CROPBIOTECH 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)

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NEWS

*** Global ***

FAO DG CALLS FOR MDG ACTION

Reducing hunger and extreme poverty is a prerequisite for achieving the international community's Millennium Development Goals (MDG), the Director-General of the United Nations Food and Agriculture Organization (FAO), Dr Jacques Diouf, said as he addressed a high-level advisory committee set up to help FAO respond more effectively to the challenge of meeting the MDGs by 2015.

Dr Diouf noted that, as the lead UN agency for agriculture, forestry, fisheries, and rural development, virtually all of the organization's activities – including monitoring, analysis, resource mobilization, partnership building and field activities – supported progress towards the MDGs.

Whereas 20 percent of people in developing countries were undernourished in 1990 – the benchmark for the MDGs – FAO's most recent estimates pointed to 17 percent, or 815 million people, still suffering from hunger in 2000/02 and projected 11 percent for 2015. According to the FAO, the goal of halving poverty between 1990 and 2015 is on track at the global level, but appears beyond reach in sub-Saharan Africa.

Read the complete press release at
http://www.fao.org/newsroom/en/news/2006/1000390/index.html.

PHYTOPHTHORA PATHOGENS SEQUENCED FOR BETTER AGRICULTURE

Researchers from the U.S. Department of Energy Joint Genome Institute (DOE JGI), in collaboration with the Virginia Bioinformatics Institute (VBI) and others,

have compared the complete sequences of two *Phytophthora* plant pathogens. *Phytophthora* attacks a wide range of plants, including agricultural crops and species of natural ecosystems, and is responsible for "Sudden Oak Death" (SOD) and soybean root rot diseases, which cost huge losses to agriculture globally.

“These new genome sequences will contribute to our basic understanding of normal plant-microbe relationships as well as their roles in disease,” said Maryanna Henkart, NSF's division director for molecular and cellular biosciences.

The researchers found the pathogens have nearly twice as many genes as other fungal pathogens, and that almost half the genes in each of the two species are undergoing rapid change, many of which encode toxins and other proteins that may debilitate plants. “We speculate that the rapidly changing genes are being driven to evolve by pressure from the defense systems of the pathogens' host plants,” said Virginia Bioinformatics Institute's Brett Tyler, the project's principal investigator.

The research, the result of a four-year, $4 million multi-agency project, was published in the Sept. 1, 2006, edition of Science.

More information is available at http://www.jgi.doe.gov/News/news_8_31_06.html and http://www.nsf.gov/news/news_summ.jsp?cntn_id=107973. To read the abstract of the article “*Phytophthora* Genome Sequences Uncover Evolutionary Origins and Mechanisms of Pathogenesis” visit http://www.sciencemag.org/cgi/content/abstract/sci;313/5791/1261

USDA VERIFIES PERFORMANCE OF TEST KIT TO DETECT UNAPPROVED BIOTECH RICE

The U.S. Department of Agriculture's (USDA) Grain Inspection, Packers and Stockyards Administration (GIPSA) has verified a strip kit that detects the presence of the Liberty Link 601 protein at a detection limit of 2% sensitivity level. The test takes approximately 10 minutes to complete.

This test was validated at the request of Strategic Diagnostics Inc. USDA is not involved in the distribution of this test for use in the marketplace.

Read the news release at http://www.usda.gov/wps/portal/!ut/p/_s.7_0_A/7_0_1OB?contentidonly=true&contentid=2006/09/0336.xml.

ERA PROCESS FOR GE ASSESSED

In “Does The ERA Process Work For GE Crops?” Jeff Wolt and Saharah Moon Chapotin of Iowa State University’s Biosafety Institute for Genetically Modified Agricultural Products (BIGMAP) mark the unofficial 25th anniversary of the ecological risk assessment (ERA) process by looking at how reliable it has been in assessing genetically engineered (GE) crops. Their article appears in the latest Information Systems for Biotechnology newsletter.

ERA is “the process that evaluates the likelihood that adverse ecological effects may occur or are occurring as a result of exposure to one or more stressors [or actions].” ERA is a specific approach to performing risk assessment, and it does so by presenting a logical scheme for organizing complex information describing environmental exposure scenarios and effects to ecological entities of concern. ERA is carried out on GE crops once substantial equivalence has been established; however, and despite 10 years of experience in safely growing GE crops, ERA has been criticized as inadequate in addressing long term ecological concerns arising from wide scale commercial production of GE crops.

