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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In This Issue:

* Big Break for Bananas
* Possible Aphid Resistance in Soy Traced to Gene
* German Chancellor Backs Biotech
* LAC Shows No Lack of Biotech Development
* Increase in GM Acreage in China Reported
* Progress of Bt Cotton in India Discussed in Paper
* Announcement: Special Call For Team Research Grant Applications

BIG BREAK FOR BANANAS

Priver Namanya of the Kawanda Agricultural Research Institute (KARI), Uganda recently reported that her team has developed a cell suspension system that is considered to be a critical step in the genetic improvement of the East African highland banana.

A number of diseases afflict Uganda's banana crop, which is planted over 1.5 million hectares of arable land, and which serves the country's population with 500 pounds of the crop per capita annually, one of the highest in the world. These include banana bacterial wilt disease, black sigatoka, fusarium wilt, and banana streak.

The method has also been adopted into an ongoing banana biotechnology project run in collaboration with the National Agricultural Research Organisation (NARO), the International Network of Banana and Plantains, and Makerere University, among others.

For more information, visit KARI at http://www.naro.go.ug/research_institutes/KARI.htm.

POSSIBLE APHID RESISTANCE IN SOY TRACED TO GENE

Researchers at the University of Illinois have recently identified a single-gene source of aphid resistance in soybean. The gene, tentatively designated Rag1, is dominant, making it easy to introduce into commercial varieties by backcrossing using marker-assisted selection.

Current cultivars do not contain the gene, but testing on ancestral lines stored in the U.S. Department of Agriculture's Soybean Germplasm Collection revealed that two varieties – Jackson and Dowling – carried the aphid resistance gene. The lines, however, have not been commercially available for the last 30 years.

Aphids can decrease soybean yield by stunting plants, transmitting viruses, distorting leaves, and reducing seeds in a soybean pod set. Infestations can be controlled by insecticides, which can cost as much as 20 to 25 dollars per acre to spray. With the recent discovery, as well as the potential ease with which the trait can be introduced into commercial lines, researchers predict that soybean seeds with the resistance gene may be available on the market within the next 5 years.

For more information, visit the National Soybean Research Laboratory at http://www.otm.uiuc.edu/techs/techdetail.asp?id=267. Read the complete article at http://web.aces.uiuc.edu/news/stories/news2857.html.

GERMAN CHANCELLOR BACKS BIOTECH

“There is no ill-will towards the technology in Germany, rather an extreme reluctance to implement genetic engineering,” German Chancellor Gerhard Schroeder said, during a convention for the Council for Engineering Sciences at the Union of the German Academies of Science and Humanities (Acatech) in Berlin, Germany.

Schroeder called for more open-mindedness towards the use of genetic engineering, and noted that he hopes that a new awareness of the possibilities genetic engineering can offer will develop within German society.

With reports from Checkbiotech (http://www.checkbiotech.org), Acatech (http://www.acatech.de) and Frankfurter Allgemeine Zeitung (http://www.faz.com). For the complete article, visit

http://www.checkbiotech.org/root/index.cfm?fuseaction=news&doc_id=8997&start=11&control=223&page_start=1&page_nr=101&pg=1.

LAC SHOWS NO LACK OF BIOTECH DEVELOPMENT

In a report in the latest special issue of Agbioforum, William Roca and his colleagues at the Centro Internacional de la Papa (CIP) at Lima, Peru, discuss the Agricultural Applications of Biotechnology and the Potential for Biodiversity Valorization in Latin America and the Caribbean (LAC).

Key developments in agricultural applications of biotechnology in Latin American and Caribbean countries are tackled, along with discussions on the potential of developing value-added products from the biological diversity harbored in the region. Countries that have used modern biotechnologies, like genetic engineering, Roca found, have had a higher value of their seed market (Brazil, US$1,200; Argentina, US$810; Mexico, US$350) than those using mature technologies like tissue culture (Bolivia, US$35; Ecuador, US$12).

Agbioforum recently released a special issue of its online magazine, this time focusing on Progress, Achievements, and Constraints for Plant Biotechnology in Developing Countries. With guest editors Nigel Taylor, Lawrence Kent, and Claude Fauquet of the Donald Danforth Plant Science Center, St. Louis, Missouri, U.S.A., the special edition contains more articles that discuss the experiences of various organizations and agencies in introducing biotechnology to the developing world.

Read the complete article at http://www.agbioforum.org/v7n12/v7n12a03-roca.htm. For more articles, Access the full issue at www.agbioforum.org

INCREASE IN GM ACREAGE IN CHINA REPORTED

Land planted to genetically modified (GM) crops in China has increased since 1998, to nearly 3 million hectares at the end of 2003.

According to Luo Yunbo, president of the Food College of the Chinese University of Agricultural Sciences, the main transgenic crops in China are cotton, sweet pepper, and tomato. Approximately 90% of China’s cotton crop is derived from GM plants.

At present, China has approved 25 transgenic crop test and safety evaluation standards, and is about to formulate 15 more. Also in the offing are 42 transgenic crop test institutions.

For the complete article, visit
http://www.agbios.com/main.php?action=ShowNewsItem&id=5987

PROGRESS OF BT COTTON IN INDIA DISCUSSED IN PAPER

R.B. Barwale and colleagues, of the Maharashtra Hybrid Seed Company, India, discussed the Prospects for Bt Cotton Technology in India in a paper in the latest issue of Agbioforum's online journal.

Tackling the journey made by the first genetically modified crop in India, the paper looks at the events of the last six years, as Bt cotton technology was moved from the laboratory to the field; as well as the progress made by the crop in India's cotton industry. The introduction of Bt cotton, Barwale reports, led to good control of bollworm species in different growing areas; significantly higher yield and boll retention (compared to control or non-Bt cotton); reduction in expense of insecticide application; additional revenue (Rs.2,500-4,000/acre) in farm income (compared to non-Bt cotton); and no adverse effects on non-target insects or adjacent non-Bt cotton crops.

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ANNOUNCEMENT: SPECIAL CALL FOR TEAM RESEARCH GRANT APPLICATIONS

The International Foundation for Science (IFS) and the Conseil Ouest et Centre Africain pour la Recherche et le Développement Agricoles – West and Central African Council for Agricultural Research and Development (CORAF- WECARD)

are inviting research grant applications containing high-quality research proposals from team members in West and Central Africa. Teams should generally consist of 2-5 researchers and a Team Coordinator.

Research should involve the priority areas of food security and productivity, focusing on processing, improvement of quality of agricultural produce, agro-forestry, cereals, root/tuber crops, and food legumes; and crop-livestock integration. Research projects must demonstrate capacity for high economic returns and significant impact on stakeholders groups.

Applications for this first call must be received no later than 31 December 2004.

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

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