BAR joins...from page 8

Guests of honor, DA Secretary Proceso J. Alcala, Philfoodex President Roberto C. Amores, Ilocos Norte Governor Imee Marcos, and Senator Francis Pangilinan grace the stage for the ceremonial ribbon cutting to formally open the Food Expo 2012. PHOTO BY ZREYNOSO

exports of food."

Apart from the exhibits, seminars, special events and demonstrations also took place during the expo. Competitions on food styling, photography, table setting and cooking were among the special events participated by enthusiasts all over the country.

Exhibit on edible landscaping

DA-BAR-funded project on Edible Landscaping headed by Dr. Fernando C. Sanchez, Jr. of the University of the Philippines Los Baños (UPLB) was exhibited during the expo. A full garden décor with gazebo and light design sat near the entrance of the main exhibit hall. Pineapple, tomato, lettuce, and even *Adlai* crops adorned the garden to demonstrate that functionality (i.e., edible) can (and should) replace ornamental landscaping. Apart from the obvious aesthetics, home-grown fruits, vegetables, and herbs will constitute a healthier diet for you and your family.

Inside the gazebo, BAR showcased products from *sapinit* including jam, juice and wine and products from arrowroot (*uraro*).

A seminar and techno demo on edible landscaping, food products from *sapinit, uraro* and *adlai* were also held during the stretch of the expo, facilitated by UPLB (for edible landscaping) and BAR (for the other seminars). *(Zuellen B. Reynoso)*

Reference:

PhilFoodEx. 2012. 11th Philippine Food Expo 2012. From Farm to Fork: The Best Philippine Food Products of the World. Retrieved from http://www.philippinefoodexpo.com/organizers.html

BAR's 25th...from page 1

Philippine agriculture. Green represents the crops sector—the largest sector comprising rice, corn and high-value crops including our export champions. Blue represents the aquaculture and fisheries sector and brown for the livestock and poultry sector. Like a growing plant, BAR, as the research funding arm of the Department of Agriculture (DA), continues to nurture the growth of these sectors as manifested in the upright directions of the leaft sheaths. The text engraved in the logo: "Celebrating R&D Excellence" reflects the theme of the celebration which has also became a mantra of the bureau as it continues to strive to cut above the rest. The inscript, "25 years" shows what the bureau has so far accomplished, emphasizing on the number "2" to highlight the two fruitful decades that passed. Together, each of the elements captures what BAR stands for in years and in colors. And with the festive and bright colors reflected in the logo, is a jovial aspiration of a hundred more years that await the bureau!

The anniversary logo and the adopted theme will be affixed in all BAR communications and related printing materials for whole year. *(Patrick Raymund A. Lesaca)*

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BAR's 25th anniversary celebration kicks-off with the unveiling of logo

The Bureau of Agricultural Research (BAR) is celebrating its 25th year! Carrying the theme, "BAR@25: Celebrating R and D Excellence in Agriculture and Fisheries" the celebration was highlighted with the unveiling of the silver anniversary logo. Leading the unveiling were BAR Director Nicomedes P. Eleazar and Asst. Dir. Teodoro S. Solsoloy who were joined in by the BAR family in the celebration.

As a staff bureau of the Department of Agriculture (DA), BAR was established to lead and coordinate the agriculture and fisheries research and development (R&D) in the country. Specifically, it is tasked to consolidate, strengthen, and develop the R&D system to improve its effectiveness and efficiency by ensuring customer satisfaction and continuous improvement through work excellence, teamwork and networking, accountability and innovation.

The grand launching commenced with a thanksgiving mass officiated by Rev. Father Faustino Martin of the Congregation of the Mission who commended the bureau on its efforts under the leadership of Director Eleazar. Fr. Martin added that the harmonious relationship of the management and staff is a key ingredient for the successful implementation of the major R& D programs in the country. "Personal sacrifice coupled with good works and dedication to work will help the country in the effort of nation building", said the celebrant.

Providing the inspiration message, Director Eleazar acknowledged the contributions of staff for what the bureau has achieved so far. He said, "this is not only BAR's anniversary, but your anniversary as well. You and I are responsible for shaping this bureau for what it is now." He also commended the pioneers of the agency since its establishment in 1987. "Feel proud of your individual accomplishments. After all, our individual and collective actions reflect the kind of mission we all believe in and that is to empower the country's marginalized sector," Boss Nick concluded.

Highlighting the celebration was the unveiling of the BAR Silver Anniversary Logo:

The silver anniversary logo of BAR reflects how far it came in its quest to be an effective and efficient player in the agriculture and fisheries Research and Development (R&D) sector. The three leaf sheaths at the right side represent the three major sectors that contribute in the total production of the

turn to page 16

IN THIS ISSUE...

Eleazar visits UPLB to assess needed inst'l dev't support

The Bureau of Agricultural Research (BAR), as the mandated national coordinating agency for agriculture and fisheries R&D of the Department of Agriculture (DA), recognizes the vital role that state universities and colleges play in revitalizing and strengthening the agriculture especially in the realm of research, development, and extension (RDE).

The University of the Philippines Los Baños (UPLB), known to have emerged as one of the leading academic institutions in Southeast Asia, is one of the institutions that are in constant partnership with the bureau. Recognizing the expertise that the members of the university faculty have, especially in the field of agricultural RD&E, the bureau also requested several experts from the university to be members of the BAR Pool of Experts.

Dr. Segfredo R. Serrano, Undersecretary for Policy, Planning, Research and Regulations of the Department of Agriculture, likewise recognizing UPLB's role in advancing and reinforcing excellence in agricultural RD&E, sought to discuss important matters on further improving the university's instruction in the agricultural RD&E with the newly proclaimed chancellor of the university, Dr. Rex Victor Cruz.

(L-R) Dr. Nicomedes P. Eleazar, director of BAR and Dr. Rex Victor O. Cruz, chancellor of UPLB.
PHOTO BY MVALDEABELLA

With this, Usec. Serrano instructed BAR Director Nicomedes P. Eleazar to convey his message and instructions for the university as well as to conduct site visits on different infrastructure and facilities that the university has. Hence, a team from BAR, headed by Director Eleazar, went to UPLB on 1 February 2012.

The BAR team, assisted by UPLB Chancellor Rex Victor Cruz, Vice-Chancellor for RDE Ma. Victoria Espaldon, deans and other staff of the visited colleges, conducted field visits and site inspections through the various facilities/laboratories of UPLB.

