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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CROPBIOTECH SUBSCRIBERS E-SURVEY

Our latest data show that the CropBiotech Update is already reaching subscribers in 189 countries. To have a better profile of our valued subscribers and to better serve you, we are currently conducting a subscribers survey. We would like to express our gratitude for those who have already responded. And, for those of you who haven't answered the survey yet, we encourage you to do so. Visit http://www.isaaa.org/kc for more information about us.

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SCHEME TO MINE GENOMIC DATABASES

A new scheme has been set up to use the wealth of agricultural genomic data stored in databases across the world and identify genes associated with crop improvement traits. It also seeks to develop a public bioinformatic platform to store this data and facilitate easy access.

The Challenge Programme for Unlocking Genetic Diversity in Crops for the Resource Poor is based at the headquarters of the International Maize and Wheat Improvement Center (CIMMYT) in Mexico. It was conceived as “a means of going in and first identifying the genetic wealth held within these banks, developing the tools and techniques to discover the genes, and then moving these genes into crop improvement programs that target poor farmers and consumers in developing countries," explained Robert Zeigler, the scheme’s director.

Zeigler said that the Challenge Programme has already initiated efforts at gathering preliminary data and developing a bioinformatics platform. The next step will be to seek proposals that will contribute to the discovery of new genes associated with improved cereals, rice, and wheat.

Fore more, contact Robert Zeigler at rzeigler@ksu.edu.

TANZANIA TO DRAFT GM GUIDELINES

A multi-sector group of Tanzanian experts will draft the policy guidelines and regulations on genetically modified (GM) crops for the country. The EastAfrican newspaper quotes Tanzania's Minister for Agriculture and Food Security, Charles Keenja, as saying that the country had taken "no clear position" on GM products but that it was important to “put in place mechanisms and guidelines on how it would be introduced, including preparing a Cabinet paper for the purpose.”

Keenja said Tanzania was having discussions with the South African government over how to adopt GM technology. He noted that the two countries have a similar environment and have laboratories for research on GM organisms. Likewise, he added that "As of now we are self-reliant for over 90 per cent of our food, but by going about this issue systematically and critically, we would in future reach a point where we will decide on how to adopt GMOs."

View the EastAfrican newspaper at this link:
http://www.nationaudio.com/News/EastAfrican/current/index.html.

ISNAR-IFPRI REPORT ON GM RESEARCH PROGRAMS

A new report from the International Food Policy Research Institute (IFPRI) in collaboration with the International Service for National Agricultural Research (ISNAR) analyzed recently the public "research pipelines" for genetically modified (GM) crop development in China, South Africa, Indonesia, Argentina, India, Philippines, Egypt, Brazil, Bulgaria, Thailand, Zimbabwe, Pakistan, Costa Rica, Malaysia, Kenya, and Mexico.

Of these 16 developing and transition countries, the authors stated that research programs have developed 209 GM events, and 20 percent of these are currently undergoing various stages of confined testing. With regards to field testing, frequent delays were observed which could increase the possibility for a trait or germplasm to lose its effectiveness due to disease pressures change, and more productive varieties that will be released over time.

The authors added that regulatory systems and policies in these countries have been under development for over 12 years. Some countries have already conducted biosafety assessments, and have determined which crops are acceptable for trials and use. However, despite this progress, regulatory decision-making processes remain complicated, and are affected by conforming to the Cartagena Protocol for Biosafety.

To expedite the development process, collaboration with farmers and engagement in more public/private partnerships and South-to-South collaboration was encouraged. The authors also discussed policy, political and institute changes that could ensure the safety and efficacy of GM crops. A combination of these changes and farmer testing of products from public research could result in the rapid assessment of success or failure of GM crop development.

The full report entitled “To Reach the Poor - Results from the ISNAR-IFPRI Next Harvest Study on Genetically Modified Crops, Public Research, and Policy Implications” is available online at http://www.ifpri.org/

IOWA STATE SETS UP CENTER FOR GM RISK ASSESSMENT

Iowa State University in the U.S. has set-up a Biosafety Institute for Genetically Modified Agricultural Products (BIGMAP) to develop tools and methodologies for independent and science-based risk/benefit assessment of genetically modified (GM) agricultural products. BIGMAP researchers will also develop strategies for mitigating the risks and communicate the results of these activities to key regulatory agencies and public policymakers to safeguard consumers and the environment.

"Science-based risk assessment is the key for safe use of agriculture biotechnology," said Manjit Misra, director of BIGMAP. "Plant and animal biotechnology have the potential to feed and heal the world, but must be managed to safeguard the food supply and the environment."

