ANNOUNCEMENT

Forum and exhibit to showcase technologies from agri & fishery R&D at SM Mega Mall

Harnessing the full potential of commerciable technologies generated from research, the Department of Agriculture-Bureau of Agricultural Research (DA-BAR) will spearhead the 5th Agriculture and Fisheries Technology Commercialization Forum and Exhibit on 27- 30 August 2009 at the Mega Trade Hall 3, SM Mega Mall, Mandaluyong City.

With the theme, "Enhancing Entrepreneurships in Agriculture and Fisheries through Technology Commercialization" the activity is organized in partnership with the Ginintuang Masaganang Ani-High Value Commercial Crops (GMA-HVCC), GMA-Corn Program, Association of Colleges of Agriculture in the Philippines (ACAP), and the Philippine Chamber of Food Manufacturers, Inc. (PCFMI).

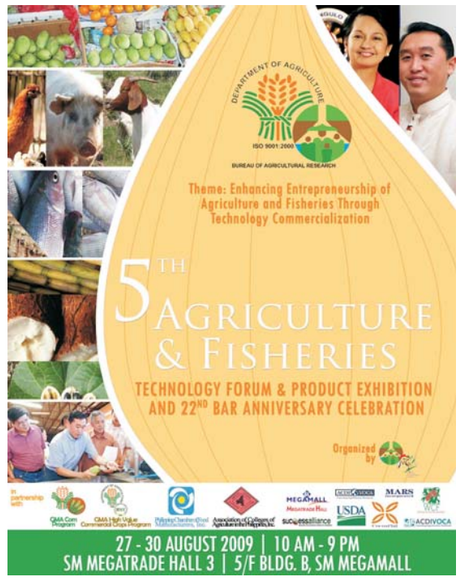
The agriculture and fisheries forum and exhibit will showcase viable and commerciable technologies developed by state universities and colleges, and DA national and regional offices. The activity aims to strengthen the partnership between research organizations and the private sector towards a progressive and more sustainable agriculture. BAR and its partners' hope that the business sector will take this occasion as an opportunity to scout for the best technologies to invest and venture into.

The activity will kick off with the opening and ribbon cutting of the exhibits and displays on 27 August to be led by guests of honor, Agriculture Secretary Arthur C. Yap and Director General William D. Dar of the India-based International Crop Research Institute for the Semi-Arid Tropics (ICRISAT). Joining them will be BAR Director Nicomedes P. Eleazar, Asst. Dir. Teodoro S. Solsoloy, and other DA key officials. Also part of the opening program is the launching of DA-supported books.

For the duration of the activity, there will be a series of cooking demonstrations on some practical food items and in-demand livelihood sources including sweet sorghum and pigeon pea food products, and *Moringa*-based foods, easy to prepare meat products, and *tilapia* products.

There will also be a series of seminars on various technologies developed with support from BAR under its National Technology Commercialization Program (NTCP) including topics on biofuels, herbal products, postharvest technologies, Good Agricultural Practices, organic agriculture, and effects of climate change.

NTCP is one of the flagship programs of BAR under the leadership of Secretary Arthur C. Yap who is giving strong emphasis on the role of technology vis-à-vis the modernization of agriculture and fisheries. Given the fact that the globalization thrust of DA is premised on the development and management of technology, BAR is orchestrating and providing the overall coordination in the implementation of the NTCP.



With the institution of this program, access to and adoption of new technologies through promotion and commercialization is now a reality. Clients are presented with alternatives based on what R&D has to offer to improve agricultural production and ultimately, the lives of poor farmers and fisherfolk. *(Rita T. delaCruz)*

For more information about the activity, please contact the BAR Technology Commercialization Unit at (02) 928-8624 locals 2626, 2627, 2621; email tcu@bar.gov.ph. You may also visit us at: http://www.bar.gov.ph

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DA through BAR provides P30M grant to UPLB to address food security

BAR Director Nicomedes P. Eleazar (center), representing Agriculture Secretary Arthur C. Yap, hands over the 30M check to UPLB Chancellor Luis Rey I. Velasco (right) to implement programs addressing food security in Regions 4A, 4B, and 5. Also in the photo is Dr. Agnes C. Rola (left), dean of UPLB-CPAf and program proponent. PHOTO: FCRUZ/UPLB

In a simple ceremony held at the UPLB Operations Room on 29 July 2009, university officials led by Chancellor Luis Rey I. Velasco formally received from the Department of Agriculture (DA) through the Bureau of Agricultural Research (BAR) Director Nicomedes P. Eleazar, representing Secretary Arthur C. Yap, a check in the amount of P30M to fund a UPLB-led participatory program to ensure and sustain rice self-sufficiency.

The program, "Collaborative Research, Development and Extension Services for Food Security" will focus on the rice producing areas of Regions 4A, 4B, and 5.

During the turnover ceremony, Director Eleazar shared that the concept for the project came about during the series of consultations that BAR held with various institutions, including UPLB and other state universities and colleges (SUCs), at the time when DA started streamlining the implementation of its FIELDS program.

The FIELDS program seeks to increase the productivity of the agriculture sector by providing funds for fertilizer, infrastructure, education and extension work, loans, postharvest facilities, and seeds.

According to Director Eleazar, DA recognizes the role of UPLB in providing the technical and training support to the current extension delivery system of the department particularly in the rice sector. He said that more commodities will be included in the program.

After receiving the P30M grant, Chancellor Velasco, on behalf of the university, expressed gratitude to Secretary Yap and Director Eleazar for their confidence in UPLB's capability to

turn to page 6

6 New TechCom projects okayed

To promote technology commercialization, and spur agribusiness development, the Bureau of Agricultural Research (BAR) through its Technology Commercialization Unit (TCU), conducted project technical review of selected projects that are on the pipeline submitted to BAR for funding and technical assistance.

Dr. Rene Rafael Espino, national program coordinator of GMA-High Value Commercial Crops (HVCC), led the panel discussion and project evaluation. The program director highlighted the basic premises of agricultural production and zeroed in on the specific roles of agricultural research aimed at increasing agri-fishery production. HVCC is a priority program of the Department of Agriculture (DA) created to address the priority concerns of the government on food security and in addressing poverty related concerns.

The scope of the technical review covers the identification of commerciable technologies that would help in jumpstarting economic activities particularly in the rural and urban areas where government intervention is much needed such as funding assistance and technical support. With these interventions,

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CPAR projects up for review and documentation research

PHOTO: JLAPITAN

In support to the Bureau of Agricultural Research's (BAR) program strategy for efficient and effective R&D management, a team of experts was created to conduct formative evaluation of the implementation of the Community-based Participatory Action Research (CPAR) projects. The CPAR projects are implemented in 16 regions through the Department of Agriculture-Regional Integrated Agricultural Research Centers (DA-RIARCs). The formative evaluation will include a review of CPAR program documentation research and its overall impact on R&D management.