The itinerary started with the visit to the Tissue Culture and Molecular Laboratory of the Institute of Plant Breeding (IPB). Last 2012 January 28, the National Plant Genetic Resource Laboratory (NPGRL) was burnt down

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small farmers, the FFF together with the Coconut Industry Investment Fund Oil Mills Group (CIIF-OMG) joined to implement the Coconut Farm Development Program (CFDP). The program aimed to establish coconut nurseries that will be ready for transplanting. From this program, 21 anchor farms are due to transplant 100,000 seedlings each for the 1,000 hectares for each anchor farm site. This totals to 21,000,000 seedlings planted to around 21,000 hectares of farm. The coconut nursery component of this ongoing program of FFF was used for the implementation of the Mykovam project.

With the assistance of experts from BIOTECH, 54 farmers representing 17 CFDP anchor farms in 10 provinces nationwide were oriented and trained on the nature and characteristics of Mykovam and on-site demonstration on its application.

From the 17 anchor farms which were used as trial farms to determine the efficacy of Mykovam in coconut, 14 are farmer-managed while three are scientist-supervised. Likewise, a field testing procedure using indicators was designed to regularly monitor the efficacy of Mykovam on the growth and development of the coconut trees.

The three scientist-managed trial farms were established in 1) Lucban, Quezon; 2) Calape, Bohol; and 3) Ipil, Zamboanga Sibugay. Meanwhile, the 14 farmer-managed trial farms were established in: Quezon (Agdangan and Unisan); Camarines Norte (Daet); Occidental Mindoro (San Jose); Negros Oriental (Bacong); Southern Leyte (Bontoc); Bohol (Talibon and Sagbayan); Cebu (Barili and Bobon); Compostella Valley (Nabunturan), Agusan del Sur (San Francisco); and Zamboanga Sibugay (Alicia and Imelda).

The owner of the farmer-managed trial farms attended the training-seminar organized by BIOTECH on the appropriate use and application of Mykovam to their coconut plantation. Based from the observations of the farmers during the training, they designed their trial farms.

An experiment including grown coconut trees was added to the farm trial in Calape, Bohol to complement the experiment with the coconut seedlings which will not reach production stage during the duration in which the project was being implemented.

To determine the effectivity of Mykovam, a farm technician regularly records the changes on the growing plants using a monitoring sheet provided by BIOTECH.

Among the indicators that must be noted and monitored included: leaf growth, increase in girth, and increase in height. To validate these observations, meetings in the field were also conducted.

Dr. Zarate of UPLB BIOTECH, who also served as the supervising scientist for the project, conducts quarterly monitoring of these trial farms.

Benefits: The Bohol farm trial

As farmer-cooperator for the project and manager of their trial farms, 300 kg of Mykovam was distributed to the 17 CFDP anchor farms, and 50 kg of another farm supplements were used.

According to Ms. Amihan M. Jonos, project coordinator from FFF, "initially, the project was borne out of a need to help farmers, particularly in Bohol, by introducing to them Mykovam in enhancing the growth of their coconut plantation and thereby improve their production. Another is to help them ease the burden on buying expensive chemical fertilizer."

"Our first goal is to determine how we can lower the price of fertilizer for our coconut farmers and improve their productivity and profit, and second is for coconut farmers to become less dependent on chemical fertilizer given its environment impact and its implication on climate change. We want to teach the farmers the importance of going back to basic," she explained.

In Bohol three Mykovam trial farms were established: Calape, Talibon, and Sagbayan. The Calape Mykovam trial is scientist-supervised. Each trial farm was introduced with different interventions like Mykovam only, Mykovam with chicken manure, and Mykovam with salt fertilizer.

According to Jonos, "in three years of the project we saw the effect of Mykovam with salt fertilizer and comparing it with the control farm, we can say to our farmers of the good result of combining Mykovam + salt fertilizer to coconut plantation particularly here in Sagbayan, Bohol. Meanwhile, in Calape, Bohol we introduced several interventions. Aside from Mykovam we also determined its effectivity with complete fertilizer, urea, and sodium sulfate and *bokasi* (compost fertilizer combining guano, chicken manure and worms)."

This was affirmed by Dr. Zarate. She said, "although it's only been three years, the result in Calape is promising both for the seedlings and the trees. Before we applied Mykovam, the coconut trees do not even have flowers, after three years, the trees are bearing nuts."

Significant findings showed that after three years, the best interventions in Sagbayan is Mykovam + salt while in Calape, the best combination is Mykovam + *bokasi*.

The project is on-going in Bohol. Particularly in Talibon, farmers continue to apply Mykovam and Mykovam + chicken manure and in Calape. Mykovam are applied both to the seedlings and grown coconut trees. Farmers in Sagbayan also use Mykovam in fruit trees and rice field as they have witnessed the efficacy of the biofertilizer in terms of production. According to farmers who have used it, Mykovam is much safer and cheaper than using chemical fertilizer.

Jonos also reported that in Calape, the farmers are not only using Mykovam but they are also distributing it to other municipalities for them to try it.

Mr. Rufino Buladaco, a farmer cooperator in Calape, noted how the Mykovam project was able to help them, "were provided with the inputs and technical assistance from the project. Through this, we were able to profit financially." Buladaco added that, "we hope that there will be more training that we could attend on various agricultural techniques so that we could improve further our production and increase our income."

Meanwhile, Mr. Norberto Bague, manager of the Catmonan Coconut Farmers Cooperative, explained how the project was able to help their members not only in terms of learning new techniques in coconut production but also improving their income and source of livelihood. ###

Mykovam: Effective growth enhancer for coconut

Text and photos by:
Rita T. dela Cruz

The Philippines, being a tropical country, is well-known for its coconut trees. Although abundant with coconut plantations, this does not necessarily amount to high productivity level. Studies showed that productivity level remains low in majority of the coconut planting areas in the country. This, according to earlier studies, was attributed to the lack of information on appropriate technologies for coconut farming, continuing land transformation of agricultural areas into industries resulting to an urgent need to produce more on less available land hence, higher cost of production due to expensive chemical inputs.

In a bid to reinvigorate the coconut industry and to provide farmers with better income, the Federation of Free Farmers (FFF), in collaboration with the experts from the University of the Philippines Los Baños-National Institute of Molecular Biology and Biotechnology (UPLB-BIOTECH) and with funding from the Department of Agriculture-Bureau of Agricultural Research (DA-BAR), implemented the project, "Observing the Efficacy of Mykovam on Coconut Seedling in Coconut Farm Development Program (CFDP) Anchor Farms".

The project, implemented in November 2008, was specifically aimed to document the effectivity of Mykovam on coconut seedlings and trees under field conditions in various parts of the country and to engage organized farmers in methodical crop-related experiments for future farm trials.

What is *Mykovam*

Mykovam is a fungi-based bio-fertilizer developed by UPLB-BIOTECH. This mycorrhizal innoculant is composed of spores, infected roots and other infective propagules of endomycorrhizal fungi.

