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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In This Week's Issue:

NEWS
- WTO Rules in Favor of GM
- Greece, Romania to Ban GM
- Argentina to Export Biodiesel to Europe
- Lula Tours Africa
- India President Visits Philippines to Strengthen Cooperation
- Africa Journalists Attend Biotech Workshop
- Report Shows Decline in New U.S. Agri-Biotech Products
- Transfer Agreements Speed Up SEASia Projects

RESEARCH
- Biofuels Could Supply 30% of Global Energy Demand, Says Report
- Engineered Tobacco Able to Grow on Zinc-Contaminated Soil
- Control of Transgene Flow Discussed

ANNOUNCEMENTS

DOCUMENT REMINDERS

NEWS

WTO RULES IN FAVOR OF GM

The World Trade Organization (WTO) has ruled preliminarily in favor of the U.S. challenge of the European Union (EU) moratorium on approvals of genetically modified (GM) agricultural crops. Joined by Argentina and Canada, the U.S. asserted that the moratorium violates international trade rules and undermines the development and use of biotechnology.

The WTO has yet to officially release the document to the media, but members of the U.S. government have released statements regarding the ruling. “It is a safe and beneficial technology that is improving food security and helping to reduce poverty worldwide,” said U.S. Trade Representative Rob Portman, "We believe agricultural biotechnology products should be provided a timely, transparent, and scientific review by the European Union, and that is why Canada, Argentina and the United States brought the case in the first place."

The Union imposed its moratorium on the approval of GM crops in 1998, and set no deadline for lifting it. Recently, however, the European Commission (EC) has already allowed the entry of a small number of biotech crops, while some EU member states refuse to accept them. The current dispute resolution set before the WTO covers both these aspects: a challenge of the overall EU moratorium, as well as challenges of individual countries' bans on products already approved for sale and trade in the European Union.

With information from:
http://www.fas.usda.gov/scriptsw/PressRelease/pressrel_dout.asp?Entry=valid&PrNum=0017-06 and http://usinfo.state.gov/usinfo/Archive/2006/Feb/08-676796.html.

Take a look at the EU rules at:
http://europa.eu.int/rapid/pressReleasesAction.do?reference=MEMO/06/58&format=HTML&aged=0&language=EN&guiLanguage=en.

For more articles regarding the ruling, visit:
http://www.agbioworld.org/newsletter_wm/index.php?caseid=archive&newsid=2483.

GREECE, ROMANIA TO BAN GM

The Romanian government has announced that it will ban the cultivation of herbicide resistant "Roundup Ready" genetically modified (GM) soy, in preparation for joining the European Union (EU). Roundup Ready soy is grown in Romania, but the variety is not approved for cultivation in the EU. The national ban will take effect on January 1, 2007.

This decision comes after a series of debates in which several parties participated, namely the country's Ministries of Agriculture, Environment, and Health; the National Sanitary - Veterinary and Food Safety Authority; the National Authority for Consumers Protection; research and educational institutions; seed companies; and environmental associations.

Greece is also remaining firm in its ban of GM corn, despite orders by the European Commission (EC) to lift it. Deputy Agriculture Minister Alexandros Kontos signed the decision that extends a current ban on the MON810 seed type from entering the country for another 18 months. MON810 is already approved for planting and sale in the EU. In addition to the 18-month extension, Greece has also decided to broaden the ban to include 31 types of seed derived from the MON810 varieties, instead of the 17 originally considered. The government is keeping the ban on account of "negative effects" of GM crops, but no reference to specific scientific studies has been provided.

With reports from:
http://www.ekathimerini.com/4dcgi/_w_articles_politics_100002_31/01/2006_65816.

To read the original press release in Romanian, visit:
http://mapam.ro/pages/view_presa.php?id=1238&lang=2. Read the translation at http://www.gene.ch/genet/2006/Feb/msg00034.html.

ARGENTINA TO EXPORT BIODIESEL TO EUROPE

A small Argentinean biotech firm, Oilfox, signed a five year contract to start exporting in April or May 2006 one million litres of soybean-derived biodiesel to a German fuel distribution company. Jorge Kaloustian, president of Oilfox, said demand for biodiesel currently exceeds production capacity, not because of shortages in soybean farming, but due to limitations in the manufacture chain. Exports could therefore increase substantially in the future. This contract, although modest, represents the debut of Argentina in the world market of biofuels.

According to the latest ISAAA Global Status Report, almost the entire production (98-99%) of soybean crop in Argentina is composed of herbicide tolerant soybeans.