The team of experts is composed of Dr. Roberto Rañola and Dr. Enrico Supangco of the University of the Philippines Los Baños (UPLB), Dr. Zosimo Battad of the Pampanga Agricultural College (PAC), Dr. Timoteo Aganon of the Central Luzon State University (CLSU), Dr. Liza Battad of the Philippine Carabao Center (PCC), and Dr. Catalino dela Cruz of BAR. The team will review the implementation of CPAR projects in various regions focusing on the strategies and process of implementation, and expected outputs.

Meanwhile, the CPAR program documentation research, which will be supervised by Dr. Marlowe U. Aquino as an insider's expert perspective, will focus on the impact of the CPAR program in relation to program management, including development of approaches and modalities, based on the three strategic stages:1987-1992, 1993-1997, and 1998-2006. These strategic stages will lead BAR to finetune the implementation strategy of CPAR as a technology transfer modality for enterprise development and community development. It will also highlight lessons learned and significant experiences of farmer-partners involved in the CPAR program.

Starting in September 2009, the CPAR project review will be conducted in the three major geographical zones, in Luzon, Visayas, and Mindanao. The review will cover on-going (2007 onwards) and completed projects (as of 2008), identify success stories of project implementation, and select technologies for Intellectual Property Rights (IPR) application, dissemination and readiness for commercialization.

The CPAR program documentation research started on 14 July 2009 in Region 10 and will continue until all the priority identified research regions are fully documented and evaluated— vis-à-vis processes, stakeholders, outcomes— and impacts. Analysis will be done immediately to develop an organizational development plan that will enhance the operation and management of the CPAR program towards enterprise and agribusiness development.

Both project review and documentation research will use quantitative and qualitative methodologies to gather relevant data necessary to improve and institutionalize the CPAR framework and principles of community-based initiatives towards making agriculture business. These will be supported by other programs of BAR through the conduct of dynamic human resource development activities, institutionalization of a systematic monitoring and evaluation system, and the maintenance of strong partnerships between and among key players and stakeholders of CPAR (*Marlowe U. Aquino, PhD*).

DEPARTMENT OF AGRICULTURE
BAR Chronicle
The official monthly publication of DA-BAR

BAR Chronicle is the official monthly publication of the Department of Agriculture-Bureau of Agricultural Research (DA-BAR), mandated to ensure that agricultural researches are coordinated and undertaken for maximum utility to agriculture. 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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BAR participates in Nat'l S&T Week '09




PHOTOS: DLEJANO

For the first time, the Bureau of Agricultural Research (BAR) participated in the annual week-long celebration of the National Science and Technology Week. This year's event was sponsored by the Department of Science and Technology (DOST) and the Quezon City government.

With the theme "Responding to Global Changes through Science and Technology," the celebration was held at the UP-Ayala Land Technohub in Diliman on 21- 24 July 2009.

Among the personalities who graced the opening and ribbon-cutting ceremonies were Quezon City Mayor Feliciano Belmonte, Jr., University of the Philippines Diliman (UPD) Chancellor Dr. Sergio Cao, DOST Undersecretary Fortunato dela Paz, and Ateneo de Manila University (ADMU) President Fr. Bienvenido Nebres.

Fr. Nebres, in his keynote message, advised everyone to "nourish the talent." In doing so, he said that "the local government must be tapped to help put the pieces together for the talent to be statistically distributed."

During the week-long celebration, members of the Quezon City Science Community, BAR included, gathered to put up their works for exhibits.

Aside from an audio-visual presentation, BAR also gave out free publications and sponsored a symposium on "Indigenous Plants for Health and Wellness". Dr. Evelyn Rodriguez of the Institute of Chemistry, University of the Philippines Los Baños (UPLB) served as the resource speaker for the seminar.

Director Nicomedes P. Eleazar toured the different booths including those of the Philippine Science High School, Bureau of Soils and Water Management (BSWM), ADMU, UPD, and Philippine Heart Center, among others.

Dir. Eleazar said, "We are very glad to participate in this very important event. It only goes to show that BAR is one with the whole Quezon City Science Community in responding to global changes through science and technology."

The event culminated with a simple closing ceremony attended by the organizers, exhibitors, guests, and participants. *(Don P. Lejano)*

Prep meeting for CPAR projects Annual Review and Planning Workshop held

A planning meeting was held in preparation for the Community-based Participatory Action Research (CPAR) Projects Annual Review and Planning Workshop on 24 July 2009 at BAR. The workshop will be conducted concomitantly with the 3rd Quarter Zonal Meetings.

The planning meeting was called in order for BAR staff and evaluators to level off and discuss the reporting format, the criteria for the evaluation, mechanics, expected outputs as well as the schedule for the review, keeping in mind the objectives of the review and planning workshop.

The objectives of the forthcoming workshop are: to review and evaluate the on-going CPAR projects in the regions funded from 2007 onwards; to identify the technologies generated by the project and to classify them whether these technologies are for IPR application, for dissemination, or are ready for commercialization; and to identify useful information, lessons learned, and document the success stories generated.

On the other hand, the CPAR Zonal Review was conceptualized to strengthen collaboration and sharing of lessons and strategies among CPAR implementers in the regions within each zone.

During the meeting at BAR, Mr. Angel Morcozo, head of Research Coordination Division's (RCD) Livestock Division and Coordinator of Region 12, presented an overview of CPAR with Mr. Tito Z. Arevalo, OIC head of RCD, who facilitated the discussion. It was followed by a workshop wherein the activities and schedules were discussed and finalized. The group agreed that the evaluators will also visit the CPAR sites near the venues of the CPAR Zonal Review.

The evaluators present included Dr. Teotimo Aganon of the Central Luzon State University (CLSU), Dr. Zosimo M. Battad of the Pampanga Agricultural College (PAC), Dr. Enrico Supangco of the University of the Philippines Los Baños (UPLB), Dr. Liza Battad of the Philippine Carabao Center (PCC), Dr. Catalino dela Cruz of BAR, and Dr. Roberto Rañola of UPLB. *(Amavel A. Velsaco)*

Midyear review and planning workshop held; addresses emerging challenges in agriculture and fishery R&D

PHOTO: NDELROSARIO III

Halfway into the year, divisions and units of the Bureau of Agricultural Research (BAR) participated in the operational planning and program performance review of the previous semester during the "Midyear Review and Planning Workshop" on 2-3 July 2009 in Antipolo City.