When applied, it is estimated to replace 60-85 percent of the plants' chemical fertilizer requirement. Results of laboratory tests have also showed that Mykovam is an efficient bio-fertilizer input for high value crops, ornamentals, fruit crops, and forest trees. But how does Mykovam work?

According to Dr. Jocelyn T. Zarate of UPLB BIOTECH, when innoculated to seedlings the fungi infect the roots and help absorb water and nutrients, particularly phosphorus, which is needed by the plant. The fungi also prevent root infection by pathogens and increase plant tolerance to drought and heavy metals.

Although, there has been earlier studies shown on the efficacy of Mykovam to crops, ornamentals, and forest trees, none has been scientifically established on its effect to coconut trees, hence this project.

How the FFF project came about

A national organization of

due to faulty electrical wirings. The equipment and infrastructure of the facility, especially those in the second level of the building, have been damaged. While there were still some equipment recovered, these are not sufficient for the facility to be functional again. Large-scale renovation procedures and procurement of new equipment are thus needed.

Also, in the Institute is the Cold Storage Laboratory which needs full furnishing and finishing (paintworks). It should, however, be noted that a total of PhP 19 M had been granted as BAR-Institutional Development Grant (IDG) support to IPB before it suffered from flooding in 2009.

The inspection proceeded to the Institute of Animal Science (IAS) with the Animal Nutrition Laboratory and Animal Husbandry as focal points. Equipment upgrading, roof rehabilitation, repainting works, repair of broken laboratory equipment, and procurement of additional tools and materials for the laboratory were some of the observed rectifications to be done.

Similar remarks were examined at the following institutes namely: Dairy Science and Training Research Institute (DTRI), Institute of Mathematical Sciences and Physics (IMSP), Institute of Chemistry (IC), Institute of Biological Sciences (IBS) and School of Environmental Science and Management (SESAM), wherein repairs on ceiling and lighting fixtures, installation of stainless steel cabinets/compartments, and exhausts, and tile works are needed.

In the Dairy Science Training and Research Institute (DTRI) of the Institute of Animal and Dairy Science Cluster (ADSC), the team met with Dr. Olivia C. Emata, head of the Dairy Products and Technology Development Division of the ADSC-UPLB. Dr. Emata discussed the current facilities and equipment of DTRI, including the new cold storage room that has a capacity to preserve various dairy products.

In terms of product development, it was suggested that the products need further improvement particularly with its packaging design. The dairy products produced by DTRI have a high potential in competing with the current products in the market in terms of quality. It will further help if the packaging and labeling of the products would undergo enhancement and improvement. Through this, it will be easy for the product to penetrate the market through promotion and compete with existing dairy product producers. It can also increase the shelf life of the dairy products. To address the issue, Dr. Emata confirmed that she will be sending proposal to DA-BAR regarding product development.


Dr. Eleazar and BAR Team visited the National Plant Genetic Resource Laboratory which was burnt down on 2012 January 28 due to faulty electrical wirings . PHOTO BY MVALDEABELLA

At the Institute of Biological Sciences (IBS), the Entomology Department of the Crop Protection Cluster of the College of Agriculture was also inspected and found to have limited equipment as well.

In the Soils Analysis Laboratory at Agronomy Building of the Crop Science Cluster, a promising innovation was conceptualized by experts, which is to be named as "Mobile Soils Analysis Laboratory." An on-site service by a fully equipped research laboratory is visualized to be contained in a vehicle.

The researchers from the School of Environmental Science and Management (SESAM) also have plans of carrying out a "Roving Laboratory" for Risk Reduction Management, which is seen to be significant in the Climate Change program.

The last stop of the field visit was concluded at the College of Forestry and Natural Resources (CFNR), where the laboratory facilities in its vicinity were the prospects for Institutional Development Support and Assistance.

Done to assess and evaluate the potential IDG support, specifically for infrastructural improvement and procurement of advanced equipment/facilities that the bureau may provide to the said agency, possible project proponents were encouraged to submit IDG proposals. (*Mara Shyn M. Valdeabella)*


Dr. Eleazar visiting the various institutions around the UPLB campus. PHOTOS BY MVALDEABELLA

BAR intensifies Organic Agriculture Program, funds 7 UPLB projects

Representatives from BAR, NOAB, and BAFPS visiting the organic experimental area at UPLB.
PHOTO BY LPADILLA

Ever since the passage of the Republic Act 10068 or Organic Agriculture Act of 2010, various initiatives on Organic Agriculture (OA) have been implemented, cutting across all sectors in agriculture and fisheries.

In view of this, the Bureau of Agricultural Research (BAR), as the national focal agency for the research and development (R&D) of OA, has been supporting and funding seven projects on this initiative.

Implemented by the University of the Philippines Los Baños (UPLB), the seven OA projects and their proponents include:

- Evaluation and Utilization of Organic Waste (Corn Cob) as Substitute for Carrier in Bio-N Production – Dr. Julieta Anarna, National Institute of Molecular Biology and Biotechnology (BIOTECH);
- Technology Promotion of Vesicular Arbuscular Mycorrhizal Root Inoculant (VAMRI) in Regions IV-A and IV-B in Different Cropping and Plantation Systems – Dr. Marilyn Brown, BIOTECH;
- Protocol Improvement and Product Development of Liquid Organic Fertilizers from Fermented Plant Extracts (FPEs) and Other Biological Concoctions – Dr. Mannix Pedro, BIOTECH;
- Sustainable Community-based Commercialization of Organic Vegetables while Promoting Food Security and Food Safety at Barangay Level – Dr. Blesilda Calub, College of Agriculture-Agricultural Systems Cluster (CA-ASC);
- Postharvest Quality and Safety Management of Organically-grown Fruits and Vegetables – Dr. Dormita Del Carmen, CA-ASC;
- Bio-Enterprise Development in Organic Agriculture Sector through Public-Private Partnership: Action Research, Policy Analysis and Advocacy, and Entrepreneurship Training Program – Dr. Isabelita Pabuayon, College of Economics-Institute of Cooperatives and Bio-Enterprise Development (CEM-ICOPED); and
- Development of Strategies and Support Systems for Farmers in Conversion from Conventional to Organic Agriculture – Dr. Lucille Elna de Guzman, CA-CSC.

To oversee the direction and ensure the smooth operations of these projects, representatives from the National Organic Agriculture Board (NOAB), BAR, and the Bureau of Agricultural and Fisheries Product Standards (BAFPS) visited and met with the pioneers of the OA projects at UPLB on 28 February 2012.

As stated in the Implementing Rules and Regulations (IRR) for RA 10068, NOAB serves as the policy-making body for the Act providing direction and general guidelines for implementing the National Organic Agricultural Program. Meanwhile, BAFPS "shall be strengthened and empowered in terms of establishing functional divisions and incremental staffing to serve as the national technical and administrative secretariat of the NOAB with the member agencies providing additional staff support as the need arises".

