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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CHINA’S SCIENTISTS BAT FOR COMMERCIAL PLANTING OF GM RICE

A group of Chinese biotechnology scientists have released a report urging the central government to allow the commercial planting of genetically modified (GM) rice. "Our GM rice technologies are technically mature and ready to commercialize. What's lacking is the leadership's bold decision," said Zhu Zhen, a leading rice scientist and deputy director of the Bureau of Life Science and Biotechnology under the Chinese Academy of Sciences (CAS).

The Business Daily Update noted that Chinese researchers have developed several GM rice varieties resistant to China's major rice pests. The varieties include strains that can resist stem borer by using Bacillus thuringiensis (Bt), delta endotoxin and cowpea trypsin inhibitor CpTI genes; protease inhibitor rice; planthopper and bacterial leaf blight, by using the rice plant disease resistance Xa21 gene; and fungal-resistant rice. The country has the largest field for GM rice trials.

Zhu estimates that about 25-30 per cent of China's plant biotechnology investments are spent on GM rice programs. The Chinese Government has become the world's second-largest spender on plant biotechnologies, next only to the United States. China is expected to launch at least 10 GM rice field trials between 2001 and 2005.

NO APPROVAL FOR CANOLA BY EU COMMITTEE

The European Union's (EU) Regulatory Committee, composed of environmental regulators, did not approve the importation and processing of "GT73", a biotech canola made by Monsanto. The application now moves to The Council of Ministers and if a decision cannot be made, it goes back to the European Commission. If authorized, the oilseed rape, which has been modified for increased tolerance to the herbicide glyphosate, would be clearly labeled as containing GM oilseed rape.

Earlier, the Europabio, the association of European bioindustries, said that GT73 oilseed rape has been assessed as safe by the European Food Safety Authority. Safety assessments take account of the potential environmental impact; compositional, safety and agronomic characteristics; potential toxicity and allergenicity; and the nutritional value of the food and feed derived from the crop.

For more information, visit http://europa.eu.int/rapid/showInformation.do?pageName=middayExpress&guiLanguage=en. For the EuropaBio backgrounder on the GT73 oilseed rape, see http://www.europabio.org/pages/index.asp.

MOST EU ANIMAL FEED WILL CARRY GM-LABELS

FEFAC, the European feed manufacturer's association based in Belgium, said that European feed manufacturers will have to label most of their compound feed products as containing genetically-modified organisms (GMOs). FEFAC estimated that 95% of compound feed produced in the EU contains some GM material. While 92% of all animal feed in the EU is not GM, compound feed, made from a variety of different crops, often contains small amounts of GM material. Compound feed supplements protein crops in Europe.

The Europe Information Service quoted FEFAC Secretary-General Alexander Doring as saying that it was difficult to label feed as 'non-GM' because there is no legal distinction between feed without any GMOs and feed containing small amounts of GMOs under the 0.9% GM material.

Doring likewise noted that half of all animal feed is home-grown forage and the rest is made up of home-produced cereals such as wheat, barley or rye. These are non-GM plants grown in the EU. The vast majority of the protein crops used by the feed industry come from the Americas where acreage under GM crops is increasing. FEFAC estimates that 80% of the soybeans imported from the US and Canada for feed will have to be labeled.

Contact FEFAC at fefac@fefac.org or visit their website at http://www.fefac.org.

SURVEY REVEALS LOW BIOTECH KNOWLEDGE IN WESTERN KENYA

A recent opinion survey by the Kenya Biotechnology Information Centre (KBIC) and African Biotechnology Stakeholders Forum (ABSF) in Western province of Kenya found that although many people have heard about biotechnology most did not have adequate knowledge about the science. The survey was conducted during the

Province's agricultural show, which was officially opened by Kenya's vice president Honorable Moody Awori.

Whereas majority of the respondents said they had heard or read about biotechnology, only one percent said they knew much about it. Over half of the respondents stated they had little knowledge about the technology. The survey targeted mainly agricultural extension workers, teachers, students, policy makers and farmers. Results showed that most teachers and students in the province were ignorant of the technology. This means that deliberate outreach programs should be designed for teachers and students in the province.

Most respondents expressed strong interest in getting more information aimed at demystifying the technology and make it easily understandable to the common people while farmers specifically wanted information about where they could get the improved seeds. Over 1,000 people, including the Vice President, visited the K-BIC/ABSF stand, with 167 making specific inquiries about biotech products and services. For more of KBIC visit http://www.isaaa-africenter.org.

Photo Caption: Kenya's Vice President Hon. Moody Awori (in hat) looks at ISAAA publications at the KBIC/ABSF exhibition.

GM FOOD MAY BE ACCEPTABLE IN EU MARKETS

"Our analysis of contingent valuation (CV) data predicts that food products made of genetically modified (GM) ingredients have a place in supermarkets in the United Kingdom. The recent decision of the European Parliament to adopt mandatory labeling and traceability to ultimately replace the moratorium on approval of new GM crops represents a significant change in the regulatory environment. The critical question is whether European food manufacturers and retailers take the policy change as a positive signal that GM foods are acceptable and offer GM foods to European consumers," says Wanki Moon, assistant professor, Department of Agribusiness Economics, Southern Illinois University Carbondale; and Siva K. Balasubramanian, Henry J. Rehn Professor, Department of Marketing, also from the same university.

