BAR conducts free seminar on SNAP Hydroponics for POs

Dr. Primitivo Jose A. Santos of IPB-UPLB lectures on SNAP Hydroponics to interested farmers and private individuals in Brgy. Commonwealth. PHOTO: RBERNARDO

As part of its task to assist clients and beneficiaries of R&D, the Bureau of Agricultural Research (BAR) organized a seminar on "Simple Nutrient Additional Program (SNAP) Hydroponics" for the benefit of various people's organizations (POs) in Brgy. Commonwealth in Quezon City on 20 May 2011 at the Commonwealth Hall Main Bldg. in the city. Attending the seminar were more then 30 participants including members of homeowners' associations, senior citizens, and private individuals interested in the technology and want to augment their income through vegetable farming. Dr. Primitivo Jose A. Santos of the Institute of Plant Breeding-University of the Philippines Los Baños (IPB-UPLB) was the resource speaker for the seminar.

SNAP Hydroponics is an alternative system of growing plants without soil. It uses an inert media and a nutrient solution containing all the essential elements needed by plants to grow. The technology was developed by Dr. Santos together with Dr. Eureka Teresa M. Ocampo of UPLB under a BAR-funded project. Also with BAR support, the trademark for the SNAP Hydroponics was approved by the country's Intellectual Property Office (IPO) in 2009 for wider adoption.

This technology was primarily designed with urban farming and backyard vegetable farming systems in mind. "This type of farming is easy to set-up and is more practical than the conventional farming system. It occupies minimal space; hence, it is doable in urban settings where small terraces can be used for growing crops. Also, the supplies and materials used are cheap and can be sourced from recyclable materials," explained Dr. Primitivo. He added that one can grow high-value vegetables such as lettuce, sweet pepper, cucumber, and celery for home consumption under SNAP hydroponics. "You'll have readily available vegetables on your table and it's fresh," he asserted.

Given the potential of the technology, many farmers and private individuals started to become interested in SNAP hydroponics. "The number of users of the technology has increased. We have also received a number of requests for demonstrations from interested people wanting to know more about the technology. Also, there has been an outpour of orders and sales for the SNAP solution," revelead Dr. Santos.

Mr. Miguel L. Linsangan, president of the Don Fabian Homeowners Association Inc., and a participant of the SNAP Hydroponics seminar, said that they heard about the technology from the *Mag-Agri Tayo* TV program and from the various exhibits where BAR participated in. "We have heard of so many kinds of hydroponics but it is the SNAP technology that we are mostly interested in. So we requested BAR to conduct a seminar on SNAP in our area," explained Mr. Linsangan. ### ***(Rita T. dela Cruz)***

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2 CPAR aquaculture projects launched in Sariaya, Quezon

BAR Dir. Nicomedes P. Eleazar (center), Quezon Rep. Irvin M. Alcala (2nd from right), and BFAR-RFRDC 4A Manager Hannibal M. Chavez (right) lead the ceremonial stocking of high-value finfishes and shellfishes including pompano, grouper, king crab, and black tiger shrimp during the launching of two CPAR projects on aquaculture in Sariaya, Quezon. PHOTO: MMOJICA

The Bureau of Agricultural Research (BAR), in partnership with the Bureau of Fisheries and Aquatic Resources (BFAR) and the local government unit of Sariaya, Quezon through the Office of Congressman Irvin Alcala of the 2nd District of Quezon Province, recently launched two Community-based Participatory Action Research (CPAR) projects that are expected to gradually uplift the aquaculture enterprise in coastal barangays of the province.

The two BAR-funded projects are: 1) culture of high-value finfishes in cages, and 2) culture of giant tiger prawn and mudcrab in ponds and cages, and were formally launched on-site at Brgy. Bignay 2, Sariaya, Quezon on 20 May 2011. The project is being implemented by BFAR Region 4A -Regional Fisheries R&D Center (RFRDC) in collaboration with the Office of Congressman Alcala.

An assessment of the projects' site proved that it is suitable for culture of several high-value finfishes and shellfishes. In the project launching, the ceremonial stocking of the ponds cages with pompano, grouper, king crab, and black tiger shrimp was led by BAR Director Nicomedes Eleazar and Congressman Alcala together with officials from BFAR and the Sariaya Municipal Agriculture Office, and the fisherfolk-beneficiaries of the project.

According to Hannibal Chavez, BFAR Region 4A -RFRDC manager and CPAR project leader, while the projects' site is naturally rich with aquatic resources, it is not optimally utilized by the community around it because of limited knowledge and capacity to undertake aquaculture.

"In order to properly harness the naturally-existing resources and the indigenous knowledge and practices of the fisherfolk, the components of the projects were conceptualized with the fisherfolk beneficiaries of Bignay 2 and Manggalang Kiling, the barangays that abut the estuary where the projects' site is located," Chavez explained.

In the project proposal prepared by Chavez and his team of researchers that include Marvin Nasino and Anna Merlina Fontanilla, they pointed out some of the advantages in choosing the area as the projects' site, "The presence

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Korea plans agricultural cooperation with Phl

Dr. Dae Seob Lee (inset photo), an agricultural economist and doctorate research fellow at the Korea Rural Economic Institute during his visit at BAR with key officials (top photo). PHOTOS: MMOJICA

In a bid to support agriculture and rural development in the Philippines and establish a mutually beneficial relation with the country, the Korean government sent one of its planning experts to the Philippines.

Dr. Dae Seob Lee, an agricultural economist and doctorate research fellow at the Korea Rural Economic Institute (KREI), recently visited the DA and some of its various offices to discuss the formulation of a framework aimed to guide the proposed development cooperation between Korea and the Philippines.

On 5 May 2011, Lee visited the Bureau of Agricultural Research (BAR) to get inputs for the development of the Country Partnership Strategies in Agriculture (CPSA) with the view to assisting the Philippines address current and foreseen issues in the country's agriculture sector. The CPSA shall be the reference document for future partnerships between Korea and the Philippines over the medium-term.

In his visit to BAR, DA's main coordinating and funding agency on agriculture and fisheries R&D, Lee was interested in getting the perspective of the R&D sector on the priority areas of concern of the government and as well as problem areas where agricultural development in the country is currently being hampered.

Lee emphasized that a strong development strategy and policy was seen as key to success and in sustaining the efforts in agricultural development. He likewise underlined the need to project the future in order to adapt to the changing needs and conditions of the agriculture sector and its stakeholders.

While Lee also stressed the importance of reinforcing human capacity and offering of scholarships to study abroad, he cited the issue of having limited local opportunities and that government support has been raised as a major concern by returning scholars. Thus, some scholars have been lured by better opportunities to venture abroad or work for multinational companies.

BAR was Lee's last stop after visiting different DA-attached agencies concerned with specific sub-sectors such as livestock, crops, and fisheries as well as agricultural statistics. Representatives from the Agricultural Training Institute (ATI) were also present at the meeting with BAR to give inputs about agricultural extension.

