development (GAD) consultant, served as the resource person for the GSL workshop; while Rita T. dela Cruz, ACD assistant head, served as the resource speaker for the BAR IEC Development and Production Workshop. Representatives from Department of Agriculture-Regional Field Offices and Bureau of Fisheries and Aquatic Resources-Regional Fisheries Offices across Luzon and information officers from BAR participated in the four-day workshop.

ACD Head Julia A. Lapitan, in behalf of BAR Director Nicomedes P. Eleazar, formally opened the four-day workshop. In her welcome remarks, she shared that “this activity

is to challenge us to not just look at the message we are trying to disseminate but the manner to which this message is carried out. We owe it to our stakeholders to package research results using language that resonates with both men and women.”

Juguilon-Pangan gave a brief overview of the basic GAD concepts which included difference between sex and gender, gender and social institutions, manifestations of gender biases, gender mainstreaming, and gender analysis. She also discussed sexism in language and how to make it gender-sensitive.

Harmonized Gender and Development Guideline (HGDD) and the 10 Core Elements in Integrating GAD in Project Development/Proposals were also introduced during the workshop. HGDD is a tool used to ensure that programs and projects undertaken by the government in their various stages are gender-responsive. The 10 core elements, on the other hand, are components that should be taken into consideration during the project identification stage and the project

decision stage to ensure that it would be gender-responsive.

Meanwhile, Dela Cruz talked about BAR’s Knowledge Management (KM) initiatives and programs. KM is a crucial concept for BAR as the R&D funding agency of the Department of Agriculture. It ensures the effective management of the information and technologies generated through R&D activities. Through this, capturing, sharing, and reusing these R&D generated information and knowledge should be easy for both the bureau and the stakeholders. She also discussed the bureau’s process in developing and producing IEC materials.

The GSL and BAR IEC Production and Development Workshop, along with previously conducted Gender Sensitive Training and Gender Mainstreaming Training, is part of BAR’s efforts on capacitating its staff on GAD. The activity aimed to address the need to mainstream GAD concepts in writing research proposals as well as in packaging research data into IEC materials. ### (Rena S. Hermoso)

BAR, SEARCA conduct IKM mentorship program 3rd face-to-face session



Dr. Edmund Centeno of UPLB-CDC discusses the how-to's on evaluating a video.

PHOTO: DLBATTAD

The Bureau of Agricultural Research (BAR), in partnership with the Southeast Asian Regional Center for Graduate Study and Research in Agriculture (SEARCA) and University of the Philippines Los Baños College of Development Communication (UPLB-CDC), conducted the third face-to-face session of the

Information and Knowledge Management (IKM) Mentorship Program on 24-26 April 2019 at SEARCA headquarters, Laguna.

The second batch of the IKM mentorship program consisting 13 learners from the regional offices and attached agencies and staff bureaus of the Department of Agriculture participated the three-day session.

In the third face-to-face session, lessons discussed focused on video production process and online content writing and publication. The session was facilitated by the IKM mentors from UPLB-CDC.

Nearing the end of the nine-month course, the learner-participants are expected to complete three

turn to page 11

BAR officially launches...from page 1

launching.

In his message, Dir. Eleazar mentioned the importance of attaining this certification for the agriculture and fisheries (AF) sector as it would help prove and improve the efficiency and effectiveness of BAR in providing quality service for the benefit of the AF sector. He further encouraged the body to fully cooperate and participate as the bureau implements a better QMS.

To lead the bureau's commitment in achieving this endeavor, Dir. Eleazar signs at the BAR ISO 9001:2015 Commitment Wall followed by the staff as they pledged their full support, cooperation and participation.

The ISO 9001:2015 is a standard based on a number of quality management principles



BAR Dir. Nicomedes Eleazar encourages everyone to fully cooperate in the implementation of a better QMS.