BAR Director Nicomedes P. Eleazar issued policy pronouncements that focused on addressing emerging challenges in the agriculture and fishery sector, namely, the looming financial crisis, climate change, and globalization. He also instructed BAR key officials to adopt strategies and measures necessary for the smooth implementation of the Bureau's programs and activities.

Addressing the current economic crisis, Dir. Eleazar stressed the seven-point plans of Agriculture Secretary Arthur C. Yap to shield the economy from the financial crunch. The seven-point plans include: 1) Rehabilitation of small water impounding facilities and related projects; 2) Involvement of schools in education, extension programs; 3) Shift of fertilizer subsidies from direct procurement; 4) Support for the P3.65B Agricultural Guarantee Fund Pool; 5) Boosting production of certified seeds; 6) Establishment of post-harvest dryers, milling centers for *palay* and corn, ice making machines, chillers and ports; and 7) Ensuring reasonable farm-gate prices through local *palay* procurement and distribution.

Specifically, Dir. Eleazar cited pronouncements in response to the involvement of schools in the DA's efforts on education, extension programs, and boosting the production of certified seeds—as this are the specific areas where BAR can contribute in terms of funding collaborative projects, technology generation and commercialization, and information dissemination.

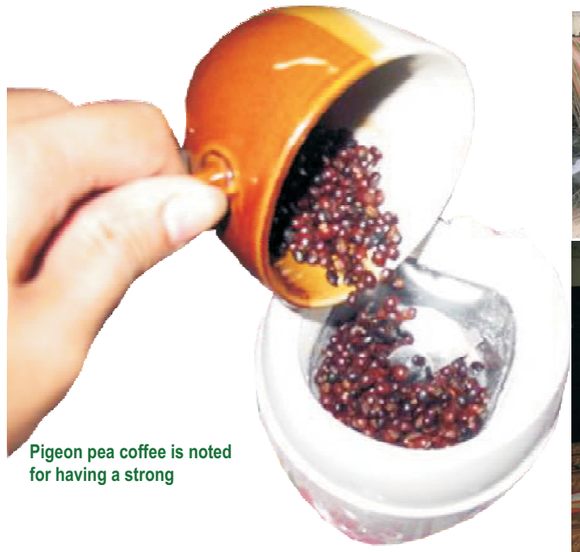
The two-day activity is aimed at planning major activities that are vital to the implementation of tmajor programs, and identifying adjustments in organizational policies and systems to achieve the overall productivity goals of BAR.

Bureau divisions and units presented their accomplishments during the last semester and their plans for the remaining half of the year. *(Rita T. dela Cruz)*


PHOTO: RDELACRUZ

Dir. Eleazar issued policy pronouncements that focused on addressing emerging challenges in the agriculture and fishery sector, namely, the looming financial crisis, climate change, and globalization. He also instructed BAR key officials to adopt strategies and measures necessary for the smooth implementation of the bureau's programs and activities.

Promoting PIGEON PEA COFFEE as healthy alternative beverage explored


Pigeon pea coffee is noted for having a strong


Prof. Raul B. Palaje (right) of the Isabela State University and proponent of the BAR-NTCP-funded project on pigeon pea coffee shows final product with technology forum participants.
PHOTOS: RPALAJE/ISU

As agriculture research and development (R&D) continuous to discover and rediscover potential agricultural crops like pigeon pea, a lot of nutritious products are also developed and packaged for commercialization.

Pigeon pea (*Cajanus cajan*), locally known as *kadyos*, functions as both food and forage crop. It is also used as cover crop for controlling soil erosion due to its strong woody tap root that can penetrate deeply into the soil. It has the capability to host nitrogen fixation making it adaptable to dry and poor soil conditions.

As a food crop, pigeon pea seeds were previously processed only as flour for baking various food products such as cookies and biscuits. This time, through the project, "Development, Utilization, and Commercialization of Pigeon Pea and Sweet Sorghum Nutri-based Food Products" other food uses from pigeon pea are being explored. One of these is pigeon pea coffee.

According to Professor Raul B. Palaje, project proponent from the Isabela State University (USI), roasted pigeon pea seeds brewed like coffee gained good acceptance and positive remarks during a technology forum conducted in various municipalities of Isabela and Cagayan. "This is a good start for the work on pigeon pea as coffee," said Prof Palaje in an interview.

Prof. Palaje, a coffee hobbyist, tried to roast and brew various grains and cereals such as corn, rice, soybean, and other crops to approximate the flavor of coffee. "But pigeon pea is different compared to those crops I have tested," Palaje revealed. Pigeon pea coffee is noted for having a strong aroma compared to traditional coffees that are sold in the market. Some participants also observed that pigeon pea coffee, when added with cream and a little sugar, tastes like "Sustagen™" or "Milo™".

On the process, Prof Palaje said that pigeon pea coffee is easy to prepare. "Harvest mature brown pods by cutting the stem two-feet from the ground or manually hand-pick the seeds. Dry the seeds in open sunlight and clean it twice before roasting. The seed is roasted for about 20-25 minutes with constant stirring in a frying pan to produce strong aroma. Start roasting at a high temperature and gradually adjust to a lower one. This is then cooled down and ground to its finest texture. And then you can get your all new roasted pigeon pea coffee," he explained.

As of now, the technology is still in the process of fine tuning, and testing for its nutritional value, production, and marketability.

Development of products such as organic vinegar, "basi" wine, handmade paper, vermin compost, pigeon pea syrup, different cookies and other flat bread baked from pigeon pea flour are also included in the project's agenda.

While the project recognizes the importance of agricultural crops as an alternative to fossil fuels, Prof Palaje stressed that, it is also important to generate more food products from these crops to help ensure the country's food and nutritional security particularly in the rural areas.

The project is funded by the Department of Agriculture (DA) through the Bureau of Agricultural Research (BAR) under its National Technology Commercialization Program (NTCP) which is in sync with the long term programs of the government to promote agribusiness in the country and create job opportunities. *(Edmon B. Agron)*

Indigenous products from corn are potential livelihood in Region 10

Investing on local delicacies as alternative source of livelihood is one of the newest programs in Northern Mindanao, thus was revealed by Regional Executive Director (RED) Lealyn Ramos and Regional Technical Director (RTD) Constancio Maghanoy Jr. of the Department of Agriculture-Regional Field Unit 10 (DA-RFU). Specific among corn producing areas in the region, *Langkoga* and *Biniki* were identified as having potentials for livelihood.

