NEW PUBLICATION

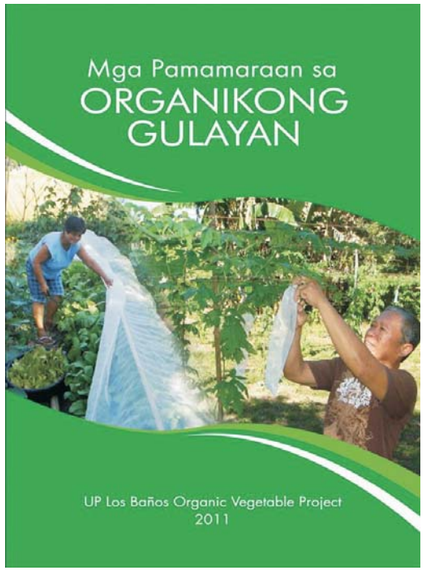
Handbook on organic vegetable prod'n launched

In an effort to promote and support the Department of Agriculture's (DA) Organic Agriculture (OA) Program, the Bureau of Agricultural Research (BAR), as the focal agency for OA in research and development (R&D), launched a handbook titled, "*Mga Pamamaraan sa Organikong Gulayan*" during the awarding ceremony of the 23rd National Research Symposium (NRS) on 11 October 2011, Manila Hotel.

The handbook is a result of the University of the Philippines (UPLB) Organic Vegetable Project led by Dr. Blesilda M. Calub of the Agricultural Systems Cluster, College of Agriculture, UPLB. With the demand for information on the production of organic vegetable, the handbook is now on its second reprint which was funded by the Bureau of Agricultural Research (BAR) under its Scientific Publication Grant (SPG). The first edition was funded by the National Economic and Development Authority (NEDA).

Dr. Calub, in a brief presentation during the book launch, she mentioned that the handbook aims to: keep the farmers and agricultural technologies aware on the methods on organic vegetable farming, provide farmers IEC material on organic vegetable farming and that could be easily share to fellow farmers, and provide as practical materials for agricultural technologies to effectively disseminate the know-how on organic vegetable farming.

The paper-thin, handy publication is composed of practical topics on the benefits of growing organic vegetable, preparing the soil that will be devoted to organic farming, managing vegetable pests, and how-tos of making vermicompost, fermented fruit juice, fermented plant juice, and manure tea. For easy information, the handbook also provides frequently asked questions (FAQ) that will help interested individuals who want to go organic but have various misconceptions and misapprehensions on the concept of "going organic".



Dr. Calub presented copies of the book to Agriculture Secretary Proceso J. Alcala who was present during the book launch. Sec. Alcala is the author of the Organic Agriculture Law when he was a congressman, and has implemented OA as one of its priority programs at the Department of Agriculture, which is now under his helm.

Secretary Alcala commended both BAR and Dr. Calub for the production of such valuable IEC material that farmers could easily have accessed to.

In lieu of the DA's efforts to further promote Organic Agriculture, the Secretary instructed BAR to translate in various dialects the book that was launched "to reach a wider audience in the country". He also enjoined BAR to continue its efforts on supporting production management technologies that will help and improve the plights of smallholder farmers and fishers in the country.

In response, BAR is currently funding the publication of the book "Mga Pamamaraan sa Organikong Gulayan" in three dialects: Ilokano, Bisaya, and Bicolano. ### ***(Rita T. dela Cruz)***

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PNoy keynotes 8th NOAC; BAR joins more than 800 attendees

Hon. President Benigno Aquino III delivers his keynote address expressing how grateful he is for being part of the activity. With him are Agriculture Secretary Proceso J. Alcala (2nd from left) and Tarlac Governor Victor Yap (3rd from left). PHOTO: MVALDEABELLA

The Bureau of Agricultural Research (BAR) Director Nicomedes P. Eleazar, with experts and technical staff, participated with more than 800 attendees including organic agriculture practitioners, heads and staff of various regional offices, attached agencies and bureaus of the Department of Agriculture (DA), state universities and colleges (SUCs), local government units (LGUs), farmer groups, non-government organizations (NGOs), organic business firms, and other sectors in the 8th National Organic Agriculture Conference (NOAC) held at the Aquino Center, Hacienda Luisita, Tarlac City, on 8-11 November 2011.

With the theme, "Organic Farming: Towards Food Sufficiency and Healthy Environment," this year's conference focuses on the current and emerging issues and challenges confronting the National Organic Agriculture Program.

Attending the opening program was a roster of important figures from the government with the President of the Philippines Benigno S. Aquino III delivering the keynote address for the occasion. Also present were Department of Agriculture Secretary Proceso J. Alcala and members of the LGU of Tarlac City.

DA Secretary Alcala, introduced to the participants and guests the conference's guest of honor and keynote speaker, the President of the Philippines, with a remark, "*Hindi na po siguro ako magkakamali.*"

In the speech of President Aquino, he expressed how grateful he was for being part of this year's conference and that mentioned how he misses being in Tarlac City, his hometown.

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BAR-funded *Sapinit* project wins best paper award

Recognizing the valuable contributions of science and technology (S&T) in the fruit industry, the Philippine Fruits Association (PFA) held its 19th National Fruit Symposium (NFS) on 24-28 October 2011 at the Dep-Ed Ecotech Center in Lahug, Cebu City. This year's theme was, "Harnessing Science and Technology towards a Dynamic and Sustainable Fruit Production."

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PHOTO: JLAPITAN

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BAR-funded Sapinit..from page 1

One of the highlights of the event was the announcement of the winners for the best poster and best paper awards. This hopes to give due recognition to outstanding researcher, fruit grower, and PFA members.

Winning the first place in the Best Paper Award was "*Sapinit Production and Utilization Project"* of the Quezon Agricultural Experimental Station (QAES). The project was funded by the Bureau of Agricultural Research (BAR) through its banner program, the National Technology Commercialization Program (NTCP) and supported under the DA-National Agricultural and Fishery Council (DA-NAFC) through the 2KR-Grant Assistance for Underprivileged Farmers (GAUF).

Sapinit (Robus rosifolius), a wild raspberry, is an indigenous plant native in Asia and thrives in Mount Banahaw. Its potential as a source of income by local farming communities paved way in the developing cultural and management techniques, and the package of technology (POT) of *sapinit*.

During the presentation delivered by Mr. Dennis DL. Bihis of QAES, the beneficiaries' response in the project was very positive. This indicates that the interventions in the project were easily adopted by the beneficiaries and, thus effectively promoted its sustainability. Through the project, *sapinit* are now being processed into various products including: jam, juice, and wine. The packaging and label designs had been already created making the products more marketable. It is also observed that the used of organic fertilizer as part of the POT on *sapinit* has significantly increased the yield.

(L-R) Dr. Louella M. Cabahug, PFA vice-president awards the certificate of recognition to Mr. Dennis Bihis, Ms. Lani Averion, and Mr. Alexander Calingasan of DA-QAES for their winner paper titled, "Sapinit Production and Commercialization Project," which is a BAR-funded project. PHOTO: DDELEON

Attending the symposium was Dr. Leo Cañeda who served as the keynote speaker in behalf of DA Secretary Proceso J. Alcala. In his message he highlighted the progress done so far by the fruit industry and the contributions of the agriculture sector in the overall economic growth. "The indicators seem to point that after almost 12 years on being on the downturn. For the first time in the first semester of the current year, agriculture was our primary economic growth driver" Dr. Cañeda said.

Another highlight of the symposium was the Farmer's Forum wherein the farmers were invited to pose their questions and queries to the experts present.

The five-day event was participated in by representatives from various government agencies, state universities and colleges, local government units, private and public fruit growers, farmers, and PFA key officials led by its president Dr. Elpidio T. Magante.