PHOTO: RHERMOSO

including a strong customer focus, the motivation and implication of top management, the process

approach, and continual improvement. ### (Rena S. Hermoso)

BAR capacitates DA-RFO 5 researchers on KM



Luz Marcelino (5th from right, standing), research division chief of DA-RFO 5, and Julia Lapitan (center, standing), head of BAR-ACD in a group photo with the participants from DA-RFO 5 and ACD staff.

PHOTO COURTESY OF RDELACRUZ

Following the pursuit towards delivering relevant information and knowledge to the public through excellent research and development (R&D), the Bureau of Agricultural Research (BAR) through its Applied Communication Division (ACD) spearheaded a “Knowledge Management (KM) Seminar-Workshop” for the staff of the Department of Agriculture-Regional Field Office (DA-RFO) 5 on 22-24 April 2019 in Naga City.

The seminar-workshop sought to capacitate the researchers and technical staff of DA-RFO 5 in the hope that they will be able to effectively manage the KM from their researches, through the production of information, education, and communication (IEC); photo documentation; audio-video presentation; or database management through various information and knowledge management platforms.

Luz Marcelino, research division chief of DA-RFO 5; and Julia Lapitan, head of BAR-ACD delivered

messages to inspire and encourage the participants. Marcelino said that, “this is a very timely activity in the sense that we have budding researchers at hand, and they needed to be trained because, in five or seven year’s time, the first generation of researchers will be retiring, so we will bequeath to you the necessary skills on how you will go on with the R&D implementation.” Meanwhile, Lapitan mentioned BAR’s goal, under the leadership of BAR Director Nicomedes Eleazar, to capacitate the regions saying that, “we hope that what we have started at BAR, especially our KM Program, we will be able to share with you and hopefully you too can implement in your region.”

After her welcome message, Lapitan presented the “BAR’s KM Program and Initiatives.” Rita dela Cruz, assistant head of BAR-ACD, presented “IEC Development and Production” and the “Principles of Effective Written Communication” while Ryan Joseph Abrigo of the BAR-Scientific Literature Services

Section of ACD, presented “Database Management and other IKM Platforms” that the bureau uses to manage its KM.

On the second day, Juan Carlos Santiago, director and chief editor of PTV 4’s Mag-Agri Tayo, lectured on photography from the foundation concepts of getting a good image, different compositions to actual shooting exercises using both a DSLR and smart phone cameras. He also mentioned how these concepts can be applied in taking good photos in the field of agriculture and fisheries R&D.

After the lectures and workshops, participants were given evaluation and feedback from the speakers on how they can improve their outputs.

The participants were composed of researchers and technical staff from the Bicol Integrated Agricultural Research Stations, Bureau of Fisheries and Aquatic Resources Region 5, and DA-RFO 5 Research Outreach Stations. ### (Rita T. dela Cruz)

BAR reviews 25 rice, corn-cassava projects



BAR reviews 11 and 14 R&D projects funded under the Rice R&D Program and Corn and Cassava Program on 2-4 and 15-16 April 2019, respectively. PHOTO: RDELACRUZ

The Bureau of Agricultural Research (BAR), through its Program Monitoring and Evaluation Division, reviewed 11 R&D projects funded under the Rice R&D Program and 14 R&D projects under the Corn and Cassava Program on 2-4 April 2019 in Los Baños, Laguna and 15-16 April 2019 in Quezon City, respectively.

The rice R&D projects were reviewed by a panel of external and internal evaluators. External evaluators were from the University of the Philippines Los Baños

(UPLB), Dr. Luis Rey I. Velasco and Dr. Pompe C. Sta Cruz. The internal evaluators were Planning Development Division (PDD) Head Joell H. Lales, PMED Rice Focal Jay Invinsor L. Bermas, Glenn D. Dimayuga of Technology Commercialization Division, Ian Jomari C. Panaga of PDD, and Mitzi M. Punzalan of PMED.

On the other hand, Dr. Artemio M. Salazar and Dr. Edralina P. Serrano of UPLB, Dr. Julieta R. Roa of the Visayas State University (VSU), and Dr. Candido B. Damo of

the Department of Agriculture (DA) National Cassava Program reviewed the R&D projects funded under Corn and Cassava Program.

