



## Biotech Papaya Resistant to PRSV Now Under Confined Trials

The candidate lines of the Papaya Ringspot Virus-Resistant (PRSV-R) Papaya are now in their confined trial site. The planting of the first perennial transgenic crop in the Philippines was conducted last February 23, 2007 at the Crop Science Cluster, Institute of Plant Breeding (CSC-IPB), College of Agriculture-University of the Philippines Los Baños (CA-UPLB). This milestone of a Philippine government-initiated project was carried out after the National Committee on Biosafety of the Philippines (NCBP) formally approved the confined trial through a letter dated February 12, 2007.

Aside from the project leaders and staff, those who attended the planting activity were regulators from the Bureau of Plant Industry-Plant Quarantine Section (BPI-PQS), a representative from the Department of Environment and Natural Resources to the NCBP and a member of the University of the Philippines Los Baños -Institutional Biosafety Committee (UPLB-IBC). The presence of these respective authorities ensures that the activity is done in accordance to the prescribed regulations of the NCBP.

This confined trial is a research activity, which is a part of the process on the development of the transgenic resistant line. The objective of the confined trial is for disease evaluation screening for resistance to PRSV of the candidate lines. There are three candidate T3 PRSV resistant lines that were planted plus the control. In total, there were 135 inoculated T3 seedlings plus 45 uninoculated and 45 inoculated 'Davao Solo' seedlings that were planted. Aside from these, 64 uninoculated 'Davao Solo'



The PRSV-R papayas were transferred to the confined trial site from the contained screenhouse facility on February 23, 2007.

seedlings were also transplanted as border plants.

The project is being funded by the Philippine Council for Agriculture, Forestry and Natural Resources Research and Development (PCARRD), Agricultural Biotechnology Support Project (ABSP II), Economic Modernization Through Efficient Reforms and Governance Enhancement (EMERGE) and the International Service for the Acquisition of Agri-biotech Applications (ISAAA). (TP Lawas and P Magdalita)

## LBR Potato Resistant to Indonesian Race of *Phytophthora*



Dr. Frank Shotkoski and members of IBFSTT visit LBR Potato confined trial on February 21, 2007

A confined trial of late blight resistant (LBR) potato at the Indonesian Vegetable Research Institute (IVEGRI) showed that the transgenic potato varieties developed by the University of Wisconsin are resistant to natural infestation of the Indonesian race of *Phytophthora infestans*, the causal organism of the blight disease.

There were 13 potato genotypes used in the confined trial, which include susceptible potato cultivars that were grown as border rows. These cultivars were planted between plots and surrounding the main plot. Insecticides were applied on the field when necessary to protect against insect infestation. No fungicide was used during the confined trial.

## Cornell Provides Additional Funds to ABSPII Activities

The College of Agriculture and Life Sciences (CAL) of Cornell University provided an additional US\$10,000 financial assistance to the Agricultural Biotechnology Support Project II (ABSPII) to help the project cope with the damage caused by typhoon 'Milenyó'. In a simple ceremony on January 29, 2007 in the Chancellor's Office at the University of the Philippines Los Baños (UPLB), Dr. W. Ronnie Coffman, Director of International Programs, CALS-Cornell University and Co-Director of the ABSPII, handed over the check to UPLB Chancellor Luis Rey I. Velasco.

Coffman also delivered to the Chancellor a letter from CALS-Cornell Dean Susan A. Henry. In her letter, Henry conveyed the deep affection and respect that she and her colleagues in CALS have for UPLB, particularly to the colleagues and collaborators in the Institute of Plant Breeding (IPB). She expressed her deep concern about the University and the Institute in the aftermath of the devastating typhoons that struck Los Baños and other parts of the Philippines.

Coffman explained that the additional funds came from Dean Henry's discretionary account. "Cornell University and UPLB have gone a long way and Cornell is happy to assist in any way we can", said Coffman.

Velasco expressed the University's deepest appreciation for the assistance of CALS-Cornell. "Cornell has always been supportive of UPLB. I am happy to note that our partnership has continued to strengthen through the years", the Chancellor added.

