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)

April 15, 2005

In This Issue:

* CGIAR Drafts Guidelines on Unintended GMOs in Genebanks
* East and Central Africa Urged to Adopt Modern Biotech
* Experts Advise Kenya to Finalize Biosafety Bill
* RIRDC Releases GM Adoption Report
* Biotech Highlighted in EC Research Proposal
* Wheat Diseases Affected by Weather, Paper Reports
* Article Shows Plant Survival in Blue Light
* Hybrid, OP Canola Management Studied
* Feature: The Africa Rice Center (WARDA)
* Document Reminders
* Announcement

CGIAR DRAFTS GUIDELINES ON UNINTENDED GMOS IN GENEBANKS

The Genetic Resources Policy Committee (GRPC) of the Consultative Group on International Agricultural Research (CGIAR) has circulated for comments a draft of the guiding principles for the development of the Future Harvest Centers' policies to address the possibility of unintentional presence of transgenes in ex-situ collections. The GRPC hopes to recommend its use by the centers of the CGIAR.

Dr. Emile Frison, Secretary of the GRPC and Director General of the International Plant Genetic Resources Institute (IPGRI) said that consultation was done widely. The GRPC recommended that more efforts were needed to demonstrate the specific nature and qualities of agricultural biodiversity to international groups such as the CBD and its open-ended working group on access and benefit sharing. "Agricultural biodiversity is distinct from the wild biodiversity the CBD generally focuses on," said Frison, "and restrictions on the exchange of agriculturally important germplasm could have negative consequences."

The draft document is available online at http://www.ipgri.cgiar.org. Read the IPGRI release by Jeremy Cherfas at http://ipgri-pa.grinfo.net/index.php?itemid=788

EAST AND CENTRAL AFRICA URGED TO ADOPT MODERN BIOTECH

Kenya's agriculture minister Kipruto Kirwa has called for rapid adoption of transgenic crops to help fight hunger and poverty in the Horn of Africa and the Great Lakes region. He said this while officially opening a regional biotechnology workshop jointly organized by the African Biotechnology Stakeholders Forum (ABSF) and Kenya Biotechnology Information Center (KBIC) in Nairobi.

The two-day workshop, called to discuss the status of biotechnology policy, research, and development in East and Central Africa, brought together over 60 regional fraternities of agricultural research institutions, life sciences industry, communication experts, regulatory agencies, researchers, policy makers, the media, academicians, religious bodies, and development experts from Kenya, Uganda, Tanzania, Ethiopia, and Rwanda.

"Agricultural biotechnology can greatly improve our food security situation and improve our farmers' income," he said.

He urged the regional governments to speed up the process of adopting transgenic crops, but observed that the impact would be greater if the countries shared their experiences and synergies to avoid duplication of efforts.

Download the complete article at http://www.isaaa.org/kc. For more information contact dotunge@absfafrica.org

EXPERTS ADVISE KENYA TO FINALIZE BIOSAFETY BILL

Kenya's ministry of education, science, and technology has been asked to speed up the process of enacting the current biosafety bill into law to enable the country to benefit from modern biotechnology.

Speaking during the official commissioning of Kenya's second level-2 biosafety laboratory and glasshouse at Kenyatta University, the chairman of the National Biosafety Committee (NBC), Mr. Joel K. Ng'eno, informed the ministry's permanent secretary, Prof. Karega Mutahi, that a legal framework was required

to regulate commercialization of transgenic products. Mr. Ng'eno said the country's agricultural, industrial, environmental and medical sectors were faced with challenges that have defied conventional solutions "yet such challenges had been solved elsewhere using modern biotechnology." Chief guest Prof. Mutahi concurred that Kenya in particular, and the developing world in general, could not afford to ignore biotechnology if they hoped to remain competitive.

The university's Vice-Chancellor, Prof. Everest Shitanda, said the newly launched state-of-the-art greenhouse, built with funding from the Rockefeller Foundation, is expected to offer biotechnology training, research, and development opportunities for researchers in east and central Africa. He said the university was open to strategic partnerships with technology transfer organizations like the International Service for the Acquisition of Agribiotech Applications (ISAAA), the African Agricultural Technology Foundation (AATF), and other institutions for the benefit of the country and the region.

Download the complete article at http://www.isaaa.org/kc. For more information contact dotunge@absfafrica.org

RIRDC RELEASES GM ADOPTION REPORT

Australia's Rural Industries Research and Development Corporation (RIRDC) recently released its report on socio-economic studies conducted to predict and calculate the losses and gains that might be had if genetically modified (GM) crops are adopted.

