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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NCFA STUDY SAYS BIOTECH CREATING WIDESPREAD BENEFITS

A study by the National Center for Food and Agricultural Policy (NCFAP) says that the widespread adoption of six biotechnology-derived crops in 2003 increased farmer income, boosted yields, reduced pesticides, and spurred

greater use of environmentally friendly non-till agriculture. These six crops are canola, corn, cotton, papaya, soybean, and squash.

Sujatha Sankula and Edward Blumenthal, authors of the study “Impacts on U.S. Agriculture of Biotechnology-Derived Crops Planted in 2003 – An Update of 11 Case Studies”, note that “This new technology has revolutionalized agriculture and is creating widespread economic and environmental benefits.”

The study revealed that between 2001 and 2003, the number of U.S. acres planted with these crops increased by 26 million acres, and that for all six crops, the percentage of acres planted with biotech varieties also increased. Of the six crops studied in 2003:

* Biotech soybeans resulted in the greatest reduction in pesticide use, (20.1 million pounds) which produced the greatest economic return for growers (additional $1.2 billion in income);

* Biotech corn (especially corn- borer resistant) produced the highest yield gains (4.9 billion pounds resulting in an additional $258.4 million for farmers);

* Biotech cotton led to a significant reduction in pesticide use (12.9 million pounds) which led to an additional $413.13 million in income for farmers;

* Biotech canola led to reduced pesticide use of 152,740 pounds, which helped farmers earn an extra $9 million.

Biotech adoption rates are expected to increase as new and improved varieties are brought to the market. In addition, farmers are seeing the environmental benefits of biotech crops with more farmers using no-till cultivation practices.

The 2004 study is an update and a reinforcement of the findings of the June 2002 study by the same Center.

The complete study is available at http://www.ncfap.org.

GM SOY APPROVED BY EO IN BRAZIL

President Luiz Inacio Lula da Silva of Brazil has just signed an executive order that will allow planting and trade of genetically modified (GM) soy in the 2004-2005 harvest.

Brazilian farmers can plant GM soy until Dec. 31, 2005, and are free to sell them until Jan. 31, 2006. Planting of the 2004/05 soybean crop started at the end of last September.

Brazil is second only to the United States in soy production, but may become the world's largest soy producer, with its cheap land, low labor costs, and plentiful water. In Rio Grande Do Sul, its southernmost state, 90% of the soy is GM in origin, as the seeds were first smuggled there in the early 1990's from neighboring Argentina.

Read the original article from the Associated Press, at http://hosted.ap.org/dynamic/stories/B/BRAZIL_BIOTECH_SOY?SITE=MYPSP&SECTION=HOME&TEMPLATE=DEFAULT.

GM FOOD 'HEALTHIER THAN CONVENTIONAL' - GERMAN ACADEMIES COMMISSION

"In consuming food derived from genetically modified (GM) plants approved in the European Union (EU) and in the United States (USA), the risk is in no way higher than in the consumption of food from conventionally grown plants. On the contrary, in some cases, food from GM plants appears to be superior in respect to health," the Union of The German Academies of Science and Humanities Commission writes in a recently released paper.

With various health issues taken into account, including toxicity, carcinogenicity, and allergenicity, the Commission concluded that (1) Since absolute safety is not possible for any food on the market, GM or non-GM, the basis for the approval of food products containing GMO is the evidence that they are at least as safe and nutritious as the corresponding products derived by conventional means, and that (2) GMO products offer the advantage that they have been exceptionally thoroughly tested in respect to health risks.

Download the article at <http://www.akademienunion.de/pdf/memorandum_green_biotechnology.pdf>

ZIMBABWE PARLIAMENT APPROVES BIOSAFETY PROTOCOL

The Parliament of Zimbabwe recently approved the Cartagena Protocol on Biosafety, thereby providing a regulatory framework for regional and international cooperation in the management of living modified organisms, including

genetically modified (GM) food.

Dr Olivia Muchena, Minister of State for Science and Technology, said, in a speech before Parliament, that the protocol provided for a regulatory framework that reconciled the respective needs of trade and environment protection, with respect to a rapidly growing biotechnology industry.