Researches reviewed were implemented by UPLB, VSU, Philippine Rice Research Institute, International Rice Research Institute, Philippine Carabao Center, DA-Cordillera Administrative Region, and National Food Authority. The project review serves as a venue to identify and assess the projects' impacts, milestones and commercialization activities, and its contribution to the modernization of the agriculture and fisheries sector.

Rice, corn and cassava, along with high-value crops and livestock and poultry, are part of DA's national commodity programs. Rice is a food staple and economic commodity of the country. Meanwhile, corn is the country's second most important staple and is used as feed ingredients for livestock and poultry. More so, cassava is regarded as one of the cheapest sources among the major starch-based feedstock. ### (Rena S. Hermoso)

Soybean R&D projects reviewed

In line with the initiatives of the Department of Agriculture (DA) to build a strong soybean production and processing industry in the country, the Bureau of Agricultural Research (BAR), together with the High Value Crops Development Program (HVCDP), conducted the "National Review and Planning Workshop on Soybeans R&D Projects" on 22-26 April 2019 in Tagaytay.

BAR Director Nicomedes P. Eleazar was present during the opening of the review wherein he encouraged the participants from the various agencies to showcase their developed products at the Agribusiness Center of the DA Central Office. Also present to

turn to page 16



BAR Dir. Nicomedes P. Eleazar (seated, 4th from right), in a group photo with the external panel of evaluators and project implementers. PHOTO COURTESY OF MEGARCES

Livestock and fisheries projects in regions 1, 3 monitored

PHOTOS: EJGESTUPA



Walter Pacunana (left) and Dante Mendoza (right) of PSAU showcase feedstuff for Red Tilapia.



The BAR monitoring team, together with the project staff, visit the experimental site where female native pigs are fed with soybean feed meals designed to improve growth, health, and reproductive capacity.

As the lead coordinator for agriculture and fisheries research and development (R&D), the Bureau of Agricultural Research, through the Program Monitoring and Evaluation Division (PMED), periodically conducts monitoring and evaluation (M&E) activities to ensure the efficient implementation of its funded R&D initiatives.

On 15-17 April, staff from PMED and the Applied Communication Division monitored three livestock and fisheries projects in Regions 1 and 3.

The M&E team met Dr. Lerma Ocampo of the Philippine Carabao Center. She is in charge of the project, “Utilization of Epididymal Sperm of Slaughtered Livestock for Basic Research using Assisted Reproductive Techniques,” which looks into the extraction and preservation of epididymal sperm from butchered livestock. In the first phase of the study, Dr. Ocampo discovered that a few hours after

native goat is butchered, its sperm can still be extracted through its epididymis, a highly convoluted duct behind the testis. The genetic material was then subjected to tests if it were to survive cryopreservation and artificial insemination. Phase 1 of the project resulted in the successful pregnancy of four goats inseminated with the epididymal sperm. The project is now on phase two which explores the same method of collecting genetic material from native carabao, cattle, and pig.

Dr. Ocampo explained the importance of collecting genetic material from native livestock, “we need to collect and freeze the sperm of native animals before their bloodline is diluted.” Native livestock is proven to be more climate resilient than foreign breeds. “It is difficult to get sperm from native animals because unlike foreign breeds, native livestock are not trained for semen collection. The only way we can collect the sperm is in the slaughter house,” she said.

The team also met Dr. Geraldine Sanchez of the Pampanga State Agricultural University (PSAU) for her project, “Utilization of Soybean (*Glycine max* L.) to enhance Growth, Health, and Estrus among Native Pigs in Pampanga.” Dr. Sanchez conducted further studies that develop soybean-based feed meals for native pig. These soybean feed meals contain active components such as genistein and lunasin which help in prolonging the estrus of female native pig as well as improve its growth performance.

Jacob Sanchez, PSAU faculty and project team member reiterated that female native pigs exhibit low levels of sexual receptivity as they are silent heaters. By prolonging the incidences for when native pig goes in heat, growers have a longer window for achieving successful breeding.

