*Pummelo with longer shelf life...from page 15*

Dr. Emma Ruth Bayogan, project leader from UP Mindanao, discusses on the appropriate treatments that they are developing to maintain the good quality of pummelo during storage and marketing periods. PHOTO:ALAZARO

and water storage and retention. It also became responsible in reducing black spots, showing the potential of chitosan as disease resistance inducer. In the same way, 1-MCP application positively affected the postharvest quality of pummelo by reducing shriveling, decay, and weight loss. In addition, better visual quality of the fruit was maintained.

Aside from demonstrating significant results, the project was also presented in regional, national, and international research conferences. According to the project leader, results of this research will also be presented to relevant stakeholders especially the pummelo growers and exporters, as they can contribute relevant information specifically for the recommended concentration of MCP and treatment duration. Furthermore, the proponents aim to use these research findings as reference for postharvest biology and technology for locally produced pummelo. ###

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For more information, contact:
**Dr. Emma Ruth V. Bayogan**
Professor, UP Mindanao
Tugbok District, Davao City
Tel. No.: (082) 293-0302
Email: *evbph@yahoo.com*

*CPAR capacitates Leyte...from page 14*

start to smell, people are already getting them from our trees. We do not know when to harvest them. Sometimes, they just fall off and get rotten. But now, we already know when to harvest them. Thanks to CPAR, it taught us good and appropriate methods on planting jackfruit so as to uplift the lives of farmers like us]" Harvey shared.

Aside from production management, the CPAR project also provided trainings for home-based processing of jackfruit products. "We have also introduced processing jackfruit into pastillas, tart, jam, and jelly to women from the same association. Most of them are the farmers' wives," Bulawan said.

As one of the banner programs of the Bureau of Agricultural Research, CPAR has been making significant impact in the lives of the farmers and fisherfolk. In the case of the Mahaplag jackfruit farmers, their production was enhanced and the commodity's productivity was improved. After two years of implementation, jackfruit yield increased from 8 metric tons to 15 metric tons per hectare; production areas expanded by 11 hectares; number of farmer-cooperators rose from 22 to 52; and average income boosted from P96,250 to P317,500. ### ***(Anne Camille B. Brion)***

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# BAR stages 4th Scholars' Fellowship Night

Attending the fellowship night are completed and on-going undergraduates, MS, and PhD students and employees of the Nat'l R&D System for Agriculture and Fisheries-member institutions who were awarded with scholarship grants and assistance under the bureau's Degree Scholarship Program. PHOTO:URIVERA

The Bureau of Agricultural Research (BAR) spearheaded the 4th BAR Scholars' Fellowship Night on 16 April 2015 at EDSA Shangri La Hotel, Manila. The activity was a tribute for the several milestones accomplished through the bureau's Degree Scholarship Program (DSP). It also served as a venue to encourage interaction and communication between and among the scholars and state universities and colleges (SUCs).

Since its inception in year 2000, DSP has already produced 99 graduates (49 MS and 50 PhD). Thirty-two graduates are from the Department of Agriculture (DA) national agencies while 67 came from both DA regional agencies and SUCs. There are 24 on-going scholars composed of 15 MS and 9 PhD, of which 4 on-going scholars are from DA national agencies and 20 are from both DA regional agencies and SUCs.

In a message delivered by BAR Director Dr. Nicomedes P. Eleazar during the fellowship night, he stressed that capacitating human resource through scholarships has always been a good investment. "Investing in human capital is an effective means to ensure a robust and capable agri-fisheries R&D sector," he said.

Around 170 participants attended the event, most of them came from the group of completed and on-going undergraduates, MS, and PhD. The rest were members of the BAR management and staff including other stakeholders.

Ms. Digna L. Sandoval, head of the Institutional Development Division, also a BAR scholar, introduced all the scholars starting from the pioneers, led by Mr. Danilo Tumamang of the Isabela Provincial Agriculture Office (PAO), to the on-going scholars. Each participant took part in the ceremonial toast after Ms. Sandoval raised a glass and wished the continued success of the DSP.

One of the highlights of the event was the launching of the directory of BAR Scholars. It is a publication containing consolidated profiles of all the BAR scholars including those who have completed their degrees and on-going students. This also serves as a database for the network of R&D professionals that the program has produced.

Another highlight of the night were the testimonials of BAR scholars who are now high ranking officials in their respective agencies, either as DA officials, SUC presidents, administrators, deans, research directors/managers, and seasoned researchers. Their testimonials inspired the attendees, particularly the on-going undergraduates, to strive hard and finish the course.

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IN THIS ISSUE...

# Eleazar keynotes MSP Annual Scientific Symposium


PHOTOS:OD

(Left photo) BAR Director Nicomedes P. Eleazar, one of the guest speakers during the MSP Annual Scientific Symposium, highlights the significance of fungi in organic agriculture. (Right photo, middle) Director Eleazar and SLSU President Cecilia Gascon, pose for a photo op.

The Mycological Society of the Philippines (MSP) celebrated its 17th anniversary by holding its Annual Scientific Meeting, Training, and Symposium on 24-25 April 2015 at the Southern Luzon State University (SLSU) in Lucban, Quezon. Dr. Nicomedes P. Eleazar, director of the Bureau of Agricultural Research (BAR), served as the one of the symposium's guest speakers.