PFA is a non-profit organization which is mandated to reach out and rally the fruit growers, processors, traders, and researchers of the country into a unified organization making PFA a solid entity and a strong voice for the Philippine fruit industry. ### ***(Diana Rose A. de Leon)***

BARChronicle
BUREAU OF AGRICULTURAL RESEARCH

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

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

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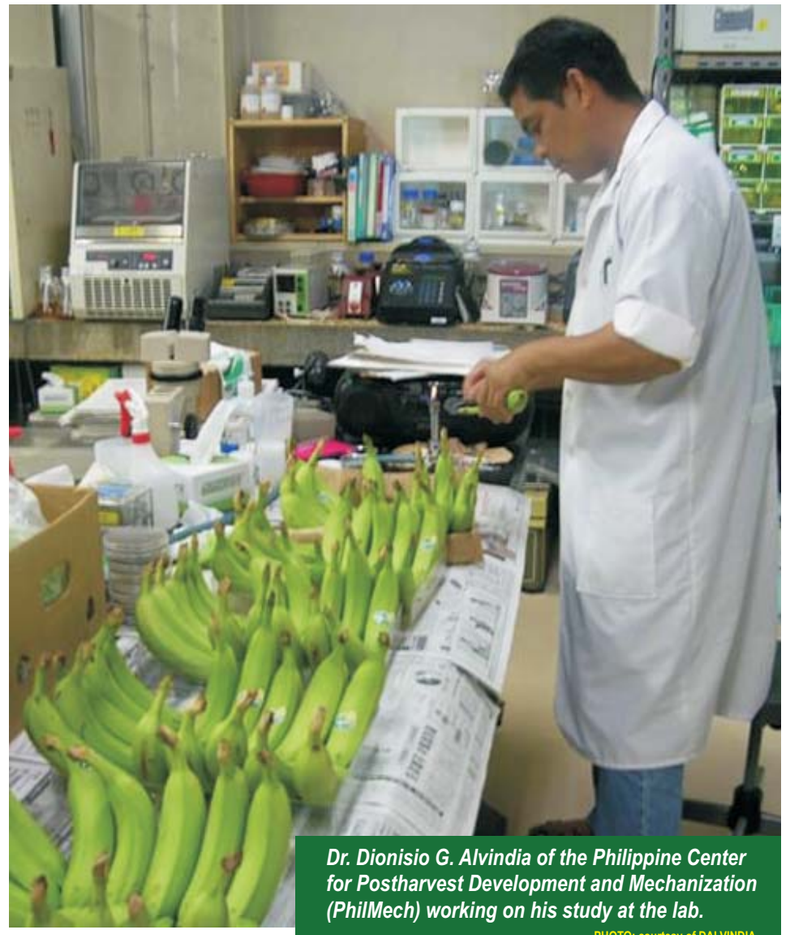
Therefore, the idea of upgrading the efficacy of single non-chemical methods was conceived. With the fact on hand that a single method has low efficacy, it was hypothesized that combining two single methods should prove more effective. The mechanism of control posed is that the eradicative action of HWT will be combined with the preventive activity of BCA or salt.

It was discovered that no research has been reported to determine the compatibility of native bacteria or fungi isolated from banana with inorganic salts or HWT. Temperatures that are not detrimental to the said fruit might not provide complete control of postharvest pathogens, but such temperature could, however, retard the development of the pathogen in the fruit. Thus, a vacuum may be created that could be exploited to its advantage by the BCA and/or salt.

The methodology of the study included the use of banana harvested at 80 percent maturity at Nueva Vizcaya. Test pathogens included the most active causes of crown rot in banana: *L theobromae*, *T. paradoxa*, *C. musae*, and *F. verticillioides* that were isolated from bananas cv. Buñgulan that were infected with crown rot. The BCA included a bacterium (*Bacillus amyloliquefaciens* DGA14) and a fungus (*Trichoderma harzianum* DGA02).

The paper presented found that the effectiveness of BCAs can be increased by mixing two antagonists, as their assets are combined. Furthermore, said report also depicted a table, citing the physical injuries notable on cv. Buñgulan by hot water, with different temperatures, exposure, and storage time. The report also cited important considerations in using HWT, particularly in terms of proper setting and monitoring of temperature during loading of fruit.



Dr. Dionisio G. Alvindia of the Philippine Center for Postharvest Development and Mechanization (PhilMech) working on his study at the lab.
PHOTO: courtesy of DALVINDIA

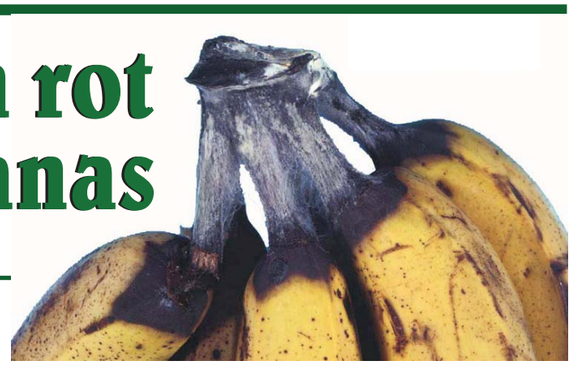
According to Dr. Alvindia, the project generated novel information for sustaining the efficacy of non-chemical approaches in control of crown rot in bananas. HWT for cv. Buñgulan does not kill fungi but does cause delay in the development. Thus, the low efficacy and inconsistency of HWT in controlling crown rot disease. *T. harzianum* DGA02 and *B. amyloliquefaciens* DGA14 cannot be used as antagonist mixture. The efficacy of non-chemical approaches can be enhanced with the combination of two single non-chemical treatments. It was found that sodium bicarbonate plus *T. harzianum* DGA02 or *B. amyloliquefaciens* DGA14 are effective as non-chemical postharvest dip treatments for control of crown rot disease in bananas.

Good quality banana is free from crown rot.
PHOTO: courtesy of DALVINDIA

Dr. Alvindia concluded that, with the potential use of their findings the project developed an effective alternative to synthetic fungicide for controlling crown rot disease in cv. Buñgulan. It is safe to use and can actually be adopted immediately with no serious concern for additional investment on equipment or manpower.

The paper of Dr. Alvindia and Ms. Cuaresma won third in the Applied Research - TG/IG – Agriculture Category during the recently concluded 23rd National Research Symposium, which is anually being conducted by the Bureau of Agricultural Research. ###

Tackling crown rot disease in bananas



Maria Anna M. Gumapac

Bananas are one of the most common and widely grown fruits in our country. According to the Department of Agriculture (DA), "It is also one of the country's major dollar earners," ranking close to coconut oil and prawns in terms of value earnings." In addition, the Philippines is host to the following most common cultivars: *Saba*, *Lacatan*, *Latundan*, *Bungulan*, and *Cavendish*, including *Morado*, *Pitogo*, *Los Banos*, *Senorita*, *Tindok*, *Gloria*, *Granda*, and *Tumok*.

In a paper titled, "Integration of Non-chemical Approaches for Managing Crown Rot Disease of Banana," presented by Dr. Dionisio G. Alvindia and May Fleur T. Cuaresma of the Philippine Center for Postharvest Development and Mechanization (PhilMech), 80–90 percent of the country's land area that is planted with banana are grown by small farmers without intensive production and postharvest management. These bananas are mostly for the domestic market. Commercial plantations located in Mindanao are with excellent production and postharvest management, and are otherwise intended for export market. Also, bananas are the Philippines' second most abundant export crop, with 2.8 million households in the country dependent on banana industry.

As of 2005, Dr. Alvindia reported that the Philippines is in second place among the top 10 banana exporting countries, with Ecuador placing first. The remaining countries include Costa Rica, Colombia, Guatemala, Honduras, Panama, Cameroon, Brazil, and Cote d'lvoire.

Before reaching consumers, bananas are keenly inspected for diseases and other quality defects. A common problem in the export market is *crown rot disease*, a serious postharvest disease complex caused by several fungi. The infection process starts with the fungi infecting the crown through fresh wounds created after trimming the crown of the banana hand into its crescent shape. Then, the fungi set in from the surface of the cut crown and infect the tissues and cause rotting. The rot then advances into the finger stalks, causing fingers to detach from the crown when handled.

Up until the early 90s, it was reported that crown rot was not considered a serious problem as synthetic fungicides were used as postharvest dip treatment. However, with the growing concern for food safety and the environment, as well as certain restrictions on chemical use, crown rot is becoming a serious postharvest disease. Therefore, researchers such as Dr. Alvindia and Ms. Cuaresma are exploring alternative methods to replace fungicides.

Alternatives to synthetic fungicides for banana crown rot include hot water treatment (HWT), biological control (BCA), inorganic salts, and inorganic salts with surfactant. However, remarks discussed during the brief presentation for each method posed issues such as: HWT being not as effective as fungicides; BCA as sole method is not comparable with fungicide; inorganic salts crystallized when dried, thus providing variation in replicated results; and inorganic salts with surfactant is acceptable but still not as excellent when compared with fungicide.

next page

Bananas showing manifestation of the crown rot.
PHOTO: courtesy of DALVINDIA

> *Crown rot disease, a common problem in the export market, is a serious postharvest disease complex, caused by several fungi. The infection process starts with the fungi infecting the crown through fresh wounds created after trimming the crown of the banana hand into its crescent shape.*

Winners of 23rd NRS best R&D paper and poster announced

(Clockwise) Winners of basic (AAlfonso, PhilRice), applied-TG/IG agriculture (AAlfiler, PCA), applied-TA/TV-agriculture (AGalacio),socio-economics (ATejada), applied-TG/IG fisheries (MSantos, NFRDI), applied-TA/TV-fisheries (RBassig), development agriculture (JDatuin, DA-RFU I), and best poster (GObra, PNRI-DOST)
PHOTOS: ACD DOCUMENTATION COMMITTEE

Winners in the 23rd National Research Symposium (NRS) were officially announced during the awarding ceremony held on 11 October 2011 at the Manila Hotel. Awards were presented to 18 Best AFMA R&D papers and 3 Best R&D Poster.

Presenting the awards was Honorable Agriculture Secretary Proceso J. Alcala, who was also the keynote speaker for the awarding ceremony. Joining him in the awarding were DA Undersecretary Antonio A. Fleta, BAR Director Nicomedes P. Eleazar, and Asst. Director Teodoro S. Solsoloy.