The authors state some cases in which the ERA framework has proven useful, and conclude that it has proven sufficiently flexible to deal with concerns surrounding biotechnology.

Contact the authors at jdwolt@iastate.edu. Read more news at http://www.isb.vt.edu/news/2006/news06.Sep.htm.

AOAD WITH FAO PROJECT FOR AGRIC STATS IN ARAB COUNTRIES

AOAD (the Arab Organization for Agricultural Development) and FAO (the Food and Agriculture Organization of the United Nations) have signed an agreement to develop and improve the work of the agricultural statistics authorities to assist decision makers in Arab countries. A new system, COUNTRYSTAT, connecting the databases of all the Ministries and institutions in the Arab countries, will be developed and implemented during the years 2006-2007 as part of the initiative.

More information at http://www.aoad.org/index_en.asp

*** Africa ***

AATF TO HOLD TALKS ON BIOTECHNOLOGY IN NAIROBI

In a bid to create an environment conducive for the adoption of modern biotechnology in Africa, the Nairobi-based African Agricultural Technology Foundation (AATF) has initiated a series of talks to be held monthly in various African countries, beginning with Kenya on September 14, 2006. Prof. Ruth Oniang'o, a renowned Kenyan nutritionist, academic and legislator, and Mr. Mark F. Cantley, a former European Commission adviser on Biotechnology, Agriculture and Food (Directorate of Life Sciences) will each make a keynote address to set the stage for the discussions.

The Open Forum on Agricultural Biotechnology in Africa (OFAB), as the talks will be known, are aimed at fostering "constructive debate on biotechnology with the aim of bringing out core issues that may have positive or negative impacts on acceptance, adoption, and application of the technology in Africa," said Dr. Mpoko Bokanga, AATF Executive Director. The initiative, he said, is in response to the need for better understanding of products, benefits, and concerns associated with biotechnology.

They are targeted, therefore, "at individuals who impact the development of biotechnology in Africa in one way or another," the Director said.

For more information, contact Daniel Otunge of the East and Central Africa BIC (ECABIC) at dotunge@cgiar.org, or visit http://www.aatf-africa.org

NAMIBIA TURNS TO JATROPHA FOR FUEL

Jatropha curcas has been grown in Namibia for decades. Soon, its oils can be added to diesel and used by farmers to run their tractors and generators. It may also replace paraffin, which is used for cooking and lighting. Jatropha plants do not require irrigation, and nuts, from which the oil is extracted, can be harvested in the third year after planting. All these make the plant an attractive source of fuel, and, according to an article in The Namibian, have prompted the government to establish a Bio-Oil Energy committee to see to it that about 63,000 hectares of the bush can be planted by 2013 to earn this new agro-industry N$189 million a year.

Blending Jatropha oil with diesel is now common practice in southern Africa. In line with developing the industry, member states of the Southern African Development Community (SADC) are embarking on a regional strategy to use bio-fuels like Jatropha, maize, and sugar on a larger scale.

Read the complete story at http://allafrica.com/stories/200609050449.html.

EGYPT SHOWS RECORD RICE YIELDS IN 2005

Egypt has achieved record rice yields with newly-developed hybrid rice varieties developed locally under a project led by the United Nations Food and Agriculture Organization (FAO). These varieties, which include SK 2034 and SK 2046, outperformed the best local varieties by 20-30 percent. These hybrids are intended to help Egypt produce more rice with less water and less land.

The project is implemented by the Cairo Agricultural Research Center and the Rice Research and Training Center (RRTC). Rice yields have risen indeed, thanks to training, as well as improved crop management (ICM). The latter includes practices such as setting planting dates to expose crops to higher solar radiation, optimizing seeding density, balanced plant nutrition, and careful water management.

Read the complete press release at
http://www.fao.org/newsroom/en/news/2006/1000387/index.html.

* The Americas *

BRAZIL: USE NON CERTIFIED BIOTECH SOYBEANS GRANTED EXTENSION FOR USE IN 2006/2007 SEASON

The Brazilian Federal government has announced this week that farmers from the Rio Grande do Sul state will be allowed to plant non-certified transgenic soybean in the 2006/2007 growing season. The Brazilian Ministry for Agriculture, Livestock, and Supply (MAPA) is supporting a system where farmers may exchange illegal, uncertified seeds for certified grains, but admits not enough seeds will be available for all the areas of the region. Only two thirds of interested farmers were able to participate in the seed exchange initiative. Therefore, the deadline for the ban of uncertified seeds has been extended, but the minister Luís Carlos Guedes Pinto has stated that a decree, to be signed by the Brazilian president Luiz Inácio Lula da Silva next week, prohibits further extensions, and also bans the commercialization and use of uncertified grains as seeds.