Themed "Fungi for Organic Agriculture," the symposium featured studies and discussions on the important role of fungi in furthering the practice of organic agriculture in the country. With BAR as the national coordinating agency for all agri-fishery R&D initiatives on the Organic Agriculture (OA) Program of the Department of Agriculture (DA), Dir. Eleazar discussed the various projects and activities supported by the bureau.

Among the 86 applied researches, 20 production and post-production related technology for commercialization, and 28 R&D facilities projects funded by BAR under OA funds from 2011 to 2015, four projects are on fungi or fungi-related. Through these projects, as mentioned by Dir. Eleazar in his talk, "BAR aims to contribute in information and technology generation and eventually apply and outscale these in the fields for the benefit and utilization of our organic farmers. We [at BAR] aim to introduce and promote fungi, not as pathogens but as antagonists to fungi that cause plant diseases. These are the fungi that are beneficial to organic farmers and farmers as a whole, in attaining productivity and sustainability without relying on chemical pesticides or fertilizers. With these projects, the bureau seeks to shed light on how a fungus, despite the common misconception and association to germs and diseases, can perform as biological control agents that combat major pests and diseases," he reiterated.

The bureau director also emphasized how these projects helped increase the profit of farmers and fishers through ecologically-sound cultural practices. He also pointed out how these projects served as a vehicle toward promoting the health and economic benefits of OA while ensuring the competitiveness and sustainability of Philippine agriculture. As he ends, Dr. Eleazar thanked the

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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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| | |
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For subscription and inquiries, please contact us at: Tel. Nos: +63 (2) 928-8505, 928-8624, 920-0234 local nos. 3012, 3025, 3328 Fax No. +63 (2) 927-5691 Email: *acd@bar.gov.ph*





# Pummelo with longer shelf life now possible

By Daryl Lou A. Battad


Varieties used in visually documenting various quality & conditions of pummelos PHOTOS:ALAZARO

The University of the Philippines (UP) Mindanao, through a project funded by the Bureau of Agricultural Research (BAR), is on its way in recommending an effective and practical postharvest technology to extend the shelf life of pummelo.

Mindanao, specifically the Davao region, is known as the major producer of good quality pummelo, which has made quite a name in the export markets. However, not much focus is given to postharvest maintenance of this fruit. Recently completed researches on pummelo in Mindanao are related to improving farm productivity and market quality of harvested fruit and focused on the optimum fertilizer management, pest control, and packaging.

Due to limited researches done on postharvest quality maintenance of pummelo, a research team led by Dr. Emma Ruth Bayogan, vice chancellor for Academic Affairs and a professor of UP Mindanao, initiated the project that hopes to address postharvest losses by developing appropriate treatments to maintain good quality pummelo especially during storage and marketing periods.

Locally known as *suha*, it is a popular fruit in the Philippines. Considered as a citrus fruit, it is the largest of its kind with flavor that varies from sweet acid to subacid. It is usually pale green or yellow in color, with its edible white and pulpy flesh inside. Pummelo is considered a high value crop in the country, with good economic potential in the international and local markets.

The project is carried out through visually documenting various quality and condition of the pummelo fruit, evaluating postharvest quality and shelf life of cured Magallanes variety treated with various concentrations such as chitosan and 1-methylcyclopropene (MCP), and determining optimum concentrations of treatments for best shelf life and quality.

The project titled, "Postharvest Quality Maintenance of Pummelo [*Citrus maxima* (Burm. Ex. Rumph) Merr] Fruit using Chitosan and 1- Methylcyclopropene," started its implementation in 2013 and has so far generated major findings including minimized shrinkage and decay as well as reduced percentage of fruit weight loss during holding and ambient conditions. Results further showed higher visual quality which varies depending on treatment duration.

The research team used chitosan, a non-toxic biopolymer derived from chitin, bearing numerous applications in agriculture and agroindustry. It has been found out that chitosan application on fruits and vegetables provided advantages for the long-term storage of foods, as its film contains an active package which allows a gradual release of preservatives, thus inhibiting fungal growth and maintaining the external appearance of the fruit for an extended period of time. Similarly, 1-MCP is a powerful new tool for delaying postharvest senescence and deterioration in crops as it specifically targets and inhibits ethylene responses. Furthermore, 1-MCP is used at low rates, has a non-toxic mode of action, and is active at very low concentrations.

In citrus fruits, as in the case of pummelo, chitosan was found effective in improving firmness, titratable acidity, ascorbic acidity,

*turn to page 16*

*Since its implementation, the project has generated major findings including* **minimized shrinkage and decay, reduced percentage of fruit weight loss** *during holding and ambient conditions, and* **higher visual quality** *depending on treatment duration.*

*CPAR capacitates Leyte Farmers...from page 13*

priority commodities of Eastern Visayas to be commercialized. And for that to happen, we should increase its production and improve its productivity. This is when we implemented the CPAR," said Alicia Bulawan, CPAR co-project leader.

**Learnings from the farmers themselves**

According to Job, fruit borer and fruit fly incidence cost them almost 40-50 percent decrease in their income due to damages. "Because of the CPAR trainings, we were equipped with knowledge on how to control fruit borer through the use of *Metarrhizium*. We really saw its effectiveness, fruit borer occurrence were almost completely eradicated and damages were minimized," Job recounted.