The 18 winners for the R&D paper entries were:

A. Basic Research Category

1. GOLD: "Marker-Aided Transfer of Beta-Carotene Biosynthetic Genes (Golden Rice 1) into two Philippine Rice Varieties" by Antonio A. Alfonso, Emilie O. Espejo, Christine Jade A. Dilla, Gerald B. Ravelo, Nelson S. Garcia, Jean J. Somera (PhilRice)
2. SILVER: "Cryopreservation of Oocytes by Minimum Volume Vitrification Methods for *in-vitro* Embryo Production in Water Buffaloes *(Bubalus bubalis)*" by Eufrocina P. Atabay, Edwin C. Atabay, Flocerfida P. Aquino, Rodante V. de Vera, Libertado C. Cruz (PCC)
3. BRONZE: "Development of novel tissue culture-based seed system for year-round production of purple yam *(Dioscorea alata L.)*" by Villaluz Z. Acedo and Catherine C. Arradaza (VSU)

B. Applied Research - TG/IG – Agriculture Category

1. GOLD: "Application of Biological Control Strategies for the Management of *Brontispa longissima* in the Philippines" by Ambrosio Raul R. Alfiler, Johana C. Orense, and Ma. Leonila R. Imperial (PCA)
2. SILVER: "Irradiation as a Quarantine Treatment for Mango Pulp Weevil, *Sternochetus frigidus (Fabr.)* in Philippine Super Mango" by Glenda B. Obra, Louella Rowena De Jesus-Lorenzana, Sotero S. Resilva
3. BRONZE: "Integration of Non-Chemical Approaches for Managing Crown Rot Disease of Banana" by Dionisio G. Alvindia and May Fleur T. Cuaresma (PNRI – DOST)

C. Applied Research - TA/TV – Agriculture Category

1. GOLD: "Evaluation of Arabica Coffee Rooted Cuttings as Plant Materials" by Avelina M. Galacio, Josephine B. Ayban, Norma B. Perdoche, Joyce Jean O. Bacayan (BPI)
2. SILVER: "Region-wide Utilization of the Light Trapping Technology for Insect Pest Management of Major Crops" by Aida D. Solsoloy, Marivic Begonia, Jose Tolentino, Jr., Arlene Castillo, Jay-R Baligat, Sylvia Igarta, Paz Mones, Angel Padilla (DA - RFU 1)
3. BRONZE: Integrated Management of Citrus Snoutbeetle, *Metapocyrtus (Trachycyrtus) spp."* by Maritess A. Alimurung, Amelia M. Cimafranca, Trenesie M. Lorezco (BPI)

D. Applied Research - TG/IG – Fisheries Category

1. SILVER: "Detection of Mislabeled Commercial Fishery By-Products in the Philippines Using DNA Barcodes" by Mudjekeewis D. Santos, Benedict A. Maralit, Roselyn D. Aguila Minerva, Fatimae H. Ventolero, Sweedy Kay L. Perez (NFRDI)

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Winners of ..from page 3

2. BRONZE: "Municipal Fisheries Stock Assessment of Guimaras, Philippines for the Year 2008-2010" by Drusila Esther E. Bayate, Sheryl V. Mesa, May R. Guanco, Mateo C. Doyola, Jr. (BFAR - RFO6)

E. Applied Research - TA/TV – Fisheries Category

1. BRONZE: "Processing Sandfish, *Holothuria scabra*: Using Papaya Leaves to Remove Hard Spiculy Layer" by Rosa A. Bassig, Adoracion V. Obinque, Gielenny M. Salem, Rosario J. Ragaza, Junwell S. Cabigao (NFRDI)

F. Development Agriculture Category

1. GOLD: "Intensification of the Innovative Goat Production Systems for Sustainable Rural Enterprise Development in Region I" by Jovita M. Datuin , Wilson D. Cerbito, Josefina P. Bueno, Cathy B. Pastor, Sharon A. Viloria , Luciana T. Cruz, Florentino A. Adame, Lemuel M. Abrenica (DA – RFU 1)
2. SILVER: "Improved Arrowroot Production Technologies and Enhancement of the Arrowroot Starch and Flour in Catanauan, Quezon" by Rosemarie Bautista-Olfato, Virgilia D. Arellano, Liwayway R. Pizarra, Anna Pamela Agudilla, Minerva C. Coronacion, Digna P. Narvacan, Aida P. Cariño (DA-RFU 4A/STIARC)
3. BRONZE: "Enhancing Food Security through Improved Rice Productivity and Increased Farmers' Income in the Rainfed Lowlands of Northern Mindanao" by Cora Alolino Dumayaca, Teresita Sandoval, Rizal Corales, Angelita Martir, Juanita B. Salvani, Juliet B. Araos (DA – NOMIARC)

G. Socio-Economics Research Category

1. GOLD: "Iron Fortification of Rice and Consumer Acceptance of Iron-Fortified Rice (I-Rice)" by Dr. Amelia W. Tejada, Edith M. San Juan, Neri O. Camitan, Amelita C. Natividad, Mario U. Gochangco, Lauro Alkuino, Ma. Carlota Dy, Zoraida L. Manalastas, Alberto R. Cariso, Dr. Alicia O. Lustre (NFA-FDC)

(L-R) BAR Director Nicomedes P. Eleazar, Agriculture Secretary Proceso J. Alcala, BAR Asst. Dir. Teodoro S. Solsoloy, and DA Usec Antonio A. Fleta. PHOTO: ACONSTANTINO

2. SILVER: "Climate Change Risk Analysis on the Coastal Areas of Cabusao, Camarines Sur" by Glenn Banaguas (DLSAU)
3. BRONZE: "Coconut-Based Farm Diversification to Reduce Poverty in Coconut Growing Communities" by Erlene C. Manohar, Armylene Posada (PCA)

Winners who garnered an average point score of 85 percent or higher were conferred the Best AFMA R&D Paper Award (gold) receiving a plaque and cash prize of PhP 100,000. The silver and bronze winners received PhP 75,000 and PhP50,000, respectively. Winners were also given 1-M Research Grant as announced during the awarding ceremony.

Meanwhile, the winners for the poster competition were:

1. GOLD: "Irradiation as a Quarantine Treatment for Mango Pulp Weevil, *Sternochetus frigidus (Fabr.)* in Philippine Super Mango" by Glenda B. Obra, Louella Rowena De Jesus-Lorenzana, Sotero S. Resilva (PNRI – DOST)
2. SILVER: "Field Culture of the Scallop, *Decatopecten striatus:* Stocking Density Effects to Growth, Recovery and Production" by Victor S. Soliman, Antonino B. Mendoza, Jr., Renan U. Bobiles, Alex P. Camaya (BUTC)
3. BRONZE: "Application of Embryo Culture Technique in the Field Collecting, Movement and Culture of Tutupaen Tall Variety for *ex situ* Conservation" by Ramon L. Rivera, Ernesto E. Emmanuel, Susan M. Rivera, Cristeta A. Cueto, Carmen N. Lambanicio, Ma. Luz C. George (PCA)

The AFMA Best R&D Poster Award was given PhP 50,000 while the first and second runners-up were given PhP 35,000 and PhP 25,000, respectively.

For more than two decades now, NRS is being annually conducted by BAR to recognize the importance of agriculture and fishery research and development (R&D) in promoting the nation's economic well-being and the vital role of researchers as catalyst for developing R&D that matters to the sector. Also, to highlight significant research results and technologies generated and conducted by researchers and scientists in the fields of agriculture and fisheries.

This year's competition focused on the theme, "Harnessing Research for Safe and Healthy Food and Agri-Fishery Products," defining the pivotal role of R&D in addressing the safe and health issues in the agriculture and fisheries products. Over the years, many advances in food production have been developed through R&D but throughout this course, quality and safety issues from production to transport and storage have not been readily addressed or resolved.

Entries totaled 126 R&D papers entries from which 63 are qualifiers including the 25 presentors from which the 18 were awarded as winners. The winners were ranked based on the garnered average point scores.

Paper entries were divided into categories, agriculture and fisheries, competing based on the four subcategories: *basic, applied*, *socio-economics*, and *development* research. Applied research was further divided into two: technology generation/information generation (TG/IG) and technology adaptation/technology verification (TA/TV). ### ***(Rita T. dela Cruz)***

Solsoloy addresses *Phytophthora* diseases in durian, jackfruit

Dr. Teodoro S. Solsoloy, assistant director of BAR, keynotes the "Forum on the Integrated Management of Phytopthora Diseases of Durian and Jackfruit". PHOTO: NDELROSARIO III

(top photos) Durian infected with Phytophthora disease and (bottom photo) microscopic Phytophthora palmivora. PHOTOS FROM: botany.hawaii.edu

Bureau of Agricultural Research (BAR) Assistant Director Teodoro S. Solsoloy delivered a keynote speech during the "Forum on the Integrated Management of Phytophthora Diseases of Durian and Jackfruit in the Southern Philippines," which part of the events held during the Grand Opening of the 6th Durian Festival sponsored by the Australian Center for International Agricultural Research (ACIAR) in collaboration with the Bureau of Plant Industry (BPI), Visayas State University (VSU), and other government institutions. ACIAR has been providing funding for research projects to assist agricultural R&D partners in Asia including the Philippines.