KREI is Korea's national research institute which presents new visions and development strategies by forecasting and analyzing changes in the agricultural circumstances in their home country and abroad. KREI's recent agricultural cooperation projects with developing countries include Lao, Mongolia, Bhutan, Vietnam, Papua New Guinea, and Cambodia in areas such as rural development, agricultural productivity, technology dissemination, and microfinance. ### ***(Miko Jazmine J. Mojica)***

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19 on-going DA-Biotech projects reviewed; 7 in the pipeline

Dr. Candida Adalla, OIC director of DA-Biotech PIU, provides the rationale of the mid-year project assessment. PHOTO: RDELACRUZ

To immediately address issues and concerns identified during project implementation, the Department of Agriculture-Biotechnology Program Implementation Unit (DA-Biotech PIU), convened project leaders, technical committees, and the program management for mid-year reviews of DA Biotech Program-funded projects on 30-31 May 2011 at the Monte Vista Hot Springs and Conference Resort in Pansol, Calamba, Laguna.

The mid-year project assessment is part of regular monitoring and evaluation (M&E) conducted by the DA-Biotech PIU to ensure that projects are implemented in accordance with their individual work and financial plans. Likewise, this is to ensure the projects' smooth implementation, attainment of their respective objectives, and their alignment to current priorities.

Nineteen on-going projects, including 15 applied biotechnology research (ABR), 3 on institutional capability enhancement (ICE), and 1 on information education and communication (IEC), went through technical review and evaluation. Also reviewed were seven new biotech projects proposed for approval and funding.

Research covered by the ABR projects include vitamin-enriched and virus-resistant rice varieties, transgenic cotton, abaca resistant to viruses through radiation-induced mutation, abaca molecular markers for high fiber quality and virus resistance, propagation of abaca high-yielding and virus-resistant hybrids, production of natural ingredients, processing rice bran into high value essential oil, fucoidan production from brown seaweeds, open-pollinated Bt eggplant, virus-resistant and delayed-ripening papaya, malunggay production technology, improvement of water buffaloes, DNA barcoding of livestock and poultry animals, and laying traits of Philippine Mallard ducks. Also included under the ABR projects is the biotech research fellowship program.

On ICE, the projects evaluated were those of the International Service for the Acquisition of Agri-Biotech Applications' (ISAAA) for the development, management, and commercialization of biotechnology; the Philippine Carabao Center (PCC) for the use of molecular markers and reproductive biotechniques for livestock genetic resource conservation; and the National Agribusiness Corporation (NABCOR) for the DA biotechnology business incubation facility. Only one project was evaluated for IEC - the Biotechnology Coalition of the Philippines (BCP)/ Biotechnology Media and Advocacy Resource Center (BMARC) on their advocacy, information, education, and development communication for biotechnology.

Also presented during the activity were seven biotech project proposals for funding consideration, which included one ICE and six ABR projects. These proposals were submitted by the Institute of Plant Breeding-University of the Philippines Los Baños (IPB-UPLB), Bureau of Plant Industry (BPI), Philippine Rice Research Institute (PhilRice), Bureau of Fisheries and Aquatic Resources-National Fisheries Research and Development Institute (BFAR-NFRDI), and Mindanao State University-Iligan Institute of Technology (MSU-IIT).

Being the agriculture and fisheries research and development (R&D) arm of the DA and a partner in DA Biotech program administration, the Bureau of Agricultural Research (BAR) was represented by Ms. Rita T. dela Cruz of the Applied Communication Division and Mr. Patrick Raymond L. Cabrera of the Planning and Program Development Division (PPDD). BAR has long recognized the potentials of biotechnology in improving the agriculture and fishery sectors of the country and sees the need to intensify the implementation of DA's biotechnology R&D program.

Also highlighting the two-day activity was an orientation-workshop on proposal and report submission, and evaluation of biotech projects using the updated and improved Electronic Submission, Monitoring and Evaluation System (ESMES) which was developed by DA-Biotech PIU to facilitate the administration of all biotech projects.

"We wanted to make everything more efficient for us by making use of this paperless facility in terms of submitting project proposals as well as for monitoring and evaluating them online. This will also provide project proponents, and even the evaluators, with easy access to all the information," explained Dr. Candida Adalla, OIC director of DA-Biotech PIU. ### ***(Rita T. dela Cruz)***

> ***"The mid-year project assessment is part of regular monitoring and evaluation (M&E) conducted by the DA-Biotech PIU to ensure that projects are implemented in accordance with their individual work and financial plans.***

BAR convenes exhibitors for 7th Nat'l Tech Forum

Exhibitors meet for the coming 7th National Technology Forum and Product Exhibition. PHOTO: AARIZABAL

In preparation for the 7th Agriculture and Fisheries Technology Forum and Product Exhibition scheduled on 11-14 August 2011 at the Mega Trade Hall 2 of SM Mega Mall in Mandaluyong City, the Bureau of Agricultural Research's Technology Commercialization Division (BAR-TCD) conducted an Exhibitors' Consultation Meeting on 18 May 2011.

Discussed were the details and other arrangements for the forthcoming event. Likewise, suggestions and other inputs from representatives from the Regional Field Units (RFUs), Regional Integrated Agricultural Research Centers (RIARCs), Regional Fisheries Research and Development Centers (RFRDCs), DA Staff Bureaus and Attached Agencies, and State Universities and Colleges (SUCs) to improve the affair were solicited by BAR.

BAR Assistant Director Teodoro S. Solsoloy welcomed the participants and encouraged working as a team to make this year's NTF a success.

The TCD is in charge of the forum and its Head, Mr. Anthony B. Obligado, gave the overview and updated the meeting participants on the preparations for the 7th AFTF followed by the presentation of workshop mechanics by Ms. Digna L. Sandoval.

Participants were grouped into four: Luzon, Visayas, Mindanao, and Staff Bureaus/Attached Agencies with regional RIARCs, RFRDCs, and SUCs included in the first three groups. Each group discussed the lessons that they learned from previous AFTFs and described the unique products of their regions that they plan to display this year as well as other potential products.

In his message, BAR Dir. Nicomedes P. Eleazar mentioned that simultaneous seminars on technical and popular topics and product demos will be conducted this year as part of the event. He encouraged exhibitors to prepare enough products and info materials for distribution for the four-day activity. The technology forum is in line with the activities of the National Technology Commercialization Program (NTCP), one of BAR's banner programs. The forum serves as a venue in presenting to the public mature technologies for possible commercialization, and to further encourage the active participation of involved sectors and strengthening of linkages and networks with non-government organizations (NGOs), local government units (LGUs), private sector, and other major stakeholders in technology commercialization.

Bearing the theme, "*Galing ng Makabagong Teknolohiya para sa Pag-unlad ng Magsasaka at Mangingisdang Pinoy,*" the four-day event will have technical presentations and technology demonstrations on new technologies, finished products and services. It will also feature the National Technology Commercialization Exhibit which will bring together manufacturers, distributors, dealers, and buyers. This is expected to open up business opportunities for entrepreneurs. ### ***(Ma. Eloisa H. Aquino)***

2 CPAR ..from page 1

of post-larvae of prawn which is enough to supply the project requirements will be taken advantage of. The fisherfolk's knowledge on mudcrab culture will also be used to complement the existing technology on the grow-out of the species. The site is also near to markets and ports making it easier for the fisherfolk to directly bring their produce to the market and thus generate a bigger income from aquaculture."

The initial beneficiaries of the projects are 20 fisherfolk from two barangays who compose the BigLing Fisherfolk Association led by Manuel Arzadon.

"We want these projects to become sustainable, thus, we expect that the technology and skills that the initial beneficiaries will acquire from these projects will be replicated by other fisherfolk in the area. Together with the support of the Department of Agriculture, through BAR and BFAR, we cannot see any reason why these projects will not come out successful," said Congressman Alcala.