Spanish-speaking subscribers may read more at
http://www.clarin.com/diario/2006/01/31/elpais/p-01601.htm

LULA TOURS AFRICA

Lula da Silva is currently on an a five-day (Feb 8-12, 2006) official visit to Algeria, Benin, Botswana, and South Africa, in the fifth official tour of Africa by the Brazilian President during his term of office. Lula aims improve to trade and increase cooperation between Brazil and the African continent. Priorities of the

trip are likely to be the strengthening of ties between Brazil and Africa to advance the Doha round of trade talks and to raise representation of developing countries in the United Nations (UN). Lula will also seek to secure political support for Brazil's bid for a permanent seat in the UN Security Council.
Brazil is to offer Algeria and Benin agricultural technical assistance for the development of biotech cotton, and will provide Botswana with antiviral HIV treatment and advice for the fight against AIDS.

Read more at http://www.radiobras.gov.br/ (in Portuguese) and http://news.bbc.co.uk/2/hi/africa/4431417.stm.

INDIA PRESIDENT VISITS PHILIPPINES TO STRENGTHEN COOPERATION

The President of India, APJ Abdul Kalam, recently concluded his historic state visit to the Philippines, the first made by an Indian head of state in fifteen years. Included in his visit were a symbolic hand over event of foundation seeds of improved peanut and sweet sorghum varieties to the President of the Philippines, Gloria Arroyo; a signing of a Memorandum of Understanding between the two countries; and a visit to the International Rice Research Institute (IRRI).

The foundation seeds were developed by the International Crop Research Institute for the Semi-Arid Tropics (ICRISAT). ICRISAT's large-seeded peanut variety ICGV 86564 is gaining popularity in the confectionary industry and among peanut farmers in the states of Gujarat and Maharashtra in India. The Institute's improved sweet sorghum variety provides an additional source of income for poor farmers, since the juice extracted from its stalk can be converted to ethanol.

The MOU will cover cooperation in rice production and processing, dryland farming, multiple cropping, bio-organic farming, agricultural machinery horticulture, cotton growing technology, sugarcane technology, integrated pest management, and plantation crops.

In his visit to IRRI, President Kalam placed special emphasis on using science and technology to help his country's millions of poor rice farmers. In comments to the Institute's scientists, the Indian president said India had around 176 million hectares of land currently available for cultivation, which, by 2020, he predicted, would be reduced to 100 million hectares. He also warned of a looming water crisis.
For more information contact S Gopikrishna Warrier, Media Officer, at w.gopikrishna@cgiar.org. Visit the institute at www.icrisat.org. Read more http://www.irri.org/media/press/press.asp?id=122.

AFRICA JOURNALISTS ATTEND BIOTECH WORKSHOP

A regional workshop for journalists of West and Central Africa took place in Addis Ababa, Ethiopia, on the 7th-9th of February, 2006. The workshop tackled biotechnology and agriculture, and was organized by The International Service for the Acquisition of Agri-biotech Applications (ISAAA), in collaboration with the United Nations Economic Commission for Africa (UNECA).

The event, in which 20 reporters took part, aimed to improve press coverage and public understanding of agricultural biotechnology issues in West and Central Africa.

Josué Dione, Director of UNECA's Sustainable Development Division, said in his opening speech that Africa cannot remain on the margin of this technological revolution and should aim for a central role in the global biotechnology debate. Dione added that the workshoptestifies to the significant role the media plays in the whole biotech debate, and to the responsibility of journalists in shaping public opinion.

Although aimed at journalists of Central and West Africa, Dione said: “Outcomes of this workshop will resonate throughout Africa, helping to clarify issues in a manner that will help our governments and leaders make the best decisions for themselves.”

To read the opening speech (in English and French) of Josué Dione access: http://www.uneca.org/

REPORT SHOWS DECLINE IN NEW U.S. AGRI-BIOTECH PRODUCTS

In the report “Withering on the vine: will agricultural biotech's promises bear fruit?” Gregory Jaffe, Director of the Center for Science in the Public Interest (CSPI) Biotechnology Project, presents the results of a study comparing the number and type of biotech crops approved for commercialization in the U.S. between the years 1995 and 2000, and the subsequent five years. The report concludes that despite a two third decrease in the number of applications filed since the year 2000, the time required for federal agencies to complete their review of biotech crops had doubled. In addition, most of the products filed after 2000 were not novel applications of the technology, but involved the use the same genes already approved for previous applications.

These “trends should worry those who believe that agricultural biotechnology can be used safely and can benefit farmers, consumers, and the environment in the

United States, other developed countries, and in developing countries" says Jaffe. In order to reverse this trend, the CSPI makes five recommendations:

1. The federal government needs to ensure a more efficient review process, and include the adoption of streamlined regulatory procedures for crops engineered with genes already used in previous applications.

2. Public investment should be streamlined into research on traits and crops not pursued by the private sector, with aims of increasing the output of novel biotech applications.