Applying what he learned on integrated nutrient management, he was able to produce good fruit quality and was able to ship some of them in Metro Manila. "May customer ako na concessionaire ng Robinsons sa Manila, dito siya kumukuha ng fruits sa akin. Malaki ang demand pero hindi ko naman ma-meet ang supply kasi maliit pa lang ang farm ko. Makikita natin na good quality talaga ang jackfruit namin, [I have a customer, a concessionaire in Robinsons in Manila who gets fruits from me. There is a big demand, but I cannot meet the supply yet because my farm is still smallscale. But we can see that our jackfruits really are of good quality]" he added.

> "Salamat sa CPAR, ito ang nagturo sa amin ng **maganda** at **tamang pamamaraan** sa pagtatanim ng jackfruit para **lalong umasenso** ang buhay naming mga farmers."

Metarrhizium preparation

Fertilizer application

Another farmer who was helped by CPAR was Mr. Harvey Abenujao. Harvey narrated on how CPAR imparted to them the importance of wrapping and bagging the fruits in controlling fruitfly incidence and in determining proper harvesting time. "Noon, 'pag umamoy na ang prutas, may mga kumukuha na mula sa puno namin. Hindi kasi namin alam kung kailan ito dapat pitasin. Minsan, nahuhulog na lang at nabubulok sa lupa. Pero ngayon, alam na namin kung kailan ito dapat pitasin. Salamat sa CPAR, ito ang nagturo sa amin ng maganda at tamang pamamaraan sa pagtatanim ng jackfruit para lalong umasenso ang buhay naming mga farmers, [Back then, when the fruits

*turn to page 16*

Upon the conduct of a Participatory Rural Appraisal among the farmers of the association, the lack of technical knowledge on proper cultural management and processing, and occurrence of pests and diseases have been identified as major problems in jackfruit production. Hence, the DA-Regional Field Office 8 through the Eastern Visayas Integrated Agricultural Research Center, in collaboration with the Visayas State University, developed technologies on jackfruit. These were taught to the farmers through the conduct of trainings and workshops. "We provided them with appropriate technologies on integrated nutrient management, pest management, and pruning strategies," Bulawan said.

Pruning

Metarrhizium application





# Soil health is the essence of YLP – Dar

"There is a need to make the Yamang Lupa Program (YLP) known and understood by everyone because soil health is important. And there is a need to make people understand that enhancing the micro-nutrients in soil is as important as the varieties of crops in production," stressed Dr. William D. Dar, president of the InangLupa Movement and YLP adviser, in a message addressed to the members of the YLP Program Management Group (PMG) and the Regional Technical Working Group (RTWG) during the "Yamang Lupa Program Review and Planning Workshop" held on 21 April 2015 at the Bureau of Agricultural Research (BAR). The meeting was conducted to monitor the progress of the YLP after more than a year of its implementation and to prepare for the Year 2 of the program.

YLP is a collaborative initiative of the Department of Agriculture (DA) and the India-based International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) that identified soil health rejuvenation as a strategy to enliven Philippine agriculture. The strategy has been used and proven effective in India and the success is hopefully to be replicated in the Philippine setting. BAR is the lead coordinating body for the R&D component of the YLP.

"The influence of the YLP came from the interaction between the Philippine's DA-BAR and DA-Bureau of Soils and Water Management, and regional offices including those from state universities and colleges (SUCs) who had the opportunity to visit ICRISAT and witness for themselves how the Bhoochetana program is being done in India," Dr. Dar reiterated.

Dr. Dar linked soil health with the onset of the ASEAN Integration mentioning its implication in making the Philippine agriculture productive. "So the message I want to say is, soil health is important in relation to making agriculture highly productive and profitable and producing a technology that is not environmentally degrading," he said.

He added that, if there is one investment that needs to be implemented, it is the soil health program, as Dr. Dar underscored, "will give higher yield and profit for the whole sector." He added that, "it's time that we make use of science to increase the level of productivity in agriculture and see to it that the technology that we are recommending is not environment depredating."

Part of the recommendation for the Year 2 implementation is the YLP expansion all over the country. As recommended by the group, for the next year, there will be more provinces that will be adopting the program for them to become more competitive and productive.

Also present during the meeting were Dr. Teodoro S. Solsoloy, assistant director of BAR; Mr. Joell H. Lales, head of BAR-Planning and Project Development Division (PPDD); Engr. Samuel Contreras, chair of YLP-PMG; and ICRISAT scientists and experts, Dr. Suhas Wani and Dr. Junel B. Soriano.

PHOTO:DDELEON

**Dr. William D. Dar, president of InangLupa Movement and YLP adviser, underscores the importance of soil health towards a productive and profitable PhI agriculture.**

Project implementers and partners from DA-Regional Field Offices and SUCs presented their accomplishments and updates on YLP being implemented in their areas. Representatives from the provincial/municipal local government units also presented their initiatives in preparation for the YLP implementation in their respective provinces. The provinces of La Union, Isabela, and Nueva Vizcaya are included in the expansion sites of YLP.

The presentations were followed by series of workshops to fine-tune their work and financial plans for the Year 2 implementation of YLP and were presented to the PMG members for suggestions and further improvement. ### ***(Rita T. dela Cruz)***

*Eleazar keynotes MSP...from page 2*

society for its contributions in advancing mycology in the country. He mentioned how the expertise of its members have continually helped BAR and the rest of the agriculture sector to "explore and optimize the resources that we have and find solutions to the challenges presented to us without sacrificing our natural resources."

Members of the academe, students, government agencies, OA advocates and practitioners, and interested individuals participated in the symposium that showcased a number of studies and technologies in the field of mycology for OA.