For its inaugural public event, it will sponsor a symposium on "Corn-Produced Pharmaceuticals and Industrials" on April 22 at the Comfort Suites Hotel, Ames, Iowa. Among the topics to be tackled include the role of transgenic technology in the biosynthesis of biopharmaceuticals and industrial protein; production of recombinant proteins in transgenic corn; and concepts for human and ecological risk assessment.

Registration can be made online at http://www.bigmap.iastate.edu/, or by contacting the University Conference Services at (515) 294-3597 or confreg@iastate.edu.

CONSUMER ATTITUDES: KEY TO AGRI-BIOTECH SUCCESS

“The fate of agricultural biotechnology hinges on consumers.” This was the key finding of a research that was recently conducted by Konstantinos Giannakas, assistant professor, Institute of Agriculture and Natural Resources, University of Nebraska, United States.

Says Giannakas, “consumer acceptance and demand depend largely on whether people think this technology benefits them and whether they believe foods made from genetically modified, or GM, crops differ from traditional products.” According to him, this perception affects the decisions made by farmers on which crops to grow, and the life science companies' decisions on the development and pricing of GM technologies.

In his research, the author explored the economic ramifications of agricultural biotechnology for consumers, producers and biotech companies. He also studied closely the market and welfare effects of introducing GM products into the food system, specifically providing an economic picture of what would happen if GM products were placed in different markets and subjected under different regulatory and labeling scenarios.

The news release from the University of Nebraska is available at http://ianrnews.unl.edu/static/0404081.shtml.

PHILIPPINES APPROVES 17 GM TRANSFORMATION EVENTS

Last February 4, 2004, the Philippine Department of Agriculture's Bureau of Plant Industry has approved 17 transformation events (TEs) for GM crops intended for use as food, feed or processing material. One TE was also approved for commercial planting in the Philippines. This was according to a report from the United States Department of Agriculture (USDA) Foreign Agricultural Service’s Global Agriculture Information Network (GAIN).

Corn, soybeans, canola, potato and cotton were the agricultural crops covered by the 17 TEs. Based on the official registry, importers can now bring in shipments of these agricultural commodities for use within the Philippines as long as they contain amounts as stipulated in the approved TEs. At present, the approval covers most of the corn and soybeans currently shipped from the United States to the Philippines.

Specific details of the approval are provided at http://www.fas.usda.gov/gainfiles/200403/146105878.pdf

ASPB OFFERS ACCESS TO PLANT SCIENCE JOURNALS

The American Society of Plant Biologists (ASPB) announced recently that it is offering scientists in almost 70 developing countries free access to its plant science journals, namely: Plant Physiology, and The Plant Cell. These two journals are two of the three most frequently cited plant science journals worldwide.

This activity is in line with ASPB’s participation in the Access to Global Online Research in Agriculture (AGORA) - an initiative led by the Food and Agriculture Organization (FAO) to provide free access to over 400 major agricultural scientific journals worldwide. Topics about the latest developments in the biological, environmental, and social sciences are also provided in the journals.

Says Mary Lou Guerinot, president, ASPB "many agricultural libraries in (the) developing countries had not received science journals for a number of years. By providing scientists in poor nations access to current scientific information, we believe scientists in these nations will be better able to help address local problems in agricultural production."

For more information about this service, contact Brian Hyps at bhyps@aspb.org.

GM FUNGUS WITH LYCOPENE

Scientists from the United States Agricultural Research Service (ARS) have added genes for making lycopene and other carotenoids to the fungus Fusarium sporotrichioides which grows on corn. Lycopene, a pigment that makes tomatoes red, is believed to have health benefits, particularly in preventing certain cancers.

Timothy Leathers of the ARS National Center for Agricultural Utilization Research in Peoria, Illinois said there is potential to use the modified fungus to mass-produce lycopene from ethanol byproducts like corn fiber rather than obtaining the carotenoid from tomatoes. Corn fiber is ideal because it is abundant and cheap. The U.S. ethanol industry generates four million tons of the fiber annually, and sells it as livestock feed to avoid disposal fees.

Preliminary results showed that the modified fungus could produce 0.5 mg of lycopene per gram dry weight within six days in laboratory culture. The next step will be to scale up the studies by culturing the fungus in fermenters on a growth medium containing the corn fiber.

Contact Timothy Leathers at his email address: leathetd@ncaur.usda.gov.

