

Communities Notified of Planned Eggplant Multiloc



Municipal Mayor George Tan (second from right) with Institutional Biosafety Committee members during the PIS posting at Kabacan, North Cotabato.

Residents of local communities where the selected biotech eggplant lines are scheduled to be further evaluated were notified of the upcoming multilocation experiments. Public information sheets, or PIS, containing relevant information on the biotech crop were posted in seven municipalities in different Philippine provinces during the month of October 2009.

The municipalities include Sta. Maria, Pangasinan; Muñoz, Nueva Ecija; Bay, Laguna; Pili, Camarines Sur; Sta. Barbara, Iloilo; Baybay, Leyte; Bago Oshiro, Davao City; and Kabacan, North Cotabato. The PIS contained

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Bt Eggplant Collaborators Oriented on Biosafety and Risk Comm

Forty-five participants comprised of researchers, technical collaborators and members of Institutional Biosafety Committees (IBCs) attended the training-workshop on Biosafety Regulations and Risk Communication for Researchers and Collaborators of Fruit and Shoot Borer (FSBR)-biotechnology Eggplant Project conducted last September 11-16, 2009. It was an initial step to the capacity building and technology acceptance initiatives of FSBR-biotech eggplant in the proposed field trial sites- Pangasinan, Nueva Ecija, Laguna, Camarines Sur, Iloilo, Leyte, Davao City and North Cotabato.

During the training-workshop, the participants were provided with new developments on the global and

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Progenies produced by selected biotech eggplant lines during the first confined trial (above) are soon to be evaluated in multilocational trials.

USAID Completes Biosafety Review of Eggplant Multiloc Proposal

Seven proposed biotech eggplant multilocation trial sites got the green light from United States Agency for International Development (USAID) in December 2009. Based on technical findings of internal and external reviewers of the Bt eggplant technology, the multilocation trials will have very low level of environmental risk, according to the agency. The results of the initial environment examination (IEE) contain conditions to be followed during the conduct of the field trial experiments and were determined by biosafety and environmental officers of the USAID as compliant to US federal regulations and likewise support the previous recommendations from the National Committee on Biosafety of the Philippines.

Similar conditions followed during the conduct of the first confined trial at the Institute of Plant Breeding, University of the Philippines Los Baños are recommended to be done during the multilocation trials like containment measures, material handling, and other management procedures. Among the basis of the recommendations on the IEE include extensive field trials previously conducted in India, Bangladesh and the Philippines, that the crop is predominantly self-pollinating, the history of safe use of the gene in cotton in other countries, and the fairly well established biosafety regulatory system in the Philippines.

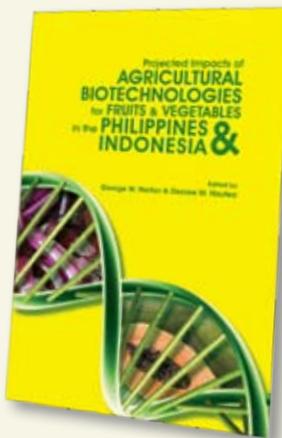
The eggplant multilocation field trials will commence once an approval from the Bureau of Plant Industry is obtained. (VMV Cruz)

New Book on the Impacts of Biotech Crops

A book that presents the projected level and distribution of costs and benefits associated with the adoption of biotech crops based on a series of ex-ante impact assessment studies in Indonesia and the Philippines is now available and adds to the stock of knowledge on the potential benefits of biotech crops. The book highlights the significant benefits that can be derived from featured biotech products in terms of yield advantage, reduced pesticide use, increased income and improved environmental quality. Bioengineered products such as insect resistant (Bt) eggplant, ringspot virus resistant papaya and multiple virus resistant tomato in the Philippines, and late blight resistant potato, insect resistant (Bt) potato, and multiple virus resistant tomato in Indonesia, are projected to earn high returns that justify the investments in their research and commercialization.