Another PSAU-implemented project that was monitored was on the “Utilization of Velvet Bean

turn to page 10

2019 Agritalk Palawan features stingless bees



Dr. Maria Dulce Mostoles of CBSUA talks about the different types of native stingless bees.

PHOTOS: LBARTINA

The first leg of this year's Agritalk seminar series was held at SM City Puerto Princesa, Palawan on 5 April 2019. More than 200 farmers and agripreneurs were present to learn about the recent farming technologies in agriculture.

One of the featured topics was on the "Utilization and Commercial Production of Stingless Bees and its By-products" presented by Dr. Maria Dulce Mostoles of the Central Bicol State University of Agriculture (CBSUA). She discussed the different types of native stingless bees as well as the different products (food and cosmetics) that can be derived from its honey and pollen.

For the cosmetics using stingless bee products, among the products developed were: alco-propolis sanitizer, propolis throat spray, and

bath soap and shampoo bar with propolis. Meanwhile, food products included macaroons with honey, polvoron with pollen, and honey-propolis candies.

Other seminar topics featured were 1) "Container Gardening of Hydroponics through Simple Nutrient Addition Program (SNAP)" discussed by Jesse Descalsota of the University of the Philippine Los Baños; and 2) "Cultivation of Oyster Mushroom" presented by Jennifer Reyes of the Department of Agriculture-Palawan Research Experiment Station (DA-PRES).

DA-PRES Center Chief Milagros Cacal graced the event and welcomed the participants. In her message, she emphasized DA's efforts in uplifting the quality of life of small farmers in Palawan, by providing them the

significant information and output results generated from agricultural research through the conduct of free seminars.

Agritalk seminar intended to further strengthen the promotion and information dissemination of various agricultural practices and package of technologies that are adaptable for urban farming.

AgriTalk is presented by Agricultural Training Institute, and Bureau of Agricultural Research in partnership with Manila Bulletin's magazine, Agriculture Online. It is an event that offers free seminars on different fields of agriculture in the country.

Two more Agritalk sessions are scheduled to be held in other parts of the country within the year. ### (Leoveliza C. Fontanil)

Livestock and fisheries...from page 9

(*Mucuna pruriens*) as Feedstuff on the Aquaculture Performance of Red tilapia." Compared to Nile tilapia, Red tilapia has higher market value and is a possible export commodity for the Chinese and Taiwanese market. According to project leader and university faculty, Dante Mendoza, his study on velvet bean

(*sabawil*) pushes for the formulation of cheaper tilapia feedstuff with ingredients that are easily accessible.

Mendoza and his team developed a production guide for growing velvet bean which is common backyard plant rich in protein, and can thrive in less fertile soil. Mendoza then tested out various formulations of velvet bean based feedstuff in improving the reproductive performance, sex

inversion, and growth performance of Red tilapia. For aquaculture commodities such as Red tilapia, sex reversal treatments for tilapia populations prove to be useful in the masculinization of the stock. Breeders prefer male tilapia as they grow faster and use less energy in the reproductive process. ### (Ephraim John J. Gestupa)

Mushroom processing offers agribusiness opportunity



Lourdes Casiño (right) of DA-RFO 3 demonstrates how to make mushroom tocino and patty.

PHOTO: LFONTANIL

With the gained popularity of growing mushroom and the increase supply in the market, one of the challenges encountered is how to turn them into profit. To address this, the Bureau of Agricultural Research (BAR), through its Applied Communication Division, featured in its monthly seminar, processing of food products from oyster mushroom on 25 April 2019 at BAR, Diliman, Quezon City.

More than 300 participants composed of farmers, members of cooperatives, representatives from local government units, and interested individuals attended the seminar. The seminar focused on the potential of mushroom for livelihood and as agribusiness opportunity. A demo on how to process mushroom into various food products (tocino, patties, and crispy mushroom) were also highlighted during the seminar.