***Langkoga* and *Biniki* are two indigenous products made from corn in Region 10.**

PHOTOS: MAQUINO

Langkoga and *Biniki* are two indigenous preparations made from corn. *Langkoga* is a beverage prepared through the process of fermentation which is similar to the traditional wine making only this time, it uses corn, powdered rice, ginger, and fresh sugar cane juice. The mixture is processed and brewed to the desired taste. Initial work has been conducted by Dr. Janet Lopez of RFU 10 and RTD Maghanoy on its social relevance to agricultural activities and festivities.

Langkoga is a native wine used in rituals particularly during farming activities and festivities of the Higaunon tribe in Northern Mindanao including the Talaandig, Manobo, and Matigsalog ethnic groups.

To date, research is on-going for *Langkoga* and its cultural relevance for the indigenous people and communities in the region, and for better corn varieties for wine processing, and product development. Specifically, it will be tested in terms of ageing, quality, packaging, and promotion.

According to RDT Maghanoy, these research activities will be done in collaboration with the Food Science and Technology Institute of the Central Mindanao University (CMU).

Meanwhile, *Biniki* is a native corn-based pudding made from young corn which is ground, boiled, and mixed with sugar and milk. It is presented to consumers wrapped in corn husks. It is normally sold in bus terminals and native delicacy shops in Cagayan De Oro City and nearby towns. Traditionally, these are prepared as part of the delicacies served during fiestas and parties in corn growing areas of the region. Given that it has cultural relevance to the lives of the people, it will be studied further in terms of preparation and packaging. Like the *Langkoga*, it will also be subjected to sensory evaluation to improve its quality, shelf-life, packaging, and promotion.

Both indigenous products will be reintroduced as a mainstream food enterprise in Northern Mindanao to support livelihood programs of rural organizations especially women and youth. As soon as these are perfected, the indigenous delicacies will help contribute to the overall productivity and profitability of corn farmers providing them an alternative source of income.

The identification of these indigenous products as potential livelihoods was based on the successful implementation of CPAR corn-based projects in the region. With this development, corn farmers now have ways to efficiently use their excess produce. *(Marlowe U. Aquino, PhD)*

PHOTOS: MAQUINO

CPAR-farmer cooperators in Region 10

BAR participates in PCFMI's Food Industry Summit

With the theme "Food Security at the Forefront", the Bureau of Agricultural Research (BAR) participated in the first-ever "Food Industry Summit" of the Philippine Chamber of Food Manufacturers, Inc. (PCFMI) or Food Makers Chamber held at Dusit Thani Hotel on 28-29 July 2009. The activity was organized as part of the 50th Anniversary celebration of PCFMI.

The activity is an offshoot of the DA-BAR-UPLB Business Meeting *cum* Technology Fair held on July 10 in Quezon City. The PCFMI invited UPLB to display their products in the summit to gain exposure to the members of the chamber. The products with potentials for commercialization were showcased in the Department of Agriculture's "Pinoy Agri Kart" that displayed all processed foods/products of small-medium entrepreneurs in agriculture and fisheries.

BAR through its Technology Commercialization Unit (TCU) assisted the University of the Philippines Los Baños (UPLB) to showcase some of its products resulting from financial support given by the bureau under its National Technology Commercialization Program (NTCP).

Agriculture Secretary Arthur C. Yap was represented by Undersecretary Bernie G. Fondevilla who delivered the keynote speech. In his speech, he emphasized the role of DA as the supplier of raw materials/inputs to food manufacturers and cited some of the significant efforts of DA in addressing food security in the country, particularly in addressing the emerging issues of globalization and climate change. He stressed the importance of technological advancement as a powerful force to counter the pressing challenges faced by the department. He likewise urged the chamber to offer contract growing agreements to farmers and fisherfolk and strengthen cooperation with government agencies to attain competitiveness in the global market.

(Top left) DA Usec Bernie Fondevilla delivers the keynote address in behalf of Sec Arthur C. Yap during the opening program. (Top right) BAR Dir. Nicomedes P. Eleazar (left) discusses with DA Asec Salvador Salacup (center) and PCFMI Pres. Pamela Forshage (right). (Bottom photos) Dir. Eleazar visits the displays in the "Pinoy Agri-Kart" featuring DA-supported products.

PHOTOS: FDLORENA

The two-day summit covered four sessions and discussions on 16 topics related to food industry.

Among the DA officials in attendance were DA Asst. Sec. Salvador Salacup, Exec. Dir. Ronilo Beronio of the Philippine Rice Research Institute (PhilRice), Deputy Administrator Carlos Carpio of the Philippine Coconut Authority (PCA), Dir. Gilberto Layese of the Bureau of Agriculture and Fisheries Product Standards (BAFPS), and members of the Secretary's Technical Advisory Group (STAG), namely, Dr. Leonardo Gonzales and Dr. Emil Javier.

The food summit was participated in by top corporations in the food industry such as Nestle, Unilever, Jollibee Foods, Kraft Foods, RFM Corporation, Fonterra, Universal Robina Corporation, Dole, Del Monte, and Wyeth, among others. The companies are also members of PCFMI. *(Ferdinand Dax L. Lorena)*

PHOTO: FDLORENA

(L-R) BAR Dir. Nicomedes Eleazar, DA Asec Salvador Salacup, Usec Bernie Fondevilla, Dr. Leonardo Gonzalez of DA-STAG, and PCFMI President Pamela Forshage.

Products with potentials for commercialization were showcased in the Department of Agriculture's "Pinoy Agri Kart" displaying all processed foods/products of small-medium entrepreneurs in agriculture and fisheries.

2nd edition of UPLB's Centennial Panorama launched at FPA

In celebration of the first 100 years of the University of the Philippines (UP), the UP Los Baños Alumni Association, Inc. (UPLBAA) launched the second edition of the coffee table book, "*Centennial Panorama: Pictorial History of UPLB*" by Dr. Fernando A. Bernardo on 30 July 2009 at the Fertilizer and Pesticide Authority (FPA) Auditorium, Visayas Ave, QC.

The *Centennial Panorama* is a pictorial history of UPLB from its pioneering days to the present challenges. In 19 chapters, the book contains more than 1,000 photographs, most of which have not been published (or even seen) before.

UPLB, being a pioneer in the fields of agriculture and forestry, the publication also features R&D breakthroughs initiated and developed throughout the hundred years that has just passed.

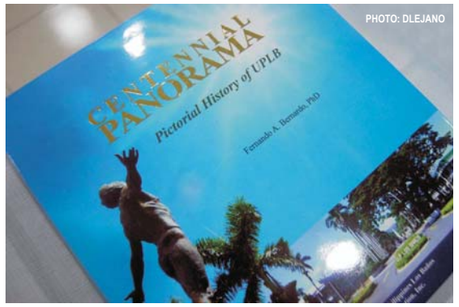


PHOTO: DLEJANO

Dr. Bernardo, author, is the former Deputy Director-General of the International Rice Research Institute (IRRI) and a former member of the Bureau of Agricultural Research's (BAR) Senior Scientist Advisory Committee (SSAC).

