CROP BIOTECH UPDATE

A weekly summary of world developments in agri-biotech for developing countries, produced by the Global Knowledge Center on Crop Biotechnology, International Service for the Acquisition of Agri-biotech Applications SEAsiaCenter (ISAAA), and AgBiotechNet

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IRRI AND CIMMYT TO WORK ON 4 RESEARCH PRIORITIES

The International Rice Research Institute (IRRI) and the International Maize and Wheat Improvement Center (CIMMYT) have formed an Alliance to coordinate research efforts on rice, wheat, and maize aimed at improving the lives of poor farmers. Duncan Macintosh, IRRI Spokesperson, says that the Boards of Trustees (BOT) of the two international centers who met in Shanghai, China recently identified four research priorities for potential first programs of the new Alliance:

* Intensive crop production systems in Asia – specifically, rice-wheat and rice-maize – and research on crop and resource management, crop genetic improvement, and socioeconomics.

* Cereals information units to provide information for researchers and partners working on genetic improvement and the management of cropping systems involving the three staples.

* Training and knowledge banks for the three crops that would take advantage of modern technologies to provide training events, the development of learning materials and education methods, distance learning, Web-based knowledge systems, library services, and logistical support.

* Climate change research directed at both mitigating and adapting the three crops to global changes that are affecting temperature, water, and other factors having crucial effects on them.

The IRRI-CIMMYT Alliance will also share a range of support services like management and regulatory affairs for intellectual property rights and biosafety, information and communication technologies, public awareness, scientific publishing, library services, and external auditing.

For information on the Alliance, email Duncan Macintosh at d.machintosh@cgiar.org or David Mowbray of CIMMYT at d.mowbray@cgiar.org.

KEY AREAS IDENTIFIED FOR GM CROPS BIOSAFETY CAPACITY IN ASIA

A benchmark document on the needs and present status of capacity building in biosafety of GM crops in Asia by A.Varma for the Food and Agriculture Organization (FAO) says that participating countries vary greatly in their capacities related to GMO biosafety, and that most require considerable efforts to build up capacity for regulating GMOs.

The document, according to the FAO, outlines approaches to build capacity in participating countries in the context of the Cartagena Protocol on Biosafety. The key areas include:

* Human resources (in situ and ex situ training, group training, national/regional workshops and updating of training manual).

* Regulatory mechanisms (development of biosafety guidelines, putting in place various acts on biosafety, enhancement of inter-country coordination,

establishment of National Biosafety Committee and Institutional Biosafety Committee, and harmonization of regulations in the region).

* Policies and programs (enhance professionalism in implementing agencies, develop policies for undertaking risk assessment and risk management, raise institutional awareness, and harmonize biosafety program and technology transfer).

* Financial requirements (provide adequate funding and identify sources of funds).

* Regional collaboration (i.e., capacity building, workshops, training, strengthening Asia BioNet, collaborative research, harmonization of risk assessment/management techniques, strengthening of quarantine systems)

* Development of time frame for all key areas.

See the document at http://www.fao.org/biotech/index.asp?lang=en

SURVEYS SHOW IP LAWS FAVOR DEVELOPED COUNTRIES

Developments in intellectual property (IP) have raised concerns about IP's implications in food production and animal health, especially throughout the developing world. These same developments, however, are made more in developed countries, and little attention is given to developing nations. This was raised and explored in "Plants and Intellectual Property: An International Appraisal," an article by Dr. Bonwoo Koo and colleagues, published in the November1 19, 2004 issue of Science.

With a survey conducted in national IP offices in 191 countries, researchers found that only 91 countries offered statutory IP protection, while another 29 countries had legislation under consideration. Majority of the 91 were high and upper middle-income countries; only 22 of 61 low-income countries had any statutory protection in place for plants. Surveys also showed that 31% of the applications in high-income countries, 65% in upper middle-income countries, 25% in lower middle-income countries, and 38% in low-income countries were lodged by foreigners.