The book titled *Projected Impacts of Agricultural Biotechnologies for Fruits and Vegetables in the Philippines and Indonesia*,

edited by Drs. George W. Norton of the Virginia Polytechnic Institute and State University and Desiree M. Hautea of the University of the Philippines Los Baños (UPLB), is co-published by the International Service for the Acquisition of Agri-biotech Applications (ISAAA) and SEAMEO Southeast Asian Regional Center for Graduate Study and Research in Agriculture (SEARCA). The book was released through a book launch on 29 September 2009 at Rama Gardens Hotel, Bangkok, Thailand during the international conference on impact assessment of biotech crops. Copies of the book maybe obtained by writing to ISAAA. It is also free to download at the ISAAA website (<http://www.isaaa.org>). (PG de Guzman)



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information notifying the public why the trials are being conducted and who will conduct them. It likewise explained in local dialects the effects of the regulated article on the target pest and who they are going to contact for further information.

The public was given 30 days from the date of PIS posting to submit their comments to the Bureau of Plant Industry which is evaluating the multilocation trial proposal from the Institute of Plant Breeding. (VMV Cruz)

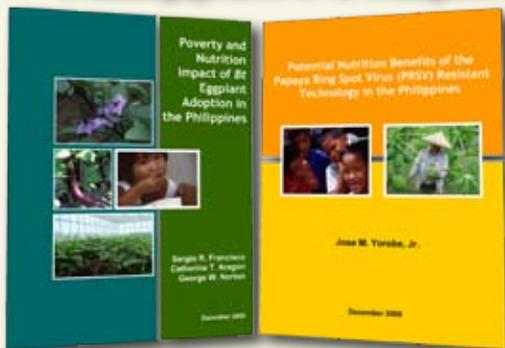
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Participants listen to a lecture on risk communication.

Impact Assessment Studies in the Philippines Completed



What would be the potential poverty and nutrition impacts of bioengineered products? Answers to this question has been the focus of the newly completed impact assessment studies in the Philippines that looked into the poverty and nutrition impacts of Bt eggplant adoption and nutrition benefits of virus resistant papaya.

The first study undertaken by Drs. Sergio R. Francisco of the Philippine Rice Research Institute (PhilRice), George W. Norton of Virginia Tech and Catherine T. Aragon, graduate student of Virginia Tech, projected the changes in poverty status of eggplant farming households resulting from the adoption of Bt eggplant. Nutrition impact was quantified in relation to changes in calorie intake by in-

come strata caused by a shift in the supply of eggplant. Results of the study show that income gain from adopting Bt eggplant ranged from 172% to 299% relative to pre-adoption income. For instance, under the 50% adoption rate scenario, average pre-adoption household income of PhP82,330 increases to PhP221,220 after adoption, or about 170% improvement in household income.

The second study undertaken by Dr. Jose M. Yorobe, Jr., Associate Professor of the College of Economics and Management, University of the Philippines Los Baños, assessed the potential nutritional impact of PRSV-resistant papaya by estimating changes in Vitamin A and Vitamin C intakes by income strata in relation to projected expansion of papaya supply due to the technology. The results of the study indicate that the decrease in prices led to the increase in papaya consumption in all income strata. Papaya consumption was noted to be higher at low income levels due to the larger number of households in the stratum and the high income elasticities.

The completed studies were supported by ABSPII through the International Service for the Acquisition of Agri-biotech Applications (ISAAA) under the guidance of Dr. George W. Norton, Virginia Tech professor and ABSPII Impact Study Coordinator. (PG de Guzman)

Philippine biotechnology R&D, adoption and commercialization, highlights and status of the FSBR-biotech research project, and updates on the guidelines and roles of the Institutional Biosafety Committee under the Philippine Biosafety Framework. The activity focused on food and environmental safety concerns on the FSBR-biotech project and risk management during the field trials based on the experiences on the risk assessment and management of Bt corn in the Philippines. The participants were also introduced to the theories and principles of risk communication and provided with several exercises on communicating biosafety issues.