Zimbabwe has already accepted GM food, but has restricted the country's use to tightly controlled shipment, milling, and distribution. With the protocol in place, consumers and business people alike will be ensured an adequate level of protection in transferring, handling, and use of GM products.

Read the full story at http://allafrica.com/stories/200410190549.html

STUDY LINKS BT COTTON TO FARMER HEALTH

The adoption of Bt cotton can substantially reduce the risk and the incidence of [pesticide] poisonings, Ferdaus Hossain and colleagues of the Department of Agricultural, Food, and Resource Economics, of Rutgers University in New Brunswick, New Jersey, USA, write, in the latest issue of the International Journal of Occupational and Environmental Health

Using data gathered from a 1992-1996 survey of farmers in northern China, researchers showed that Bt cotton adoption reduced pesticide use. There were an average of 54,000 cases of pesticide poisonings of farmers per year, with 490 of them fatal, before Bt cotton had been introduced. Surveys showed that farmers who grew only Bt cotton applied about 18 kg of formulated pesticide per hectare, while farmers who grew only conventional cotton sprayed about 46 kg per ha. While almost 33% of the farmers who exclusively used non-Bt cotton reported pesticide poisoning, only 9% of those who exclusively used Bt cotton reported such cases.

Download the full article at http://www.ijoeh.com/pfds/1003_Hossain.pdf

AFRICAN MINISTERS MEET ON AGRI MASTER PLAN

African ministers of agriculture recently met in Kenya to brainstorm the continent's agricultural master plan.

There was a general call for an urgent need to develop a continental capacity to determine the safety of genetically (GM) foods, as well as to allow local institutions to develop their capacity to test GM seeds.

The implementation of the common agricultural policy was also discussed, which is seen as a prerequisite in addressing the decline in agricultural production in the continent.

Read the full article at http://www.usagnet.com/story-national.cfm?Id=1085&yr=2004

DIOUF: EFFORTS NECESSARY FOR BIODIVERSITY MAINTENANCE

Global efforts are needed to conserve plants and animals in gene banks, botanical gardens, and zoos. Genetic material can be removed from its natural habitat and placed in a safe place where it can be studied and documented, and then accessed and used if needed. This was emphasized by Jacques Diouf, Director-General, Food and Agriculture Organization (FAO) during his talk at the Howard University School of Law in Washington, DC, USA on the occasion of the 24th Observance of World Food Day.

Equally important is maintaining biodiversity on farms and in nature, where it can evolve and adapt to changing conditions or competition from other species. “If we are to assure the conservation of agricultural biodiversity, it becomes imperative that those most responsible for its development and its preservation -- the indigenous people who maintain the farms, the herds, the forests, and the fishing areas -- are both respected and rewarded for their efforts,” Diouf explained.

Hence, a new legally binding International Treaty recognizes the contributions of farmers and identifies ways of protecting and promoting farmers' rights. It also establishes a multilateral system of access and benefit sharing to ensure that plant genetic resources are available for use, and that any benefits are shared with the countries in which they originated.

For the full speech, visit http://usinfo.state.gov/xarchives/display.html?p=washfile-english&y=2004&m=October&x=20041020142904BAllennoCcM0.8963739&t=livefeeds/wf-latest.html.

Meanwhile, FAO reports that The Global Crop Diversity Trust, an initiative to conserve in perpetuity the Earth's most crucial agricultural biodiversity, entered into force as an independent international organization. It hopes to provide a

secure and sustainable source of funding for the world's most important crop diversity collections.

The Trust is a joint initiative of FAO and the International Plant Genetics Resources Institute, on behalf of the Future Harvest Centers of the Consultative Group on International Agricultural Research (CGIAR).

More details on the Trust are available at http://www.fao.org/newsroom/en/news/2004/51211/index.html.

EU MEMBER STATES SUPPORT GM TASK FORCE

About 13 countries are supporting the joint Danish-Italian request to set up a European task force to ensure the co-existence of genetically modified (GM) crops and others crops. The European Union Agriculture and Fisheries Council said that these countries (Austria, Belgium, Cyprus, the Czech Republic, Germany, Greece, Hungary, Latvia, Luxembourg, Poland, Slovenia, Spain, and the Netherlands) agreed with Denmark and Italy to collect and disseminate information at the EU level.