Veronica Mangune and Lourdes Casiño of the Department of Agriculture-Regional Field Office (DA-RFO) 3 served as resource speakers for the processing of mushroom tocino and patty. Joining them was the team of Lyn Turiano, assisted mushroom processors of DA-RFO 3, who

taught the techniques and procedures of cooking the popular, crispy mushroom.

On the health benefits of mushroom, Mangune cited that it contains vitamins, minerals, and antioxidants, specifically, the Vitamin B complex, iron, calcium, and potassium. When it comes to economic benefits, Mangune mentioned mushroom processing as potential livelihood opportunity requiring low capital because readily-available resources in the community can be used. Mushroom can give 236 percent to as much as 800 percent return on investment Mangune said.

DA-RFO 3's initiatives on mushroom started in 2007 carrying out studies to further explore the benefits of mushroom. With funding support from BAR, the region embarked on researches and studies on the development of low-cost technologies on mushroom. One research initiative was on tissue culture and the propagation of edible mushrooms for the establishment of mushroom livelihood projects at the national community level. ### (Leoveliza C. Fontanil)

BAR, SEARCA...from page 6

major outputs: full feature article, audio-visual presentation, and blog series featuring agri-fishery research and development (R&D) projects implemented by the participants' respective offices.

BAR Director Nicomedes Eleazar, in his message read by Julia Lapitan, head of the Applied Communication Division, underscored the importance of the IKM program, saying that "IKM does not only focus on the technology, but more on people and processes. Its role transcends to bring people together, creating an enabling, encouraging environment—in our case—for our farmers and fishers and their communities."

The IKM mentorship program is in its second phase and is funded by BAR through its Scientific Publication Grant. The program is specifically designed to capacitate the research and information officers of the DA who are tasked to disseminate R&D results in agriculture and fisheries. ### (Daryl Lou A. Battad)

Promotion of coco sugar intensified



With lower GI as opposed to the conventional sugar available in the market, the coconut sap sugar is an ideal alternative sweetener for people with diabetes.

People are becoming more conscious in using food products that are not only healthy but are also natural and organic. This is the reason why the demand for coconut sugar has been on a steady rise since it was first introduced to the public's eye.

The advantage of coco sugar is its low Glycemic Index (GI) compared to the conventional table sugar that is often sold in the market. Coco sugar is the ideal alternative sweetener for people with diabetes.

The Bureau of Agricultural Research (BAR), through its National Technology Commercialization Program (NTCP), has been funding various research and development (R&D) initiatives in support to the product

development and promotion of coco sugar.

As early as 2006, BAR, in partnership with the Philippine Coconut Authority (PCA), embarked in a project to boost coco sugar as an income-generating enterprise for village-level production. Through this project, the production process of coconut sap sugar was standardized, and the product was characterized. It also paved way to the fine-tuning of the technology and developing the protocol for coconut sap sugar production.

Through the project, a women's group called the "Aroman Natural Food Producers Multipurpose Cooperative" was established in North Cotabato. The cooperative applied their coconut sap sugar for

Organic Certification that further boosted the quality of coco sugar resulting to a high demand, both in the global and local markets.

With the great potential of coco sugar as an enterprise, BAR embarked in another project, "Production, Promotion, and Commercialization of Coconut Sap Sugar in the Province of Quezon." The project was implemented by the Quezon Agricultural Research and Experiment Station of the Department of Agriculture-Regional Field Office 4A, in collaboration with the local government unit of Quezon. It aimed to increase the coconut farmers' income, create employment, and sustain the coconut industry as the municipality's major source of income.

The project was able to establish technology demonstration sites for coconut production, and later, expanded these sites outside the municipality. Farmers were capacitated through the conduct of trainings on production, technology transfer, and value-addition of coconut sugar production. Through the project, a significant increase in the income of farmers was achieved. One of the farmer-cooperators earned an average gross yearly income of Php 877,500 from coco sap sugar production alone.

Currently, the project team is able to increase its production volume and improve the quality of the product expanding the market outside Quezon Province. ###
(Patrick Raymund A. Lesaca and Rita T. dela Cruz)

Reg. 11's RRDEN...from page 4

of Southern Mindanao Agriculture Aquatic and Resource Research and Development Consortium (SMAARRDEC) Region 11.