Pioneers of the seven organic agriculture projects were invited to present an overview of their research. Most of the projects have already started but some are just recently approved and being implemented.

Present during the visit was Dr. Oscar B. Zamora, UPLB Vice Chancellor for Instruction, who opened the activity with the discussion of the organic agriculture program in UPLB, emphasizing on strengthening the prioritization of scientists, researchers, and the academe on organic agriculture. "We are currently packaging a proposal to set-up a national organic agriculture center in UPLB," he said.

Dr. Ma. Victoria O. Espaldon, UPLB Vice Chancellor for Research and Extension, also participated in the activity and stressed the importance of research and extension in facilitating the development of the organic agriculture.

After the presentations, the representatives from BAR, NOAB, and BAFPS went to visit the organic experimental areas in CA-ASC, the organic vegetable production sites in CA-ASC-IPB, and the Bio-N, VAMRI, and MykoVAM production laboratories in BIOTECH.

Since the pioneers reported that their projects are being implemented effectively, the feedback and suggestions of the visitors revolved around the monitoring of the projects and the awareness and accessibility of the technologies to the farmers and other concerned stakeholders. *(Leila Denisse E. Padilla)*

BAR asst. chief presents updates on R&D programs and climate change

BAR Asst. Director Teodoro S. Solsoloy

PHOTO BY ELACAMBRA

To update the sector on the recent programs of the Bureau of Agricultural Research (BAR), Assistant Director Teodoro S. Solsoloy presented the bureau's Research and Development (R&D) Programs and updates on climate change during the recently concluded "R&D Review and Planning Workshop of the Mariano Marcos State University (MMSU)" on 9 February 2012 in Batac, Ilocos Norte.

In his presentation, Dr. Solsoloy encouraged the researchers and other participants to submit proposals under the following priority programs: 1) Agriculture and Fisheries Modernization Act (AFMA), and 2) Agri-Pinoy Program which encompasses rice, corn, high-value crops, and organically grown food. He further emphasized that all proposals must be directly addressed to BAR Director Dr. Nicomedes P. Eleazar to ensure that the submitted documents will go through proper screening and evaluation by a set of technical experts.

Climate change, as defined in the presentation of Dr. Solsoloy, is a major change in the average pattern of weather over a long period of time. He also differentiated the difference between climate and weather describing the former as an average of weather over time while the latter as a condition that is unpredictable that could change from time to time.

Moreover, he emphasized on *greenhouse gases* (GHGs) which act as insulating blanket that keeps Earth's surface warmer. GHGs such as carbon dioxide, methane, nitrous oxide, and chlorofluorocarbons (CFCs) are affected by human activities. Some of these are the over-use of fossil fuels, reduced number of trees, among many others. Another type of GHG is water vapor which becomes clouds in the atmosphere. Unlike the previously mentioned gases, vast changes in the amount of water vapor is believed to be caused by natural phenomena rather than by man-made disturbances.

He also said that if the society will slow down use of fossil fuel, there will be little reduction in the rate of global warming in the first couple of decades but the so-called global warming later this century and beyond would be significantly reduced. With this statement, he invited researchers to revisit or continue to make researches using locally available crops like sweet sorghum which was pioneered by Dr. Heraldo Layaoen. As cited in previous reports, this crop has been known to possess huge potentials not only in alternative fuel or bioethanol but also as source of food and feeds.

An open forum was conducted after his presentations on R&D Programs and Climate Change. Some of the suggestions included possible social-researches, maximizing the use of corn carcass, marine-researches such as coral implants, among many others. In his response, Dr. Solsoloy mentioned that researches should be aligned with the priorities of DA-BAR particularly on the Climate Change, Research, Development and Extension (RDE) Agenda and Program for Agriculture and Fisheries which is anchored on two pillars-adaptation and mitigation strategies.

Dr. Solsoloy was also invited at the 14th Anniversary of Cotton Development Authority (CODA) on 10 February 2012 to present the Science of Climate Change. *(Jacob Anderson C. Sanchez)*

PHOTO BY NDELROSARIO III

BAR Asst. Director Teodoro S. Solsoloy

Solsoloy speaks on strengthening partnership in R&D

Bureau of Agricultural Research (BAR) Asst. Director Teodoro S. Solsoloy served as the keynote speaker of two simultaneous celebrations: the 36th University of Southern Mindanao Agricultural Research Center (USMARC) and the 26th Philippine Industrial Crops Center Institute (PICRI) on 2 February 2012. This was held at USM, Kabacan, Cotabato with anniversary celebration's theme "Strengthening partnership in R&D for sustainable agriculture".

The activity was attended by representatives from the Department of Agriculture (DA) regional offices, staff bureaus, attached agencies, organic farming enthusiasts, faculty, researchers, extensionists, students and other stakeholders.

In his speech, Dr. Solsoloy emphasized the strong partnerships among BAR, USMARC, and PICRI in bringing remarkable development in Philippine agriculture. He further stressed that sustainable agriculture is a complex concept which involves everything that belongs in the food system which work together to bring economically viable opportunities, environmental and socially safe food for everyone.

An important insight he shared BAR's institutional linkage with the academe such as USM and non-government organizations, different research institutions and civil societies of the country. This to him are the core values that BAR has high respect since without the support of these institutions, the success rate of the bureau's core program will be in vain.

Dr. Solsoloy also informed the audience that the Philippines now seats as a member of the International Rubber Research Development Board (IRRDB) wherein it recognized the country's potential to upscale rubber production. He commended the significant accomplishments of USMARC and PICRI particularly in rubber research and development.

Rubber (*Hevea spp.)* has significant value in textile industry because of its excellent elongation and recovery properties. A typical example of this is the clothing that we wear. This crop is also known to be used in vulcanization or the manufacture of vehicle tires we use in transportation. He also mentioned that it has created jobs for local farmers, thereby, recognizing its regional importance.

As previously reported, rubber has a strong capability to store soil organic carbon. Importantly, rubber plantations explore its economic importance through Carbon Sequestration and Trading. In the Philippines, he cited that some companies that manufacture tires and cars have already looked into this business venture.

Asst. Dir. Solsoloy commended the exhibit of developed products and conduct of farmers' forum. Research findings of the aforementioned research stations include rubber, cacao, oil palm, root crops, fruit crops, and spices which contributed to sustainable source of food and industrial raw materials.

However, he cited that the country is still behind compared with other neighboring countries which have better facilities for conduct of experiments particularly in rapid detection of potential diseases. As a general information, molecular tools used in diagnostics as preventive measure and early detection of pests/diseases can be an instrument of immediate information dissemination on possible action to be taken by farmers. He believes that this kind of researches will minimize if not to totally eradicate, the damaging effects of pests and diseases.