Scientific papers and posters, both competing and non-competing, were presented as part of the plenary sessions.

Mycology is the branch of botany that studies fungi and fungus-caused diseases. ### ***(Mara Shyn M. Valdeabella)***

# Market research for ADLAY underway

PHOTO:ABRION

A researcher from Baseline Research Philippines, Inc. shows one of the respondents a pack of adlay seeds during the household survey.

Initiatives on market research for adlay are now being undertaken.

Following a series of national reviews and planning workshops conducted in view of the Adlay R&D Program that pushes for the commodity's market development, the program is now focusing on the marketing aspect.

While research and development efforts on adlay have already been accomplished and produced promising results in terms of production and processing, information on regional market has not yet been established. With this, the Bureau of Agricultural Research (BAR) commissioned the University of Asia and the Pacific (UA&P) to lead the market research on adlay. A private research university in the country, the UA&P is known for having the technical expertise in conducting market research endeavors.

The study aims to come up with a marketing plan for adlay products based on the market research of households and retailers/distributors in the selected sample areas. Such areas include major adlay-producing regions including 2, 4A, 9, and 10 and not-so-familiar areas to adlay including the National Capital Region (NCR) and Region 7. The marketing plan will serve as a guiding tool in pursuing possible commercialization of adlay.

According to UA&P, a comprehensive analysis of adlay's marketing environment is important in determining its acceptability in the market. Moreover, it will aid in designing appropriate product development and introduction strategies that will help in realizing marketing-related goals of the Adlay R&D Program.

As far as benefits are concerned, this initiative will pave for the crafting of further research plans for the development of adlay as food staple and processed food product in support to the Food Staples Sufficiency Program of the Department of Agriculture. Furthermore, it will encourage farmers to improve their productivity and income by venturing into value-added processing.

On 27-30 April 2015, a team composed of adlay focals from concerned divisions of BAR and Department of Agriculture-Cagayan Valley Research Center joined the UA&P to observe the fieldwork on product test and price sensitivity among selected households in Dupax and Bambang, Nueva Vizcaya. ###
***(Anne Camille B. Brion)***

*BAR stages 4th Scholars'...from page 1*

Dr. Liza G. Battad, chief of the Planning Division of the Philippine Carabao Center, said *"I want BAR to be proud of me. I owe it to BAR to somehow see PCC as a good agency to support kasi product ninyo ako!"*

Meanwhile, Dr. Casiano S. Abrigo, Jr., executive director of the University of the Philippines Los Baños-Foundation Institute (UPLB-FI), in his inspirational message, said that "learning does not end after achieving a degree, it is an everyday process best acquired through experience and desire for excellence".

UPLB Chancellor Dr. Fernando C. Sanchez, Jr. also expressed his appreciation to BAR for its effective implementation of a program that will not only increase agri-fisheries manpower, but also produce high caliber of people to make the sector productive.

In 2012, BAR launched the "Scholarship Program for UPLB Agriculture and Agri-Biotechnology Undergraduate Students" to increase the number of Agri-Fisheries R&D professionals. The program, which is now on its third year, has already supported 35 students, two of which graduated Magna cum Laude. In 2014, BAR and DA Biotechnology Program institutionalized the "Biotechnology Scholarship Grant for UPLB Undergraduate Students" specializing in BS Agricultural Biotechnology (BS ABT). There are 15 ongoing scholars under this scholarship.

Fifteen years in operation, BAR has achieved so much through the program. However, for BAR Director Eleazar, the strategies to continuously improve the program continues – "the Scholarship Program will not stop after achieving those feats. We always update and modernize the system to cater to more of our young and fresh minds who wish to engage in agri-fisheries R&D," Dir. Eleazar said.

The Pampanga State Agricultural University Rondalla and La Granja Modelo Socio Cultural Dance Troupe entertained the participants with all-time favorite folk songs and the popular *La Jota Moncadeña*. ### ***(Jacob Anderson C. Sanchez)***





locally-available resources can likewise help reduce capital requirement.

Studies showed that native chickens housed in better facilities could significantly improve their survival rate compared to those without. Proper housing provides protection against any form of draft and for easy monitoring as to the number of chickens in a flock. To some would-be raisers, the design and materials required for housing construction may be expensive, and thus recommended are the use of materials like bamboo, wood, nipa shingles, and other alternatives as long as they are treated against termites. ###

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For more information, please contact:
**Dr. Jaime C. Cabarles Jr.**
Acting Dean
College of Agriculture, Resources and Environmental Sciences
Central Philippine University (CPU)
Iloilo City
Mobile No.: 0920-217-4979
Tel. No.: (033) 329-1971 loc. 1096

Dr. Jaime C. Cabarles Jr. of Central Philippine University shares important tips on raising native chickens through science-based approach. PHOTOS:PLESACA

# CPAR capacitates Leyte farmers *on jackfruit technologies*

Story and photos by Anne Camille B. Brion

Fruit wrapping/bagging

"Ako po'y talagang nagpapasalamat sa CPAR dahil marami kaming natutunan. Kung wala ito, mahihirapan kami sa production ng jackfruit [I am really thankful to CPAR because we have learned a lot. If not for CPAR, we will be having difficulty in jackfruit production]," said Job D. Abuyabor, Sr., one of the farmer-cooperators of a Community-based Participatory Action Research (CPAR) project on jackfruit in Mahaplag, Leyte.