During the projects' launch, BAR Director Eleazar and Congressman Alcala led the signing of the Memorandum of Agreement on the two CPAR projects which are expected to run for two years.

CPAR is one of the banner programs of BAR which is seen as an effective means to strengthen the role of R&D in technology transfer and in production management system. It also institutionalizes the active involvement of the community both in the identification of the most appropriate technologies that suit their needs and management of their own farm resources.

Also present during the project launch were incoming BFAR 4A OIC-Regional Director Esmeralda Manalang, outgoing BFAR 4A Regional Director Rosa Macas, Region 4A Fisherfolk Regional Association President Rodolfo Rondon, and BAR fisheries experts, Ligaya Santos and Ma. Elena Garces. ### ***(Miko Jazmine J. Mojica)***

BAR CONSULTS EXPERTS TO FINALIZE ACTION AGENDA FOR PHIRARDEP

Tapped experts discuss during the roundtable consultation meeting to finalize the action agenda for the PhiRARDEP. Experts include: (L-R) Dr. Luis Rey I. Velasco, UPLB chancellor; Dr. Teotimo Aganon, CLSU vice president for research, training and extension; Dr. Gina P. Nilo, head of BSWM's Soil Management Conservation Division; and Dr. Heraldo L. Layaoen, MMSU vice president for administration, planning and external linkages. PHOTOS: RDELACRUZ

Selected key staff of the Bureau of Agricultural Research (BAR) led by Director Nicomedes P. Eleazar and Asst. Dir. Teodoro S. Solsoloy held a roundtable consultation meeting held on 26-27 May 2011 at Estancia Resort in Tagaytay City with experts from the University of the Philippines Los Baños, Central Luzon State University (CLSU), Mariano Marcos State University (MMSU), and Bureau of Soils and Water Management (BSWM) to finalize and set the priorities of the action agenda for the Philippine Rainfed Agriculture Research and Development and Extension Program (PhiRARDEP).

The roundtable meeting is an offshoot of a bigger consultation workshop held in April 2011, the output of which was used as the basis to discuss and finalize the RDE action agenda for rainfed agriculture. The finalized action agenda will be used to identify and prioritize specific projects that will be funded and implemented under the PhiRARDEP.

Experts present during the meeting were: Dr. Luis Rey I. Velasco, UPLB chancellor; Dr. Heraldo L. Layaoen, MMSU vice president for administration, planning and external linkages; Dr. Gina P. Nilo, head of BSWM's Soil Management Conservation Division; Dr. Teotimo Aganon, CLSU vice president for research, training and extension; and Ms. Josefina M. Lantican, BAR senior consultant for policy research.

BAR Asst. Dir. Solsoloy facilitated the discussion, with him was Mr. Joell H. Lales, head of BAR's Planning and Program Development Division (PPDD) who provided the direction following the four components of PHIRARDEP: 1) rainfed farming systems innovation; 2) participatory watershed management; 3) strategic social science and policy research; and 4) capacity building, communication and social mobilization.

Dr. Velasco discussed the bases that the group may work on particularly in identifying researchable areas/programs that are specific for rainfed agriculture. He stressed that the major goal of the activity is to increase productivity and income of farmers in rainfed areas. Given this, there is a need to consider specific target areas wherein majority of the rainfed farmers in the country will benefit. He also mentioned that, since the nature of rainfed ecosystem is location-specific and has high variability unlike irrigated areas, there is a need for community participatory action research to strengthen technology transfer and to ensure greater impact in the targeted areas.

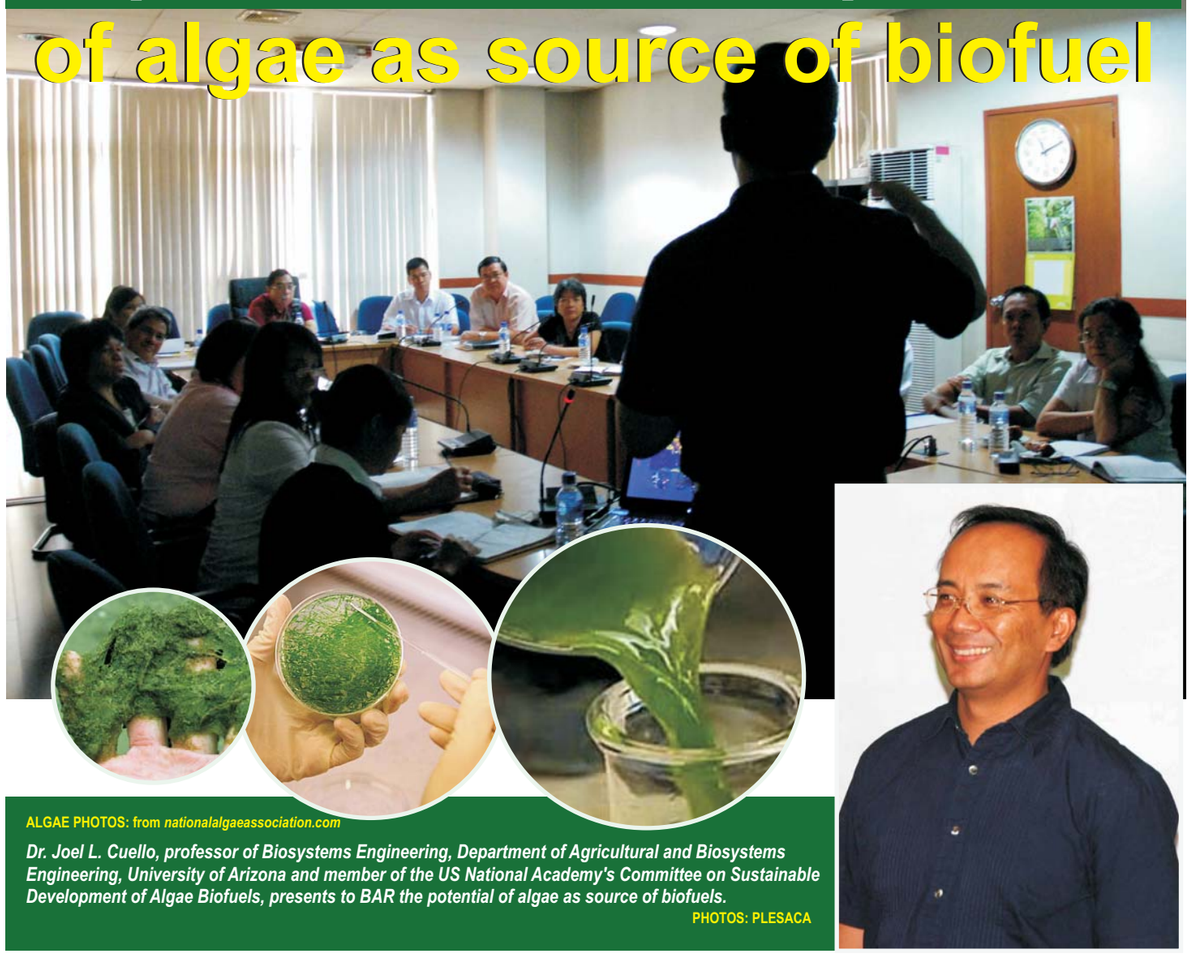
Dr. Layaoen emphasized the need to classify the different ecosystems and mentioned specific crops that are suitable for rainfed areas. He stressed that the crops to be prioritized should be appropriate to the existing rainfed agro-ecosystem in the target areas.