Dr. Solsoloy said that other constraints include the limited number of technical experts with knowledge, experience, and training in performing molecular researches. Recognizing the previously stated facts, BAR provided reasonable amount of research funds specifically on Institutional Development Grants (IDG) to fulfill their mandate in research particularly on crops that would benefit and sustain the needs of the Region 12 and of the Philippines in general.

Through the pioneering program of BAR and University of the Philippines National Sciences Research Institute (UP-NSRI), BAR helps researchers particularly those who would like to apply for post-doctoral and senior scientist research fellowship in basic research. Included in the research are degree courses in any agriculture allied fields while non-degree courses include local and international trainings. Dr. Solsoloy believes that the development of human resource can boost the technology in areas requiring immediate concern. *(Jacob Anderson C. Sanchez)*

> ***"...sustainable agriculture...involves everything that belongs in the food system which work together to bring economically viable opportunities, environmental and socially safe food for everyone.***

BAR supports UPLB R&D

Eight projects implemented by the experts of University of the Philippines Los Baños (UPLB) had been visited and monitored on 9-10 February 2012. This is part of regular activities done by the Bureau of Agricultural Research (BAR) to its funded projects to assure that the projects are being implemented accordingly and the funds downloaded is being used efficiently.

As the premier academic institution on research and development (R&D) in agriculture, UPLB is no doubt conducted wide arrays of R&D projects and programs that will ensure and strengthen the agricultural productivity as well as placing the country as the leader in agriculture R&D innovations. With the UPLB's non-stop fulfillment of its R&D endeavors, BAR, as the national arm of R&D in agriculture, continuously supported the initiatives of UPLB.

The eight projects visited cover the biotechnology, climate change, utilization of by-products, and indigenous plants, among others.

Mr. Jiamy Jae Apacionado (left) of BAR-PMED and Dr. Pablito Magdalita of UPLB during the M&E of the project, "Selection/breeding known Drought-resistant, Pest/disease resistant and Flood-tolerant Species for Climate Change Adaptation".
PHOTO BY DDELEON

Natural colorants from indigenous plants

As colorants come synonymously with attractiveness and palatability, Filipinos are fond of putting colors to their foods. However, some of the commercially available colorants are hazardous to health especially when eaten. With this, project proponent Prof. Lourdes B. Cardenas of Institute of Biological Sciences is adamant to her belief that Filipinos should be provided with safe foods. This is only possible if the colorants used come from a natural source - the plants which are abundantly available in the country. Using biotechnology as a tool to explore the potentials of plants as source of natural colors, Prof. Cardenas with her team started the project titled "Biotechnology in the Utilization of Natural Colors from Indigenous Plants."

The project aims to identify indigenous plants with health benefitting natural colors and to develop technologies in utilizing them. The project is part of the BAR's Indigenous Health and Wellness Program (IHWP) which underscored the utilization of indigenous plants in promoting health and wellness in the country.

Seed morphology and germination of indigenous and exotic fruits

Benchmark literature for seed morphology and seed germination for most of indigenous and exotic fruits in the country is sparse. This inspired Professor Emeritus Roberto E. Coronel and his colleague Prof. Rachel C. Sotto to conduct the characterization of fruit's seeds.

Seventy-five ripe fruit species were collected and evaluated for the duration of the study. The seeds were collected and its morphological characteristics (number, weight, shape, color, length, width and thickness) and seed germination (percent germination, number of days from initial to final germination, type of germination, and type of embryony) were recorded.

Based on the results of the study, in terms of morphology, durian is the largest fruit and has the highest flesh weight. *Linawin* is the smallest fruit. *Sapinit* and *lovi-lovi* have the two highest edible portion while granadilla has the lowest edible portion. In terms of seed germination, there are 20 fruit species which has 100 percent germination rate. This includes avocado, miracle fruit, rambutan, etc.- the lowest germination was observed in *bamban*.

Moreover, through the bureau's Special Publication Grant, Dr. Colonel is able to publish a book titled Important and Underutilized Edible Fruits of the Philippines.

Banana peduncle utilization

Another unique project supported by BAR is the banana peduncle project of UPLB-BIOTECH.

Peduncle is the stalk or a stem supporting an inflorescence. Commonly, peduncle is treated as a waste after removing the banana bunches. Having no formal study on the uses of peduncle, this pushes a group of researchers in BIOTECH headed by Ms. Mary Ann T. Tavanlar to conduct a thorough study to answer the question if the banana peduncle is to waste or not to waste.

It is found out that peduncle fiber has good elasticity, quick to absorb moisture and has high water- and oil holding capacities. The study also covers processing the peduncle into pulp and paper, fiberboards, fiber mats, peduncle juice (which is high in sodium and potassium), burger patties for dietary fiber, and as bio-fertilizer.

Other projects monitored are: 1) Somatic embryogenesis from cell suspension cultures of banana and somatic embryo germination and regeneration in banana and abaca Phase III; 2) Development of immunoassay methods for analysis of pesticide residues from mango and okra; 3) Development of abaca cultivars with resistance to major abaca viruses through mutation breeding; 4) Seed production of open pollinated varieties of tropical vegetables, and; 5) Selection/breeding known drought-resistant, pest/disease resistant and flood-tolerant species for climate change adaptation. *(Diana Rose A. de Leon)*

Local adaptability testing of imported crops assessed

In line with the goal of introducing Philippine's high value crops to Singapore, representatives from the Department of Agriculture-High Value Crops Development Program (DA-HVCDP), Bureau of Agricultural Research (BAR), other DA agencies and institutions, state universities and colleges (SUCs), and research institutions convene for a follow-up meeting *cum* workshop to discuss the updates on the adaptability testing of several imported vegetable seeds and the Japanese sweet potato from Singapore under local conditions in the Philippines. The collaborative work between the Philippines and Singapore is set to provide a venue for Filipino farmers to establish markets in Singapore.

To date, DA Regional Field Unit 4A, 5, 10, 11, Tarlac College of Agriculture (TCA), University of the Philippines, Los Baños (UPLB) and Bureau of Plant Industries – Los Baños National Crop Research and Development Center (BPI-LBNCRDC) conducted adaptability testings of the following imported vegetables: chili, cabbage, broccoli, coriander, tomato, lettuce, *pak choi*, okra, eggplant and spinach and as well, sweet potato. Local check plants (control) were also planted side-by-side to determine its competence with that of the imported varieties. As noted, the Singaporean businessmen were also interested with trying out the local varieties which possess the same characteristics of the imported vegetables.

Technology Commercialization Division Head Anthony B. Obligado welcomed the participants. He noted that the Department has committed funds for the technology demonstration was increased to cover activities under the project.