The forum featured the presentations of distinguished durian and jackfruit scientists from Australia, Thailand, Vietnam, and the Philippines. Local farmers, plant breeders, academe, and other stakeholders responded well to the critical role of integrated disease management, cultural practices, proper harvest and storage of crops, among others.

"Our objective is to improve the health of the tree by managing its pests and diseases because the farmer's are more interested in producing a lot of durian and jackfruit" said ACIAR component leader, Professor David Guest.

In his keynote speech, BAR Asst. Dir. Solsoloy noted the importance of durian and jackfruit cash crops in Southeast Asia including Thailand, Malaysia, Indonesia, and Philippines. "As a prized tree, it commands extraordinary high prices at local and export markets. Apart from being a source of income and livelihood, both crops are highly wind tolerant, therefore makes a good component in a windbreak or border planting. However, these commodities are not exempted from production problems. One crucial of which is the imminent threat of the *Phytophthora* disease, which remains a struggle for the fruit industry."

Phytophthora palmivora is the most serious disease of durian. According to reports Davao City and Davao del Norte recorded a high incidence of infection up to 40 percent. At a young age of 3-6 years old, the trees can show manifestations as it infects all parts of durian; therefore, early detection becomes difficult if it attacks the base of the tree.

"This disease affects all stages of the cropping cycle. It causes the vital parts of an affected tree to wither and eventually die when severely infected. Symptoms include root rot, seedling/tree dieback, patch canker, and pre- and post-harvest fruit decay. Incidentally, infection is most severe during the rainy season," Asst. Director Solsoloy shared.

Dr. Solsoloy shared that the problem can be addressed through Integrated Disease Management which includes utilization of the least disruptive options and minimized use of pesticides for disease control to the lowest practical levels.

On jackfruit R&D, he acknowledged the research efforts of Dr. Carlos S. dela Cruz, superintendent of the Eastern Visayas Integrated Agricultural Research Center in Abuyog, Leyte particularly in his recent conduct on the adaptability of available technologies for the management of jackfruit fruitfly. This research initiative has earned him as the Regional Gawad Saka 2011 awardee.

Rising from a simple livelihood; today, durian and jackfruit continue to be the flagship of Southern Philippines and a champion of the export industry. Given the challenges in the industry, including the *Phytophthora* disease, Dr. Solsoloy hopes that eventually this will be addressed through various R&D initiatives and interventions ### ***(Jacob Anderson C. Sanchez)***.

BAR approves 5 new CBSUA projects

Present during the inception meeting are the proponents of the five BAR-newly approved projects led by Prof. Joel L. Batanes, (5th from left) CBSUA vice-president for research and extension. PHOTO: ZREYNOSO

The Bureau of Agricultural Research (BAR) held an inception meeting for five newly-funded research and development (R&D) projects to be implemented by the Central Bicol State University of Agriculture (CBSUA) on 18 October 2011 at BAR.

The five newly-approved projects were: 1) Pigeon Pea R&D Project; 2) Ethnobotanical Survey, Uses, Phytochemical Analysis, Production and Conservation of Indigenous Plants In Camarines Sur; 3) The Use of Organic Selenium, Probiotics, Prebiotics and their Combinations against *Coccidiosis* in Free Range Chicken; 4) Antidiarrheal Action of *Amarillong Gubat* (*Bidens pilosa* L.) against *Salmonella entiritidis* in Weaner Piglets, and 5) Pre and Postharvest Technology for Taro in the Bicol Region.

Present during the inception meeting were the proponents of the five BAR-newly approved projects led by Prof. Joel L. Batanes, CBSUA vice-president for research and extension. Technical experts from other institutions and BAR technical staff served as members of the panel of evaluators.

Mr. Patrick Cabrera of PPDD served as the facilitator discussing the purpose and mechanics of the meeting. The proponents were given an hour each to present their projects including 40 minutes presentation and 20 minutes for addressing the queries of the evaluators.

Ms. Fe B. Perlas, proponent of the project titled, "*Pigeon Pea R&D Project*," was the first to present. The project hopes to promote pigeonpea in Bicol region. Pigeonpea was introduced in the Philippines through a collaborative effort with the International Crops Research Institute for the Semi-Arids Tropics (ICRISAT). Since then, BAR has been funding the commercial production and utilization of pigeonpea.

The second presenters were Ms. Marilyn B. Balderas and Mr. Celerino B. Llesol with the project, titled "*Ethnobotanical Survey, Uses, Phytochemical Analysis, Production and Conservation of Indigenous Plants In Camarines Sur*." Their study is in line with the Indigenous Plants for Health and Wellness Program (IPHW) of BAR which was launched in 2007. This is in close coordination with the University of the Philippines Los Baños (UPLB) and Bureau of Plant Industry (BPI).

Dr. Monaliza M. Nagrampa presented the project, "*The Use of Organic Selenium, Probiotics, Prebiotics and their Combinations against Coccidiosis in Free Range Chicken*," which sought to evaluate the effectiveness of organic selenium, probiotics, prebiotics or their combinations against coccodiosis in free range chickens.

Mr. Alberto M. Cabrera presented the project, "*Antidiarrheal Action of Amarillong Gubat (Bidens pilosa L.) Against Salmonella entiritidis in Weaner Piglets*" which hopes to evaluate the anti-diarrheal properties of *Amrillong Gubat* infusion on weaner piglets.

The last to present was Dr. Maria Dulce J. Mostoles with the project, "*Pre and Postharvest Technology for Taro in the Bicol Region."* The general objective of the study is to develop a pre- and postharvest technology for taro which could be utilized by the Bicolano farmers in order to uplift its production and enhance the quality of the produce for international competitiveness.

Four out of five of these projects have already released the initial funds. ### ***(Diana Rose A. de Leon)***

BAR attends...from page 6

participants of this project are members of RIC Latangan.

One of the members visited was Ms. Rosalinda Rocha, a level-one member who was bestowed two ready-to-breed gilts (*inahin*) and five weanlings (*biik*). Her success by far is quite impressive, having bred over 43 native swine in total.

In conversing with Dr. Bulatao, the scheme followed by this project is akin to a "pay it forward" process. Level 1 members are given gilts and weanlings, to be raised by said members. Their means of "paying it forward" involve providing level 2 members with weanlings that are products of the initial gilts and weanlings raised by the level 1 member. Level 2 members are to do the same, following in the footsteps of the previous level, to "pay it forward" to the next level, which are level 3 members. Other households visited showed impressive results, with a number of *biiks* ranging in their respective backyards. ### ***(Maria Anna M. Gumapac)***

2 agri researchers with outstanding contributions to R&D adjudged

PHOTO: RBERNARDO

RIVERA

PHOTO: ACONSTANTINO

TUMAMANG

The Bureau of Agricultural Research (BAR) awarded two outstanding agriculture researchers in recognition of their valuable contributions to agriculture research and development (R&D). The awardees were: Ramon L. Rivera, division chief of the Breeding and Genetics Division of the Philippine Coconut Authority (PCA) - Zamboanga Research Center; and Severino Tumamang, agricultural center chief of the Cagayan Valley Integrated Agricultural Research Center (CVIARC), Regional Field Unit (RFU) 2 based in Ilagan, Isabela.

The awardees were adjudged during the 23rd National Research Symposium (NRS) awarding ceremony on 11 October 2011 at the Manila Hotel.

Rivera is a recognized plant breeder, coconut gene bank manager, and molecular biologist/scientist both in the local and international scenes. Among his recent contributions is the development of the micro-satellite or simple sequence repeats (SSR) marker technology for coconut and his pioneering work on molecular biology for varietal improvement.

As the program leader of PCA's varietal improvement program (VIP), he implemented innovative R&D approaches that have led to outstanding coconut technologies and information beneficial to the industry. This led to PCA's pioneering work on genetically enhanced coconut variety combining high yield precocity, vigor and durable genetic stability providing the answer to the country's relentless need for low input and high quality planting materials.

Another awardee, Tumamang, is also a plant breeder/agronomist at CVIARC, considered as DA's prime plant breeding institution in Region 2. The Center has intensified its programs on crop improvement to continue developing new and improved varieties of agricultural crops for better yield and profit. Tumamang is well-known for developing the best selling and well-known high-yielding open pollinated varieties (OPV) of corn including: IES No. 2, 8906, 8910, 8912. He also led in the breeding of the glutinous corn varieties: IES Glut No. 4, 6, and 7; and white flint varieties and OPV yellow drought resistant varieties: IES Cn 5 and 7. These are all registered at the National Seed Industry Council (NSIC).

Perhaps, one of his most important contributions is the commercialization of these corn varieties which helped small and medium enterprises (SMEs) in Ilocos region. The developed corn varieties have also provided the raw materials for the popular "Boy Bawang" brand.