The program is important in promoting the use of certified seeds, with a potential for increased yield, said Guedes Pinto, and the minister added their use will raise the level of productivity of the state. The results of the next planting will clearly demonstrate the advantages brought to farmers by the use of certified seeds.

With reports from
http://www.agenciabrasil.gov.br/noticias/2006/09/06/materia.2006-09-06.9306086335/?searchterm=agricultura.

NEW RULES ANNOUNCED FOR TOMATO IMPORTS, OTHERS

The U.S. Department of Agriculture's Animal and Plant Health Inspection Service (USDA-APHIS) announced that it is amending former regulations to allow, under conditions, importation of pink and red tomatoes from several Central American countries into the United States. These conditions include the following: 1) tomatoes must be grown and packed in APHIS-approved sites, in areas free from the Mediterranean fruit fly; 2) a pre-harvest inspection of the production site must be conducted by the national plant protection organization (NPPO) of the exporting country, and must be found free of pea leafminer, tomato fruit borer, and potato spindle tuber viroid; 3) tomatoes must be packed in insect-proof containers or covered with insect-proof mesh or plastic tarpaulin during transit to the United States; and 4) each shipment must be accompanied by a phytosanitary certificate issued by the exporting country's NPPO.

The USDA APHIS also announced, in an interim rule, that it has removed inspection exemptions for Canadian-grown fruits and vegetables imported from Canada. These inspections and fees are necessary to prevent the introduction of plant pests into the United States

Read the complete press releases at
http://www.aphis.usda.gov/newsroom/content/2006/08/tomatoim.shtml and
http://www.aphis.usda.gov/newsroom/content/2006/08/Canfees.shtml.

MEXICO MAIZE PLANTING CLARIFIED

Farmers from Sonora, Mexico are still not cleared to plant transgenic maize commercially. This was clarified by authorities from Mexico. The Crop Biotech Update August 25, 2006 edition mistakenly reported that Agriculture Undersecretary of the State government, César Salazar Platt, had announced that transgenic maize would be grown commercially in the country.

*** Asia and the Pacific ***

INDIA'S COTTON PRODUCTION TO REACH ALL TIME HIGH

The Cotton Advisory Board (CAB) of India's Ministry of Textile estimates cotton output to grow at 10% to 270 lakh bales (27 million bales) in 2006-07. In its last meeting of this season, the board announced that the final cotton output for the year 2005-06 was recorded at 244 lakh bales (24.4 million bales) of 170 kg each. The country harvested bumper cotton crop for the second successive year during 2005-06 and the trend would continue, the board observed. This was possible due to increased use of Bt cotton hybrids seeds all over the country, as well as better farm practices adopted by cotton growers. According to estimates, the acreage area for the year 2005-06 was recorded at about 88.73 lakh hectares, while the acreage area for the year 2004-05 was recorded at 87.86 lakh hectares.

With reports from Business Standard and Financial Express. Read the complete report at: http://www.cotcorp.com/press_note.pdf. For more information contact Bhagirath Choudhary of the ISAAA South Asia Office at b.choudhary@isaaa.org.

AGRO-CHEMICALS TO GET DATA EXCLUSIVITY IN INDIA

India's Committee on Data Protection has decided to grant a three to five-year data exclusivity to agro-chemicals. Data exclusivity is a strict condition that implies non-reliance of a regulator on an innovator's data. Safeguards will still be taken, however, to ensure that the agrochemicals will have no adverse effects on public health, animals, or plants.

The committee is also planning similar protection for the pharmaceutical sector. This time, pharmaceuticals will undergo data protection, which states that generic companies cannot have access to innovators' data from the office of the drug regulator.

With reports from Financial Express and Business Standard. For more information contact Bhagirath Choudhary of the ISAAA South Asia Office at b.choudhary@isaaa.org.