HVCDP Program Director Jennifer E. Remoquillo in her message encouraged participating agencies to commit and help support the project. She also stressed that with continued research, all queries of the Singaporean representatives will be addressed.

This was followed by the presentation of the overview and brief status of the project by Institutional Development Division (IDD) Head Digna L. Sandoval.

HVCDP Program Director Jennifer E. Remoquillo and BAR-TCD Head Anthony B. Obligado discussing the updates of the adaptability trials. PHOTO BY MVALDEABELLA

Adaptability trials of vegetables and Japanese sweet potato from Singapore in STIARC and BPI-LBNCRDC. PHOTOS BY STIARC/BPI

The second day was devoted for the workshop proper wherein the group worked on the Report Format including the parameters to be measured for each commodity. This will be submitted by the implementing agencies.

BAR Technical Adviser Virginia L. Agcopra provided inputs on the parameters to be incorporated with the matrix and report format. Likewise, DA-HVCDP Technical Staff Arianne Aldeza, along with BAR HVCDP Focal Persons Wilbert Newton Pollisco and Gian Carlo Espiritu shared their inputs and recommendations to the group.

Present during the workshop were representatives from Southern Tagalog Integrated Agricultural Research Center (STIARC), Quezon Agricultural Experiment Station (QAES), Bicol Integrated Agricultural Research Center (BIARC), Northern Mindanao Integrated Agricultural Research Center (NOMIARC), Southern Mindanao Integrated Agricultural Research Center (SMIARC), BPI-LBNCRDC, UPLB, and TCA.

In January 2012, Filipino entrepreneur, Mr. Agripino Ferrer Jr., visited SMIARC, QAES, and BPI-LBNCRDC wherein some of the imported vegetable seeds have been planted for adaptability field testings. *(Ma. Eloisa H. Aquino)*

LSPU visits BAR

According to Diogenes Laertius, "The foundation of every state is the education of its youth". True, indeed. The importance of inculcating to the youth the value of education and perhaps a sense of nationalism cannot be over emphasized. Empowering students through the provision of quality education and proper exposure in their chosen field will therefore make the difference. In the case of agriculture and fisheries students, exposing them further will create the needed paradigm and appreciation to agriculture and its discipline.

Hence, the case of the Laguna State Polytechnic University (LSPU) – Los Baños Campus, in which a contingent of approximately 116 agriculture and fisheries students and eight faculty staff of LSPU stormed the Bureau of Agricultural Research (BAR) on 15 February 2012 as part of their educational field trip.

The LSPU is a public university in the Philippines which is mandated to enhance the skills and learning capabilities of the students in agro-fisheries and sciences. The educational field trip is a learning opportunity for the students to learn the intricacies and dynamics of countryside agriculture.

Ms. Julia A Lapitan, head of the Applied Communication Division (ACD), welcomed the visiting faculty and students while BAR Assistant Director Teodoro S. Solsoloy graced the orientation proper. Dr. Solsoloy provided a brief backgrounder on the current thrusts of the bureau by highlighting significant research and development initiatives of BAR. He commended LSPU faculty for exposing their students in their chosen field through the said exercise.

Part of the orientation process involved showing of the BAR Institutional Primer, an audio-visual presentation, encapsulating the current R&D thrusts and programs of the bureau. After the presentation, Ms. Lapitan, in a nutshell, shared the many on-going activities and accomplishments of BAR. She added that the agency is the research arm of the Department of Agriculture (DA). Also present from the BAR family, who also served as resource persons, were: Bernardo Manuel of the Information Management Unit (IMU), Apolonia Mendoza of the Project Monitoring and Evaluation Division (PMED), and Ma. Eloisa Aquino of the Technology Commercialization Division (TCD).

The entire LSPU delegation also visited the R&D Technology Commercialization (TechCom) Center and the Scientific Literature Services (SLS) of the bureau.

Dr. Rosalina V. Bunal, dean of the College of Agro-Fisheries and Sciences, who is also the team leader of the educational trip, extended its appreciation to the bureau for accommodating the group. *(Patrick Raymund A. Lesaca)*

***BAR joins**...from page 7*

In congruence with Dr. Prem Nath, she stressed that in addition to food security, nutritional security to people should also be given equal importance. Food security deals on availability and access to food while nutritional security on availability and access to balanced nourishment in the diet.

For the initiatives of the Philippine Department of Agriculture (DA), she cited the *Oh May Gulay!* Project of Sen. Edgardo Angara on creating public awareness for vegetable production and consumption and the *Gulayan sa Paaralan* project for information and education campaigns. The school garden project reached about more than 8,000 schools as of 2008 and now part of the national school curriculum in the Philippines.

BAR, as the DA lead coordinating R&D agency for agriculture and fisheries, has supported various projects, programs and initiatives on vegetable production in the country. To date, BAR coordinated more than 80 projects (completed and on-going) through downloaded/augmented/funds from the DA-High Value Crops Development Program (HVCDP).

The symposium served as a venue for exchange of information and ideas on the recent researches/technologies/scientific findings in the vegetable sector. This helped establish networks and strengthen linkages in the vegetable industry.

After listening to the presentations, some highlights and recommendations noted by the BAR delegations include:: 1) advocating vegetable production and consumption to address not just food security but also malnutrition; 2) promoting organic farming; 3) enhancing research and extension facilities; 4) increasing investment in R&D; 5) cultivating indigenous and off-season vegetable crops; and 6) formulating and strengthening climate change adaptation and mitigation strategies, among others. These initiatives will result to the improvement in vegetable production and marketing.

During the closing ceremonies, Dr. Robert Holmer of AVRDC served as moderator during the roundtable discussion and symposium synthesis. He noted that vegetables are major contributors for nutritional security. He added that women have significant roles in vegetable production and nutrition.

A follow-through SEAVEG symposium in 2014 was suggested by Dr. Prem Nath which was encouragingly approved by the participants. *(Ma. Eloisa H. Aquino)*

Bangkok to host Horti ASIA 2012, BAR attends press launch

Bangkok, Thailand will host the "Horti ASIA 2012 International Tradeshow for Horticultural and Floricultural Production and Processing Technology" on 9-11 May 2012 This international event is targeting around 8,000 visitors including growers and producers, breeders, representatives from seed companies, food industries, government, and private sectors, and business entrepreneurs from the Association of Southeast Asian Nations (ASEAN) countries.