"ABSPII-Philippines is very thankful for the support provided by CALS-Cornell led by Dean Henry. When they heard about the extent of the damages wrought by typhoon 'Milenyó' to the Institute, they readily expressed their moral support. The USD10,000 financial assistance for the repair of IPB Genetics Laboratory facilities equipment being used by the ABSPII project is an added bonus", said Dr. Desiree M. Hautea, Regional Coordinator of ABSPII Southeast Asia, who was present during the event. (VRG Lee)



Dr. W. Ronnie Coffman of CAL-Cornell handed to UPLB Chancellor Luis Rey I. Velasco the US\$10,000 additional grant to the Cornell-funded ABSPII activities in the Philippines. The grant is primarily to assist in the repair/renovation/replacement of damaged facilities and equipment of IPB Genetics Laboratory being used for the ABSPII projects. Also present were (from left to right) ABSPII-Regional Coordinator for Southeast Asia Desiree M. Hautea, Vice Chancellor for Instruction Rita P. Laude, College of Agriculture Dean Candida B. Adalla, UPLB Foundation, Inc. Director Cecilio R. Arboleda, Crop Science Cluster and Institute of Plant Breeding Director Jose E. Hernandez, and Office of Public Relations Director Stella C. Tirol.

## Virginia Tech Professor Visits Philippines

Dr. George Norton, economics professor from Virginia Tech University and Agricultural Biotechnology Support Project II (ABSPII) Impact Study Coordinator, visited the Institute of Plant Breeding in the University of the Philippines last March 19-22, 2007 to review the progress on socio-economic impact studies in Southeast Asia and plan impact research in the Philippines for this year.

Dr. Norton met with Drs. Desiree M. Hautea, ABSPII Regional Coordinator for Southeast Asia, and Randy A. Hautea, Global Coordinator of the International Service for the Acquisition of Agri-biotech Applications (ISAAA) and SEAsiaCenter Director. The three discussed the set of activities planned for the next phase of the project. Impact studies identified are assessments of nutritional and poverty impacts of Bt eggplant, and nutritional impacts of PRSV-resistant papaya in the Philippines. Another project that will be pursued is the publication of a book presenting the results of the impact studies done in the Philippines and Indonesia. The said book will contain eleven chapters and summarize the projected level and distribution of costs and benefits associated with the adoption of target biotech crops in each country, including the value of environmental impacts. (PG de Guzman)

## LBR Potato Resistant ... (From page 1)

All plants of the susceptible cultivars succumbed to the disease during the confined trial. These cultivars (Atlantic, Granola, Katahdin control, and Merbabu) were severely infected two months after planting (MAP). Among the resistant genotypes, J103K7 was observed to be more resistant than SP951 and SP904. Among the transgenic lines, SP951 is more resistant than SP904. The wild species (*Solanum tuberosum*) PT29, which is the source of resistance gene (RB gene) on SP951 and SP904, was confirmed to be the most resistant to *P. infestans* from Lembang.

Dr. Frank Shotkoski, Director of ABSPII visited the confined trial in February, together with members of the Indonesian Biosafety and Food Safety Technical Team (IBFSTT). The LBR Potato breeding team followed the requirements specified by the IBFSTT such as provisions for genetic and material confinement which aim to prevent gene flow and LBR potato material going out of the confined trial. (M Herman)

## Seminar on Biosafety Regulations and Risk Communication

A seminar-workshop entitled Biosafety Regulations and Risk Communication for Biotech Crops Researchers was held last February 12 and 13, 2007 at the Institute of Plant Breeding, University of the Philippines Los Baños (IPB-UPLB). The seminar helped the technical and the research staff gain knowledge on biosafety regulations, product development, and the principles of risk communication. The event was organized by the Economic Modernization through Efficient Reforms and Governance Enhancement (EMERGE) along with the Agricultural Biotechnology Support Project II (ABSPII), the Southeast Asian Regional Center for Graduate Study and Research in Agriculture-Biotechnology Information Center (SEARCA-BIC), and the International Service for the Acquisition of Agri-biotech Applications (ISAAA).