Aside from Rivera and Tumamang, three agricultural scientists were also recognized as finalists of the Gawad Saka Outstanding Agricultural Scientist category. They were: Dr. Roel R. Suralta of the Philippine Rice Research Institute (PhilRice); Dr. Pablito M. Magdalita of the Crop Science Cluster, College of Agriculture, University of the Philippines Los Baños (UPLB); and Dr. Carlos M. Dela Cruz of the Eastern Visayas Integrated Agricultural Research Center (EVIARC), DA-Regional Field Unit No. 8 based in Abuyog, Leyte.

Gawad Saka, which started in 1970, is an annual contest conducted nationwide by DA in partnership with the local government units, academe and the private sector. One of the categories is the Gawad Saka Outstanding Agricultural Scientist in which BAR takes the lead in the search and evaluation. The evaluation committee is chaired by the bureau's assistant director, Dr. Teodoro S. Solsoloy. ### ***(Rita T. dela Cruz)***

BAR attends turnover ceremony of native swine project in Mulanay

The Bureau of Agricultural Research (BAR) visited the town of Mulanay in Quezon province for the turnover ceremony and end-of-project report of the "Native Swine for 'lechon de leche' Production: Improving Feed Availability through Integration of *Sakwa* as Forage Feed in Coconut-based Production System" on 24 October 2011.

Proponents, Dr. Mary Jean G. Bulatao and Dr. Virgilio T. Villancio, met with the BAR team including technical staff from the Technology Commercialization Division (TCD) and Applied Communication Division (ACD) of BAR, to attend the activity and visit the sites for notable successes and highlights of the project.

The ceremony was presided over by the municipal agriculturist officer, Ms. Preceva Q Villafranca. TCD staff, Ms. Evelyn Juanillo and Mr. Mark Jason Fernando delivered messages of support in behalf of BAR Director Nicomedes P. Eleazar and Executive Director of UPLB Foundation, Inc. Cecilio R. Arboleda, respectively. This was followed by an end-of-project report presented by Dr. Bulatao.

A product of the combined efforts of various agencies and organizations, the project was implemented by the Farming Systems and Soil Resources Institute, Agricultural Systems cluster, College of Agriculture, University of the Philippines Los Baños (UPLB), and the UPLB Foundation, Inc. The project was funded by the National Agricultural and Fishery Council (NAFC) through the KR2 Program Grant Assistance for Underprivileged Farmers and BAR under its National Technology Commercialization Program (NTCP).

The project was an offshoot of another project back in 2006. Based on a study conducted by the Agricultural Systems Cluster (UPLB) in the coconut areas of Bondoc Peninsula, it was found that native swine production is an active practice in the municipalities of Mulanay and San Narciso. It was found that dried, chipped, and milled *sakwa*, the corm of *gabing* San Fernando (*Yautia* spp.) can be substituted for corn as feed ingredient by as much as 60–90 percent.

Ms. Evelyn Juanillo (3rd from left) hands over a Certificate of Recognition to Ms. Nelia Mercurio, (3rd from right) MRICF president and project farmer cooperator. Also in the photo are: (L-R) Mark Jason Gloria of UPLB-FI, Dr. Mary Jean Bulatao of UPLB, Dulce Ojeda and Kristine A. Adao of the Mulanay Municipal Office. PHOTOS: ZREYNOSO AND MAGUMAPAC

The research's study reported that *gabing* San Fernando has been found to be well adapted in plateaus and can tolerate shade conditions, and is resistant to adverse climate conditions, pests, and diseases. It is also relatively drought-resistant and can be planted anytime of the year. Thus, Dr. Bulatao and Dr. Villancio's proposal piloted the utilization of *sakwa* as feed for ranging native swine in hopes of improving nutrient availability and increase the average daily gain of said animals, therefore reducing the length of time it takes to achieve the desired marketable weight. In turn, with healthier pigs raised, there is the increased chance of healthier piglets, thus translating to lesser mortality.

The project aimed to overall improve the productivity and income of coconut farm households by improving or enhancing the integration of existing coconut-livestock enterprise. More specifically, it sought to improve nutrient availability by integrating the production of *gabing* San Fernando as feeds for native swine, as well as introducing good management practices for native swine production so as to improve production and reduce mortality. This venture consisted of four major components: capability building/training on swine production, marketing, and disease control; establishment of *gabing* San Fernando under coconut; swine dispersal and technical assistance; and monitoring of economic impacts.

The participating association chosen as collaborating partner in this project after much discerning was the Rural Improvement Club (RIC) of barangay Latangan. All level

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PNoy keynotes..*from page 1*

The president also good-humoredly narrated the friendship that he has shared with Secretary Alcala and how he admires his dedication and determination. In the President's words, *"Kaya naman po, sabi ko talagang buo ang kumpiyansa ko sa iyo na kapag nagbitaw ng salita* (referring to Secretary Alcala), *itaga na nga talaga sa bato, iyon po ang totoo. Kaya naman po, buo po ang aking tiwala: bawat binhi na kanyang* (referring to Secretary Alcala) *ipinupunla para sa sektor ng agrikultura, tulad na lamang ng kumperensyang ito, ay talaga namang magbubunga ng magagandang resulta para sa mga Pilipino."*

The president also emphasized the importance of Organic Agriculture in alleviating poverty and improving the lives of the Filipinos. *"Malaki ang potensyal ng organikong pagsasaka na maiangat ang kita, at labanan ang gutom at kahirapan sa mga papaunlad na bansa tulad ng Pilipinas. Dahil hindi ginagamitan ng chemical-based fertilizers, ligtas na paraan ito sa produksyon ng pagkain at malaya ito sa posibleng banta sa kalusugan at kalikasan. Nakakatulong din ito upang mapababa ang gastos sa sakahan*."

Highlighting the event was the awarding of the Gawad Saka Outstanding Organic Farmer Award which was given to Mr. Benjamin Lao, president of Lao Integrated Farms, Inc., for his active involvement in organic farming, particularly in coconut farming which started since 1998.

The second day of the conference featured plenary sessions focusing on the conference's theme. Topics discussed during the plenary session included: 1) "The Global Organic Market Access (GOMA) Project," discussed by Mr. Gilberto F. Layese, member of the Technical Working Group of the GOMA Project; 2) "State of Organic Farming in ASEAN Countries" by Dr. Peter Batt, professor at the Curtin University, West Austalia; 3) "RA 10068 Status of Implementation and Introduction of New NOAB Non-Government Members," discussed and presented by the newly designated OIC-Director of the Bureau of Agriculture and Fisheries Product Standards (BAFPS) Ms. Angelina A. Bondad; 4) "Organic Situation in Luzon" by the Program Leader of the Benguet State University-Organic Agriculture Program Dr. Jose Balaoing; 6) "Organic Farming in Visayas" discussed by Ms. Pamela Henares, Board of Trustee, Negros Island Sustainable Agriculture and Rural Development Foundation; 7) "Organic Farming in Mindanao" by Dr. Sylvia Concepcion, dean of the UP School of Management; and, 8) "Organic Farming in National Convergence Initiative Sites," discussed by Mr. Mariz Agbon, National Secretariat for the National Convergence Initiative.

Each speaker was given a Plaque of Appreciation and a token for their valuable contributions as resource speakers.

`Ms. Angelina A. Bondad, BAFPS OIC-director, also introduced new NOAB Non-Government Members to the audience. These include: Mr. Miller Bicaldo, general manager, of the Pecuaria Development Cooperative (PDCI); Mr. Rey Pedroso of the Badiangan Organic Farmers Association (BOFA); Ms. Emalyn Legal, provincial coordinator of the Pambansang Kiluan ng mga Samahang Magsasaka (PAKISAMA) – Mindanao, Inc., and Mr. Edwin Marthine Lopez, executive director of the Alter Trade Foundation Inc.

Three simultaneous breakout sessions were held during the third day. These sessions included topics on research and technology updates, and marketing tools and strategies, which were discussed by some of the country's distinguished experts in science, technology, and entrepreneurship.

Mr. Edicio dela Torre, member of the Department of Agriculture-Secretary's Technical Assistance Group (DA-STAG) afterwards presented the "Updates on the Formulation of the Organic Agriculture Roadmap." This was followed by the formulation of the 8th NOAC Resolution which was arbitrated by Ms. Emalyn Legal, one of the newly-introduced members of the NOAB. ### ***(Mara Shyn M. Valdeabella)***

Organic soybean...*from page 14*

kasi for the first time in my life nakakita ako ng butil ng soybean" he said. He also enumerated what are the noticeable effects brought up by using organic fertilizer. He noticed that there is an increase in number of beneficial insects, hence, no need to spray pesticides/insecticides. The size of grains is bigger compare to the soybean grains using inorganic fertilizer. He expected to harvest 1.5 - 2 tons of soybeans in his one hectare land. There was no incidence of soybean diseases observed in his field. He reminded the participants that the use of organic fertilizer (vermicomposting) depends on the substrates used. His vermicast comes from substrate mixture of 30 percent coconut husk, 30 percent corn husk, 30-35 percent goat's manure, and the remaining are leaves. In his testimony, he emphasized that engaging in organic farming really needs dedication and passion and encouraged his co-farmers to join him in his advocacy on organic farming.