In the second release of the book, there is a supplemental chapter titled, "DA and UPLB: Forging Strong Ties for Agricultural Growth" which highlights milestone projects of the Department of Agriculture (DA) with UPLB in the fields of agribusiness, biofuels research, ICT, value-adding and post-harvest technologies, and biotechnology.

In the fulfillment of DA's R&D functions, UPLB has always been supportive as a partner towards greater agricultural productivity. Recognizing UPLB's strength in the fields of agriculture and biotechnology, DA has worked to enhance the playing field for research utilization and application in collaboration with the local government units (LGUs), farmer's associations, and people's organizations to implement R&D projects featuring UPLB-generated technologies and information with impact at the farmers' level.

The publication of the book was made possible through a funding support from BAR's Scientific Publication Grants (SPG). SPG is part of the knowledge products and services programs of BAR in support of government initiatives geared towards the dissemination of information relevant to research and development. *(Rita T. dela Cruz)*


(L-R) Dr. Santiago Obien, Former DA Usec. Cesar Drilon, Dr. Elpidio Rosario, Mr. Simeon Cuyson, Dr. Teodoro S. Solsoloy, Dr. Luis Rey Velasco, Fernando Bernardo, Dr. Ruben Villareal, and Mr. Rolly Pagaspas. PHOTO: DLEJANO

BAR to assist in showcasing commerciable technologies

As a follow-up activity to the business meeting cum technology fair between the University of the Philippines Los Banos (UPLB), through the Bureau of Agricultural Research (BAR), and the business sector, Department of Agriculture (DA) Assistant Secretary Salvador H. Salacup instructed BAR to assist UPLB in showcasing its technologies that are ready for commercialization during the Food Industry Summit.

Organized by the Philippine Chamber of Food Manufacturers, Inc. (PCFMI) or Food Makers Chamber, the activity will feature product displays as a way of introducing these to the members of the chamber on 28-29 July 2009 at the Dusit Thani Hotel.

The instruction to BAR was relayed during the signing of the Memorandum of Agreement (MOA) between the PCFMI and DA in which the latter will provide support to PCFMI for the conduct of the activity.

The MOA was signed on 15 July 2009 at the Secretary's Conference Room. Representing Secretary Arthur C. Yap was Usec. Bernie G. Fondevilla, who gave importance to the role of the chamber in the development of agriculture and fisheries being the buyers of raw food materials of the sector.

After the MOA signing, the group proceeded to the agribusiness showroom of the DA wherein they sampled some of the products on display. *(Ferdinand Dax L. Lorena)*

Bicol explores potential of seaweed farming; innovative products developed and packaged

PHOTOS: EAGRON

Innovative products from seaweeds developed by RFRDC Region 5.

The commercialization of seaweeds and seaweeds products in Bicol Region is now underway, said Aida S. Andayog, manager, Regional Fisheries Research and Development Center (RFRDC) Region 5. This was made possible through the collaborative efforts of the Department of Agriculture - Bureau of Agricultural Research (DA-BAR), Bureau of Fisheries and Aquatic Resources - National Seaweed Technology and Development Center (BFAR-NSTDC), local government units (LGUs), and fisherfolk partners.

Initially, on-farm research and a seaweed nursery were established in 2003 through a Community-based Participatory Action Research (CPAR) funded project on seaweeds production that became a model farm for the coastal municipalities in Sorsogon and eventually, in the whole region.

With enough harvests of seaweeds, the fisherfolk, through the continuous assistance of the different bureaus of DA, have found ways to market their produce and came upon the idea of processing them into various food products.

The project, "Product Development/Improvement and Commercialization of Seaweeds in Bicol Region" led by Ms Andayog paved the way for developing seaweeds into various innovative food products.

Specifically, the project was aimed at systematizing and creating a comprehensive development and commercialization of seaweeds and processed seaweed products in the Bicol region and to establish village-level seaweed production and processing enterprises.

As a strategy, the project tapped the existing people's organization (PO) and assisted them in the production, development, and formulation of processed food products derived from seaweeds. These are the Tiwi Food Processors Association (TFPA), Green Ladies Association (GLA) and the Malinao Food Processors Association (MAFPA) in Tiwi, Albay and the neighboring town of Malinao.

Trainings and seminars were also conducted to educate farmers and PO members on the principles of good manufacturing practices (GMP) and sanitation standard operating procedures (SSOP) which are prerequisites of the Hazard Analysis Critical Control Points program (HACCP) and a guarantee of the quality of seaweed food products produced.

PHOTOS: EAGRON

Pansit with seaweeds and malunggay and seaweeds pickles

Furthermore, products underwent sensory evaluation to assess the product appearance, odor, flavor and textures and, more importantly, its nutritional value through nutritional evaluation.

"We develop and create new products which are not only affordable but are also nutritious," Ms Andayog said.

Currently, RFRDC Region 5 has developed 20 nutritious products from seaweeds. These are: seaweed candies, seaweed noodles, pickled seaweeds, seaweed chips, *nata de* seaweeds, seaweed tart, seaweed jam, seaweed chocolate bar, *yema* with seaweeds, cracknels de seaweed, seaweed *longanisa*, macaroon with seaweed, fish *lumpia* with seaweed, seaweed *morcon*, "Namnam" or baby's food, seaweed capsule, seaweed marmalade, seaweed *kropek*, seaweed juice, *gulaman* cupcake, and other value-adding products.

"These products have competitive advantage in the market considering their uniqueness, taste, and nutritional value. Seaweeds are low-calorie food, with a high concentration of minerals, vitamins, proteins and digestible carbohydrates, and some lipids. Seaweeds contain fats and are rich in iodine, iron, magnesium, and sodium and have high amounts of calcium and phosphorous. This could be the answer to heart disease and hypertension" Ms Andayog pointed out.

The project is funded by BAR under its National Technology Commercialization Program (NTCP), one of its banner programs designed to promote viable technologies on agriculture and fisheries by providing financial assistance and encouraging small farmers and fisherfolk to venture in agribusiness. *(Edmon B. Agron)*

Corn energy bar prepared for commercialization

Wheat energy bar is to Americans as corn energy bar is to Filipinos.

Randomly selected patients of The Medical City got to try the newest product – the corn energy bar – developed by the School of Nutrition of the Philippine Women's University (PWU) on 28 July 2009.