Job is a member of the Mahaplag Jackfruit Growers Association, one of the recipients of the Department of Agriculture's (DA) Plant Now Pay Later distribution scheme of grafted jackfruit in Region 8. "Jackfruit is considered by the DA as one of the high-value crops and is one of the

*turn to next page*

# A science-based approach in raising NATIVE CHICKEN

By Patrick Raymund A. Lesaca

PHOTO:RBERNARDO

Raising native chickens is an income resource generator. Traditionally, raising native chicken is a backyard practice wherein the chickens can roam freely with minimal interventions in terms of feed supplementation, proper housing, health care, breeding, selection, and handling, among others.

To institutionalize a science-based approach to raising native chicken that will lead to a better understanding on its proper management, the Bureau of Agricultural Research (BAR) conducted a lecture-seminar presentation on the "Advances in Commercial Production of Philippine Native Chicken". This was presented and delivered by Dr. Jaime C. Cabarles, Jr., acting dean of the College of Agriculture, Resources and Environmental Sciences of the Central Philippine University (CPU), Iloilo City.

Dr. Cabarles mentioned that raising native chickens is a multi-billion peso industry and the active participation of various stakeholders along the production and food value chain is imperative for the development of the industry. Based on his lecture, Dr. Cabarles said that the unstructured market for native chicken and its products is still inadequate and still lack a formal channel or distribution scheme from the raisers to consumers. This is in great contrast to the commercial breeds wherein some commercial-scale operators follow a certain method. He added that the lack of production technologies and marketing protocols greatly affect the availability, price, standards, quality of the chickens and even the packaging of products, and thus must be addressed.

The required inputs including the sources of day old chicks (DOC), supplemental feeds, phytobiotics, package of technologies for commercial production, and advanced line of facilities, among others are limited, and therefore, a systematic approach is vital.

The resource speaker advised and shared some important tips to the participants should they decide to venture into backyard or full scale commercial operations.

Experience in raising native chickens topped his list of prerequisites. The ranging area requires a stocking density of one bird per five sq.m. yard. However, the regular stocking density is 10 sq.m. per bird. This allows the fowl to practice natural behavior. Drainage, tree covers, presence of scavengeable feeds, surrounding households, and other flock of chickens must be considered in identifying the ranging area. The modification of the area can be done to fit the requirements of the raisers. In terms of labor, an individual can manage to rear 1,000-1,500 heads of chicken. This is to maximize the laborers' time in feeding, cleaning, and in doing other activities.

Dr. Cabarles also recommended to prepare a detailed feasibility study to avoid unwise spending and the utilization of





# Smallscale entrepreneurs venture in soybean food processing business

"Eight distinct entrepreneurs are now into food processing business with soybean as the main ingredient," reported Mr. Danilo Rodriguez of the Department of Agriculture-Zamboanga Peninsula Integrated Agricultural Research Center (DA-ZAMPIARC) during the "National Review and Planning Workshop on Soybean R&D Projects" held in Palawan.

Loury Ann "Yanny" A. Tizon of Binuay, Dimataling, Zamboanga del Sur has been into food processing business until she learned the potential of soybean. "Nahikayat ako sa soya bean noong 2012 sa kadahilanang maraming nagagawa ang soybean maliban sa gatas. Pati na ang sapal nito ay pwede ding pakinabangan," Tizon shared.

Ms. Loury Ann Tizon (left) and Mr. William Capablanca (right) of Zamboanga del Sur are two of the eight entrepreneurs who are now venturing into soybean food processing business after having learned of the crop's health and economic benefits. PHOTOS COURTESY OF DA-RFO9

With soybean as the main ingredient, Tizon added that it provided additional income to her business as she was able to utilize every seed. Now, she produces soymilk and produce soy patty for the meals and soy cookies as snacks. With her business, she also processes soy coffee and tofu. She also shared the good feedback and acceptance she gets from her food preparations. "Kampante po ang mga mamimili ko. Nauubos po ang mga paninda ko. Malinis po kasi ang aking pagkakagawa at wala pa pong kahit isa na nagreklamo sa akin tungkol sa paninda ko," she said. With little cost for the ingredients, it can result to greater income. "Maintaining a nourished family, it provides additional income for our family," Tizon added.

Once employed in *taho*-making business in Cagayan de Oro, Mr. William Capablanca returned to Zamboanga del Sur on his own. "*Nakita ko po na malaki ang kita at aasenso ako sa business kaya naisip kong bumuo ng sarili ko,"* he said. He was also happy to share the positive feedbacks. He has regular customers who are doctors and nurses who also learned the health benefits of soybean in the body.

In 2014, DA-Region 9 reflected the greatest hectarage increase in areas covered/planted with soybean, with 3,000 farmer-adopters noted in the year under review.

As part of the continuing efforts to further promote the production, processing, and utilization of soybean in the country, hence, build a competitive soybean industry, the Bureau of Agricultural Research (BAR), together with the DA-High Value Crops Development Program (HVCDP), facilitated the annual conduct of the event which was actively participated in by regional managers, soybean focal persons, and technical staff.

A total of 641.443 tons of soybean seeds were produced/harvested, of which 98.67 tons of seeds were distributed to farmer beneficiaries. The production areas increased to 3,991 hectares from 2,615 hectares in 2014. To date, the number of soybean adopters/beneficiaries increased to 13,182 which included IP communities like the Mangyans in MIMAROPA and Subanen Tribe in ZAMPIARC.