Read the enhanced article online at www.sciencemag.org/cgi/content/full/306/5700/1295.

NEW IRM AND IPM STRATEGIES PROPOSED

New strategies are needed for insect resistance management (IRM) and integrated pest management (IPM) in transgenic crops. These were outlined by Sarah Bates of Cornell University and colleagues, in “Insect resistance management in GM crops: past, present and future,” published in Nature Biotechnology.

Authors recounted several deployment tactics designed to delay resistance, including moderate toxin dosage to ensure the survival of a fraction of susceptible insects; a high toxin dosage to kill insects heterozygous for resistance; the used of stacked genes in transgenic plants; temporal or tissue-specific toxin expression of the genes in question; and “refuge” or provision of non-transgenic plants.

The researchers likewise reported new techniques for integrated pest and insect resistance management. These were the use of pyramided transgenic strains, as in the latest strains of transgenic cotton, which can ensure better pest control, and which require a smaller refuge; and the use of novel toxins, such as Cry and Bt toxins with different modes of action, or vegetative insecticidal proteins (Vips) which have shown insecticidal activity against a wide range of pests.

Researchers also proposed that molecular breeding should be complemented by traditional methods of integrated pest management, including cultural and biological controls.

Download the article at http://www.nature.com/cgi-taf/DynaPage.taf?file=/nbt/journal/v23/n1/full/nbt1056.html&filetype=pdf

RESEARCH PROPOSES NEW GM BEET MANAGEMENT SYSTEM

Researchers of the Broom's Barn Research Station, national center for sugar beet research in the United Kingdom, recently released their findings on a new genetically modified herbicide-tolerant (GMHT) sugar beet management system. Their new system, they say, "could resolve legitimate concerns about indirect environmental effects of GMHT sugar beet on weeds, insects, and birds.” There is concern that increased herbicide application may affect wildlife, as animals, and birds, in particular, feed on weed seeds in the spring. In “Management of genetically modified herbicide tolerant sugar beet for spring and autumn environmental benefit,” Dr. Mike May and colleagues show that GMHT sugar beets and improved timing of herbicide application can both maximize crop

yields, as well as provide the local avian populations with food through the season.

Their new management system involves applying the first glyphosate spray fairly early and omitting the second spray – resulting in savings of about 150 British Pounds per hectare per year, or 23 million British Pounds per year if GMHT crops are grown exclusively. The new technique can also enhance weed seed production up to sixteen fold compared to conventional systems.

"We are excited about our results," Dr. John Pidgeon, Broom's Barn director, says, "Because this is the first time research has shown that GM herbicide tolerant crops can be managed for environmental benefit."

Read the press release at http://www.rothamsted.bbsrc.ac.uk/broom/gm_work.php. The research paper is published in Philosophical Transactions B, a learned journal produced by the Royal Society. It may be downloaded at the ISAAA website.

EU CONSORTIUM RELEASES GM SAFETY RISK ASSESSMENT RECOMMENDATIONS

Entransfood, a consortium of 65 partners from 13 different European countries, including representatives from various sectors, has come up with major conclusions and recommendations of topics which they investigated regarding genetically modified safety risk assessment. The network on the safety risk assessment of genetically modified food crops which is being subsidized by the European Union through the Fifth Framework Programme.

Among the conclusions that the network released were:

* Existing test methods for safety assessment of GM organisms "are efficient and ensure that GM foods that have passed the test are as safe and nutritious as plant-derived foods."

* There is no indication that unintended alteration in the composition of plants are more likely to occur in GM crops.

* Reliable documentation systems to trace the origin of ingredients and analytical methods to detect and quantify amount of GM derived ingredients are available.

* It is important to explicitly address public concerns and to develop new methods for stakeholders' involvement and public consultation.

The network suggested that future research projects should address ways to formalize public engagement and consultation into new working procedures as well as impact on risk analysis process. It also called for a Permanent Evaluation and Discussion Platform on the assessment and introduction of new foods in Europe as well as a general framework for risk analysis of all types of new foods.