The Bureau of Agricultural Research (BAR) supported the development and promotion of this corn energy bar for enhancing the endurance of physically active individuals. An energy bar is a dietary supplement that can supply the high calorie requirement of athletes and other high-energy requiring individuals.

Generally, the project aims to develop and promote a corn-based energy bar made from white flint corn grits. The product is intended to be an alternative to other commercially available energy bars.

Previous studies showed that corn has high amylose content which makes it a good pre-event meal for active people. This study thought of developing corn into a more convenient form for consumption that retains the same advantages as the original form. Hence, the corn energy bar was produced.

That corn is an indigenous crop makes the corn energy bar more sustainable and competitive compared with other commercially available products. Its being one of the top commodities in the Philippines makes it all the more fit to boost the appeal of this product.

Since the initiation of this project, the recipe of the corn energy bar has been standardized and consumer acceptability testing has been done. Also, the packaging has already been developed and its shelf life, proximate composition and total dietary fiber analysis have been determined.

The proponents of this project, along with frontliner Dr. Leonora Panlasigui, are now thinking of collaborating with the mass media such as television, radio, and print to promote the corn energy bar. They are also going to start conducting seminars and workshops on the benefits of this product. Furthermore, they are going to start establishing linkages with prospective manufacturers of the product.

Collaborating with the School of Nutrition of the PWU in this venture is the Physical Education Department of the University of Asia and the Pacific. *(Don P. Lejano)*

DA through BAR... *from page 1*

provide the research and extension services needed by agricultural technicians and farmers in the regions.

According to Dr. Agnes C. Rola, dean of UPLB's College of Public Affairs (CPAf) and program proponent, they will document the best practices in the implementation of the FIELDS program in the three regions and analyze the constraints in the production of rice and other commodities.

The program, Dr. Rola explained, will be implemented by CPAf in collaboration with the College of Agriculture (CA) and other units of UPLB. The program will also focus on strengthening the capability of the DA-Regional Field Units (RFUs), SUCs, local government units (LGUs), and other organizations in effectively managing the government's rice self-sufficiency program.

To strengthen and sustain a multi-stakeholder partnership among rice stakeholders among the three regions, the program will also help provincial and municipal government institutions in creating the legal frameworks needed to support agricultural development planning. (*Florante A. Cruz, UPLB*)

6 new TechCom... *from page 1*

targeted communities gain expertise on the most advantageous agriculture and fishery related enterprises. At the heart of such undertaking is empowerment of the marginalized sector of the country.

Dr. Espino pointed out that, in order for DA program to succeed, the role of the farmer-cooperators and all those involved in the process of implementation must be critically identified. He added that government assistance through DA and its attached agencies and bureaus must also be in place. "At the end of the day," he concluded, "the profitability of farmers' and fisherfolk should be assured."

Six projects were approved based on their individual project design and merit. These are: 1) Establishment of the Code of Practice for "Pinakbet" Vegetables in Support to GAP Implementation in Luzon Cluster, *DA-RFU IV-A; 2)* Establishment and Promotion of GAP for Mango in Major Production Areas in Luzon, *DA-RFU I/ ILIARC; 3)* Technology Promotion and Commercialization of Shallot (*Allium cepa), DA-RFU I/ ILIARC; 4)* Promotion and Commercialization Using Protective Structure for High Value Vegetables Production in Container in Urban Areas (Phase 3), *UPLB-PHRTC; 5)* Promotion and Product Development of Cassava as Raw Material for Noodles and Other High Value Products in Sorsogon, *LGU-Castilla, Sorsogon;* and 6) Technology Adaptation and Promotion of *Moringa*, *MMSU.*

These projects were discussed based on their technical merits, and more importantly, on the technology commercialization aspects which run parallel to the thrusts and objectives of the National Technology Commercialization Program (NTCP), the flagship program of BAR concerned with the mainstreaming of new technologies.

BAR, for its part, will schedule Pre-Implementation Meeting (PIM) for each project together with the proponents within the prescribed timeline of activities prior to the signing of the Memorandum of Agreement (MOA) and the issuance of Notice to Proceed. *(Patrick A. Lesaca)*

Producing biomass ethanol using carabao's digestive system highlighted in BAR seminar

Dr. Fiorello B. Abenes

In its continuing effort to disseminate recent and significant research results in agriculture, the Bureau of Agricultural Research (BAR) conducted its 8th Seminar for 2009 with the topic "Biomass Ethanol Using Rumen Microorganisms" on 17 July 2009 at the 2/F Conference Room, RDMIC Bldg., Visayas Avenue, Diliman, QC.

Dr. Fiorello B. Abenes, a US Fullbright professor at the Mariano Marcos State University (MMSU) and a Balik Scientist Program Awardee, served as the resource speaker for the seminar.

Despite the bad weather, the seminar was well attended by representatives from various international and local research institutions and state universities and colleges (SUCs), including the Department of Agriculture (DA), Sugar Regulatory Administration (SRA), Mariano Marcos State University (MMSU), University of the Philippines Los Baños (UPLB), United States Department of Agriculture (USDA), and the US National Aeronautics and Space Administration (NASA).

Asst. Dir. Teodoro S. Solsoloy, in his welcome remarks, emphasized the significance of the topic. He said that: "The impact of Dr. Abenes' research is very timely and appropriate given the government's conscious effort to look for alternative biofuel sources that are not only inexpensive, but will not compete with the food production."

Dr. Abenes explained the concept behind the "Single Stage Model for Cellulosic Ethanol Production Using Carabao Rumen Microorganisms" and how his research team was able to develop a method of producing bioethanol from lignocellulose using the rumen fluid from ruminants, like the carabao, as a source of enzymes that simplifies the process of producing biomass ethanol.

"Our study focused on the crucial deconstruction and saccharification step, during which lignocellulose is broken down by microbes into fermentable sugars," explained Dr. Abenes.

In this particular study, the carabao was used in the paradigm showing the process needed to convert lignocellulose (structural materials in plants) to ethanol. Carabao, according to Dr. Abenes, has rumen fluid whose micro-organisms can help transform rice stubble and straw and other biomass into bioethanol.

Dr. Abenes further stated that this study could significantly lower the cost of producing biomass ethanol, making the commercialization economically feasible. "We can extract the microorganisms from the rumen fluid of the carabao and multiply them many times for commercial production of ethanol from biomass.

The open forum was held immediately after the lecture with lively and active exchanges on the topic.