The seminar-workshop also aimed to develop the staff's capacity for communicating technical research results to the general public, as well as to develop a closer relationship among the staff to enhance their work performance as a group.

Forty participants attended lectures of experts on biosafety regulations as well as risk communication. Lecturers for biosafety regulations included representatives from the Institutional Biosafety Committee of the University of the Philippines Los Baños (IBC-UPLB) and the National Biosafety Committee of the Philippines. Two representatives from the Bureau of Plant Industry (BPI), and from Monsanto Philippines, Inc., shared their experiences on how to effectively communicate biotechnology information to the public, and how to deal with challenges concerning public acceptance. A lecture on the socio-economic issues of biotechnology was also presented.

For public communication, Representatives of SEARCA-



**K! Quest.** This board game developed by ISAAA is designed to enhance knowledge on biotechnology and foster team work at the same time.

BIC and ISAAA shared their knowledge and experiences to the participants on principles on public communication of science. The activity was supplemented by a lecture on risk communication by Dr. Eufemio T. Rasco from the University of the Philippines Mindanao.

An exercise facilitated by ABSPII's project leaders for Fruit and Shoot Borer-Resistant (FSBR) Eggplant and Papaya Ringspot Virus (PRSV)-Resistant Papaya oriented the participants on how to fill up the application form for field testing (as required by the BPI). It was during this exercise that all the research and technical staff understood what requirements the IBC-UPLB needed and why it was important that these requirements be accomplished. ISAAA, represented by Dr. Mariechel J. Navarro, also facilitated the ISAAA-developed board game K! Quest. The game helped foster better relationships among

participants, and helped increase their knowledge on biotechnology through trivia and knowledge sharing.

A module on risk communication was facilitated by Ms. Sonny P. Tababa of SEARCA-BIC. The participants were asked to participate in a mock tv/radio interview where they role-played different stakeholders and answered questions about biotechnology. This module helped the research and technical staff become comfortable with each other. It also was an effective method to exercise their interpersonal communication skills when dealing with a sensitive issue like biotechnology, and also to apply what they have learned from the lectures.

All in all, the workshop was a fun and enriching experience for the participants as well as for the facilitators. The seminar-workshop ended with the sharing of expectations from ABSPII's biotechnology projects and the participants' personal expectations. (ZB Juliano)

## ABSPII Team Members Attend Training-Workshop on Insect and Weed Resistance Management

Four members of the Agricultural Biotechnology Support Project II (ABSPII) Team, namely, Ms. Alma O. Canama, Ms. Fe Alzona, and Mr. Mario V. Navasero (FSBR Eggplant project), and Ms. Marivi G. Colle (PRSV-R Papaya project), attended the Insect and Weed Resistance Management Training for Transgenic Crops. The training was held last February 19-21, 2007, at the National Institute of Molecular Biology and Biotechnology (BIOTECH), University of the Philippines Los Baños (UPLB). The event was jointly implemented by the Program for Biosafety Systems - Southeast Asia (PBS-SEAsia) and the Bureau of Plant Industry - Department of Agriculture (BPI - DA), in collaboration with Michigan State University (MSU), USA.

The training was conducted to equip researchers working on genetically modified (GM) crops and plant protection officers from various regions of the Philippines with information on management and stewardship issues associated with GM crops. The workshop also provided basic education on biotechnology use, insect and herbicide resistance monitoring and management.