Dr. Nilo, being an expert on soil management conservation, mentioned nutrient management systems that are appropriate for the crops and the presence of market outlet as other important factors that must be considered in identifying research areas for rainfed agriculture. She also discussed specific areas that the group could focus on in prioritizing specific programs for rainfed agriculture. The specific areas proposed are based on crops, location, and available resources.

Meanwhile, Dr. Aganon discussed upland and lowland rainfed areas, and the need to focus on the upland rainfed areas (drylands) as these are the least favorable areas where people are mostly poor.

After the discussion, the experts and other BAR staff were assembled into groups for the workshops based on the four components of PHIRARDEP. The group for the Rainfed Farming Systems Innovation component was composed of Dr. Teodoro Solsoloy, Dr. Heraldo Layaoen, Mr. Joell Lales, Mr. Anthony Obligado, Ms. Ligaya Santos, and Ms. Cynthia de Guia. Dr. Gina Nilo, Dr. Teotimo Aganon and Ms. Miko Jazmine Mojica tackled the Participatory Watershed Management component. Ms. Josefina Lantican, Patrick Cabrera, and Maylen Villareal focused on Strategic Social Science and Policy Research component. Dr. Carmencita Kagaoan, Ms. Digna Sandoval, and Ms. Rita dela Cruz discussed Capacity Building, Communication and Social Mobilization component. The workshop outputs were presented in the afternoon session. ### ***(Rita T. dela Cruz)***

Experts look into the potential of algae as source of biofuel



ALGAE PHOTOS: from *nationalalgaeassociation.com*

Dr. Joel L. Cuello, professor of Biosystems Engineering, Department of Agricultural and Biosystems Engineering, University of Arizona and member of the US National Academy's Committee on Sustainable Development of Algae Biofuels, presents to BAR the potential of algae as source of biofuels.

PHOTOS: PLESACA

Who would have thought that one day algae would find its way to the laboratory as a potential source of biofuel? Well, that day may be just around the corner.

Algae are plants or plant-like organisms of any of several phyla, divisions, or classes of chiefly aquatic usually chlorophyll-containing nonvascular organisms of polyphyletic origin (of multiple ancestries). These usually include the green, yellow-green, brown, and red algae in the eukaryotes and especially the cyanobacteria in the prokaryotes group.

To better look into the potential of these plant-like organisms, the Bureau of Agricultural Research (BAR) recently convened experts on algae for a preliminary consultation meeting on 16 May 2011 at BAR. The meeting was attended by Dr. Joel L. Cuello, professor of Biosystems Engineering, Department of Agricultural and Biosystems Engineering, University of Arizona, USA; Professors Rex Demafelis, Lourdes Cardenas, and Nerissa K. Torreta of the University of the Philippines Los Banos (UPLB); Dr. Nemesio Montano, University of the Philippine Diliman-Marine Science Institute (UP-MSI); Professor Caridad N. Jimenez, University of the Philippines Visayas (UPV); Dr. Fabian M. Dayrit of the Ateneo de Manila University; and Mr. Edwin Bacani of the Congressional Committee on Science Technology and Engineering (COMSTE).

Dr. Cuello, one of the 10 members of the US National Academy's Committee on the Sustainable Development of Algae Biofuels, was in the Philippines to meet and discuss with R&D stakeholders the potential of algae in the biofuels spectrum. Further, the consultation intended to conceptualize the developmental framework wherein UPLB, UPD, UPV and Ateneo will form the core organizations of the program. On the other hand, BAR will serve as the facilitator and the liason between the above *institutions* and other government agencies like DA-Biotech, BFAR, COMSTE, and the Committee on Agriculture and Food, among others.

Dr. Cuello, who has been working and studying algae for more than a decade, said "algae are very good candidates as feedstock for biofuels because they are renewable, meaning to say you can grow them. They also have high productivity in terms of oil, much greater than all the others." The consultation meeting, which was presided by Mr. Anthony B. Obligado of BAR-

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BAR taps potential of *Stevia* to boost sweetener industry

Stevia rebaudiana

BAR-TCD Monitoring Team, Evelyn H. Juanillo (3rd from left) and Ethcel Princess H. Patulot (left) pose with Dr. Maria Elena Quimio (2nd from right) of BIGFIS, during the Stevia project site visit.

PHOTOS: EJUANILLO

Stevia has great potential in the foreign market," said Dr. Maria Elena Quimio of the Bicolandia Greenfields Development Organization (BIGFIS) during a project monitoring visit conducted by BAR in Bicol on 23-25 May 2011.

Stevia is a natural sweetener made from the stevia plant (*Stevia rebaudiana*). Native to tropical and subtropical regions in North and South America particularly in Paraguay, it is mainly grown for its leaves as a sweetener and sugar substitute. In the Philippines, some farmers drawn to the herbal medicine trend have started to experiment planting stevia in small areas.

To monitor the progress and developments on the on-going project, "Commercialization of *Stevia rebaudiana,* a natural sweetener (Phase 1)", technical staff from the Bureau of Agricultural Research-Technology Commercialization Division (BAR-TCD) visited project sites in Naga, Camarines Sur and Tabaco, Albay.

"The sweetener industry is predicted to penetrate and take a big chunk of the market for sugar in the future," Dr. Quimio proudly mused.

Funded by BAR, the project shall establish a nursery that will provide planting materials for farmer-cooperators and educate farmers on good agricultural practices. The project is being implemented by BIGFIS, a non-government organization in Naga City, Camarines Sur.

Based on the report submitted to BAR, *stevia* is a plant that originated from Paraguay and is now widely cultivated and used in other countries. Here in the Philippines, it is already grown in nurseries located in Antipolo, Cavite, and Quezon. Now utilized as an ingredient in coffee, tea blends, and some health products, *stevia* is seen as a natural alternative to artificial sweeteners. Leaf parts of stevia are about ten times sweeter than table sugar. Only tiny amounts of it are needed for food sweetening and drink preparations.

Stevia nursery

Stevia is an herb that comes from the Chrysanthemum family which grows wild as a small shrub. The leaves contain glycosides which account for its incredible sweetness, making it unique among the nearly 300 species of Stevia plants.

The *stevia* planted in the DA-RFU V- Albay Experiment Station are locally-adapted varieties while those planted in its main office in Pili, Camarines Sur are from Paraguay. Compared to the locally-adapted varieties, leaves of *stevia* from Paraguay are elongated and the plants themselves are longer.

According to Dr. Quimio, the Philippines previously did not entertain any serious thought on developing this industry. "It is therefore timely and fortuitous that BAR has taken the initial steps towards the development of *stevia*," she added.

The BAR Monitoring Team composed of Ms. Evelyn H. Juanillo and Ms. Ethcel Princess H. Patulot met with other project proponents in the region. They also looked into other projects on herbs and spices, abaca and native swine production. ### ***(Ma. Eloisa H. Aquino)***

Adlai thrives well in Region 2

Mr. Roy Y. Aquino (left) of CVIARC inspects the Adlai grains (left, inset photo) at the experimental station. PHOTOS: PLESACA

Staff of the Bureau of Agricultural Research (BAR) conducted a project site visit to the Cagayan Valley Integrated Agricultural Research Center (CVIARC) at Ilagan, Isabela on 18 May 2011 to get updates on the ongoing *adlai* project. This project, "Adaptability trial *cum* seed production on *adlai*," has generated a number of findings, including the results of utilizing three specific varieties of *adlai*: *gullian*, *tapul*, and *ginampay*. The seeds were sourced from indigenous people from Zamboanga through the Masipag Biodiversity Center in Bukidnon and were first planted in December 2010.