As guest speaker, Ms. Garces read the message of BAR's Director Nicomedes Eleazar for the ocassion wherein he encouraged the researchers present in the event to submit their proposals to BAR.

Mr. Legaste delivered his message of support to the program and mentioned the event is one of the indications of reviving the soybean industry in South Cotabato. One of the good prospects he identified in soybean is the higher demand in Halal Foods.

Dr. John B. Pascual, OIC regional technical director for research of DA-RFU 12, also gave his message of support and cited that Regional Executive Director Amalia J. Datukan is in full support in the soybean program. "In fact," he said, "25 hectares of land are already allotted for soybean cultivation and also, all the regional stations in South Cotabato will plant soybeans."

This event is one of the activities organized by CEMIARC in an effort to promote and boost organic soybean production in the region and contribute to economic growth. The next step will be on soybeans' product development and commercialization. ### ***(Diana Rose A. de Leon)***

Aileen V. Alvarez, focal person of soybean program in DA-Region 12, leading the tour in the project site while discussing important points on organic soybean production. PHOTOS: DDELEON

Organic soybean production kicks off in Region 12

It is only in the early 20th century that soybeans gained worldwide popularity due to health-related benefits associated with it. Since then, soybeans become an economically important crop. Aside from its food function, soybeans are already utilized as oil, animal feed and as an industrial raw material such as soaps and biodiesel.

In the Philippines, it is noted that there has been an attempt to cultivate soybeans since the early 1980s. Being an undervalued crop in the country at that time, the attempt was futile, thus, the soybean industry did not prosper and remained so throughout the years. Not until through the leadership of Department of Agriculture (DA) Secretary Proceso J. Alcala that the revival of soybean industry has been prioritized.

Under the High Value Crops Development Program (HVCDP), one of the banner programs of DA, soybean has been included as one of its priority commodities. In the crafted soybean roadmap titled, "Building Sustainable Soybean Industry in the Philippines," the goal is to build a community-based sustainable organic soybean production in the country.

The Bureau of Agricultural Research (BAR) was tasked to facilitate the research and development component of the program. As part of this initiative, the Central Mindanao Integrated Agricultural Research Center (CEMIARC) led a technology demonstration and field day on organic soybean production program in Tupi, South Cotabato on 20 October 2011. This activity officially jumpstarted the soybean program in the region.

Farmers from the different municipalities of South Cotabato with the representatives from different DA attached agencies, local government unit, non-government organizations, and private sector, attended to witness and participate in the technology demonstration and program launching.

During the tour on the soybean project site, Ms. Aileen V. Alvarez, focal person of soybean program, DA-CEMIARC, discussed the salient points on organic soybean production including the interventions included in the project including the different fertilizer application.

To compare the effects of using organic and inorganic fertilizers, one hectare project site was divided into four areas corresponding to four different fertilizer applications. In organic, the interventions used were: vermicompost+vermitea+indigenous microorganisms (IMO) combinations, and vermicompost+IMO combinations. For the inorganic, basal application was done using 14-14-14 fertilizer combinations, and sidedress application using also 14-14-14 fertilizer combinations.

Aside from seeing the soybean in its raw stage, participants tasted different cooked soybeans products including: *taho*, *adobong tokwa*, soybean *bola-bola*, fried *tokwa* and *nilagang* soybean. There were also other products such as soybean coffee and roasted soybean feeds.

After the tour, participants proceeded to Brgy. Concepcion, Tupi for the organic soybean production program proper.

Gracing the event were Mr. Reynaldo H. Legaste, provincial agriculturist of South Cotabato; Dr. John B. Pascual, OIC regional technical director for research of DA-RFU 12; Ms. Lorna P. Vilbar, CEMIARC center chief; Mr. Elmer E. Enicola, consultant on soybeans from the Institute of Plant Breeding, University of the Philippines Los Baños (IPB-UPLB); and Ms. Ellen M. Garces of the BAR- Technology Commercialization Division, who represented BAR Director Nicomedes P. Eleazar as guest speaker.

Engr. Daniel F. Apostol, farmer-cooperator and owner of the soybean project site, shared his organic soybean production experiences. *"Actually hulog ng langit itong soybeans para sa amin*

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BAR highlights research results from adlai, coffee in 2011 AgriLink

Sustainable agriculture is the ultimate goal of every society's food and agriculture lead institution. The Department of Agriculture (DA), being at the helm of ensuring that there is food in every Filipino's table, is gearing towards the same goal.

On this end, the Foundation for Resource Linkage and Development, (FRLD) in collaboration with DA, National Agricultural and Fishery Council (NAFC), Bureau of Fisheries and Aquatic Resources (BFAR), and other partner agencies organized the 2011 AgriLink/FoodLink/AquaLink, the country's biggest and well-renowned yearly international trade show on food, agribusiness, and aquaculture. With the theme, "Integration: Key to Sustainable Agriculture", the activity was held on 6-8 October 2011 at the World Trade Center, Manila.

As one of the sponsors, the Bureau of Agricultural Research (BAR), in cooperation with the DA-Regional Field Unit 4A-Southern Tagalog Integrated Agricultural Research Center (STIARC) and Cavite State University (CavSU), participated in the event featuring adlai and coffee in its exhibit display. Also showcased were the bureau's two banner programs, the Community-based Participatory Action Research (CPAR) and the National Technology Commercialization Program (NTCP).

Promoting *adlai* as staple food crop

BAR has been promoting adlai as an alternative staple crop in line with DA's goal towards food self-sufficiency. A seminar on adlai production and processing was held on the second day with DA-RFU 4A-STIARC Manager Digna P. Narvacan as the resource speaker.

"DA 4A-STIARC and its research outreach stations in Tiaong, Quezon and Tanay, Rizal are among the research institutions that pioneered the conduct of adlai variety trials and seed production," mentioned Ms. Narvacan in the presentation. Upholding the utilization of adlai through technology showcasing and cooking demonstration are also parts of the project activities.

Ms. Narvacan presented the adlai's physical and biological characteristics, varieties, uses and benefits, chemical analysis, production and postharvest management, and various products developed from the crop. "Every food that can be cooked using rice can also be cooked using adlai," explained Ms. Narvacan. Among the food products developed were *adlai sinaing, sinukmani, champurado, maja blanca, polvoron, turones de adlai, adlai krispies, chichi adlai,* puffed *adlai,* no-bake energy bar*, suman sa lihiya*, nutty breadsticks, and adlai drink. After the seminar, food tasting of the different adlai products was held. The audience was given *adlai sinukmani* and adlai drink brought by the speaker.

Dr. Ruel M. Mojica of the Cavite State University talks about the effect of roasting coffee on its phenolic content and antioxidant activity. PHOTO: LPADILLA

DA-RFU 4A STIARC Manager Digna P. Narvacan promotes adlai production and discusses the various products developed from the crop. PHOTO: LPADILLA

Roasting coffee and its effect on its chemical compounds

"One of the most important commodities of the Philippines is coffee and one of the most favorite drinks of Filipinos," said CavSU professor, Dr. Ruel M. Mojica. The seminar on coffee highlighted the effects of different degrees or levels of roasting on the total phenolic content and antioxidant activity of the four coffee varieties, namely: *Arabica, Excelsa, Liberica,* and *Robusta.*

Dr. Mojica stressed the importance of roasting coffee for it affects its phenolic content, which is comprised of different chemical compounds that influence the color, aroma, and flavor of coffee beans. Moreover, roasting coffee also affects its antioxidant activity, which can provide health assistance to prevent certain ailments.

As a conclusion, Dr. Mojica said that light roasted coffee beans of all four varieties have the highest phenolic content. He recommended the establishment of exploratory indicators to optimize industrial processing conditions to generate high quality coffee blends. ### ***(Leila Denisse E. Padilla)***

BAR joins 2011 World Food Day

(L-R) DA Asst. Sec. Allan Q. Umali, UN World Food Program Country Director Stephen Anderson, UN Resident Coordinator Jacqueline Badcock, UN-FAO Ambassador of Goodwill Lea Salonga, DA Secretary Proceso Alcala, and UN-FAO Representative-Philippines Kazuyuki Tsurumi. PHOTO: ACONSTANTINO

"The Philippines, which used to be the world's largest rice importer, is seeking to achieve rice self-sufficiency by 2013. Successful implementation of irrigation systems repairs, establishment of more postharvest facilities and farm-to-market roads are part of the intensified production program in achieving self-sufficiency in two to three years time." This was cited by the Food and Agriculture Organization (FAO) to highlight the efforts of the Philippines in boosting food production as a strategic response to high food prices.

Gearing further towards this end, the Department of Agriculture (DA) together with FAO, led the conduct of the 2011 World Food Day (WFD) celebration. Joining the celebration were DA attached agencies and staff bureaus including the Bureau of Agricultural Research (BAR).