Serving as host region, Ms. Marissa Luna, manager of DA-MIMAROPA and Engr. Elmer Ferry, station manager of DA-Palawan Agricultural Experiment Station, welcomed the participants and officially opened the annual activity.

Mr. Anthony B. Obligado, head of BAR-Technology Commercialization Division delivered the message on behalf of BAR Director Nicomedes P. Eleazar.

"As the lead agency tasked to handle the R&D component of the soybean program, BAR has been funding and coordinating 82 different projects on soybean. BAR started the crafting of the industry roadmap and has been supporting R&D activities on the initial production to adaptability testing to full scale implementation to product development and commercialization of the crop. Conduct of trainers' trainings and cooking demonstration to beneficiaries and adopters are also not left behind," Mr. Obligado said.

Ms. Virginia Agcopra, BAR technical adviser; Ms. Digna Sandoval, head of BAR Institutional Development Division; Ms. Rose Mary Aquino, chairperson of Soybean Technical Working Group; Mr. Elmer Enicola, vice-chairperson of Soybean TWG; and Mr. Obligado served as the panel of evaluators. ### ***(Ma. Eloisa H. Aquino)***

# Legumes R&D Program of BAR expands in 5 regions

PHOTOS:DBATTAD

During the "First Legumes R&D Review and Planning Workshop" attended by project implementers, experts, and evaluators, it is recommended that the second year of the program should focus on expansion in five regions, namely: Regions 7, 9, 10, 11, and 12.


Mr. Cristy dela Cruz of Region 2 facilitates the training on geo-tagging

A year after the implementation of the Legumes R&D Program, project implementers of the four pilot regions, alongside legume experts and evaluators, gathered together for the "First Legumes R&D Review and Planning Workshop" held on 6-8 April 2015 at the Bureau of Agricultural Research (BAR). The meeting was set to specifically assess if the set targets and activities for the pilot sites have been attained during the first year of program implementation, and to plan the next course of actions for Year 2 of the program.

As a general recommendation during the meeting, Year 2 will focus on the expansion of the program. It will expand in five regions, namely: Regions 7, 9, 10, 11, and 12.

The project implementers of the four pilot regions, namely: Region 1, 2, 4A, and 5 presented their respective progress reports. Ms. Melinda Calumpit reported the project titled, "Improvement of Legume Varieties/Technologies and Seed Production Management System in Region 1". Ms. Vanessa Calderon presented the project titled, "Sustainable Seed and Technology Transfer Support Systems on Food Legumes in Region 2". Mr. Dennis Bihis reported the project titled, "Groundwork for Groundnut: Improving Productivity and Sustainability of Peanut Production in CALABARZON." Last to present was Ms. Luz Marcelino who reported the project titled, "Commercial Production of Peanut and Mungbean in Region 5."

Ms. Rose Aquino and Mr. Elmer Enicola, both members of the Legumes R&D Program Technical Working Group (TWG), served as evaluators during the review.

Also part of the three-day planning workshop was the conduct of a geo-tagging training for the project implementers. This was facilitated by Mr. Cristy dela Cruz of Region 2.

The Legumes Research and Development (R&D) Program was established to complement and support the Department of Agriculture-High Value Crops Development Program (DA-HVCDP) in their efforts to increase the production of legumes and eventually to cut down the requirement for its importation. The Philippines has been importing more than half of its requirement for peanut and mungbean.

The Legumes R&D program specifically addresses the need for varietal development; ensuring a sustainable and available supply of certified quality seeds (both on-station and on-farm); post-production support that includes seed storage and packaging materials; capacity enhancement of farmers to produce and grow their own seeds; and monitoring and evaluation through information and technologies dissemination, and geotagging. ### ***(Diana Rose A. de Leon)***

## Legumes R&D Program:
to increase legumes production and to cut down importation requirements





# Mozambique researchers visit BAR for future RDE collaboration


BAR staff members welcome researchers from Mozambique who wish to explore possible collaborations with the Philippines regarding biotech and genetic resources.

The Mozambique researchers visit BAR's TechCom Center. PHOTOS:LBARRAL

The Mozambique Institute of Agricultural Research (Instituto de Investigação Agrária de Moçambique or IIAM), in coordination with the Asian Institute of Development Studies (AIDSI), visited the Bureau of Agricultural Research on 23 April 2015. The main purpose of the visit was to observe and learn the research management strategies and agricultural development programs of research institutions. Further, the delegation wanted to explore the possible future collaborations with the Philippines specifically in exchanging R&D outputs in biotech and genetic resources.

The delegation was led by Dr. Eduardo C. Sison, AIDSI chairman, together with Engr. Sergio Macamo, Competitiveness and Private Sector Development Project (PACDE) coordinator and Mr. Alcino Felicidade, IIAM Technology Transfer Department chief.

Visitors' inquiries were answered by BAR technical staff members from each division. Ms. Cynthia Remedios de Guia of the Planning and Project Development Division (PPDD) provided a brief background on the National Technology Commercialization Program (NTCP) and explained how BAR provides financial support to its target clients specifically the government, academe, and other research institutions. In response to the visitor's query on the success rate of BAR-funded projects, Ms. De Guia cited the bureau's ongoing initiatives through project documentation and impact assessment of CPAR projects. Ms. Marinelle Espino, also from PPDD, provided estimates on the percentage distribution of funds per program as well as the process of validating research proposals. The undergraduate scholarship program was explained by Ms. Elvira Rapada of the Institutional Development Division (IDD) while Ms. Marnelie Gadong of the Project Monitoring and Evaluation Division (PMED) gave an overview on the Community-based Participatory Action Research (CPAR) Program and its monitoring and evaluation process. Mr. Victoriano Guiam of the Applied Communication Division (ACD) also explicated how the bureau facilitates linkages between the researchers and the private sector through the conduct of technology forum and product exhibitions.