BAR has been working in collaboration with non-government organizations, DA regional units, and state universities and colleges, and of course, farmers, in exploring the potentials of *adlai* as a crop through adaptability trials conducted nationwide. The aforementioned crop is recognized by the Department of Agriculture as possessing the potential to become an alternative staple food to rice and corn, and these trials are being made in an effort to promote the cultivation of *adlai*.

Thorough seed preparation is a primary consideration. According to Mr. Roy Y. Aquino of CVIARC and one of the focal persons in this project, seeds were prepped with 8 hours soaking in water. After removal from water, seeds were then incubated for 4 hours before planting. A jabber planter was used to ensure proper seed placing, using a distance of 60 cm between hills, and good germination. After 7–15 days, 50–70% of the seeds germinated. Transplanting with seedlings raised in seedbeds or seedling trays was done to replace some of the missing hills. Thinning was done 15 days after planting (DAP), inter-row cultivation at 15 - 20 DAP, while hilling-up was done at 35 DAP.

However, this project is not without its problems. Moisture stress resulted in leaf burning and unfilled spikelets (documented during the middle of March). Pests also proved to be a problem with attacks by cutworms, leaf folders, hairy caterpillars, leaf miners, corn planthoppers, and the "Asiatic corn borer" (ACB) during the plant's vegetative stage. Leaf damage was apparent even at 70–80 DAP due to cutworms. With the ACB, 2–3% were affected with damage including shot/pin holes on emerging leaves, damaged shoots called "dead heart" similar to rice plants, and stem tunnels/borings. Control measures made use of bio-control agents like *Trichogramma* and earwigs.

The spacing dimension of 90×60 cm turned out to be too wide as it allows for more weeds to grow. Reducing said space is being considered for the next round of planting.

As of present, organic fertilizer has not been used and no amount of synthetic fertilizer has been employed.

It has also been observed that of the three varieties, despite *ginampay* being the tallest with a height of 180 cm, it is *gullian* that presents the highest yield.

In spite of troubles encountered in this endeavor, *adlai* is being tried out in other areas as well. Seed production is being done in Gamu, Isabela and in Solana, Cagayan. Planting was scheduled for April and May 2011 for Gamu and Solana, respectively.

Other sites in Region II where adaptability trials are currently ongoing include Dupax del Sur, Nueva Vizcaya with 0.1 hectares and Aglipay, Quirino with 0.2 hectares as the dedicated area.

Currently, plans for *adlai* in this region include promoting this crop for production and consumption as it could lessen the pressure on rice production. Info-dissemination is in the works which shall cover *adlai* production, utilization, and other benefits (e.g., briefing on *adlai* for a municipal session at Natipunan, Quirino). To further the research into this crop, as well as in support to future variety development, the observation and documentation of flower biology and/or its structure, plus the collection of local varieties/germplasm, are being carried out.

On future plans for *adlai*, even as adaptability trials are still on-going there already are considerations for possibly expanding the area for seed production as well as initiating the clustering and organizing of future growers. ### ***(Maria Anna M. Gumapac)***

BAR boosts organic soybean production in Region 2

As part of the on-going activities under the Philippine Soybean Roadmap for 2010-2014, crafted by the Department of Agriculture (DA) in which the Bureau of Agricultural Research (BAR) is tasked as the focal agency for R&D, the DA-RFU 2 - Cagayan Valley Integrated Agricultural Research Center (CVIARC) conducted the "Organic Soybean Production Program Launching and Techno-Demo Field Day" at Brgy. Villa Pagaduan, Aglipay, Quirino Province, on 6 May 2011.

Residents and farmers from different towns of Quirino Province, such as Aglipay, Cabarroguis, Maddela, Nagtipunan, and Diffun, participated in the event which commenced with the Techno-Demo Field Day that featured Barangay Captain Mrs. Merlita Belmonte's organic soybean farm. Senior Agriculturist Ms. Rosemary G. Aquino spearheaded the Techno-Demo on behalf of the CVIARC.

Gracing the event were: Mr. Orlando J. Lorenzana, RTD for Research & Regulations of DA-RFU 2; DA High Value Crops Program OIC-Director, Ms. Jennifer Remoquillo; and DA-BAR Director Nicomedes P. Eleazar who served as the event's guest speaker.

Ms. Aquino began with a discussion on the growth and development of soybean in the site in the past months including the challenges encountered during production. She talked on the technology interventions, which she attested to be all organic or organic-based, used in the techno-demo that ensured the proper development of the soybean crop. Some of these technology interventions are the basal application of 10bags/hectare of organic fertilizers, foliar spraying of Bacterium Mineral Water and humic acid once during their flowering stage, and inoculation of the seeds with the recommended *Rhizobium*. Further, bio-control agents were used in order to prevent the spread of pests and diseases such as *Trichogramma* (in *trichogramma* cards) and cultured earwigs.

BAR Dir. Nicomedes P. Eleazar (center) discusses with Ms. Merlita Belmonte (left), farmer-cooperator for the soybean project. With them is Ms. Jennifer Remoquillo (right), OIC director of DA-HVCDP. PHOTO: MVALDEABELLA

The guests were also oriented on the different field equipment used in processing the soybeans. One of these is the seed separator, which classifies soybean seeds according to shape and rolling ability.

After participating in the Techno-Demo, guests, residents, and farmers proceeded to the Brgy. Villa Pagaduan covered court for the Organic Soybean Production Program Launching where participants and guests were not only oriented and enlightened about the advantages and benefits of organic soybean production, but were also treated to samples of the organic soybean food commodities on display. Some of the food commodities prepared were soybean milk, soybean pulvoron, soybean balls, soybean coffee, and soybean patties.

The Program Launching was attended by the Officials of Quirino Province, headed by Hon. Junie E. Cua, the Provincial Governor, and Hon. Jerry T. Agsalda, Mayor of Aglipay, Quirino,

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Experts look..from page 4

TCD, began with the presentation of Dr. Cuello wherein he presented the algae engineering technologies leading to innovations in scaling up of biomass and renewable hydrogen. He also updated the group on the University of Arizona's on-going studies on algae research and development particularly feedstock for biofuels.

The visiting scientist said that his coming to the Philippines has opened a lot of doors and opportunities for the country to look into the potential and benefits of algae not only in biofuels, but in the areas of nutraceuticals and high-value organic fertilizers as well. He added that the country is a natural habitat for algae.

On the part of BAR, Mr. Obligado said that, being the research arm of the Department of Agriculture, BAR is tasked to coordinate and facilitate research activities deemed necessary to warrant national interest. "And such is a welcome and positive development", Obligado said.

The presence of the scientific community in the said meeting is a manifestation of the commitment among the academes to pursue vigorously doable measures to enhance the country's productivity.

The formulation of the Roadmap for Algae Production in the Philippines will institutionalize the needed push to jumpstart the industry that will eventually commercialize and utilize the potential of algae in the country in terms of industrial and agricultural use. The draft road map is expected to be finished by August of this year.