The activity kicked off with a brief opening and ribbon cutting ceremonies officiated by DA Undersecretary for Administration and Finance Antonio A. Fleta, Mr. Kazuyuki Tsurumi of FAO, DA Asst. Sec Allan Q. Umali who is also the chairman of 2011 WFD National Steering Committee, and DA Asst. Sec. for Agribusiness and Fisheries Salvador S. Salacup.

DA and FAO have been spearheading this annual celebration every 16th of October since 1980 to promote awareness of food security for all in the fight against world hunger and malnutrition. October 16 is also the founding anniversary of the FAO, which was organized in 1979 by UN member-countries, including the Philippines.

'Food Prices - from Crisis to Stability' was the adopted theme for this year's event which focuses on creating global awareness on factors that cause food price increases, and enjoining national and local governments, the private sector, farmers' and fishers' groups and individuals to implement initiatives to reduce the impact of food prices and come up with programs or mechanism designed to make food prices affordable to the common people and to the poorest members of society.

In this year's celebration, DA has lined up week-long activities at the DA building main lobby, featuring the agency's program thrusts particularly on achieving food security and food staple sufficiency. Various DA agencies and private enterprises took part in the product exhibits on major staples, vegetables, iron-fortified rice, livestock and dairy products and animals, and fishery products. Also lined up are technology demonstrations and seminars on aquaphonics system, urban aquaculture, and ornamental fish production.

Agriculture Secretary Proceso Alcala addresses the theme on food prices and food security. PHOTO: NDELROSARIO III

The DA's Research, Development and Extension (RD&E) components were given the opportunity to present their program thrusts and initiatives during the week-long event. The sub-committee on RD&E was chaired by BAR and co-chaired by the Bureau of Soils and Water Management (BSWM). Meanwhile, the extension service was led by the Agricultural Training Institute (ATI). Tasked to coordinate the committee for the 2011 WFD National Committee was the BAR's Applied Communication Division (ACD).

The sub-committee on RD&E conducted series of seminars to complement the initiatives of the DA's current thrusts on food security and in the promotion of staple foods. Lectures on the commercialization of adlai, white corn grits, vermiculture, and organic fertilizers were among the presentations organized by the committee.

For BAR, on-going studies on *adlai,* promoted as a traditional staple food, were presented in a seminar.

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Challenges to CPAR finfishes project promotes community-building in Quezon

Five months after the official launch of the Bureau of Agricultural Research's (BAR) Community-based Participatory Action Research Project (CPAR) on "The Culture of High-Value Finfishes in Cages in Sariaya, Quezon," highly marketable fish including red *tilapia*, *bangus*, and grouper continue to swarm the once empty fish cages of Brgy. Bignay II in Sariaya, Quezon.

The coast of Sariaya lies within Tayabas Bay – a known spawning ground for various marine species. However, due to illegal fishing operations and destructive methods, coupled with harsh weather changes affecting both the marine life and the water, fish catch continued to decline noticeably in 2008. Discouraged fishermen were forced to either give into illicit fishing activities (i.e., dynamite fishing), or opt out and search for other economic means. According to the Bureau of Agricultural Statistics (BAS), market demand for fish (i.e., *tilapia*) fluctuated; price of fish in the market increased.

Headed by Bureau of Fisheries and Aquatic Resources (BFAR)-Regional Fisheries Research and Development Center (RFRDC) Region 4A with funding support from BAR, a project that ultimately aims to bring back a sustainable supply of finfishes in the market by updating indigenous practices and merging it with developed technologies was put in motion. Among the finfishes cultured in cages, there were also red *tilapia*, *bangus*, and grouper. All three are food fish, with continuous increasing market demand for utilization both at home and in business. *Bangus* and grouper were kept in bamboo fish pens, while red *tilapia* was set in a nearby pond as per differences in pH requirements.

Just months after the project's inception, according to RFRDC Region 4A Manager Hannibal M. Chavez, "*Maganda ang growth performance ng mga isda*" ("the growth performance of the fish is good").

Majority of the finfishes grew with regards to size and population as the project began. Although in the months that progressed, weather interruptions and typhoons affecting water quality slightly stunted the growth of the finfishes, Chavez and the Brgy. Bignay II cooperators continue on and remain hopeful.

"*Hindi mo talaga ma-control ang environmental factors. Pero dapat gagawan mo ng paraan*" ("You really cannot control environmental factors. But of course, you'll find a way").

Considering that the project is relatively new, the fish-farming culture of the fisherfolk has shown much development. They are now not only able to cultivate the finfishes in the pens and pond, but are also equipped with knowledge in implementation techniques, management of the pens and pond, and decision-making. Although there may be minor roadblocks to stabilizing the production of *red tilapia, bangus*, and grouper within the province, the community continues to push on to discover more ways in which they can overcome the challenges presented to them. here they are able to exchange information and ideas on how to combat issues arising from the effects of weather disturbances, and even the existing social conflicts brought on by the pressure of protecting the pens and pond. Cooperators continue to organize meetings where they are able to exchange information and ideas on how to combat issues arising from the effects of weather disturbances, and even the existing social conflicts brought on by the pressure of protecting the pens and pond.

With this project promising to enable the fisherfolk of Sariaya, Quezon more fish for harvest, they are now more than ever challenged to move forward, putting their differences aside, and achieve sustainable community development. And in months to come, Sariaya, Quezon just might be one of the top finfish suppliers in the country. ###

(Zuellen B. Reynoso)

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Cultural management strategies on *Stevia* production being adopted

Dr. Maria Elena F. Quimio of BIGFIS shows the Stevia plant to BAR Director Nicomedes P. Eleazar during his visit to the project site. PHOTO: BIGFIS

Given the threat of climate change and its imminent effects to the crops sector, adaptation and adjustment efforts were being done to Stevia plants being grown under an on-going project titled, "*Commercialization of Stevia Rebuadiana: A Natural Sweetener"*. This was reported by Dr. Maria Elena F. Quimio of the Bicolandia Greenfields Development Organization, a non-government organization based in Naga City, during a project status update to the Bureau of Agricultural Research (BAR) Director Nicomedes P. Eleazar who recently visited the project site in Ocampo, Camarines Sur. Given the great potential of Stevia in the foreign market as a natural sweetener, BAR is funding the project under its National Technology Commercialization Program (NTCP).

According to Dr. Quimio, adaptation strategies are being conducted in response to climate change disturbances in the country and ensure the success of the project. Since Stevia plants are not native in the Philippines growing them has to be managed well through effective cultural management and interventions.

"Raised beds were established to prevent water log and peripheral drainage canals were built around the periphery of the farm area," Dr. Quimio explained. "Ratooning, applications of organic sprays on plants, and proper distancing to avoid crowding were done to prevent infestation of fungus and pests brought about by rains and frequent rainy cloud conditions."

Dr. Quimio added that their group has used bamboo sticks to anchor newly planted stevia in table beds when sown during the typhoon season. Use of table beds is ideal for urban agriculture or for rooftop gardening. "Proper timing of application of vermi-compost to prevent being washed out by rains and proper timing of planting of cuttings to avoid stress on roots caused by frequent rainfall should also be noted," she revealed.

Although Stevia plant originated from Paraguay, it is now being widely cultivated and used in other countries. As a natural alternative to artificial sweeteners, Stevia is being utilized as an ingredient in coffee, tea blends, and some health products. Leaf parts of stevia are about ten times sweeter than sugar. Only tiny amounts of purified steviol glycosides, the sweet compounds in stevia, are needed for food sweetening and drink preparations.

Through this BAR-funded project on Stevia, nursery production in plastic pots, table beds and in field conditions has been established. The plants are being grown in trays and pots in three screen houses and in fields in three areas located in Camarines Sur and Albay.

Farmer cooperators were already cited as part of the activities of the project. These farmer cooperators will then be provided with planting materials and will be trained on nursery production and on good agricultural practices. ###

(Ma. Eloisa H. Aquino)

Agriculture Secretary Proceso Alcala promotes adlai and asks to Dr. Jacqueline Badcock, UN Resident Coordinator, to taste food products from the crop after the 2011 World Food Day culminating ceremony. Assisting Sec. Alcala are staff from BAR's Applied Communication Division. PHOTO: NDELROSARIO III

Adlai or Job's Tear is a tall grain-bearing tropical plant of the family *Poaceae* (grass family). The crop is also a potential source of food like cooked rice, *maja blanca, sinukmani, champorado*, among others. The seminar on *adlai* was presented by Digna Narvacan, manager of the Southern Tagalog Integrated Agricultural Research Center (STIARC), Region IVA.

Meanwhile, a seminar on white corn grits was also organized by BAR, in view of this event. Dr. Artemio M. Salazar of the University of the Philippines Los Baños (UPLB) served as resource speaker. Dr. Salazar highlighted the nutritional facts or values of the white flint corn which could substitute rice as staple food.