The results of the *ex-ante* studies on socio-economic impact of the FSBR-biotech eggplant and the emerging concerns on the commercialization of FSBR-eggplant in India were also shared with the participants for better appreciation of the possible economic and environmental benefits that can be derived from the adoption of the technology once approved for commercialization.

This capacity building initiative was organized by ABSP II, ISAAA and SEARCA Biotechnology Information Center. The Program for Biosafety Systems Southeast Asia Center (PBS SEAsia), the Philippine Council for Advanced Science and Technology Research and Development (PCASTRD), the UPLB-Institute of Plant Breeding, Biotechnology Coalition of the Philippines (BCP) and USAID also sponsored the activity. (JA Panopio)

International Conference Discusses Impacts of Biotech Crops



ABSP II co-sponsored the conduct of a conference titled *Measures of Hope and Promises Delivered: An International Conference on Socioeconomic and Environmental Impact Assessment of Biotech Crops* held in Bangkok, Thailand on 29-30 September 2009. The conference provided opportunities for participants and experts in the field of impact assessment to better understand methodologies and tools available in characterizing impacts of biotech crops and discuss experiences in examining those impacts. The conference aims to identify priority and emerging issues for research, capacity building and doable policy options that will help strengthen public policy on agricultural biotechnology.

One important concern identified during the two-day conference point to a limited range of biotech crops subjected to impact assessment studies in developing countries and focusing only on direct economic impacts. In addition, there has been less effort in quantifying the environmental impacts of biotech crops which would highlight how

the technology could promote sustainable agriculture. The impact assessment studies so far undertaken are quite limited as there are indirect benefits not quantified such as gains in management efficiency. Hence, the question posed by one of the presentation during the conference: "Have we underestimated the value of GM crops?"

Other important concerns identified during the conference include data base development, availability and accessibility that would allow more accurate measurement of impacts and the need for appropriate standard procedure or methodologies.

The conference was attended by 80 participants from the region and was co-organized by the International Service for the Acquisition of Agri-biotech Applications (ISAAA), Southeast Asian Regional Center for Graduate Study and Research in Agriculture (SEARCA), International Food Policy Research Institute (IFPRI), and Thailand Development Research Institute (TDRI). (PG de Guzman)

KM Confab on Agri-biotech

Agricultural challenges such as food security, environmental sustainability, climate change and energy security continue to confront Asian countries. These challenges need to be addressed with crop biotechnology as a possible option. Countries thus need to utilize biological knowledge to greater productive value and identify gaps in the process chain, from product development to utilization. This is where knowledge management plays a crucial part as it enables innovation and productivity that lead to action. These were insights during the *International Conference on Knowledge Management (KM) in Agricultural Biotechnology: The Asian Experience* held last October 1-2 at Rama Gardens, Bangkok, Thailand. It was attended by 87 participants composed of policy makers, technology and R&D managers in agriculture and natural resource management; development planners, researchers, program officers; and extension, communication and knowledge managers/officers coming from 13 countries namely Australia, Egypt, India, Indonesia, Iran, Malaysia, Pakistan, Philippines, Singapore, Taiwan, Thailand, Vietnam and USA.

In his keynote message, Dr.Thira Sutabutra, chairman of Thailand's National Research Council, stressed the importance of knowledge management as it streamlines efforts to enhance knowledge sharing among countries. The workshop's themes were: agri-biotechnology and KM, platforms on biosafety policies governing agri-biotech, capacity building for KM, and KM and networking.

Highlights of the event include updates on the KM initiatives on science and technology, global scenario of biotech crops adoption and technology transfer, role of biotechnology in addressing global



challenges and its implications to KM, and current approaches on harnessing and mobilizing knowledge for bioenterprise. In addition, diverse experiences and lessons learned on advocacy, biosafety, capacity building, North-South and South-South partnerships and networking on agricultural biotechnology were shared by featured speakers representing various stakeholders.