3. The federal government needs to increase public investment in risk assessment and safety studies for crops ready for commercialization.

4. GM crops that address the specific needs of farmers in developing countries need to be developed. The U.S. and other developed nations need to increase public funding for agricultural research on such crops, and agricultural biotechnologies should invest part of their profits to developing technology beneficial to developing countries.

5. Steps should be taken to improve public acceptance of agricultural biotechnology.

To read the full article in pdf, access:
http://cspinet.org/new/pdf/withering_on_the_vine.pdf

TRANSFER AGREEMENTS SPEED SEASIA PROJECTS

The South East Asia end of the Agricultural Biotechnology Support Project II (ABSP II - SEAsia) aims to produce high-quality, bio-engineered crops for target countries in the region, in a wide partnership involving both private and public institutions. The technology to develop transgenic Cucumber Mosaic Virus (CMV) and non-transgenic Geminivirus resistance for tomatoes has been formally transferred to the Philippines from the Asian Vegetable Research and Development Center (AVRDC).

A license agreement for technology to develop fruit and shoot borer-resistant (FSBR) eggplant was also signed recently, involving the University of the Philippines, Los Ba?os (UPLB), Sathguru Management Consultants Private Limited, and the Maharashtra Hybrid Seed Company (MAHYCO). Mr. Kannan Ragunathan is Director of Sathguru, while Dr. Brent Zehr is Director of Research at MAHYCO, and not vice-versa, as reported in last week's Crop Biotech Update.

For more information, visit http://www.absp2.cornell.edu/

RESEARCH

BIOFUELS COULD SUPPLY 30% OF GLOBAL ENERGY DEMAND, SAYS REPORT

Energy demand is projected to grow by 50% by 2025, with much of the increase in demand predicted to originate from developing countries with fast rates of economic growth. The vast majority of energy is currently derived from fossils fuels, a limited, nonrenewable and polluting resource. Biofuels produced from dedicated, tailored energy crops have the potential to play an important role in addressing future energy demands.

“We can readily address, with research, 30 percent of current transportation fuel needs” said Dr. Arthur Ragauskas, from the Georgia Institute of Technology. Dr. Ragauskas and his colleagues highlight future challenges to converting biofuels into a practical, cost efficient alternative to petroleum in the review article “The Path Forward for Biofuels and Biomaterials”, published in the journal Science. The authors recommend a multidisciplinary approach, where the activities of biologists, agronomists, engineers, energy experts and policy specialists are integrated to achieve the transition from nonrenewable carbon resources to renewable bioresources.

Bioresources result in zero net greenhouse gas emission as the carbon dioxide they release upon combustion is initially extracted from the atmosphere during biomass production. Several countries have set goals for increasing the proportion of biofuels used for transport: the US plans to replace 30% of the liquid petroleum with biomass-derived products by 2025; India has a target to increase the proportion of biofuels from 5% to 20% by 2012; and the European Union targets close to 6% of fuels to be derived from biomass. Brazil is the world's leader in biofuels, with 30% of transport fuel currently derived from biomass.

Biofuels in the US and Brazil are primarily derived from fermentation of starch derived from maize and sugar cane. In their study, the authors recommend increasing the range of material used in biofuel production to include low cost agricultural waste products, fast growing trees, and perennial energy crops, such as switchgrass. “The grand challenge for biomass production is to develop crops with a suite of desirable physical and chemical traits while increasing biomass yields by a factor of 2 or more” say Dr. Ragauskas and co-workers. Their proposed “research road plan” includes a combination of modern breeding and transgenic techniques to improve photosynthesis efficiency, crop chemical composition, confer resistance to pests and diseases, and to reduce agricultural inputs.

Readers can view the full review article by Dr Ragauskas and colleagues at: http://www.sciencemag.org/cgi/reprint/311/5760/484.pdf

ENGINEERED TOBACCO ABLE TO GROW ON ZINC-CONTAMINATED SOIL

Researchers at the International Center for Genetic Engineering and Biotechnology, and at the Jawaharlal Nehru University in New Delhi, India, report on a new strategy to confer heavy metal tolerance in plants.

In an article published in the journal of Plant Physiology this month, the authors report high methyl glyoxal accumulation in plants growing on high concentrations of zinc and other heavy metals. Over-expression in tobacco of either glyoxalase I or II on their own confers increased zinc tolerance with no penalties on yield and reproduction, and performance was further enhanced in double transgenics. The authors believe that increased production of phytochelatins, proteins that bind excess metals to prevent them from damaging the cell, is likely to be one of the mechanisms mediating zinc tolerance in transgenic tobacco plants.

Over-expression of glyoxalase I and II in transgenic plants has previously been reported to also increase drought tolerance. This approach has the potential to develop multiple-stress tolerance in important food crops.