Present during the event were Bureau of Agricultural Research (BAR) OIC-Asst. Director Digna Sandoval (representing BAR Director Nicomedes Eleazar); and Kris Thea Marie Hernandez of the

BAR-Program Monitoring and Evaluation Division.

Asst. Dir. Sandoval discussed the Agricultural Competitiveness Enhancement Fund R&D Grant for state universities and colleges and the criteria for the "Search for Gawad Saka Outstanding Scientists and Researchers." She also encouraged the participants to submit proposals and applications for the ACEF R&D Grant and Gawad Saka Search.

Meanwhile, Hernandez was invited to conduct a briefing on BAR's Community-based Participatory Action Research (CPAR) program with the aim of increasing the number of proposals submitted to BAR for funding. A writeshop has been scheduled for RRDEN staff in July 2019 to sustain and improve the quality of CPAR proposals submitted by the region. ###
(Clarisse Mae N. Abao)

BAR, BSU launch bio-organic waste conversion facility

To enhance the productivity of smallholder farmers who practice organic farming, the Benguet State University (BSU) and the Bureau of Agricultural Research (BAR) launched the Bio-organic Waste Conversion Facility on 26 April 2019 in La Trinidad, Benguet.

As part of the initiatives of BSU to further improve the organic practices of the university and the region, the newly-established facility aims to increase the production rate and volume of good quality bio-organic compost. The bio-organic compost will boost the productivity of the organic farmers in the area.

The facility is expected to complement the Agri-Business Technology Business Incubator (BSU ATBI/IC), which serves as a technology-demonstration for farming, food processing, and

marketing with its own physical facilities, and a technical and business development support system for nurturing and mentoring smallholder farmers, food processors, and sellers of agricultural products. Pursuing both the objectives of the establishment of the R&D facility and the goal of the BSU ATBI/IC will ensure the appreciation of the program and technology by farmers.

Gracing the event were Maria Elena Garces, assistant head of BAR-Technology Commercialization Division (TCD), representing Director Nicomedes Eleazar; Dr. Violeta Salda, director of BSU-Food Innovation and Research Center; Ruth Diego, ATBI/IC director; Dr. Susanta Kundu, CEO of Excel Innovation Centre, Mumbai; Cheryl Marie Natividad-Caballero, CEO

of Optiserve Technologies, Inc.; and Jennilyn Castañeto, BAR-TCD technical staff.

“Through this partnered with the various technical development support systems offered by the ATBI/IC, I can clearly see not just a sustainable but a regenerative agricultural production with BSU serving as the catalyst for this development in the region,” said Garces as she delivered the message of Director Eleazar during the event.

The project was funded through the bureau’s Research Facilities Development Grant which aims to strengthen the capacities of the NaRDSAF member-institutions through the establishment and upgrading of facilities, as well as the acquisition of R&D equipment. ###
(Clarisse Mae N. Abao)



INSET: BSU Food Innovation and Research Center Director Violeta Salda (left) and BAR-TCD Assistant Head Maria Elena Garces (right) during the ribbon-cutting ceremony of the Bio-organic Waste Conversion Facility.

PHOTOS: CMABAO

CPAR on water saving technology showcases positive returns



PHOTO: DLBATTAD

Hon. Robert Lungan, municipal mayor of Benito Soliven, Isabela (2nd from left) and Rose Mary Aquino, DA-RFO 2 regional technical director for Research and Regulations (rightmost) discuss matters regarding CPAR, along with the project team members.

The Department of Agriculture-Regional Field Office (DA-RFO) 2 spearheaded the conduct of a grand field day of a “Community-based Participatory Action Research (CPAR) project on Water Management of Rice-based Cropping System in Lucban Small Water Impounding Irrigation System” in Benito Soliven, Isabela on 16 April 2019.

The project, which aimed to increase productivity of rice by introducing cropping patterns and improving the existing water management system, showcased various technologies during the field day.