The Mozambique delegation also visited the bureau's Research and Development (R&D) Technology Commercialization Center and Edible Landscaping Garden which made them aware of the latest breakthroughs and significant technologies in agriculture and fisheries R&D. As a token of appreciation, the researchers from Mozambique were provided a copy of the coffee table book titled, "Channels of Progress: Bringing Innovations Closer to People". ### ***(Liza Angelica D. Barral)***

# Book on GOAT NUTRITION launched


CLSU President Ruben C. Sevilleja (right) and BAR-ACD Head Julia A. Lapitan (left) lead the launching of the BAR-supported book titled, "Mineral Profile of Forages and its Influence on Goat Nutrition". PHOTO:RBERNARDO

This book is useful for **researchers** and **dev't workers** to improve the nutritional status of goat, for **goat raisers** to improve the mineral levels of animals, and for **students** to serve as reference material on the latest technologies in goat raising.


Significant findings of a 20-year research on mineral nutrition of goat were compiled into a 148-page book which was launched after the flag-raising ceremony at the Central Luzon State University (CLSU) on 27 April 2015.

The book titled, "Mineral Profile of Forages and its Influence on Goat Nutrition," was authored by CLSU professors: Dr. Edgar A. Orden, Dr. Emilio M. Cruz, and Dr. Maria Excelsis M. Orden; and Dr. Tsutomu Fujihara, a retired professor from Shimane University and a volunteer consultant at the Philippine Carabao Center (PCC).

The publication of the book was funded by the Bureau of Agricultural Research (BAR) through its Scientific Publication Grant (SPG), a service provided to the members of the National Research and Development System for Agriculture and Fisheries (NaRDSAF), including state universities and colleges, to cover the cost of publishing scientific journals, manuals, and books, among others.

The event was attended by key officials and staff of CLSU headed by its president, Dr. Ruben C. Sevilleja, and Ms. Julia A. Lapitan, head of BAR-Applied Communication Division, who attended on behalf of BAR Director Nicomedes P. Eleazar.

The publication of the book is timely as there is an increasing interest on goat raising in the country. However, the country's production is still considered unstable due to several factors, one of which is due to poor nutrition. "This book is useful for researchers and development workers whose primary objective is to improve the nutritional status of goat, thus increasing its productivity. It will be helpful for goat raisers as it provides alternative strategies to improve the mineral levels of animals, and more importantly for students who are taking up animal science or any related course as it serves as a good reference material in increasing their knowledge and be abreast of the latest technologies in raising goats," explained Dr. Edgar Orden, one of the authors.

The book contains information on the status of goat production in the country, common forages and its mineral contents, analytical methods for nutrients and biological availability determination, distribution and solubility of minerals in forages, and feeding option to improve mineral status on goats. ### **(*Diana Rose A. de Leon*)**

*BAR, SEARCA hold...from page 7*

Development and Technical Services of SEARCA, presented on "Building and Leveraging Relationships and Networks". In his presentation, he gave justice to the role of networking and collaboration, and how it contributes to the dynamics of value chain framework.

After the lectures was a series of workshops wherein the participants were divided into groups. After each workshop, the groups were required to share their outputs and thoughts on the activity. ### ***(Patrick Raymund A. Lesaca)***





# BAR, SEARCA hold back-to-back training on KM


Information officers and writers from the DA family participate in a two-part training workshop on knowledge management that aims to equip the participants on the concepts and principles of knowledge management and the KM tools and techniques to facilitate knowledge sharing at work. PHOTOS:RDELACRUZ/ABRION/DDELEON

Information officers and writers from the Bureau of Agricultural Research (BAR), Department of Agriculture (DA) attached agencies, and DA-Regional Field Offices (RFOs) gathered together to attend a back-to-back training on "Demystifying Knowledge Management" (KM) and "Knowledge Sharing for your Work: Techniques and Tools for Project KM" held on 13-17 April 2015 at the Southeast Asian Regional Center for Graduate Study and Research in Agriculture (SEARCA), University of the Philippines Los Baños (UPLB), College, Laguna.

The training was part of the BAR-SEARCA joint project titled, "Capacity Development Program on Knowledge Management". The initiative hopes to lay down a workable strategic framework for the Philippine agriculture and fisheries information and knowledge management system and capacitate the KM workers of the national agriculture and fisheries research and development sector.

SEARCA Director Gil C. Saguiguit, Jr. welcomed the participants and acknowledged the full support of BAR to SEARCA's quest for knowledge development. He also expressed his enthusiasm in the KM initiative and looked forward to a flourishing partnership between BAR and SEARCA.