To access the abstract for the article, “Glutamine Synthetase-Glutamate Synthase Pathway and Glutamate Dehydrogenase Play Distinct Roles in the Sink-Source Nitrogen Cycle in Tobacco,” visit: http://www.plantphysiol.org/cgi/content/abstract/140/2/444. Subscribers to Plant Physiology can read the complete article at http://www.plantphysiol.org/cgi/content/full/140/2/444.

TRANSGENE FLOW CONTROL DISCUSSED

Transgene flow from biotech crops to other organisms is an issue that should be properly addressed when considering biosafety. Transgene flow can be countered by either establishing containment mechanisms to keep the transgenes within the crop, or by employing mitigation techniques aimed at minimizing the environmental effects of the primary transgenic trait should it escape.

Jonathan Gressel and Hani Al-Ahmad of the Weizmann Institute of Science, Israel, review transgenic mitigator strategies in their article “Mitigating Transgene Flow from Crops”, published in the latest issue of the Information Systems for Biotechnology News Report. In transgenic mitigation, genes (termed mitigator

genes) that lower the competitive ability of transgenic hybrids are linked to the primary transgene. Such mitigator genes are neutral or positive to the crop, and may confer traits such as dwarfism, inhibited dormancy, and non-shattering of seedpods. These traits would confer a competitive disadvantage in wild populations, ensuring escapes would not survive.

Researchers co-cultivated TM transgenic oilseed rape (with a mitigator gene for dwarfism) with its wild counterpart and found that the TM rape was suppressed, unable to grow normally, and hardly set seed. TM-weed hybrids, as well as further backcrosses, were also found to be “exceedingly unfit and unable to compete with wild type weed.” Thus, researchers conclude, transgenic mitigation is clearly advantageous to a crop grown alone, while disadvantageous to a crop-weed hybrid living in a competitive environment.

For more information, visit http://www.isb.vt.edu/news/2006/news06.Feb.htm

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ANNOUNCEMENTS

CGIAR OPENS FELLOWSHIP PROGRAM

The CGIAR Gender & Diversity Program (G&D) is now inviting applications from qualified women scientists in East Africa for a two-year fellowship. With support from the Rockefeller Foundation, these fellowships are open to women scientists from national agricultural research institutes (NARIs) and universities in Kenya, Uganda, and Tanzania who have at least an MSc degree, and are working in crop sciences. The overall goal is to increase women's skills, visibility and contributions to science and development.

Dead line for applications is February 28, 2006.

For more details on the Fellowship, see:
http://www.genderdiversity.cgiar.org/resource/women_fellowships.asp

MEETING SET UP FOR BETTER DATES

Date growing countries will meet in Al Ain, United Arab Emirates between the 19th and 21st of February, 2006 to discuss sustainable date production. The meeting, organized by the University of the Arab Emirates, will provide an opportunity for scientists, experts and senior officials from date growing countries to exchange knowledge and expertise on of date palm production, propagation

and marketing. The congress also seeks to foster international technical cooperation on different aspects of date palm production chain.

For more information, contact A Zaid at zaid@uaeu.ac.ae.

BRAZIL TO HOLD BIOTECH CONFERENCE

A Biotechnology and Brazil Conference will be held in São Paolo, Brazil, from March 8-9, 2006. Biotechnology and Brazil will focus on the country's recently approved seed legislation for genetically modified (GM) seed and the effect it will have on the prospects in Brazil itself and over the world. The conference will examine the implications of biotechnology regarding the cost of production of soybeans and future GMcrops, and it will discuss the stance and policies that Europe has taken with regard to GM soybeans, cotton, and corn, and consumer concerns surrounding GM labeling. The conference will be conducted in English and Portuguese with simultaneous interpretation. For more information, visit http://www.agra-net.com/biotech06.

DOCUMENT REMINDERS

KC RELEASES FIVE-YEAR REPORT

ISAAA's Global Knowledge Center (KC) has just turned five years old! To view the KC's achievements and milestones, we would like to invite you to download our Report at http://www.isaaa.org/kc.

PLANT JOURNAL TECHNIQUES ISSUE AVAILABLE FOR FREE

The Plant Journal Special Issue on Techniques for Molecular Analysis is now available. The second Plant Journal Special Issue on Techniques, 2006, follows on the success of the first techniques issue, published in 2004. These peer-reviewed “how-to” articles are devoted to examining plant biology techniques of broad interest to the research community, and are freely available for download.

To access the second and first issues visit:
http://www.blackwell-synergy.com/toc/tpj/45/4;jsessionid=agtaHoirhSJ9VkEwrL
and http://www.blackwell-synergy.com/toc/tpj/39/5

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