Scientific papers which served as basis for the conclusions and recommendations will be posted on the Entransfood website. See the Entransfood flyer for the summary of its report at http://www.entransfood.com.

PHILIPPINES TO TEST BT COTTON

The Philippines is set to test Bt cotton, possibly the next genetically modified crop to be introduced in this Asian country after Bt corn. The Cotton Development Authority (CODA) signed a memorandum of agreement with the Philippine Rice Research Institute (Philrice) for the Bt cotton testing. Alice Ilaga, Department of Agriculture (DA) biotechnology program implementation unit director, said that the collaborative effort will enable the local testing and evaluation of the transgenic cotton hybrids from China.

The national daily Manila Bulletin quotes Ilaga as saying that “The country will benefit from homegrown Bt cotton and save an estimated $86 million in import yearly if Bt cotton proves safe (and bollworm resistant). Farmers can increase their income, and textile millers will have a local source for good-quality fiber.” The Philippines imports some 60,000 to 75,000 metric tons of cotton lint yearly, which represents about 95 percent of the country’s requirement.
Philrice will make available its biotechnology facilities to CODA. The latter will test the crop in its research stations in the country.

See related story in http://www.mb.com.ph/BSNS2005012026831.html#.

NZ SET TO BE NEXT BIOTECH CENTER

New Zealand seems to be the latest biotech hub, and its four million inhabitants form arguably the most politically and environmentally correct society on the planet. This is according to Stephan Herrera, whose article “New Zealand: Green Haven for Biotech?” is published in the latest issue of the Massachusetts Institute of Technology (MIT) Technology Review.

The country's economy is largely dependent on agriculture, where farming comprises 4.8% of the gross domestic product. To retain this status, and to keep its economy growing, lawmakers welcomed the entrance of genetically modified crops into New Zealand in 2001, reasoning that it was advisable not to turn away from biotechnology, but rather manage it wisely with a transparent, enforceable, publicly accessible, and scientifically robust regulatory framework.
This framework, enacted in October 2003, allows New Zealanders more power to participate in the approval process for local research and development projects; and enforces strict observance of the local Maori tribes' traditions. As such, several field trials of genetically modified trees, onions, and dairy cows have already been approved.

Download the article at
http://www.technologyreview.com/articles/05/02/issue/brief_newzealand.asp?p=1
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AGRI MINISTER ENCOURAGES GM SEED IMPORT

India's Union Minister of Agriculture, Consumer Affairs, and Public Distribution, Mr. Sharad Pawar, encouraged the import of genetically modified (GM) oilseeds and high oil content seeds. Mr. Pawar made this proposal as he spoke before the 74th World Congress of the International Association of Seeds Crushers (IASC) in Mumbai, India.

India currently does not allow import of GM seeds, but according to government policy, oilseeds imports are freely allowed, with a 30% customs duty and plant quarantine clearance. Inadequate infrastructure and fragmentation of processing capacities have hampered the local oilseed-processing sector. At present, India imports some 40% of its annual needs of 11 million tonnes of edible oil, which consists mainly of palm and soft oils.

Read the complete story at
http://www.thehindubusinessline.com/2005/01/19/stories/2005011902860100.ht
m. Visit the congress at http://www.iasc2005.com

ANNOUNCEMENTS

BIOTECH VENTURE SUMMIT SLATED FOR THE PHILIPPINES

A Biotech Venture Summit will be held in Makati City, Philippines, from January 26-29, 2005. At the end of this 4-day conference, participants will learn how to develop science into an enterprise; find business and work opportunities in the biotech industry; know the latest technology transfer practices, laws, and regulations; and create environment- friendly biotechnology businesses in the Philippines

The summit is organized by Hybridigm Consulting and Businessmaker Academy. Scientists, entrepreneurs, investors, corporate and intellectual property lawyers, policy makers, and managers in the medical, pharmaceutical, agriculture and aquaculture, food, cosmetics and industrial fields are invited to attend.