The countries suggested that identifying research requirements concerning co-existence should be done at a pan-European level, and that limit values should be set for labelling GMOs in seeds. In addition, they proposed that “the decision by the Commission to include 17 genetically modified types of maize in the common catalogue of varieties should have been taken only once the Commission's report on experience with the Member States' implementation of the rules governing co-existence has been published”.

The EU Commissioner for Agriculture, Rural Development, and Fisheries, Franz Fischler, stated that a network between Member States can be set up to exchange information and ideas on new practices and experiences.

Visit www.eufic.org for more information regarding the EU task force on GM.

CHINA MAY RELEASE GM RICE SOON

China, the world's top producer and consumer of rice, as well as pioneer in rice research, could release its genetically modified (GM) rice varieties – including Bacillus thuringiensis (Bt) rice, cowpea trypsin inhibitor gene rice, and disease resistant Xa21 rice – as early as next year.

Local scientists also believe that the government may soon allow the commercialization of GM rice, after more than six years of trials. Field trials in Hunan and Fujian provinces showed GMO rice boosted yields by 4 to 8%, and allowed an 80% drop in pesticide use.

At present, China is already the world's top grower of Bt cotton, which has been effective in controlling damage from the bollworm pest.

Read the original news story at www.reuters.co.uk

GM ALFALFA READY FOR FIELD

Commercial varieties of Roundup Ready (RR) alfalfa are expected to be available to California forage producers next year. This is according to a team of University of California Cooperative Extension farm advisors, who have been evaluating the genetically modified (GM) crop for four years.

The GM alfalfa will allow the crop to be treated with glyphosate herbicides without damaging the plant. However, since glyphosates do not kill all the weeds that threaten alfalfa, other treatments – including rotating weed control chemistry and tank mixing – will be necessary to control Cheeseweed, nettles, fleabane, filaree, henbit, and marestail, the most common weed varieties that damage alfalfa.

For the full story, visit http://westernfarmpress.com/news/9-29-04-roundup-ready-alfalfa/.

SYNGENTA TO DONATE GOLDEN RICE SEEDS/LINES TO HUMANITARIAN BOARD

Agribusiness giant Syngenta recently announced that it would donate new Golden Rice seeds and lines to the Golden Rice Humanitarian Board. The donation includes the scientific results of the first field trial, as well as technology, rights, and research. This follows the successful completion of the first Golden Rice field trials and harvest in the United States, World Food Day on the 16th of October, and the International Year of Rice, as celebrated by the United Nations.

The Golden Rice Humanitarian Board is led by Ingo Potrykus, Professor Emeritus of the Swiss Federal Institute of Technology ETH in Zurich,

Switzerland; and Professor Peter Beyer of the University of Freiburg, Germany, the leaders of the research team who first demonstrated pro-Vitamin A production in rice. The Board also includes representatives of the International Rice Research Institute (IRRI), the Rockefeller Foundation, the international public initiative HarvestPlus, and the United States Agency for International Development (USAID), among others.

Visit www.syngenta.com for the full news article.

MALAYSIA GEARS EFFORTS ON AGRICULTURE

The Malaysian government has allotted RM1.5 billion for agriculture projects to fast track agri-research activities as the country shifts its growth strategy from one based on exports to one driven by domestic-led growth in the face of global competition.

The Malaysian Agricultural Research and Developments Institute (MARDI) is contributing its share to this goal as it seeks to commercialize its research and development findings. MARDI is currently attracting private and government-linked companies to some research projects which are ready to be commercialized.

Meanwhile, MARDI reports that Dr. Rezuwan Kamaruddin has come up with a productive and cost effective way to grow certain varieties of heat-tolerant temperate crops under tropical conditions. Malaysia spends some RM680 million a year importing temperate vegetables. Attention is also being focused on the institute's work on genetically engineered orchids which are more colorful, last longer, and are more disease-resistant.

Visit the Malaysian Biotechnology Information website for more biotechnology news at http://www.bic.org.my.

EFFECTS OF FEAR EXPLORED IN PAPER

David Ropeik takes a look at "The Consequences of Fear," an European Molecular Biology Organization (EMBO) paper that explores the effects of both fear and risk misperception, and correlates them with risk management strategies.