The participants were divided into three working groups for a workshop session where issues, gaps and priorities in KM related to

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Six Students Complete University Degrees under the Biotech Projects

The eggplant and papaya projects have been significant in providing research areas and thesis support to two graduate and four undergraduate students of the University of the Philippines Los Baños. The students successfully conducted their theses on the projects and have completed and submitted their requirements to the University on June 1, 2009.

These students are Carlo Ramil (MSc Biochemistry), Roanne Ripalda (MSc Genetics), Rheina Aldovino (BSc Chemistry), Ma. Cecilia Villanueva (BSc Chemistry), Joan Buensuceso (BSc Chemistry), and Girly Juniper Basilio (BSc Chemistry). Ms. Ripalda worked on eggplant determining the level of Bt protein expression and Bt gene transmission, while the five other students worked on papaya focusing on research areas on transgene detection, and analysis of fruits for levels of glycoalkaloid, benzyl isothiocyanate and papain compounds. Mr. Ramil and Ms. Ripalda were also supported by scholarships from the Philippine Department of Science and Technology.

Degree oriented training is a very important component of capacity building activities of the project to develop human resources, and strengthen the knowledge base and experience on biotech research and crop varietal development in the Philippines. (VMV Cruz)

Eggplant Poster Lands Top Five Spot in India Conference



Dr. Lourdes D. Taylo (center) with members of the conference organizing committee Drs. K.R. Kranthi (second from left) and P. Ananda Kumar (second from right) and with Dr. Emiliana Bernardo (left) and Mr. Santiago Palizada (right).

The poster presenting the potentials of the Bt eggplant technology in the Philippines was judged as one of the top five best posters at the "7th Pacific Rim Conference on the Biotechnology of *Bacillus thuringiensis* and its Environmental Impact" held on November 25-28, 2009 in New Delhi, India. The paper was authored by Drs. Lourdes D. Taylo, Maria Luz J. Sison, Von Mark V. Cruz, Desiree M. Hautea, Josefina O. Narciso, Randy A. Hautea, Ms. April N. Alviar and Mr. Reynaldo B. Quilloy.

Three other eggplant poster papers from the Philippines were presented during the conference organized by the Indian Council

of Agricultural Research, Department of Biotechnology, Calcutta University and All India Crop Biotechnology Association. These posters include those that discuss comparisons of abundance of non-target arthropods on Bt and non-Bt eggplant plots, generational stability of the Bt gene across three generations of biotech eggplant, and level of expression of the Bt gene in the Philippine biotech eggplant lines.

Participation to the conference of Dr. Lourdes Taylo along with Dr. Emiliana Bernardo of the Department of Agriculture's Insect Resistance Management Team, and Mr. Santiago Palizada of the Bureau of Plant Industry was made possible by support from ABSP II, CropLife International, and ISAAA. (VMV Cruz)

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agricultural biotechnology were identified. Each group presented their outputs and recommendations relevant as components or features for a regional collaborative initiative, policy directions, and follow-through actions.

The international gathering was co-organized by SEARCA, ISAAA, ABSP II, PBS SEAsia, Center for Agricultural Biotechnology (CAB) and Biosafety and Biotechnology Information Center (BBIC) of Kasetsart University. The International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), Asia Bio Business Ltd (ABB), National Taiwan University (NTU), Food and Fertilizer Technology Center for Asia and the Pacific (FFTC), Office of the Gene Technology Regulator (OGTR) Australia, CropLife Asia (CLA), and the Office of the Multilateral Trade and Agricultural Affairs of the US Department of State also provided support by sponsoring the attendance of resource persons and some participants to the conference. (MJ Navarro and JA Panopio)



Volume V 2009

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ABSP II 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, ABSP II 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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