For more information, contact (632) 6874445, 6874645, or 6873416; or visit http://www.philbiotech.com.

SEMINARS SCHEDULED TO PREPARE FOR MOP2

The Public Research Sector Initiative has scheduled activities to allow the public research sector greater involvement in the coming Meetings of the Parties (MOP2) to the Cartagena Protocol on Biosafety.

The series will involve three phases, with the first entailing raising awareness of the public research sector regarding MOP2. The second phase will be an Introductory Seminar, to be held on March 3-4 2005, at the Donald Danforth Plant Science Center. The seminar is designed for scientists from public research institutions from both developing and developed countries, in which they will be informed about the background, content, and implementation of the Cartagena Protocol on Biosafety, as well as about the ongoing discussions in the Meeting of the Parties

The third and final phase will involve the structured involvement of the public research sector in following MOP's, which will ensure continuous participation of the public research sectors. This will be achieved through working groups, scheduled meetings, newsletters, and position papers, among others.

The Initiative is a foundation with the objective to involve the public research sector in the development and implementation of regulations that are relevant for the application of biotechnology. Download their statement at www.isaaa.org/kc. For more information, visit http://www.pubresreg.org.

DOCUMENT REMINDER:

POCKET K ON GLOBAL STATUS OF BIOTECH CROPS

A pocket-size summary of the Clive James report on the global status of commercialized biotech/genetically modified crops in 2004 is now available online at http://www.isaaa.org/kc. It discusses among others, the global area of biotech crops since its planting in 1996, distribution of biotech crops in industrial and developing countries, distribution of biotech crops by country, the global value of biotech crops, and future prospects.

The executive summary of this report is also available online in English and Chinese. Translations of the press release of the report highlights are available in Chinese, French, Germna, Gujarati, Hindi, Italian, Marathi, Portuguese, Punjabi, Spanish (Mexico and Argentina), Tamil, Telegu, and Thai. Visit http://www,isaaa.org/kc to download these materials.

AFRICAN COUNTRIES DRAFT STATEMENT OF COMMITMENTS

A Statement of Commitments from African countries has been released, supporting the African Union (AU) Summit calling for an African common position on biotechnology and genetic engineering, and their applications in agriculture, health, mining, and other sectors.

The said statement endorses the African Policy Dialogues on Biotechnology (APDB) as an effective platform for building consensus and raising awareness on the role of modern biotechnology and genetic engineering in Africa's social and economic development; supports the plan to convene an Africa-wide session of the APDB in early 2005; and recommends that an enlarged Steering Committee of the APDB continue to provide leadership to this process.

The countries also reached a consensus on a number of important points, including the need to a) build clear institutional arrangements to manage and safeguard intellectual property rights (IPR) at international, regional, and national levels, b) distinguish between utilization of IPR to promote innovation and technology transfer versus application of IPR for protection of the rights of technology developers, and c) increase investment to strengthen African countries' physical, human, and institutional capacities in biotechnology-related fields, including policy design and implementation.

Read the statement at http://www.isaaa.org/kc.

NEW CGIAR PUBLICATION RELEASED

The Consultative Group On International Agricultural Research (CGIAR) has recently released Saving Seeds: The Economics of Conserving Crop Genetic Resources Ex Situ in the Future Harvest Centres of the CGIAR, which will be of interest to those involved in plant breeding and genetics, conservation, biodiversity, and agricultural economics.

Written by Dr. Bonwoo Koo, of the International Food Policy Research Institute (IFPRI) and colleagues, the publication documents the CGIAR's work on the conservation of genetic resources through its eleven genebanks. Researchers report a series of detailed economic studies on key policy and management issues, as conducted by IFPRI in collaboration with CIAT (based in Colombia), CIMMYT (Mexico), ICARDA (Syria), ICRISAT (India), and IRRI (Philippines).