According to the report: Australia and the world would likely benefit financially from the wider adoption of GM crops; the potential global benefits of adopting GM maize, soybean, and canola can be US$4.0 billion annually; China and India will benefit the greatest from adoption of GM rice and wheat; and, as exporter, Australia would gain, but only slightly, from adopting GM varieties of these crops because the gain from higher crop productivity would be almost fully offset by an adverse terms of trade change.

The report also recommended points to keep in mind when revising Australian consumer and producer regulations. These included continuing studies and evaluations, since comparative advantages of each region and of Australia as a whole in various crops will continue to change as new GM crop varieties appear; ensuring, on the part of rural research and development corporations, that a portion of their portfolio includes GM technologies, so that when markets become more accepting those technologies can be disseminated relatively promptly; and opposing excessive trade standards abroad, on the part of Australia.

Download the complete report at http://www.rirdc.gov.au/reports/GLC/05-016sum.html

BIOTECH HIGHLIGHTED IN EC RESEARCH PROPOSAL

The European Commission's proposal for the Seventh Framework Research Programme highlights the role of biotechnology particularly in health, food and agriculture, as well as in industry. The latter is being linked to the development of a knowledge-based bio-economy as it relates to sustainable production and management of biological resources; "farm to fork" (food, health, and well being), and biotechnology for sustainable non-food products and processes.

According to EuropaBio, the association of European bioindustries, the new strategy is a welcome development. It looks forward also to the development of four basic components, such as support to the creation of some European Poles of Excellence, the establishment of a European Research Council to stimulate basic research, initiatives to make Europe more attractive for researchers, and a better coordination of national research programs.

For more information, visit http://www.europabio.org.

WHEAT DISEASES AFFECTED BY WEATHER, PAPER REPORTS

Sarah Bearchell and colleagues of the University of Reading, United Kingdom, recently found, through their research, that their local "Wheat archive links long-term fungal pathogen population dynamics to air pollution." Their findings are published in the latest online issue of the Proceedings of the National Academy of Science.

Bearchell was interested in the abundance of two important wheat pathogens, *Phaeosphaeria nodorum* and *Mycosphaerella graminicola*, in wheat samples archived in the last 160 years. Using PCR to detect the pathogens, as well as records of weather conditions during the time period, researchers discovered that changes in the ratio of the pathogens over the 160-year period were very strongly correlated with changes in atmospheric pollution, as measured by SO2 (sulfur dioxide) emissions. Sulfur dioxide is known to affect physiological processes in plants and may impair disease resistance mechanisms. There was no relationship established between changes in the pathogen DNA ratio and changes in lead, cadmium, polychlorinated biphenyls, or polyaromatic hydrocarbons.

Both pathogens studied cause septoria blotch diseases in wheat, resulting in losses of millions of tonnes of grain worldwide every season. The two fungal pathogens frequently coexist on leaves, and both damage plants by decreasing photosynthetic areas of upper leaves that fill grain.

Download the complete article at http://www.pnas.org/cgi/content/short/102/15/5438.

ARTICLE SHOWS PLANT SURVIVAL IN BLUE LIGHT

An article in a recent issue of Plant Cell Preview reports that "Phototropins Promote Plant Growth in Response to Blue Light in Low Light Environments," as based on the work of Atsushi Takemiya and colleagues of Kyushu University, Japan. Phototropins are plant-specific blue light receptors which control phototropism, chloroplast movement, leaf expansion, and stomatal opening, all of which affect photosynthesis.

Using Arabidopsis thaliana as their model, the researchers subjected wild types and mutants (*Arabidopsis* plants with non-functional genes for the phototropins) to varying amounts of red and blue light. After measuring growth, researchers found that plants with functional phototropin genes could still optimize photosynthesis under blue light; and that restoring one of the phototropin genes, phot1, to mutants allowed their photosynthetic abilities to be restored as well.

Read the complete article at http://www.plantcell.org/cgi/reprint/17/4/1120.

HYBRID, OP CANOLA MANAGEMENT STUDIED

In the latest issue of Better Crops, Dr. Stewart Brandt and colleagues of Agriculture and Agri-Food, Canada studied the planting requirements of hybrid and open-pollinated varieties of Canola in "Management of High Yielding Canola Cultivars." To maximize seed yield, the article states, high yielding canola cultivars should be receiving more fertilizer than is currently being applied.

By monitoring growth changes with changes in planting conditions, researchers found that both cultivars responded consistently to seeding rate, nutrient level, and fungicide, despite the hybrid producing greater seed yield than the open pollinated cultivar. However, tests on the data showed that seed yield could still be increased by applying more fertilizer.