Professor Rex Demafelis, the focal person of BAR's biofuels program, recommended that a convenor and co-convenor for the project be named or appointed. He proposed the adoption of a common framework to effectively facilitate the submission of inputs and findings in relation to the general parameters which are to be identified by the tapped experts. Prof. Rex also stressed the need for knowledge interfacing among the core members in order to fine-tune the inputs given to BAR prior to the finalization of the said Roadmap. This shall then be subjected to a strategic workshop in the first week of August in 2011. ### ***(Patrick RA Lesaca)***

Sec. Alcala visits projects on integrated strawberry and lettuce farm in N. Vizcaya

Agriculture Secretary Proceso J. Alcala visited Barangay Malico, Santa Fe, Nueva Vizcaya, to look its project on an integrated strawberry and lettuce farm as well as to coordinate and interact with the local community. Staff of the Bureau of Agricultural Research (BAR) accompanied his visit on 20 May 2011.

Mayor Teodorico Padilla Jr. of Santa Fe welcomed the visitors and explained the local farmers' concerns and suggestions.

Among these concerns is the chronic issue of irrigation. The Secretary replied that, since the National Irrigation Administration is unable to provide proper irrigation to the barangay as they are located in a mountainous area, water shall be piped in to the community through a 1.5 inch diameter hose that is 1 km in length.

He also declared that the government shall provide two carabaos with attachments for the local cooperative.

In the forum, he stated his plans of developing the local agriculture by encouraging the production of coffee- of which the Secretary has a strong penchant for - as well as cacao. Stating that cacao in particular is in high demand, the Secretary has high hopes for expanding the community's sources of income.

In relation to this, Secretary Alcala said that the plans for increasing the municipality's income-generating crops shall extend to providing means for planting rambutan, lanzones, durian, and mangosteen. Since these are high value fruits, this should pave the way for improved earnings for the barangay residents.

Furthermore, Sec. Alcala also mentioned his plans for developing the local livestock industry through a program for intensifying the breeding and production of native pigs in Barangay Malico.

Going beyond providing new opportunities for Barangay Malico and in keeping with his firm belief that agriculture is the key to our country's growth, Sec. Alcala relayed news of granting three Agriculture scholarships per municipality as an investment for the country's future. With three chosen scholarship grantees from each community taking Agriculture or Agriculture-related courses, Sec. Alcala has high hopes for the development of Barangay Malico in particular and the Philippines as a whole.

With these plans in place, the notion that agriculture can lead the Philippines' development may just become a reality. ### ***(Maria Anna M. Gumapac)***

***BAR boosts**..from page 5*

BAR Dir. Nicomedes Eleazar (3rd from left), HVCDP OIC Director Jennifer Remoquillo (2nd from left), DA-RFU II RTD Orlando Lorenzana (3rd from right) during the project launch of organic soybean production in Region 2. PHOTO: MVALDEABELLA

who welcomed the guests and attendees.

In explaining the program to the residents of the province, Ms. Rose Aquino of CVIARC presented the Organic Soybean Development Program Roadmap starting with the background and rationale of the program, and its goals and objectives. Ms. Aquino mentioned the benefits of organic soybean production specific to the province along with results of the production trial that were showcased in the Techno-Demo.

Mrs. Merlita Belmonte, farmer-cooperator and the Barangay Captain of Brgy. Pagaduan, shared her experiences with organic soybean production. According to her, planting organic soybean has been very beneficial, not only because of the income that it generated, but also due to the nitrogen-fixing capabilities of the *Rhizobium* bacterial inoculum in the soybean which aid the fertility of the soil. Mrs. Belmonte raised both soybean and rice in a cropping pattern.

DA-BAR Director Dr. Nicomedes P. Eleazar, in his message, emphasized the benefits of soybean production, not only for its end-users, but also in the restoration or creation and preservation of healthy soil. Also, he pointed out that our country has been importing 94% of its soybean requirement - a clear indication that there is a huge market for soybean in the country.

Individual messages of support were also given by the heads or representatives of the different agencies involved in the program whose help and support made possible the successful implementation of the program. These included Dr. Nicomedes P. Eleazar, DA-BAR Director; Gov. Junee E. Cua of Quirino Province; Atty. Casiano G. Eclar, Jr., Regional Director for DAR-RFO 2; Mr. Orlando J. Lorenzana, RTD for Research & Regulations of DA-RFU 2; and Mr. Thomas Fernandez, Chairman of the Cooperative for Rural Development (CORDEV).

The "Organic Soybean Production Program Launching and Techno-Demo Field Day" culminated with the signing of the Pledge of Support by representatives of the different agencies and units for the Organic Soybean Production Program. ### ***(Mara Shyn M. Valdeabella)***

Experts, stakeholders convene for SSNM nat'l review and training on nutrient expert software

Participants, resource speakers, experts during the SSNM National Review and Planning Workshop and software training held in Tagaytay City. PHOTO: NDELROSARIO III

In line with its goal of attaining food security and sustainability, the Bureau of Agricultural Research (BAR), in partnership with the DA- National Corn Program, DA-Bureau of Soils and Water Management (BSWM), University of the Philippines Los Baños (UPLB), and International Plant Nutrition Institute (IPNI), held the 3rd National Review and Planning Workshop on Site-Specific Nutrient Management (SSNM) for maize (corn) on 18-20 May 2011 at the Kimberly Hotel, Tagaytay City.

Aimed at consolidating and reviewing SSNM for yellow corn outputs, identifying and thereby, recommending solutions to the problems encountered during the production as well as to plan for the upcoming SSNM activities, this event served as a venue for local scientists and extension experts to discuss and evaluate management strategies and farming practices developed and applied in the regions following previous SSNM trainings and discussions.

Participating in this national event are Corn Coordinators and SSNM Focal Persons coming from all 16 regional offices of the Department of Agriculture (DA) as well as technical experts and representatives from collaborating agencies and bureaus.

The three-day activity started with the Hands-on Training on Nutrient Expert Software for Hydrid Maize conducted by Dr. Mirasol Pampolino of IPNI. The Nutrient Expert Software for Hydrid Maize, which Dr. Pampolino addressed as a "computer-based decision support tool", was developed to assist local experts in formulating fertilizer guidelines as well as to help scientists and extension experts in devising management strategies.

With the use of the Nutrient Expert for Hybrid Maize Software, experts can 1) develop an optimal planting density for a location; 2) evaluate farmers' current nutrient management practices; 3) set a meaningful yield goal based on attainable yield; 4) estimate NPK fertilizer rates required for the selected yield goal; 5) translate fertilizer rates for available fertilizer sources; 6) develop an application strategy for fertilizers (right rate, right source, right location, right time); and 7) compare the cost and benefits between the farmers' current practice and the recommended practices.

Through the use of this software, it is expected that the dissemination of site-specific nutrient management practices would become easier and the information more accessible to a greater range of farmers.

With this innovation and other plans already laid for the continuous development, evaluation, and dissemination of improved nutrient and crop management strategies for maize, this year's Site-Specific Nutrients Management for maize looked into other alternatives towards alleviating hunger and food scarcity. One is exploring and developing an SSNM for yet another valuable but neglected maize, the white corn.

According to Mr. Milo D. Delos Reyes, head of the DA's Corn Program Secretariat, there has been little, perhaps none, research done on white corn and this has contributed to the significant decline in production and consumption of white corn despite its less demanding production management and nutritional advantages.