In the CPAR model farms, three interventions were established to improve water management based on Alternate Wetting and Drying. This served as water saving technology for the introduced cropping patterns, hybrid rice-hybrid rice-mungbean for the upstream part of the CPAR site, and hybrid rice-watermelon in the tail end.

With reports from the project team and farmers on AWD, fertilizer management, crop diversification,

as well as product development and marketing, the CPAR project showed success in its implementation. In fact, prior to CPAR, farmers in Brgy. Lucban average a monthly income of around Php 900 for inbred rice, with high cost of production. When CPAR was introduced, their income increased to more than Php 10,000 monthly.

Joseph Justo, a CPAR farmer-cooperator, mentioned how grateful he is for the evident change not only in his life but in his co-farmers’ lives because of the intervention of CPAR. Justo presented his experience in the CPAR program and how his living conditions improved. “*Dati, isang beses lang kami mag-ani sa isang taon. Ngayon, nakakadalawang harvest na kami sa bigas, tapos mayroon pa kaming ibang tanim na pinagkukunan din ng kita namin. Nagkaroon na rin kami ng kaalaman kung paano namin magagamit nang maayos ang patubig, hindi na kami nahihirapan sa tubig. Salamat sa CPAR talaga,*” he shared.

Among the highlights of the program included the turnover of the CPAR project to the Local

Government Unit of Benito Soliven as part of the sustainability measures of CPAR. Hon. Robert Lungan, municipal mayor of Benito Soliven, has full support in the CPAR project, appreciative of how CPAR turned the lives of the farmers around in Benito Soliven. “We will make sure CPAR flourishes *at magdadagdag pa tayo ng mas maraming magsasakang makikinabang dito,*” Mayor Lungan mentioned.

Representatives from DA-RFO 2, local government units, Agricultural Credit Policy Council, Agribusiness and Marketing Assistance Service, and Regional Agriculture and Fishery Council also presented their own respective programs that will benefit the farmers, such as product enhancement and market linkage assistance programs, and loan and calamity programs.

With results of the project showing a 50-97 percent increase in production and income, CPAR continues to be an effective means of community transformation. ###
(Daryl Lou A. Battad)

Testing of organic sweet potato technologies in full swing

Technologies on the sustainable production of organic sweetpotato are currently being tested in Central Luzon.

Spearheaded by Central Luzon State University's Ramon Magsaysay Center for Agricultural Resources and Environment Studies (RM-CARES), the testings are part of the project titled, "Development of Package of Technology for Sustainable Organic Sweet Potato Production in Central Luzon."

The project aims to advocate the use of organic farming system among sweet potato growers in the region.

Funded by the Bureau of Agricultural Research (BAR) under the National Organic Agriculture Program (NOAP), the project specifically intends to lessen the cost of production of farmers and their usage of synthetic fertilizers.

"Sweet potato is common among farmers in Central Luzon. *Maraming farmer din ang lumalapit at nagtatanong sa amin kung may technology ba* about organic sweet potato *na maaari nilang magamit,*" shared Dr. Jonathan Galindez, director of RM-CARES and project leader.

Dr. Galindez explained that the increasing demand for organic produce due to its health and environmental benefits also prompted them to embark on the study.

The first component of the project evaluated five sweet potato varieties. Among these varieties included PSB SP 30, VSP6, SPJ, Kinerots, and Japonita.

Another component of the study was the use of *Trichoderma*, a potent biocontrol agent used extensively to combat soil-borne diseases.

Other components

Plants with pesticidal qualities were also identified in another component. These plants were yellow ginger, *kakawate* leaves, and hot pepper (*siling labuyo*).

Text and photo by
Jhon Marvin R. Surio



Cecilio Antolin, Jr., farmer-cooperator, shows off some of the organic sweet potatoes he produced using the introduced technologies.

These plants were then blended on a 1:1 ratio with water. Extracts were fermented for seven days. In the initial trials, seven different concoctions were made, namely: yellow ginger, *kakawate* leaves, hot pepper, yellow ginger-*kakawate*, yellow ginger-hot pepper, *kakawate* leaves-hot pepper, and yellow ginger-*kakawate* leaves-hot pepper extract.