In response, BAR Director Nicomedes P. Eleazar affirmed the benefits of having the KM training, particularly in capacitating the information and knowledge workers of the entire DA. He also mentioned that the KM project is in line with the bureau's function as a steward of funds for the national agriculture and fisheries R&D. "We are making R&D relevant to the public not only through funding support, but also by processing research results into knowledge worthy of sharing among the sector's stakeholders," he stressed. He further articulated the important role of KM in connection with the latest initiative of BAR which is the crafting of a compendium of all R&D projects funded by the bureau. He asked that all information officers and writers in the region be tapped and be involved in the activity. "This will serve as a concrete proof of what we have done in research and development," Director Eleazar added.

Ms. Julia A. Lapitan, head of the Applied Communication Division of BAR, provided the rationale of the training program and likewise introduced the participants.

Dr. Alexander G. Flor, KM Capacity Development expert and faculty member of the Open University, served as the resource speaker for the training. Ms. Emely M. Amoloza, KM training facilitator, explained and presented on the "Development of the Knowledge Capture Algorithm in a Development Assistance Project," wherein she highlighted the documentation of procedures and tools used for the knowledge capture and development of algorithm for knowledge capture of KM practitioners. Dr. Lope B. Santos III, OIC of the Project

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(Seated at the front row, L-R) SEARCA-Project Development and Technical Services OIC Lope B. Santos III, SEARCA-Research and Development Program Head Bessie M. Burgos, BAR Director Nicomedes P. Eleazar, SEARCA Director Gil C. Saguiguit, BAR-Applied Communication Division Head Julia A. Lapitan, and KM Capacity Development Expert Alexander G. Flor with the participants in a photo opportunity PHOTO COURTESY OF SEARCA

Regional Seminar Series

# BAR supports Eastern Visayas' rehab efforts












PHOTOS:RBERNARDO/NDELROSARIO/LBARRAL/ABRION

# through livelihood-inspired seminars

Since the massive devastation of Typhoon Yolanda in 2013, the entire Eastern Visayas region is working in partnership with various government agencies, non-government organizations (NGOs), and local government units (LGUs) to intensify and fast track its rehabilitation efforts especially in the farming communities.

In response, the Department of Agriculture-Regional Field Office 8 (DA-RFO 8) supported the "Uma-Ahon Initiative" launched in February 2014. The program aims to restore the agriculture sector of Eastern Visayas by extending rehabilitation assistance to Typhoon Yolanda-affected farmers and by promoting its priority commodities and providing support along the value-chain including rural infrastructure, among others.

Also helping in the rehabilitation efforts is Sister Eloisa David, Order of Saint Benedict, of the Agricultural Rural Alternative Development Options Foundation, Inc. who is facilitating livelihood and technical assistance to individual farmers and farmer cooperatives affected by Typhoon Yolanda. "Nakita ko na kailangan ng mga tao ang pagkain, so I want to go into agriculture," Sister Eloisa explained. With the support of various organizations, she was able to introduce other agricultural technology interventions to farmers, provide equipment, and establish processing facilities for sustainable production and increased livelihood. Given the continuous initiatives, Sister Eloisa realized the need in addressing food sustainability at the household level and providing alternative source of income for the community.

In response to the concern, the Bureau of Agricultural Research (BAR), in collaboration with DA-RFO 8, conducted its 2nd Regional Seminar Series on Edible Landscaping (EL), SNAP Hydroponics, and Soybean Production and Processing on 7-9 April 2015 at Divine Word Hospital, Tacloban, Leyte. Dr. Elvira Torres, regional technical director for Research, officially welcomed the participants from the municipalities of Jaro, Babatngon, Divisoria, Pastrana, Tacloban, Alang-Alang, Tunga, and Ormoc. Sister Eloisa gave an inspirational message reassuring her continuous support not only to the farming communities, but also to the ongoing rehabilitation efforts of the DA.

Dr. Fernando C. Sanchez, Jr., chancellor of the University of the Philippines Los Baños (UPLB), discussed on the importance of EL, specifically in maintaining food security at the household level. The resource speaker also discussed the different principles and elements of design such as form/shape, size, texture, color, line, balance, contrast, emphasis, harmony, and scale and proportion. Ms. Eliza C. Aquino and Ms. Maria Charito E. Balladares, also from the EL Team, discussed the design and implementation phase, specifically the considerations in choosing hardscapes and softscapes as well as the use of companion crop table which indicates the set of crops applicable in one cropping season. Tips on proper nutrient and pest management were also given by the resource speakers. For practical application, the participants engaged in a series of group activities such as "basic art class" using the principles and elements of design, creation of base map and master plan, and the actual implementation of EL garden located within the vicinity of the Divine Word Hospital.

Mr. Ricardo Bernardo of BAR-Applied Communication Division discussed the SNAP Hydroponics and its advantages, as well as the materials needed in utilizing the technology. He also demonstrated on how to prepare the proper medium and ratio of SNAP solution. Some of the participants had a hands-on training in preparing the styropor boxes and cups as well as transferring the seedlings to the prepared medium.

Final lecture on Soybean Processing Technologies was given by Ms. Jennilyn Castañeto of BAR-Technology Commercialization Division. For the participants to appreciate the importance of producing and processing soybeans, she first discussed on the various health benefits of soybean to human health. Value-adding technologies were also presented by introducing different soybean recipes. For their final output, the participants were divided into groups and created soybean food products like soymilk, milkshake, burger patty, cupcake, and soy balls.

During the closing ceremony, Information Education and Communication (IEC) materials were distributed to the participants including brochures, flyers, magazines and technology guides. SNAP Hydroponics solutions were also provided to the participants for initial technology application. ###

***(Liza Angelica D. Barral)***