*** Europe ***

FRENCH SCIENTISTS DEVELOP TOOL TO TEST FOR MULTIPLE VIRUS

Plants are attacked by a wide range of viruses, and crops are often infected with viruses not yet identified, which renders the development of a single viral detection kit difficult. Researchers from the National Institute for Agricultural Research (INRA) of France in Bordeaux have however succeeded in the task, developed by identifying short conserved sequences specific to several virus families. The new technique, based on the polymerase chain reaction (PCR) has already allowed the identification of several new viruses affecting stone fruit trees and banana plants. The kit therefore has potential for developing detection kits specific for the newly uncovered disease agents, and opens avenues to study their epidemiology and to design strategies to protect crops from these pathogens.

Read more at:
http://www.inra.fr/presse/detecter_la_diversite_des_virus_phytopathogenes

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RESEARCH

WAR. PLANTS: HIDE YOUR SUGAR

Plants respond to the attack by herbivores by producing an array of chemical and physical defenses aimed to fend off aggressors and reduce the amount of damage inflicted. However, the interaction between the plant and its assailants is highly dynamic, and as survival is as stake, herbivores are under strong selection pressure to evolve mechanisms that evade the plant defense systems. Could the development of tolerance to the enemy, acquired by minimizing the effect of defoliation by insect pests on the fitness of the plant, be a solution to the problem?

Scientists at the Max Planck Institutes in Jena and Postdam, and in the Research Centre in Jülich, Germany, report on the discovery of a gene, *GAL83*, the beta-subunit of a SNF-1 related kinase in tobacco (*Nicotiana attenuata*) plants. The researchers noted that expression of *GAL83* was markedly reduced in young leafs attacked by tobacco hornworm larvae (*Manduca sexta*), and that silencing of the gene in the leaves increased the translocation of carbon from leaves to roots, a less vulnerable part of the plant. Increasing root reserves at an early stay of development prolongs flowering, and allows the plant to invest the saved sugars in seed formation after the larvae pupate and no longer represent a

threat. Down-regulation of *GAL83* in transgenic tobacco plants had the same effects on sugar transport to roots as insect attack on wild-type plants.

To read the abstract of “SNF-related kinases allow plants to tolerate herbivory by allocating carbon to roots” published in the Proceedings of the National Academy of Sciences, USA, visit: http://www.pnas.org/cgi/content/abstract/103/34/12935

For more information visit:
http://www.mpg.de/english/illustrationsDocumentation/documentation/pressReleases/2006/pressRelease20060905/

RESEARCH FINDS GENE FOR PLANT RESISTANCE IN ARABIDOPSIS

Plants use a variety of defenses to keep potentially pathogenic microorganisms at bay. If pathogens get past mechanical or chemical barriers – such as fibrous stalks or thick cell walls – they trigger the production of reactive oxygen species (ROS) in the plant, and prompt the accumulation of defense signaling molecules such as salicylic acid (SA) and/or jasmonic acid (JA). Attack by pathogens also allows plants to produce systemic resistance responses. The response can lead to systemic acquired resistance (SAR) which allows plants to be resistant to a broad range of different pathogens.

What genes are involved in SAR? In an article in the latest issue of Plant Physiology, Tatiana E. Mishina and Jürgen Zeier of the University of Würzburg, Germany report that "The Arabidopsis Flavin-Dependent Monooxygenase *FMO1* Is an Essential Component of Biologically Induced Systemic Acquired Resistance."

Scientists identified uncharacterized genes involved in SAR establishment by selecting up-regulated genes in Arabidopsis leaves inoculated with avirulent or virulent strains of the bacterial pathogen *Pseudomonas syringae*. One gene, the scientists found, was similar to flavin-dependent monooxygenases (FMO), and was designated as *FMO1*. Once this gene was knocked out in Arabidopsis, transgenic plants were impaired in establishing SAR triggered by *P. syringae* attack. This impairment was accompanied by the inability to accumulate SA, as well as to initiate systemic expression of various defense-related genes. Since *FMO1* was induced upon infection, and was missing in SAR-defective SA pathway Arabidopsis mutants, scientists concluded that *FMO1* expression is closely correlated with a plant's ability to establish SAR.

Read the complete article at
http://www.plantphysiol.org/cgi/content/full/141/4/1666 or
http://dx.doi.org/10.1104/pp.106.081257.

ANNOUNCEMENTS

ST. ANDREWS PRIZE FOR THE ENVIRONMENT OPEN FOR SUBMISSIONS

The St Andrew's Prize aims to find practical solutions to environmental problems by awarding grants to projects that make a significant contribution to environmental conservation. The grant is awarded to the project displaying the best combination of good science, economic realism and political acceptability. Topics covered by previous winners and finalists include urban regeneration, by-products from waste, health and water issues, agriculture and renewable energy.