The lectures and presentations on 1) mushroom culture, 2) vermiculture - vermicomposting technology, and 3) basic hydroponics were presented by Jacqueline Rojales, Angelita Marcia, and Alan Anida of the BWSM, respectively.

For ATI, the agency highlighted an organic-based vegetable production project being piloted in the province of Benguet. Mr. Juntaro Nakajima, local manager of the Safe Vegetable Promotion Project in Benguet – The Japan Agricultural Exchanged Council, shared his expertise in vegetable production using organic-based material.

Among the highlights of the 2011 WFD included the launching of the *'Gulayan sa Paaralan'* held at the Emilio Aguinaldo Elementary School in Murphy, Quezon City. The DA through the Bureau of Plant Industry (BPI) initiated the urban-vergetable project in partnership and coordination with the Office of Vice Mayor Joy Belmonte.

For the on the-spot poster-making contest, 16 elementary pupils from each region competed. Of the 16 finalists, five national winners were named during the deliberation process. The five winners of the 2011 World Food Day postermaking contest showcased their respective 'masterpieces' during the culminating event held in Quezon City. The contest was held on 12 October 2011 at the DA Agribusiness Center as part of the celebration.

Agriculture Secretary Proceso J. Alcala and world-acclaimed Filipina singer-actress, Ms. Lea Salonga, also the United Nations' Food Agriculture Organization (UN-FAO) Ambassador of Goodwill, staged and marked the culminating event of celebration held on 14 October 2011 at the Quezon City Memorial City. With them were Dr. Jacqueline Badcock, UN resident coordinator and UN Development Program resident representative; Stephen Anderson, UN World Food Program country director and representative; and Kazuyuki Tsurumi, UN-FAO representative in the Philippines.

The event concluded with the ceremonial food tasting of other major staples being promoted by DA including white corn grits *(bigas-mais), saba*, sweet potato *(camote*), cassava *(kamoteng kahoy), taro (gabi*), and a*dlai*. There was also the candle-lighting ceremony and reading of the '2011 World Food Day Pledge,' held at the Liwasang Aurora, Quezon City Circle. ###

(Patrick Raymund A. Lesaca)

BAR ACD Head Julia Lapitan (3rd from right) leads ACD staff during the food tasting of adlai products after the World Food Day culminating activity. PHOTO: NDELROSARIO III

BAR features seminars on adlai, white corn to address food security

Food security is a world challenge. Food, as an essential part of human's existence and survival has inevitably reached instability given the multi-faceted conflicts that sprout almost everywhere – cutting across all sectors.

Following its thrusts on food security and self-sufficiency, the Department of Agriculture (DA) in collaboration with the Food and Agriculture Organization of the United Nations (FAO), spearheaded the celebration of 2011 World Food Day (WFD) on 11-14 October, with the theme, "Food Prices – from crisis to stability".

As member of the Research, Development and Extension (RDE) Committee, the Bureau of Agricultural Research (BAR) took part in the event through the conduct of a two seminars on *adlai* and white corn. The two crops were found to have potentials as staple food just like rice and in the long haul could alleviate famine and augment food stability in the country.

DA-RFU 4A-STIARC Manager Digna P. Narvacan as the resource speaker on adlai. PHOTO: LPADILLA

Rice-like *adlai*

BAR, together with DA-Regional Field Units (RFUs), and other partner agencies have been developing *adlai* as an alternative staple crop in line with DA's Philippine Food Staples Self-Sufficiency Roadmap (FSSR).

Through DA-RFU 4A-STIARC Manager Digna P. Narvacan as the resource speaker, BAR organized a seminar on the production and processing of the rice-like *adlai*. The seminar is aimed to introduce and promote *adlai* as an alternative staple resource. Ms. Narvacan described *adlai*'s physical and biological characteristics and discussed its different varieties, uses and benefits, chemical analysis, and production and postharvest management in her presentation.

In the discussion, various *adlai* recipes were presented. Ms. Narvacan mentioned that the foods that can be cooked using rice can also be done using adlai. Among the recipes were *adlai sinaing, champurado, maja blanca, polvoron, turones de adlai, suman sa lihiya,* and *adlai* drink. Food tasting of *adlai sinukmani* was held at the end of the seminar.

STIARC is one of the research institutions that headed the seed production and variety trials of *adlai* in the country. Its research outreach stations are located in Tanay, Rizal and Tiaong, Quezon. As part of their promotional activities, they also conduct cooking demos and technology showcasing.

Dr. Artemio M. Salazar of IPB-UPLB discusses white corn as a healthy alternative to rice. PHOTO: LPADILLA

White corn, a healthy, easy alternative

BAR invited Dr. Artemio M. Salazar of the Crop Science Cluster, Institute of Plant Breeding (IPB), University of the Philippines Los Baños (UPLB), as resource speaker for the white corn seminar. He said, "White corn is a healthy and affordable substitute to rice."

The seminar aimed to provide the audience background, nutritional analysis, and potentials of white corn. Highlighted in the presentation were the health benefits of this crop. It is said that white corn is healthier than rice because it has a low glycemic index. "White corn is good for people with diabetes," Dr. Salazar added.

He stressed that white corn consumption can reduce famine and diabetes incidence among Filipinos. However, the problem is that Filipinos are used to eating rice as staple food. This is resolved through the UPLB researchers' formulation of a rice-corn mixture that have passed sensory and acceptability tests. The white corn grits is mixed with rice to produce 'rice composite'. At the end of the seminar, food tasting of white corn *sinukmani* was held. ### ***(Leila Denisse E. Padilla)***

BAR joins multi-sectoral confab to beef up the cacao R&D industry

To promote exchange of ideas among several sectors, thereby, sustaining the country's reputation as producer of premium and export quality cacao beans, a "Regional Cacao Multi-Stakeholder Forum/Consultation" was held on 3-5 October 2011 at the Isabela State University (ISU) in Echague, Isabela.

Cacao (*Theobroma cacao*) is a high value tree crop suitable in different production systems (monocrop, intercropping, agroforestry, etc.). It serves as raw material of sweets such as tablea, pastries, cosmetics, and other pharmaceutical products. Aside from being a good source of amino acids, it has antioxidant properties which helps delay aging.

Joining the forum was representatives from the Bureau of Agricultural Research (BAR) led by Asst. Dir. Teodoro S. Solsoloy who also served as the keynote speaker.

Asst. Dir. Solsoloy mentioned the strength in technology, expertise, and good germplasm collection of the cacao industry. "However, the inadequate technical know-how on cacao production among farmers and technicians/ extension workers should be addressed through best varieties, economical and environmental friendly pests and diseases control, labor-efficient farming system practices, and appropriate post-harvest practices and technologies," he stressed.

Given the potential of cacao as a high value crop, BAR has been providing R&D funding support to several projects on cacao.

The forum was anchored on the on-going BAR funded project titled, Sustainable Cacao Program: Bio-intensive IPM and Farming System Approaches" which is being led by the Cocoa Foundation of the Philippines (Cocoa Phil)—non-profit organization of farmers, cacao buyers and processors, and committed professionals which stands as the umbrella organization for the cocoa industry in the Philippines.

Currently, there are three major varieties being propogated in the country.

PHOTO FROM: www.campco.org

Given the potential of cacao as a high value crop, BAR has been providing R&D funding support to several projects on cacao.

These are: Criollo, Forastero, and Trinitario. Among them, Criollo has superior quality and relatively susceptible to pest and disease. Forastero is a high yielding variety with round pod and thick-walled which turn yellow when ripe and has flat, violet seeds; one group of this is Amenolado. On the other hand, Trinitario is a hybrid between Criollo and Amellonado.

An important skill to be learned in cacao industry is proper drying, according to reports. In Ghana, Indonesia, and Vietnam, the usual practice is to expose the beans under direct sunlight. Nowadays, many are already using mechanical dryers which hasten the procedure.

A presentation of Dr. Divina A. Amalin, a DOST Balik Scientist awardee from University of Florida, Miami, focused on the Bio-Intensive IPM of cocoa pests and diseases. In her report, she mentioned that molecular diagnostic laboratories can rapidly detect plant problems. Important cacao insect pests and diseases include cacao pod borer (CPB), mirid/capsid bug, helopeltis, among others. Available control measures such as sleeving, early harvesting, sanitation, chemical control may help reduce damage. "Today, insect monitoring tools such as sex pheromone trap specific to cacao pod borer is used. Interestingly, biological control (bio-control) measures which are proven safe and eco-friendly include: 1) Classical (Applied) Biological Control which is the introduction of biological control agents from the origin of the pests; and 2) Natural (Native) Biological Control which refers to the use of native biological control agents.

Currently, an R&D Roadmap for Cacao has been crafted. In particular, Region 2, being the host for the multistakeholders' forum has warmed-up its engine and is now ready for takeoff on the following areas: Conservation of Genetic Resources, Establishment and Production, Prevention and Control of Pests and Diseases, Postharvest Processing and Enhancement of Quality, Secondary Processing and Product Development, Industry and Socio-economic Analysis, and Development of National Strategic Initiatives. ### ***(Jacob Anderson C. Sanchez)***.