As a result of some of the decisions we make when we are fearful, Ropeik writes, along with some of the choices we make when we are not fearful enough, and because of the ways our bodies react to chronically elevated levels of stress, the hazards of risk misperception may be more significant than any of the individual risks about which we fret.

Contributing to the effects of fear is 'the mean world syndrome,' where various sectors, including the media, use an approach to make risks sound as dramatic, threatening, and urgent as possible. With this in mind, Ropek recommends that (1) government and business should take a holistic approach to risk as they formulate risk management policy, considering how people perceive a risk, and how they are likely to react to government policy about that risk; (2) risk communicators must convey information to people in ways that help them to keep risk in perspective; and (3) those who develop the methodologies of valuation analysis must design ways to quantify the effects of perception, so that these effects can be included in analyses of the costs and benefits of various risk management strategies.

Download the full article in PDF format at http://www.nature.com/cgi-taf/DynaPage.taf?file=/embor/journal/v5/n1s/full/7400228.html&filetype=pdf

DOCUMENT REMINDER:

UPDATED POCKET K 4

A revised version of Pocket K No. 4 on “GM Crops and the Environment” is now available online at http://www.isaaa.org/kc. It discusses the current environmental situation, environmental benefits of GM crops, potential risks, and how GM crops are assessed for environmental safety.

Pocket Ks are Pockets of Knowledge, packaged 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. There are already 15 Pocket Ks which are all available online at http://www.isaaa.org/kc.

INVENTORY OF OECD BIOTECH STATS

A working paper that attempts to provide an accurate assessment of the current state of biotechnology statistics in the Organization for Economic Cooperation and Development (OECD) member and observer countries is now available. The

report is an update of a document released in 2000. The latest document includes a statistical definition of biotechnology and incorporates guidelines for the compilation of biotechnology indicators, including model questions for inclusion in national surveys. It also has a reference to the most appropriate web sites where additional information may be obtained.

For more of the inventory of biotechnology statistics, visit http:///www.oecd.org.

ERS RELEASES PATENT DATABASE

The Economic Research Service of the United States Department of Agriculture (ERS/USDA) recently released a database identifying and describing U.S. utility patents on inventions in biotechnology and other biological processes, used in food and agriculture, with issue dates between 1976 and 2000.

The database also provides information about the ownership of these patents, among other vital data, and includes agricultural biotechnology utility patents, patent ownership information, and a system of technology classification.

Users may access the database at http://www.ers.usda.gov/Data/AgBiotechIP/.

CONFERENCES

THE 13TH AUSTRALASIAN PLANT BREEDING CONFERENCE

Breeding for Success: Diversity in Action is the theme of the next Australasian Plant Breeding Conference, to be held on the 18th to 21st of April 2006 at the Christchurch Convention Center in Christchurch, New Zealand.

The conference aims to highlight the economic, sociological, and environmental benefits of plant breeding in Australia, New Zealand, and South East Asia. Organized in conjunction with the New Zealand Grassland Association Inc., it will be based on six core themes: Benefits from plant improvement, genetic resources in a genomics era, environmental challenges and opportunities, plant gene technologies, added value products, and parallel breeding of plants and associated organisms

Additional features include field tours through New Zealand, to highlight practical innovation across the agriculture, horticulture, and forestry industries; and a master class in plant breeding, which will use practical examples and computer

models to demonstrate the application of quantitative and population genetics in plant breeding.

For more details, visit www.apbc.org.nz, or email Helen Shrewsbury, Conference Secretariat, at shrewsbh@lincoln.ac.nz

BRAZILIAN CASSAVA CONFERENCE

An International Conference on Cassava Plant Breeding has been set for the 1st-5th December 2006, in Brasilia, Brazil. Organized by Professors Nagib Nassar and Rodomiro Ortiz, the conference will discuss cassava breeding and food security in Sub-Saharan Africa, management of cassava reproduction systems, cassava polyploidization and chimera production, cassava genetic resources, and enriching cassava contents.

For more information, contact Prof. Nagib Nassar at nagnassa@rudah.com.br. or Dr. Rodomiro Ortiz at r.ortiz@cgiar.org.