Application of the extracts or biopesticides was recommended to be done early mornings and late afternoons, when pests are most active. Population count of pests is then recorded per treatment in which the yellow ginger-*kakawate* leaves-hot pepper extract showed best results. Little to no damage was observed in the leaves of sweet potato plants.

The fourth component of the project looked into proper water management practices. Results showed that those plants that were not watered at all and watered only once obviously did not produce good crops and died. Those that were watered twice or more flourished.

Farmer's testimony

Galindez claimed that combining the package of technologies will

produce quality organic sweet potatoes. From an average of 24 tons under farmer's practice, production under an organic farming system can reach an average of 33 tons per hectare.

Sweet potato growers that earn an average of Php 35,000 per harvest then can now earn up to Php 250,000 per harvest.

Cecilio "Sonny" Antolin, Jr., farmer-cooperator of the project, attested to Galindez' claims. "*Malaking tulong talaga ito kaya nagpapasalamat ako sa mga nagbigay ng binhi at ng mga technology,*" he said.

Antolin also shared the advantages and noticeable differences of growing sweet potatoes using conventional practice and organic system during a field day-cum-seminar held recently in Brgy. San Pablo, Castillejos, Zambales.

"*Sa organic, mas malaki at mas matamis talaga ang laman ng kamote. Tested na namin 'yun. Ang kagandahan pa nga e sa organic practice, malayo ka talaga sa sakit dahil walang kemikal na ginagamit. Effective naman pala ang organic pesticide,*" Antolin shared. ###

BAR features cacao wine and coco sugar in TienDA



BAR showcases the cacao wine and coco sugar during the TienDA. PHOTO: EJGESTUPA

In celebration of the Filipino Food Month, the Bureau of Agricultural Research (BAR) participated in the opening of the “TienDA: Piyesta ng Pagkaing Pilipino” on 10 April 2019 at the Department of Agriculture (DA) Central Office.

One of the highlights of the event was the promotion of local agriculture products showcasing local ingredients, delicacies and cuisines from different regions. BAR showcased some of its R&D supported products, cacao wine and coconut sap sugar.

While most cacao wines are infused with either cacao beans or chocolate, the cacao wine, developed by Quezon Agricultural Research

and Experiment Station (QARES) under the Department of Agriculture-Regional Field Office (DA-RFO) 4A, is a one-of-a-kind beverage because it is made from the pulp of the cacao fruit. This “light and delicious” wine resembles zesty young champagne with notes of cacao fruit and vanilla. The cacao wine boasts not only of its delicious taste and unique origin, but also –and most especially that– it is made by local Filipino farmers.

Coconut sugar is made from the nectar produced from the sap of the flower bud stem of the coconut palm. The sugar is obtained from coconut trees through monitored cultivation and produced manually by smallhold farmers. The health benefits of coco

sap sugar cannot be undermined as it promotes better health benefits than table sugar. The group of Benjamin Villaflor Jr., municipal agriculturist of the local government of Quezon, collaborated with DA-QARES in the conduct of the project from which the coco sap sugar was developed.

Pursuant to Proclamation No. 469, President Rodrigo Duterte declared April of every year as Filipino Food Month. Leading this annual event are DA and the National Commission for Culture and the Arts. ### (Ephraim John J. Gestupa)

Soybean R&D...from page 8

deliver a message was Regional Technical Director Rose Mary Aquino of DA-Regional Field Office 2, chairperson of the Soybean Technical Working Group (TWG).

Serving as evaluators were Dr. Cesar Quicoy and Elmer Enicola both from the University of the Philippines Los Baños; Rose Mary Aquino of DA-RFO 2; and technical staff from the Technology Commercialization Division of BAR.

BAR, through TCD, has been continuously supporting projects towards the promotion of organic soybean seed production and product development to establish strong partnership with private sector in processing and marketing of soy-based products in the local and international market. ### (Maria Elena M. Garces)



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