With the launching of the White Corn Program by the Department of Agriculture in July of this year, the members of the SSNM for Maize Technical Working Group are confident that, with the program's implementation, the pressure on the rice supply will eventually be reduced as Filipinos will be offered an alternative to rice. Further, production and consumption of white corn is also seen as a means to address hunger and possibly reduce rice importation by 2013 thus bringing us closer towards attaining food self sufficiency.

White corn is a health food with low calorie content (90kcal in 100g), higher amylose content than rice, and low glycemic index. It is basically rainfed, thus, there is less need for irrigation. It is also said to be less susceptible to the corn borer. The White Corn Program aims to strengthen and sustain white corn production and encourage rice-consumers to include white corn as a staple.

The project, "Site Specific Nutrient Management for Maize in the Philippines" was launched in 2005 by the IPNI Southeast Asia Program in partnership with the University of the Philippines Los Baños, Department of Agriculture-National Corn Program, DA-Bureau of Agricultural Research, and DA-Bureau of Soils. ### ***(Mara Shyn M. Valdeabella)***

Dr. Eleazar pushes for public-private partnerships for sustainable agriculture


PHOTO: CSSP

Dr. Nicomedes P. Eleazar

Looking into the importance of sustainable agricultural production in providing opportunities to address food adequacy and environment concerns in the country, BAR Director Nicomedes P. Eleazar, emphasized how natural resource-based programs, through the public-private partnership (PPP) strategy, can bring about development of the agriculture sector.

"To ensure local development and food security, we need to look into what commodities need to be strengthened in terms of production and income. Let us first see to it that supply is enough in the localities before bringing the products to other areas," Eleazar said during the "Agri-Entrepreneurs' Forum and Techno Clinic" held on 12 May 2011 at the La Piazza Hotel and Convention Center in Legazpi City, Albay.

With the overall goal of the Department of Agriculture (DA) of sustaining agricultural production, there is a need to draw increased support from the private sector and further tap the local government units as active partners for agriculture and fishery development. With this, Dr. Eleazar identified several possible areas for public-private partnerships that include infrastructure, and research and development (R&D).

For infrastructure, among the possible areas for PPP are: 1) establishment of cold chain systems, which consist of common service facilities with marketing support, resulting to reduced postharvest losses; 2) maintaining an inventory of quality perishable goods; 3) promoting direct marketing; and 4) stabilizing prices and promoting food safety awareness. Others mentioned include the establishment of grain centrals with bulk handling facility that cover all rice and corn postharvest activities, such as marketing, and logistics support for the agri-fishery products supply chain which makes efficient food transport and handling of agri-food commodities in major market points.

On R&D, Dr. Eleazar discussed the current priority programs of BAR, particularly its two banner programs: Community-based Participatory Action Research (CPAR) and National Technology Commercialization Program (NTCP), which promote agriculture-fishery development through PPP efforts that are geared towards increasing production and incomes of farmers and fisherfolk.

He also cited two current BAR-funded projects under the PPP initiative : 1) "Sustainable Cacao Program: Biointensive Integrated Pest Management and Farming System Approaches," - this project uses indigenous knowledge together with modern agro-ecological principles and scientific techniques to provide cacao farmers the best options for increasing yield and income and to maintain biodiversity; and 2) "On-farm Trials of Organic and Non-Toxic Antica Fungicide to Various Agricultural Crops," which is in line with promoting the use of naturally-extracted, organic, and safe pesticides to promote the growth of natural habitat and organisms that are beneficial to crops.

The forum and techno clinic is part of the activities of the Federation of Crop Science Societies of the Philippines' (FCSSP) 21st Scientific Conference held on 9-12 May 2011 in Legazpi City. This year's conference carried the theme, "Public-Private Partnership for Sustainable Agricultural Research, Development and Extension."

The FCSSP is an alliance of of six societies with experts and workers from all fields of agricultural research, development and extension. These include the Society for the Advancement of Vegetable Industry (SAVI), Philippine Fruit Association (PFA), Philippine Seed Industry Association (PSIA), Crop Science Society of the Philippines (CSSP), Philippine Association for Plant Tissue Culture and Biotechnology (PAPTCB), and Conservation Farming Movement (CFM). ***### (Rita T. dela Cruz)***


PHOTO: CSSP

Dr. Nenita V. Desamero (2nd from left), FCSSP president, awards the certificate of appreciation to Dr. Eleazar.

Sec. Alcala brings good news to N.Vizcaya farmers

The Bureau of Agricultural Research (BAR) recently took up the opportunity to document the visit of Secretary Proceso *"Procy"* Alcala of the Department of Agriculture (DA) to Cagayan Valley on 20 May 2011. The Secretary, who is committed to addressing the farming and fishing concerns of the people of Nueva Vizcaya, declared that the DA will help them in their farming needs to become more competitive. He added that one of the main goals of his department is farmer and fisherfolk empowerment.

Secretary Alcala, who also served as the guest of honor in a special program, commended Congressman Carlos Padilla of Nueva Vizcaya as well as the local and municipal officers of the province for a job well done in ensuring the continued production and supply of rice, corn, vegetables and other high-value crops in the province.

Secretary Alcala also said that the province of Nueva Vizcaya has the potential to become one of the major suppliers of highland vegetables in the country. And, as testament of the DA's commitment and support, Sec. *Procy* led the inauguration of the Barangay Trading Post and Marketing Project of KinGBiKS, an acronym for barangays (*Kinabuan, Ganao, Biruk, Kimbutan, Sanguit)* in Dupax del Sur, Nueva Vizcaya. Dupax del Sur produces around 30 percent of the total vegetable production in Nueva Vizcaya. The rest comes from Dupax del Norte and Kasibu towns.

Meanwhile Congressman Padilla thanked and acknowledged the assistance provided by DA under the stewardship of his former congressional colleague, Sec. *Procy,* for his commitment to uplift the lives of the local citizens. Cong. Padilla said that "the entire map of Nueva Vizcaya is now the focus of DA".

The DA chief also visited the vegetable demo field, supervised the distribution of tilapia fingerlings, and witnessed the operation of a tramline that will be used by upland farmers for transporting agricultural produce. The Secretary also instructed Regional Executive Director Lucrecio Alviar, Jr. to keep an open line between DA-Regional Office 2 and KinGBiKS in the delivery of public service.


Sec. Proceso J. Alcala with a farmer in Nueva Vizcaya. PHOTO: PLESACA


PHOTOS: PLESACA

Among the key local officials present during the event were Kinabuan Mayor Romeo Magawa, barangay chairman Teodoro Bumacas also of Kinabuan, who led the organization of KinGBiKS in 2000, and the current KinGBiKS chairman, Marcelo Baysa.

During the visit, the DA officials extended a total amount of P13 million in financial assistance for operating capital, construction of trading post, irrigation, tramline, and procurement of other equipment. The support accorded by Secretary Alcala is essential for boosting agribusiness activity in the area.

According to information from the DA's Agriculture and Fisheries Information Service (DA-AFIS), the amount is actually the 'second wave' extended by the DA. In September 2010, when Sec. Alcala first visited Nueva Vizcaya, he committed P6M, broken down as: P3.5-M operating capital (from the Agricultural Credit Policy Council or ACPC), P1.2 million for construction of a packinghouse and trading post with multi-purpose drying pavement, and P1 million for the purchase of plastic crates and weighing scales.