Distinguished scientists and experts in the field attended the seminar including three *Balik* Scientist awardees, namely: Dr. Josefino C. Comiso, a renowned physicist from NASA's Goddard Space Flight Center; Dr. Catalino A. Blanche, national program leader of the Natural Resources and Environment Unit of the USDA's Cooperative State Research, Education, and Extension Service (USDA-CSREES); and Dr. Terry Sarigumba, retired forest soils scientist.

Other attendees were: Dr. Ernesto J. del Rosario of the Institute of Chemistry, UPLB; Dr. Rex B. Demafelis, convenor of the UPLB Alternative Energy RDE and chair of the Department of Chemical Engineering of the UPLB College of Engineering and Agro-industrial Technology (CEAT); and Dr. Roque A. Ulep, chemist from MMSU and one of the co-authors of the research. *(Rita T. dela Cruz)*

BAR Asst. Dir. Teodoro S. Solsoloy (third from left) and other BAR key officials pose with Dr. Abenes after the lecture. They were joined in by other *Balik* Scientist awardees, namely: Dr. Josefino Comiso of US NASA (third from right) and Dr. Terry Sarigumba (fourth from right), a retired forest soil scientist.

BIOTECH products showcased in DA-BAR-UPLB TechnoFair

The National Institute of Molecular Biology and Biotechnology (BIOTECH Philippines) showcased its new commercially-available products at the "DA-BAR-UPLB Technology Fair" held at the Fernando H. Lopez Hall of the Bureau of Soils and Water Management (BSWM) on10 July 2009.

Among the products that were exhibited included BIOGROE, BIO-N, BIO-GREEN, MYKOVAM, MYCOGROE, NITROPLUS, BIOFIX, COCOGRO, BROWN MAGIC, BIOQUICK, MYCOBEAD, and many others.

PHOTOS: RDELACRUZ

Dr. Ida Dalmacio of BIOTECH-UPLB is being interviewed by Mr. Philip "Ka Ipe" Daffon of NBN's *Mag-Agri Tayo* show.

BIOGROE, which is a solid-based microbial plant growth promoter, is the latest bio fertilizer product that BIOTECH has developed. It contains plant growth promoting bacteria (PGPB), which are root-associated bacteria influencing root growth by producing plant hormones and providing nutrients in soluble form.

BIOGROE is easy to use and is environment-friendly. Its benefits include enhanced root growth and development, increased crop productivity and reduced use of toxic chemical fertilizers and pesticides.

Meanwhile, another biotech product that was put on display during the techno-fair was BIO-N. Available nationwide, BIO-N is a microbial-based fertilizer for rice, corn, and other crops like tomato, eggplant, and *okra*. This fertilizer can be introduced into the plant through seed inoculation; direct broadcasting or it can be mixed with water as root dip.

If BIO-N is available nationwide, the other biotech products are exclusively available at the BIOTECH laboratories located at UP Los Baños (UPLB). The Department. of Agriculture (DA) made an effort to designate mixing plants in different regions for BIO-N to be available across the country.

PHOTO: DLEJANO

BAR Dir. Nicomedes P. Eleazar (center) and BAR-TCU Head Anthony B. Obligado (right) pose with key staff from BIOTECH-UPLB.

Dr. Ida Dalmacio, BIOTECH director, granted an interview to NBN Channel 4's *Mag-Agri Tayo* to share more knowledge about the recently developed biotech products.

"We welcome entrepreneurs to adopt our technologies but we need to work closely with them to ensure the quality of the products. After all, the materials that they will need will be coming from us," said Dr. Dalmacio.

BAR Director Nicomedes P. Eleazar expressed his happiness for the success of the techno fair. "This activity is an excellent venue for the research organizations and the business sector alike to create strong linkages for a more progressive and sustainable agriculture."

"We are very glad that Sec. Yap, Asec. Salacup, UP President Emerlinda Roman and UPLB Chancellor Luis Rey Velasco were all present to be part of this milestone in the field of agriculture. We are certain that this is the beginning of something very fruitful," added Dir. Eleazar.

The probable technology adaptors who were invited to the event were members and representatives of the Philippine Food Processors and Exporters, Inc., the Philippine Chamber of Commerce and Industry, and the Philippine Chamber of Food Manufacturers, Inc. *(Don P. Lejano)*

Training on chickpea held; 8 varieties from India identified for field testing

To orient researchers on how to identify and evaluate outstanding chickpea entries planted in lowland and highland areas for promotion, a training on chickpea varietal, technology evaluation, promotion, and seed production in the Philippines was conducted on 7-9 July 2009 in La Trinidad, Benguet.

The training is part of the newly-approved collaborative project of the Bureau of Agricultural Research (BAR) and the International Crop Research Institute for Semi-Arid Tropics (ICRISAT) titled, "Field Testing of ICRISAT Legume Varieties and Technologies in Selected Regions of the Philippines".

Chickpea or *garbanzos* (*Cicer arietinum* L.) is an annual cool season legume that has one of the highest nutritional compositions than any dry edible legume. The seed is rich in protein, starch, fat, crude fiber, soluble sugar, and ash. There is a high demand for chickpea worldwide. According to reports, in 2010 the estimated demand for chickpea will reach to 11.1 metric tons.

Dr. Julia Solimen, vice president for research and extension at the Benguet State University (BSU), graced the occasion and welcomed the researchers from three pilot regions (Regions 1, 9, and 10) and technical staff from BAR. Dr. Solimen encouraged the participants to engage in promoting chickpea in the Philippines and promised continued support for chickpea research and development.

Meanwhile, Dr. Carmencita Kagaoan, head of BAR's Program Development Division (PDD), gave the opening message and explained the importance of enhancing the capacity of regional partners in conducting research on chickpea. She described the potential benefits from chickpea production once it is commercialized.

Currently, the Philippines is importing chickpea from India, Turkey, Pakistan, Iran, Mexico, Australia, and Canada.

Dr. Fernando Gonzales of BSU served as resource person for the training. He is currently the national focal person for chickpea.

On the first day, Dr. Gonzales provided a brief introduction on chickpea, specifically, its characteristics and growth traits. Other topics discussed focused on crop production technology and variety selection process; field preparation and planting; weed control and fertilizer application; integrated pest/disease management, germplasm collection, and seed production.

On the second day, the group visited chickpea production areas at BSU, La Trinidad and Tuba, Benguet. They discussed various aspects of harvesting and threshing, production and socio-economic constraints, including chickpea production systems in India.

A workshop was conducted during the culminating day to prepare the next steps for project implementation. The group finalized the minimum data to be gathered and agreed to report the results of their experiments after one cropping season.

Meanwhile, eight varieties of chickpea seeds from ICRISAT are expected to arrive in the country in August 2009 for field trial in the three pilot regions.