Visit http://www.cgiar.org for more details.

CBT NEWS FEATURE: DR. PER PINSTRUP ANDERSEN

Dr. Per Pinstrup-Andersen, a citizen of Denmark, received the $250,000 World Food Prize for 2001 for his contribution to agricultural research and food policy. He was then the Director General of the International Food Policy Research Institute (IFPRI) (1992-2002) when he was selected for this prestigious award.

Under his leadership, IFPRI became the world's leading think-tank on hunger issues, taking on numerous groundbreaking research projects, including: breeding staple crops for higher nutrition; improving the effectiveness of food for education efforts; and computer-modeling through IFPRI's IMPACT computer system projections to determine the effects of government policies on child malnutrition and food security. IFPRI is a Future Harvest Center, which is funded through the Consultative Group on International Agricultural Research (CGIAR) based in Washington, D.C.

Dr. Pinstrup-Andersen also worked with Cornell University as director of the Food and Nutrition Policy Program and a professor of food economics. He also served as a member of the Technical Advisory Committee to the CGIAR; director of the Food Consumption and Nutrition Policy Program at IFPRI, an agricultural economist at the International Center for Tropical Agriculture (CIAT) in Colombia, director of the Agro-Economic Division at the International Fertilizer Development Center (IFDC) in the United States, and an associate professor of the Danish Veterinary and Agricultural University in Copenhagen. Currently, he is a senior research fellow in the Director General's Office of IFPRI.

In 1993, Dr. Pinstrup-Andersen launched the 2020 Vision Initiative. The effort alerted world leaders to potential food security crises in the 21st Century, thus

helping to change the priorities of governments; halting the decline in donor support to agricultural research and development; and leading to the instigation of projects which have improved the lives of the world's poorest citizens and reduced global poverty figures.

Dr. Pinstrup-Andersen is a member of several committees, including the Committee on Agricultural Biotechnology, Health, and the Environment under the National Research Council; the Working Committee on Biotechnology under the State Department's Advisory Council on International Economic Policy; and the World Health Policy Forum and its General Council. He is a Fellow of the American Agricultural Economics Association and the American Association for the Advancement of Science (AAAS).

Other awards he received include: Distinguished Alumnus of the Economics Institute of the University of Colorado; Distinguished Alumnus of Oklahoma State University; Outstanding Journal Article Award and a Ph.D. Thesis Award, both from the American Agricultural Economics Association; Charles A. Black Award for outstanding record of research and communication; and the Danish Agronomy Prize.

He also holds honorary doctors degrees from Tamil Nadu Veterinary and Animal Sciences University in India, the Swiss Federal Institute of Technology in Zurich, Switzerland, the University of Aberdeen, U.K, and the Wageningen University in the Netherlands. He is honorary professor at the Tashkent State University in Uzbekistan and a Distinguished Professor at Wageningen University, the Netherlands.

Dr. Pinstrup-Andersen holds a B.S. in agricultural economics from the Royal Veterinary and Agricultural University in Denmark and an M.S. and Ph.D. from Oklahoma State University. He has written more than 300 books, articles, and papers.

Quote from Dr. Pinstrup-Andersen "The 2020 Vision is a vision of a world which by year 2020 will be free of poverty, hunger, and malnutrition and of a world where management of natural resources will be done sustainably. Can we reach this? Yes, we can. Will we? Depends on what we do between now and then. It is in our hands; it's in the hands of the people who can make the decisions to make it happen. It is a matter of priority, not a matter of whether it can be done or not."

http://www.worldfoodprize.org
http://www.ifpri.org/pinstrup_wfp/pinstrup_wfp.htm

Do not hesitate to tell other colleagues/contacts about this mail list. If they wish to join, they should send an e-mail message to knowledge.center@isaaa.org leaving the subject blank and entering the one-line text message as follows: SUBSCRIBE Crop Biotech Network

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