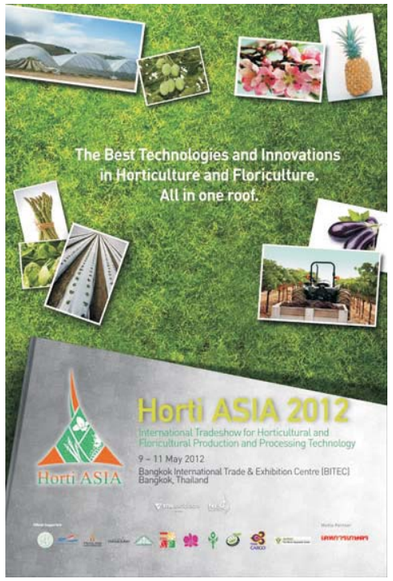
In preparation for Horti Asia 2012, organizers from Thailand, namely: NCC Exhibition Organizer Co., Ltd. (NEO), Thailand Convention and Exhibition Bureau (TCEB), and Thai Fruit and Vegetables Producer Association; and its counterpart in the Philippines, organized a press launch on 10 February 2012 at the Sulo Riviera Hotel, Diliman, Quezon City.

The Bureau of Agricultural Research (BAR) represented by Ms. Rita dela Cruz and Ms. Leila Denisse Padilla of the Applied Communication Division (ACD), Ms. Mara Shyn Valdeabella of the Office of the Director (OD), and Mr. Wilbert Pollisco of the Technology Commercialization Division (TCD), participated in the activity.

The event was opened by Mr. Zac Sarian, editor of the Manila Bulletin AGRICULTURE Magazine, who served as the master of ceremony for the event. Mr. Thanis Na Songkhla, minister of the Royal Thai Embassy-Manila, emphasized the significance of the event, citing common traits between Thai and Filipino cultures and how these similarities can boost the horticulture and floriculture industries in both countries.

Representing Agriculture Secretary Proceso J. Alcala was DA Assistant Secretary for Fisheries/Agribusiness and Marketing Salvador S. Salacup. As he read Sec. Alcala's message to the participants, Asst. Sec. Salacup mentioned the potentials of Philippines' endemic and indigenous crops in the international market. In his own thoughts, Asst. Sec. Salacup stressed that "the Philippines need to catch up" in the export market for it only exports around 4B, while Thailand exports 24B.

Representatives from government and private agencies on agriculture were invited to present relevant information on the topic. Ms.



Josephine T. Garcia of the Bureau of Plants and Industry (BPI) presented "New Trends in Horticulture", Ms. Karen Kristine A. Roscom of the Bureau of Agriculture and Fisheries Product Standards (BAFPS) presented "Agriculture Products Standards Setting in the Philippines", Dr. Vivencio Mamaril of the National Seed Industry Council (NSIC) discussed on how to avail the plant variety protection, and Ms. Kyrah Abad of the Plantmate Organic discussed the benefits of using the "Plantmate Organic Fertilizer".

Ms. Ladda Mongkolchaivivat, general manager of NEO, emphasized that the conduct of HortAsia 2012 will be able promote ASEAN as the leading suppliers of agricultural products with international standard and as a hub of horticultural trade in the region, and be able to link them to other market potentials and opportunities. The tradeshow will likewise, serve as platform for linkage of information and technology sharing, particularly innovations and breakthroughs related to the entire supply chain of horticulture and floriculture industries in Southeast Asia. *(Leila Denisse E. Padilla)*

DA Asst. Sec. Salvador S. Salacup (right) representing Agriculture Sec. Proceso J. Alcala during the press launch. Also in the photo are: Mr. Thanis Na Songkhla (left), minister of the Royal Thai Embassy-Manila and Mr. Zac Sarian (middle), editor of the Manila Bulletin Agriculture magazine. PHOTO BY LPADILLA

BAR joins World Vegetable Center's SEAVEG 2012

The Bureau of Agricultural Research (BAR) participated in the Regional Symposium "*High Value Vegetables in Southeast Asia: Production, Supply and Demand (SEAVEG2012)*" on 24-26 January 2012 in Chiang Mai, Thailand.

Hosted by The World Vegetable Center, in partnership with Thailand's Department of Agriculture (DOA), Vegetable Science International Network (VEGINET), the Horticultural Science Society of Thailand (HSST), the Taiwan Ministry of Foreign Affairs (MOFA) and the Association of Southeast Asian Nations (ASEAN), through the ASEAN AVRDC Research Network (AARNET), the three-day symposium aimed to bring together a wide range of expertise related to the vegetable sector.

There were 205 delegates from 23 countries attending the event. Representing the Philippines was the Bureau of Agricultural Research (BAR) which was composed of: Institutional Development Division (IDD) Head Digna L. Sandoval and technical staffs, Raymond Patrick L. Cabrera of the Planning and Project Development Division (PPDD) and Ma. Eloisa H. Aquino of the Technology Commercialization Division (TCD).

They were joined in by other delegates from the various research organizations, agricultural and environmental agencies, universities, policymakers, private sectors as well as farmers, consumers, and producer groups from Australia, Germany, India, Indonesia, Netherlands, New Zealand, Philippines, Taiwan, Thailand, and United State of America, among others.

Mr. Allan P. Bacho (3rd from left) of DA-RFU 10 received the SEAVEG 2012 Best Oral Presentation Award for his paper. He is also a recipient of the BAR's Non-Degree Scholarship Program. PHOTO BY MEAQUINO

Simultaneous oral presentations of 50 scientific papers were actively participated (divided into three sessions) with 29 posters exhibited on the second day. Among key points of the paper presentations were the latest advancements in vegetable research and development. Likewise, highlights adaptation and mitigation strategies and measures in respect to climate change issues.

Mr. Allan P. Bacho of DA-RFU 10 bagged the SEAVEG 2012 Best Oral Presentation Award for his paper "*Developing Vegetable Etrading: Characterization from the Vegetable Marketing Practices in Northern Mindanao, Philippines*". Mr. Bacho is one of the recipients of BAR's Human Resources Development Program for the Non-Degree Scholarship Program.

(L-R) BAR staff, Ms. Digna Sandoval of IDD, Ms. Ma. Eloisa Aquino of TCD, and Mr. Raymond Patrick L. Cabrera of PPDD join the 205 participants representing 23 countries in the 2012 SEAVEG in Chiang Mai, Thailand.

Promoting vegetable production and consumption

The symposium aimed to "encourage improvement of the sustainability of vegetable production, market access, promotion of vegetable consumption for health and vitality, industry profitability and competitiveness, structural change, and the vegetable industry's reputation in Southeast Asia."

Dr. Prem Nath, former assistant director general of Food and Agriculture Organization (FAO) and chairman of the VEGINET, welcomed the participants and gave an overview of the activity. He emphasized on the role of vegetable production as a supporter for food security, and a major contributor in nutrition by augmenting health improvement.

For the inaugural speech, AVRDC Deputy Director General for Research Jacqueline d'Arros Hughes presented "The nourished millennium: How vegetables put global goals within reach". She cited that "increasing daily intake of green leafy vegetables could significantly reduce the risk of type 2 diabetes and should be investigated further."