Download the article at http://www.ppi-ppic.org/ppiweb/bcrops.nsf/$webindex/11B2D69D32D9CEE585256F9E0020955E/$file/05-1p12.pdf.

FEATURE: THE AFRICA RICE CENTER (WARDA)

Formed in 1971, the Africa Rice Center (WARDA) is an autonomous intergovernmental research association of African member states. WARDA was first established by 11 West African countries with the assistance of the United Nations Development Program (UNDP), the Food and Agriculture Organization of the United Nations (FAO), and the Economic Commission for Africa (ECA).

WARDA's mission is to contribute to poverty alleviation and food security in Africa through research, development, and partnership activities aimed at increasing the productivity and profitability of the rice sector in ways that ensure the sustainability of the farming environment. Its projects include crop and natural resource management, especially on stress tolerant rice; integrated pest management; and bioinformatics.

WARDA's most important achievement, however, is its development of New Rice for Africa (NERICA), for which Dr. Monty Jones won the 2004 World Food Prize. First begun in 1991, NERICA initiated a biotechnology-based program to combine the best traits of the Asian and African rices. Today's NERICAs grow taller; have wide, droopy leaves which smother weeds in early growth; and develop tightly-held grains which prevent rice from shattering.

The Center conducts research in association with the African Rice Initiative (ARI), the Regional Rice Research and Development Network for West and Central Africa (ROCARIZ), and the Inland Valley Consortium (IVC). It also supports the Coordination Unit of the Eastern and Central African Rice Research Network (ECSARRN), based in Tanzania. Since January 2005, WARDA has been working out of the IITA-Benin station in Cotonou, having relocated from its headquarters in Bouaké, Côte d'Ivoire, because of the Ivoirian crisis. WARDA has regional research stations near St Louis, Senegal and at the International Institute for Tropical Agriculture (IITA) in Ibadan, Nigeria.

At present, WARDA comprises 17 member states, namely Benin, Burkina Faso, Cameroon, Chad, Côte d'Ivoire, The Gambia, Ghana, Guinea, Guinea Bissau, Liberia, Mali, Mauritania, Niger, Nigeria, Senegal, Sierra Leone, and Togo.

For more information, visit http://www.warda.org.

DOCUMENT REMINDERS

POCKET K NO. 18 NOW AVAILABLE

Pocket K No. 18 on Ethics and Agricultural Biotechnology is now available online at http://www.isaaa.org/kc. It defines agricultural ethics, discusses some ethical issues about agricultural biotechnology, and explains how to deal with them. The discussion on ethics is important in the light of the debate on agricultural biotechnology which has polarized not only stakeholders but countries as well.

Pocket Ks, are Pockets of Knowledge, packages of information on crop biotechnology products and related issues. They are produced by the Global Knowledge Center on Crop Biotechnology of the International Service for the Acquisition of Agri-biotech Applications. Seventeen other topics are available at http://www.isaaa.org/kc.

BANGLA VERSION OF GLOBAL STATUS REPORT AVAILABLE

The executive summary of the Global Status of Commercialized Biotech/GM Crops: 2004 published by the International Service for the Acquisition of Agri-biotech Applications is now available in Bangla (Bangladesh). 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. Visit http://www.isaaa.org/kc to download this summary.

FAS RELEASES EU-US TRADE SPREAD

A recently released spread by the United States Department of Agriculture Foreign Agricultural Service (USDA-FAS) details the latest statistics on U.S. agricultural trade with Europe. Trends show that the United Kingdom, the Netherlands, Spain, Russia, and Portugal earned double-digit growth in their imports; and that Europe purchased $10 billion worth of U.S. agricultural, fish, and forest exports in the last fiscal year, with soybeans and tree nuts selling best in the region.

Download the spread at http://www.fas.usda.gov/info/agexporter/2005/March/March%202005.html

ANNOUNCEMENT: BIOSAFETY SYSTEMS POLICY DISCUSSION

The East Africa and Program for Biosafety Systems Policy Roundtable will be held from April 18 – 20, 2005 in Entebbe, Uganda. The roundtable discussion on "Regulatory Cooperation Across Borders – Sharing National and Regional Expertise in Biosafety" will address biosafety-related issues that face developing countries. These roundtables, according to the Biosafety Systems Program which is sponsoring the event, serves as an incubator for the new models for biosafety systems that can be implemented in the context of local expertise, resources, regulations, political and social realities, and trade constraints.

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

To stop receiving this newsletter, please send an e-mail message to knowledge.center@isaaa.org and write, "unsubscribe newsletter" in the subject box.

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.

Copyright (c) 2005. CropBiotech Net.