The deadline for the first round of submissions is 31 October. For further information visit: http://www.defra.gov.uk/news/latest/2006/defra-0901.htm and http://www.thestandrewsprize.com/

RESOURCE POOR FOREST DWELLERS FOCUS OF VIETNAM TALKS

An international conference on Managing forests for poverty reduction: capturing opportunities in forest harvesting and wood processing for the benefit of the poor will bring together stakeholders and international experts to share experiences related to small-scale forest operations. The conference, slated for October 2-6 in Ho Chi Minh City, Vietnam, will highlight options for forest management by local and poor people and forest management to benefit the poor. Details, conference program and registration are available to download.

Visit the conference site at: http://www.recoftc.org/site/

GEMS5 TO TAKE PLACE IN VENICE

Venice, Italy will host the Fifth Plant Genomics European Meeting (Plant GEMs 5) from October 11 - 14, 2006. The annual meetings are sponsored by national Plant Genomics programmers in Europe and the European Research Area Network Plant Genomics. Read more at http://www.distagenomics.unibo.it/plantgems/.

THE WORLD CONGRESS ON COMMUNICATION FOR DEVELOPMENT

The first World Congress on Communication for Development is slated for October 25-27 in Rome, Italy. The Congress will focus on demonstrating that

communication for development is an essential ingredient for meeting today's most pressing development challenges and, as such, should be more fully integrated in development policy and practice.

The event will bring together communication professionals engaged in development initiatives, policymakers, development practitioners, donor and civil society organization representatives, community representatives, and academics from around the world to share experiences and best practices in this growing field.

More information available at: http://www.devcomm-congress.org/worldbank/public.asp

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DOCUMENT REMINDERS

USDA RELEASES AGRI-BIOTECH REPORTS

The United States Department of Agriculture Advisory Committee on Biotechnology & 21st Century Agriculture (AC21) has released its consensus reports on opportunities and challenges in agricultural biotechnology. These documents include information on regulations, impacts and implications for the US, and preparing for the future. Download the reports at http://www.usda.gov/wps/portal/!ut/p/_s.7_0_A/7_0_1OB?contentidonly=true&contentid=AC21Reports.xml.

VIRTUAL LIBRARY NEW GATEWAY TO GLOBAL AGRICULTURAL KNOWLEDGE

The CGVlibrary provides instant access to research on agriculture, hunger, poverty, and the environment using a valuable new resource — the CGIAR Virtual Library.

From just one search engine, tap into leading agricultural information databases, including the online libraries of all the Consultative Group on International Agricultural Research (CGIAR) centers. Use the CGVlibrary to discover resources, go directly to the full text of thousands of publications, and stay current on CGIAR research.

Get more information from: CGVlibrary@cgiar.org or http://vlibrary.cgiar.org/V?RN=832110719

FROM THE BICs

BIOTECH COMMUNICATION WORKSHOP HELD IN MANILA

Scientists, farmers, and government officials gathered recently in Makati City, Philippines to attend the "Biotech Issues and Communication Workshop: Enhancing Communication Skills of Southeast Asian Decision Makers on Biotechnology." The workshop, held September 4-7, 2006, was attended by participants hailing from Southeast Asia, Kenya, and the U.S.

"This is…an important initiative not only for the Philippines, but also for all nations working to push biotechnology into the center of their development programs," Philippine Department of Agriculture Secretary Domingo F. Panganiban said in his message to the participants. Today, he further said, there is no question as to the importance of effective communication in our bid to promote support, awareness, cooperation, and information about biotechnology.

Aside from participating in risk communication exercises, attendees also visited Bt corn planting sites in Rizal province; greenhouses in the Institute of Plant Breeding, University of the Philippines, Los Banos (IPB-UPLB); and the International Rice Research Institute.

The conference is sponsored by the International Service for the Acquisition of Agri-biotech Applications (ISAAA) and the SEAMEO Regional Center for Graduate Study and Research in Agriculture (SEARCA), with the support of the United States Grains Council (USGC).

With reports from Rudy A. Fernandez of the Philippine Star. For more information, contact ISAAA at knowledge.center@isaaa.org.

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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Please visit CropBiotech Net web pages (http://www.isaaa.org/kc) to view previous issues of this newsletter and see other available resources for download.

While we are still developing this site, feel free to e-mail (knowledge.center@isaaa.org) us for your views and comments on any crop biotechnology product and related issues.

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