The eight varieties are classified either as *desi* or *kabuli* types based primarily on seed color. *Desi* chickpea is high in fiber and is usually used in making splits (*dhal*) and flour (*besan*) due to its high milling efficiency. The *kabuli* chickpea has lower fiber content and is used usually as whole grain.

The eight chickpea varieties are: (desi-type) ICCV 93952 (JAKI 9218), ICCV 93954 (JG 11), ICCV 94954 (JG 130), ICCV 92944 (JG 14/Yezin 6); (kabuli-type) ICCV 92311 (KAK 2), ICCV 2, ICCV 95311 (Vihar),and ICCV 95332 (JGK 2). *(Mariko M. Ramos)*

PHOTOS: FGONZALES

desi-type chickpea varieties: ICCV 93952 (JAKI 9218), ICCV 93954 (JG 11), ICCV 94954 (JG 130), ICCV 92944 (JG 14/Yezin 6)

kabuli-type chickpea varieties: ICCV 92311 (KAK 2), ICCV 2, ICCV 95311 (Vihar), and ICCV 95332 (JGK 2)

Chickpea or 'garbanzos' is an annual cool season legume that has one of the highest nutritional compositions than any dry edible legume.

BAR steps up efforts to address emerging issues of climate change and globalization

The Bureau of Agricultural Research (BAR) is intensifying its R&D activities and policy advocacy in response to emerging world challenges in the agriculture sector, specifically globalization and climate change. Thus said Dir. Nicomedes P. Eleazar during the 2009 Midyear Planning Workshop held in Antipolo City.

Dir. Eleazar identified specific strategies and mechanisms to address the emerging challenges. In addressing climate change, he instructed the staff to expedite the finalization and immediate dissemination of the Climate Change RD&E Agenda and programs for 2010-2015, which will serve as the basis for prioritizing R&D projects for implementation both in the agriculture and fishery sectors.

A key component of climate change mitigation efforts will be the need to develop new technological solutions and to disseminate current relevant technologies to the industry for immediate adoption.

PHOTO: RDELACRUZ

Corollary to this, BAR, in partnership with state universities and colleges (SUCs) and other research institutions, will be allocating funds for R&D activities and policy advocacies with specific focus on disaster risk management and mitigation projects and climate change adaptation measures. "The key to successfully addressing climate change is better technology, and the advancement of technologies largely depends on research," stressed Dir. Eleazar.

In addressing the challenge of globalization, Dir. Eleazar urged the need for the agriculture sector to be competitive given that by 2010, most tariffs for agriculture and fishery produce will equal to zero as required by the WTO-General Agreement on Tariffs and Trade. Likewise, he advocated for the need to expand social protection by targeting vulnerable sectors (e.g., women, children, indigenous peoples) in lieu of the Gender Advocacy Development (GAD).

Given that globalization is a new reality, with an increasing impact on the way the agriculture and fishery sector behaves, Dir. Eleazar is optimistic that through innovative technical researches, the country will be more than ready to meet the challenges of competition in the world market. *(Rita T. dela Cruz)*

BAR reviews Bioversity-UPLB collaborative project

PHOTO: MLBARONA/Bioversity

The Bureau of Agricultural Research (BAR) and its collaborating organizations, Bioversity International and the Crop Science Cluster of the Institute of Plant Breeding – University of the Philippines Los Baños (CSC-IPB-UPLB), held a terminal review of the project, "Introduction, Evaluation, and Adoption of Improved and Superior Landraces of Banana for Food and Income Alleviation" on 6 July 2009 at the International Rice Research Institute (IRRI) Complex in Los Baños, Laguna.

The review was undertaken as the four-year project concluded with a number of ground-breaking activities. These include the establishment of two National Repository, Multiplication and Distribution Centres (NRMDCs) in the country, one located at IPB-UPLB, and the other at the Davao National Crop Research Development Center - Bureau of Plant Industry (DNCRDC-BPI). The NRMDCs currently maintain 23 banana cultivars introduced from the International Transit Centre based in Leuven, Belgium in cultures, inside the screen house, and in the field.

Agronomic and yield performance, resistance to major diseases as well as sensory evaluation to determine the acceptability of the introduced cultivars were conducted. Four training courses on nursery and field management of banana were administered to farmers and technicians of the local government units.

Results of the trials were presented in various symposia and meetings, through an oral and 10 poster presentations. One of the posters won the Best Poster (Agricultural Science Category) at the National Academy of Science and Technology (NAST) Annual Scientific Meeting held in 2008.

The review was attended by project evaluators and officials from BAR, and project proponents from Bioversity International and IPB-UPLB. (*Ma. Lizbeth J. Baroña, Bioversity International*)

More than 37 UPLB technologies showcased in techno-fair

The Department of Agriculture (DA), through the Bureau of Agricultural Research (BAR), sponsored and organized a business meeting *cum* technology fair to showcase viable and commerciable technologies developed by the University of the Philippines Los Baños (UPLB) on 10 July 2009 at the BSWM Convention Hall.

BAR, being the national coordinator and DA's lead agency for R&D in agriculture and fisheries collaborated with UPLB, the premier learning institution in the country considered as the "oasis of technologies", to conduct this activity.

The activity is aimed at strengthening the partnership between the research organizations and the private sector towards a progressive and more sustainable agricultural development.

More than 37 notable technologies from UPLB were showcased during the techno-fair including food, ornamental, and industrial crops, food and dairy products, postharvest processing and agri machineries, biofuels, diagnostic kits, biotechnology products and, agricultural and forest production systems.

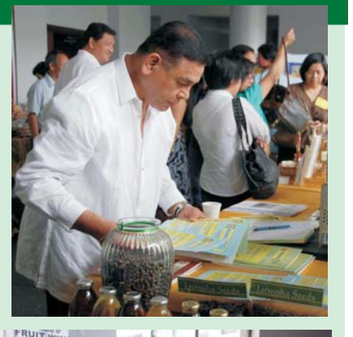
Business dialogue attended by DA Secretary Arthur C. Yap, UP President Emerlinda R. Roman, DA key officials, and members and representatives from the Food Makers Chambers.

PHOTO: RDELACRUZ

Invited guests from the business sector included members and representatives from the Philippine Food Processors and Exporters, Inc., the Philippine Chamber of Commerce and Industry, and the Philippine Chamber of Food Manufacturers, Inc.

DA Secretary Arthur C. Yap expressed optimism that partners from the business sector would take this activity as an opportunity to "shop" for the best technologies and to adopt them for commercialization. *(Rita T. dela Cruz)*

Highlights of the UPLB-DA-BAR Techno Fair



PHOTOS: RDELACRUZ AND DLEJANO