The DA will also provide assistance to the KinGBiKS cooperative in the form of marketing and financial management training, a vegetable techno-demo project, and the conduct of *'lakbay-aral'* to learn the operations at the *Sentrong Pamilihang ng Produktong Agrikultural sa Quezon*, La Trinidad trading post in Benguet, and the Nueva Vizcaya Agricultural Trading Center . The Secretary instructed the Agribusiness Marketing Assistance Service (DA-AMAS), Agri-Pinoy Trading Center Project Management Office, and DA Reg-2 to assist KinGBiKS in any way and anywhere they can. ***### (Patrick RA Lesaca)***

1st Sweet Sorghum Business Summit showcases sweet sorghum as competitive business enterprise

(Left) Mr. Anthony Obligado, head of BAR-TCD delivers a message in behalf of Dir. Nicomedes Eleazar. (Top right) DA Asst. Sec. Edilberto de Luna, Negros Occidental Gov. Alfredo Marañon, and UPLB Prof. Rex Demafelis at the VIP table. (Bottom right) Attendees during the sweet sorghum business summit .

PHOTOS: AARIZABAL, GESPIRITU, UPLB

To make use of the results of various sweet sorghum R&D projects and to showcase the crop as a competitive feedstock for ethanol production, the Bureau of Agricultural Research (BAR), in collaboration with the University of the Philippines Los Baños (UPLB), held the "1st Sweet Sorghum Business Summit and Plantation Showcase" in Bacolod City on 2 June 2011. With the theme, "Unmasking the Potential of Sweet Sorghum for a Competitive Business Enterprise", the event was attended by bioethanol plant proprietors, farmers' groups, representatives of government and private financial institutions, local government officials of Negros Occidental, sweet sorghum researchers, seed company representatives, and interested entrepreneurs.

Mr. Carl Lopez, councilor of Bacolod City welcomed the participants while Hon. Alfredo G. Marañon, governor of Negros Occidental, gave an inspirational talk. Mr. Anthony Obligado, head of the Technology Commercialization Division (TCD) of BAR delivered a message on behalf of BAR Director Nicomedes P. Eleazar which was followed by the keynote message from Department of Agriculture (DA) Secretary Proceso J. Alcala which was delivered by DA Assistant Secretary Edilberto M. de Luna.

Highlighting the summit was the presentation, "Overview of the Emerging Bioethanol Industry in the Philippines: Status and Prospects," given by Mr. Jose Maria Zabaleta, chairman of the Bronzeoak Asia Pacific. Mr. Zabaleta said that, with the full implementation of the Biofuels Act starting in August of 2011, the local blending requirement for ethanol will be doubled from 5 percent to 10 percent, which would mean a national requirement of 400 million liters of ethanol annually. "Though many investors have expressed interest in going into the production of ethanol, only two plants have been put up in the country: the San Carlos Bioenergy Inc. (38M liters from sugarcane) and the Roxol Bioenergy (30M liters from molasses), for a combined annual output of 68 million liters of ethanol," he said. Despite the good prospect, Mr. Zabaleta cautioned everyone that the bioethanol industry is not without its problems. He noted that "without effective tariff protection we cannot compete with the price of imported ethanol as a result. And contrary to the Biofuels Act, most of the ethanol added to our gasoline is presently imported from Brazil".

The next presentations were on researches being done on sweet sorghum. "Prospects of Sweet Sorghum as Bioethanol Feed Stock in the Philippines" was given by Dr. Heraldo H. Layaoen of the Mariano Marcos State University (MMSU). He described the advantages of producing sweet sorghum which has multiple uses - for food, feed, forage and fuel (ethanol). According to Dr. Layaoen, it has a high yield per unit area per unit time for both stalks and grains, high sugar content, short crop cycle as it matures in 85-95 days after cutting (ratoon), and it has low production cost.

Next was the "Agronomic Performance Trials in Sagay City," reported by Mr. Jerelu Ganancial, chief agriculturist of Sagay City. The Biomass Resources Inc. described the results of its conduct of sweet sorghum trials in San Carlos City to check for varieties with the best performance in terms of biomass yield, including the first and second ratoon yields, grain yield, Brix level and potential alcohol yield.

Mr. Carlos Ted dela Torre, manager of the Farm Systems and Operations, Biomass Resources Inc., provided data on the comparative cost and income among sweet sorghum, sugarcane, and corn showing sweet sorghum as having the highest net income over a one-year period.

Engr. Susan C. Benitez, senior vice president of Negros Biochemical Corp., presented the prospects of sweet sorghum as a biofuel crop in the Philippines. According to Engr. Benitez, sweet sorghum has some advantages over sugarcane in that it requires less water and is more resistant to drought, has a relatively lower fertilizer requirement, has a significantly shorter crop cycle, and it has a higher cane yield per hectare per year.

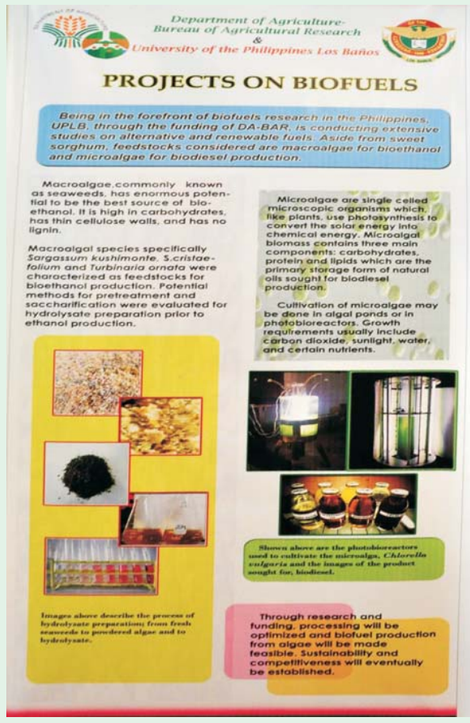
The next presentations were on the potential of using sweet sorghum as an ingredient in feed and aqua-feeds. After the presentations, a business matching session followed.

> ***"...with the full implementation of the Biofuels Act starting in August of 2011, the local blending requirement for ethanol will be doubled from 5 percent to 10 percent, which would mean a national requirement of 400 million liters of ethanol annually.***

An offshoot of the business meeting is that Gov. Alfredo Marañon will visit ICRISAT in Patancheru, India later this year to personally see how the institution has partnered with industry players, from farmers to a distillery owner, to successfully utilize sweet sorghum as feedstock for ethanol production and how the bagasse is being utilized for feeds. Also, Mr. Zabaleta announced during the meeting that his company is willing to buy sweet sorghum juice or syrup.

The business matching provided a good venue for different stakeholders in the renewable energy sector to engage in discussions and look for business opportunities.

Encouraged by the good turnout of the business summit and the project results of the "Sweet Sorghum Validation Trials in Collaboration with Ethanol Players in Negros Occidental," Prof. Rex Dimafelis, UPLB professor and project leader, and Mr. Anthony Obligado, BAR-TCD head, plan to hold similar events in Luzon and Mindanao. This is to create more awareness of the potential of sweet sorghum as a feedstock for bioethanol production. ### ***(Alexander G. Arizabal, Jr.)***



PHOTOS: AARIZABAL, GESPIRITU, UPLB