SALT-TOLERANT RICE NEEDS CAREFUL SELECTION

Under sub-optimal conditions, the best way for rice breeders to improve the rice harvest is to produce varieties which are not fertilizer dependent. However, specifically modified varieties need to be developed for rice growing under saline conditions said the Netherlands Organization for Scientific Research. This has implications for many rice planting countries in Asia and Africa where salinity is a major problem.

Gambian researcher Baboucarr Manneh investigated variations in the rice yield and the possibilities for increasing this under a variety of environmental circumstances by means of plant breeding. He could accurately predict the rice yield with the help of DNA markers. Manneh also found that the crop growth model ORYZA1 accurately predicted the biomass and grain yield of the rice. Using this model he could also assess the possibilities for increasing the yield by manipulating the physiological characteristics of the rice plant.
The research was funded by the Netherlands Organization for Scientific Research. For more information contact Baboucarr Manneh of the Department of Plant Sciences Wageningen University and Research Centre at Baboucarr.manneh@wur.nl or baboucarrmanneh@yahoo.com.

View the full press release from the Netherlands Organization for Scientific Research at http://www.nwo.nl/nwohome.nsf/pages/nwop_5x5bvh_eng.

SWEDEN APPROVES THE PLANTING OF GM POTATO

Sweden has recently approved the planting of the first genetically modified (GM) potato in the country. This crop, however, will be used solely for the production of starch for paper. According to Gabriella Cahlin, spokeswoman, Swedish Board of Agriculture, as quoted by The Guardian, the new potato contains high amounts of starch that can be used in paper production. Cahlin, however, conceded that by-products from the starch extraction will also be used for animal fodder and fertilizer.

This decision was met by public resistance within the country despite the fact that no scientific evidence has yet been found to prove that animals fed GM crops suffer any harm or pass on any antibiotic resistance or other traits further up the food chain. The move is also seen to stir a controversy within the European Union (EU), which is still to ratify the Swedish decision.

Read the full story at http://www.guardian.co.uk/gmdebate/Story/0,2763,1188926,00.html.

ANNOUNCEMENTS

GLOBAL CHALLENGE SURVEY

The National Academies, a U.S. based scientific advisory organization, is conducting a survey to gather insights from people in the developing world on global challenges and whether agricultural biotechnology can help address any of these challenges. Be part of this survey by visiting http://dels.nas.edu/global_challenges or emailing Michael Kisielewski of The National Academies at mkisiele@nas.edu.

ISAAA CHAIR TO GIVE TALK AT EUROPABIO

EuropaBio, an association of bioindustries in Europe, is extending an invitation to meet Dr Clive James, Chairman of the International Service for the Acquisition of Agri-biotech Applications (ISAAA), who will make a presentation on the future prospects for GM technology. His presentation will take place during lunch on April 20, 2004 at the Dorint Hotel in Boulevard de Charlemagne,Brussels. Dr. James founded ISAAA, a not-for-profit charitable organization, established to facilitate the acquisition and transfer of agricultural biotechnology applications from the industrial countries, for the benefit of resource-poor farmers in the developing world.

For more information, email Adeline Farrelly of EuropaBio by April 16 at a.farrelly@europabio.org.

INTERNATIONAL SYMPOSIUMS

China: International Symposium on Science & Technology in Agriculture

The “International Symposium on Science & Technology in Agriculture: Current and Future” will be held jointly by the Chinese Academy of Agricultural Sciences (CAAS) and World Food Prize Foundation (WFPF) on July 10-12, 2004. The symposium aims to promote the academic exchange and cooperation among the agricultural communities between China and other countries.The topics of the symposium will be: China and world agriculture in the 21st century; agricultural policy; international agricultural science and technology development and cooperation; issues of agricultural biotechnology; and hybrid rice. More information is available at http://www.worldfoodprize.org/chinaconference.htm.

Latin American and Caribbean Meeting on Agricultural Biotechnology (REDBIO 2004)

Taking place in Boca Chica, Dominican Republic on June 21 to 25, 2004, this event will cover topics including: nutrition genomics, molecular farming, marker assisted selection, and biosafety and its applications. One special plenary session, associated symposium and workshop will be devoted to rice biotechnology in celebration of the UN International Year of Rice. For more information, email redbio2004@redbio.org

UNCTAD XI in Brazil
A June 13-18, 2004 meeting of the UN Conference for Trade and Development (UNCTAD) will be held in São Paulo, Brazil. This meeting will present new opportunities to debate alternative policies for agriculture and world development, and set the organization's priorities for the next four years. A symposium on fair trade and sustainable development is also part of the agenda. For more information, visit http://www.unctadxi.org/.

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