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BAR joins 11th Food Expo; edible landscaping highlighted

(left photo) BAR-funded project on Edible Landscaping booth, headed by UPLB sits near the entrance doors of the main exhibition area. (right, bottom photo) Sec. Proceso Alcala visits the BAR booth with ACD Head Julia Lapitan assisting him. Also in the photo is Yazaki Torres owner, Mr. Feliciano Torres. PHOTOS BY ZREYNOSO

Food security is mirrored in full plates with your pockets still not empty. This was the advocacy of the 11th Philippine Food Expo held on 23–26 February 2012 at the World Trade Center, Pasay City as it highlights the importance of food producers of this country.

With this year's theme “From Farm to Fork: The Best Philippine Food Products of the World”, the organizers made sure that food producers—those involved in the initial steps of farming to the exportation of goods—were given a venue to showcase their goods to the public and make known their products as the best of Philippine food products to date.

The Philippine Food Processors and Exporters Organization, Inc. (PhilFoodEx), together with its government partners and a conglomeration of business owners, launched this annual convention with a goal of bringing together all sectors involved in food production to enhance the businesses and projects of both the public and private sectors, and to improve the products recognized as Filipino-made.

Cooperators include the Department of Agriculture (DA), DA – Bureau of Agricultural Research (DA-BAR), Department of Trade and Industry (DTI), Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development (PCAARRD), Philippine Chamber of Commerce and Industry (PCCI), Philippine Okra Producers and Exporters Association (POPEA), and the United States Agency for International Development (USAID), among others.

The first day of the expo was marked with an opening ceremony, attended by government officials, company CEOs, representatives from foreign companies looking to invest as well as exhibitors and visitors. Among the notable guests were Agriculture Secretary Proceso J. Alcala, Senator Francis Pangilinan, and Ilocos Norte Governor Imee Marcos.

In a brief and straight-the-point speech by the Chairman of the Senate Committee on Agriculture and Food, and the Senate Committee on Social Justice and Rural Development, Senator Francis Pangilinan explained, “If we want to move the agri[culture] and fisheries sector forward, our partners in the private sector play a critical role.”

The partnership of PhilFoodEx with government agencies such as DA and its related agencies such as BAR contributes largely to the development of small, medium, and large scale food manufacturers, especially the farming community and the fisherfolk. With conventions such as this held annually, developments in and of the products are easily shared and transferred within a congregation of Filipino producers, thereby allowing the products to flourish with guidance. With the benefits aimed towards all sectors involved in Philippine food production, the profits are limitless. Apart from monetary, sustainable development in farming and fishery is expected as every component of production is considered significant. “Promote closer coordination among farmers, processors, exporters and other stakeholders to achieve increased

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4 BAR-funded projects featured in 11th Food Expo

(left, bottom photo) BAR Director Nicomedes P. Eleazar with STIARC Manager Digna P. Narvacan and Philfoodex President Roberto C. Amores. (middle, bottom photo) Dir. Eleazar with Dr. Fernando C. Sanchez of UPLB, proponent of the Edible Landscaping project. PHOTOS BY DDELEON

As part of the Bureau of Agricultural Research's (BAR) strategy in creating public awareness and promoting its programs and initiatives to commercialize and utilize the results of research and development (R&D), a series of seminars was conducted during the 11th Philippine Food Expo (Philfoodex). This is in line with the Philfoodex's goal on showcasing products and technologies which have the potentials on being adopted and exported in the world market.

The package of technologies established and the product development of sapinit (wild raspberry), *uraro* (arrowroot), *adlai* (Job's tears), and edible landscaping *were presented during the four-day event.*

First in the line was the sapinit project of Quezon Agricultural Experimental Station (QAES). Ms. Lani Averion of QAES presented the “Sapinit Production and Utilization Project.” Sapinit (*Robus rosifolius*) is an indigenous wild raspberry that thrives in Mount Banahaw, Dolores, Quezon. Being an underutilized crop in the community, the project looks into the potentials of the fruit not only as commodity but as well as means to increase the income of the propagators. Through the project, they are able to produce a juice, jam, and wine out of the fruit which shown presence of *saponin* – a phytochemical that lowers cholesterol, strengthens the immune system, and reduces the risk of cancer.

The propagators sell the raw fruit for 200 pesos per kilo while the juice is sold for Php35, jam is Php85, and the wine is for Php300.

The arrowroot project of Southern Tagalog Integrated Agricultural Research Center (STIARC) is funded under the banner program of BAR, the Community-based Participatory Action Research (CPAR).

Ms. Rosemarie Bautista-Olfato of STIARC shared to the seminar attendees how the project becomes a rising enterprise in Catanauan, Quezon through her presentation of “Arrowroot: Processing of Tubers into Starch and Flour and Other By-Products.” Being considered 'healthy' flour. The Department of Agriculture-Regional Field Unit 4A (DA-RFU 4A) is looking into the possibility of substituting the wheat flour with arrowroot flour. The flour/starch is being marketed in Quezon, Bulacan, Laguna, and Marinduque.

Arrowroot is identified as One Town, One Product (OTOP) of Catanauan, Quezon. Products derived from arrowroot starch are *polvoron* and cookies, and a novelty paper from its bagasse.

Ms. Gloria B. Leycano of STIARC presented the DA's highly promoted alternative staple food crop – the *adlai*. Through her presentation of “Adlai Production and Processing”, she explained the characteristics of adlai, its cultural management and the products developed. Having tasted the *sinukmani na adlai* (made out of pulot variety – the glutinous type), seminar participants noticed the similarities of adlai with the traditional rice.

Other products derived from adlai are *sinaing na adlai*, *champorado, maja blanca, polvoron, turones de adlai, chi-cha adlai*, puffed *adlai, suman sa lihiya,* and nutty breadsticks.

The only not commodity-based included in BAR line-up of seminars is the edible landscaping of the University of the Philippines Los Baños (UPLB).

Project proponent Dr. Fernando C. Sanchez, UPLB vice chancellor for planning and development, and research assistant Bryan V. Apacionado discussed “Edible Landscaping: The Artistic technique Food Crop Production.” Edible landscaping is an approach in landscaping wherein instead of using the conventional ornamental plants as softscape, edible crops were used as substitute. The project was born out in the need to provide food to Filipinos, incorporating the principles of landscaping in crop production with emphasis in small spaces and urban setting.

In choosing softscapes, any edible crops can be utilized but there are some considerations that needed to be looked at. These are personal preference, ornamental value (color, shape, etc), size of garden, and must be edible.

The four seminars perked up the interests of the Philfoodex attendees. *(Diana Rose A. de Leon)*