The lectures in the workshop included pest management, crop biotechnology, and issues concerning biotechnology. It was in these lectures that the representatives from MSU and BPI-DA shared their experiences on insect and weed impact management,

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## Staff Get Awards for FSBR Eggplant Project Research

The Pest Management Council of the Philippines, Inc. (PMCP) and BAYER CropScience annually recognize the academic endeavors of instructors, researchers and students of crop protection. For 2007, Ms. Karen P. Ardez, a research associate in the Entomology team of the Fruit and Shoot Borer Resistant (FSBR) Eggplant Project of ABSPII, was awarded the PMCP-Bayer CropScience Best Undergraduate Thesis Award in Entomology for her thesis entitled "Host Range, Life History, and Ovipositional Preference of Eggplant Fruit and Shoot Borer, *Leucinoides orbonalis* Gueenee (Lepidoptera: Pyralidae)." Ms. Ardez conducted the study with Dr. Augusto Sumalde as her adviser. Dr. Sumalde is among the Study Leaders of the Papaya Ringspot Virus-Resistant (PRSV-R) Papaya project, also co-funded by the ABSPII.

The award was formally announced during the PMCP's 38th Anniversary and Scientific Conference held in Tagbilaran City, Bohol last March 20-23, 2007.

The study determined the ovipositional preference of the eggplant fruit and shoot borer (EFSB) on seven crops, namely eggplant (*Solanum melongena*), white potato (*Solanum tuberosum*), sweet potato (*Ipomoea batatas*), tomato (*Lycopersicon esculentum*), okra (*Abelmoschus esculentus*), pole sitao (*Vigna sinensis*) and black nightshade (*Solanum nigrum*) under free choice. It was found out that the EFSB prefer to oviposit on eggplant only. On the other



Karen P. Ardez (right) receives the award for best thesis from Aristeo N. Filipino (middle), president of PMCP.

hand, the comparative life history of the EFSB was determined using a no choice test and it was observed that the EFSB was able to complete its life cycle in eggplant, nightshade and potato. The EFSB still grows best in eggplant but the results suggest that black nightshade could serve as an alternate host while pole sitao and tomato could be used as alternate food plants.

The findings of the study conducted by Ms. Ardez gave insights on how the EFSB can be reared and maintained efficiently in the laboratory.

Dr. Virginia Ocampo, another member of the Entomology team of the FSBR Eggplant Project, also received an award from PMCP. This was the 2007 Pest Management Award for Instruction for her exemplary performance as a teacher in the

Department of Entomology, now the Crop Protection Cluster of the University of the Philippines Los Baños (UPLB). PMCP commended her for her enthusiasm and devotion to teaching, dynamic teaching style, ability to extract the best from her students, and meticulous supervision over her students' theses and dissertations, which led some of them to bag awards from prestigious award-giving bodies such as the National Academy of Science and Technology, Philippine Association of Entomologists, Inc., Gamma Sigma Delta – Honor Society of Agriculture, and the Bureau of Agricultural Research of the Department of Agriculture. (RR. Ripalda)

### ABSPII Team Members Attend... (From page 3)

particularly on corn production. Information was given on the general life cycles, physiology, hosts, ID, scouting, damage and behaviors of insects and weeds that affect insect management. The definition and principles of integrated pest management (IPM) were also discussed. Information were also provided on how pesticides are engineered, with emphasis on the Bt protein (e.g. Bt trait in corn), glyphosate and EPSP enzyme (e.g. Round-up ready in corn), how these pesticides work, how and why they are used, their fate in the environment and the benefits and limitations of each pesticide. Factors that may lead to resistance to insecticides and herbicides, and management of resistance were also tackled.

To provide hands-on experience for the participants, these were allowed to do a field-level identification and scouting of insects and weeds in a conventional corn field. The participants also went to a conventional corn field inside the UPLB premises to test transgenic corn (either Bt or Round-up ready corn) against

its non-transgenic counterpart using test kits.

According to the ABSPII members who participated in the said training-workshop, the course was done very systematically and the major topics provided enough information on management/stewardship of a biotech product. (ZB Juliano, MG Colle)

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ABSPII is a USAID-funded consortium of public and private sector institutions that supports scientists, regulators, and the general public in developing countries to make informed decisions about agricultural biotechnology. Where demand exists, ABSPII focuses on the safe and effective development and commercialization of bio-engineered crops as a complement to traditional and organic agricultural approaches. The project helps boost food security, economic growth, nutrition, and environmental quality in East and West Africa, Indonesia, India, Bangladesh, and the Philippines.

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