In their study, Moon and Balasubramanian provided a descriptive analysis of CV survey data to examine whether there is market for genetically modified (GM) foods in the European Union (EU). The surveys were administered to almost 9,000 UK consumers. The highlights of the research are as follows:

* There is a non-negligible percentage (ranges from 16% to 38% depending on the type of question asked) of the UK population who are willing to buy GM foods if they become available in supermarkets.

* Almost 13 percent (13.3%) of the respondents could be characterized as GM technology embracing (segment of consumers who support GM technology and are willing to consume GM foods at no discounts), while 13.8% can be classified as price-conscious consumers (those who would buy GM foods only if non-GM foods are more expensive).

* The percentage of consumers who will purchase GM foods due to their lower prices will hinge on the price differential between non-GM and GM foods, or the magnitude of the premiums that non-GM foods may command.

The research article entitled “Is there a market for genetically modified foods in Europe? Contingent valuation of GM and non-GM breakfast cereals in the United Kingdom,” can be found at http://www.agbioforum.org/v6n3/v6n3a06-moon.htm.

FAO RESPONDS TO CRITICISMS ABOUT BIOTECH PERSPECTIVE

The Food and Agriculture Organization’s (FAO) State of Food and Agriculture report reflects the views of known specialists of Member States on the subject. As regards biotechnology, FAO's position is determined by its competent statutory bodies under the guidance of the FAO Conference and of Summits of Heads of State and Government. This was stressed by FAO Director-General Jacques Diouf in response to criticisms on the report by nongovernment organizations.

Diouf enumerated the following points as determining FAO’s stand on biotechnology:

* The FAO/WHO Codex Alimentarius has agreed on the principles and guidelines for assessing health risks related to foods derived from modern biotechnology.

* The FAO/WHO Codex Alimentarius Ad Hoc Intergovernmental Task Force on Foods Derived from Biotechnology, open to all Member Nations is the body responsible at international level to elaborate standards, guidelines or other principles, as appropriate, for foods derived from biotechnology;

* FAO has recently published the guidelines adopted by the 130 Members of the International Plant Protection Convention for pest-risk analysis for living modified organisms. Such agreements can help harmonize regulatory procedures globally.

In addition, Diouf said that “we will have to use the scientific tools of molecular biology, in particular the identification of molecular markers, genetic mapping and gene transfer for more effective plant enhancement, going beyond the phenotype-based methods. Decisions on the rules and utilization of these techniques must however be taken at the international level by competent bodies such as the Codex Alimentarius.”

For the full response, visit http://www.fao.org/newsroom/en/news/2004/46429/index.html.

GM PLANTS TO MANUFACTURE ESSENTIAL FATTY ACIDS

Researchers led by Baoxiu Qi of the University of Bristol, United Kingdom, reported the production of two very long chain polyunsaturated fatty acids in substantial quantities in a higher plant. The production of essential oils in Arabidopsis thaliana suggests transgenic plants could become a dietary source of these essential fatty acids normally obtained only from fish.

In an article in the journal Nature entitled “Production of very long chain polyunsaturated omega-3 and omega-6 fatty acids in plants”, the researchers discussed the successful genetic engineering of Arabidopsis to produce arachidonic acid and eiconsapentaenoic acid.

In the same issue of Nature, Allan Green puts the study in context. He noted that while the main source for the essential fatty acids is fish oils, the depletion of fish resources and the accumulation of toxins in various species becomes a problem. Hence, the research has enormous potential in developing an alternative source. He cautioned however, that there continues to be many scientific challenges but results provide a significant impetus for further research to resolve these issues.

See the full articles online at http://www.nature.com/cgi-taf/DynaPage.taf?file=/nbt/journal/v22/n6/abs/nbt972.html and http://www.nature.com/cgi-taf/DynaPage.taf?file=/nbt/journal/v22/n6/full/nbt0604-680.html.

NEW GM ORCHIDS FROM MALAYSIA

The Malaysian Agricultural Research and Development Institute (MARDI) is currently bio-engineering orchids to produce varieties with unique colors such as deep red and dark blue. According to the New Strait Times (Malaysia), as cited by the Pew Initiative on Food and Biotechnology, this research is currently being undertaken by the research center to meet the growing demand for orchids. In Malaysia, orchid exports presently bring in about RM150 million a year.

To create such varieties, scientists transfer genetic material or genes into single orchid cells. This technology allows them to develop hybrids with novel characteristics such as vivid colors, which are impossible to create using conventional methods such as pollination. Mardi is also doing research on extending the flowers' shelf life and improving their shape and structure and resistance to diseases.

Says Dr Umi Kalsom Abu Bakar, deputy director of MARDI's biotechnology center, "once these (flowers) have bloomed, we will be able to analyze them to know how colors are formed in orchids and where we need to genetically enhance them to get the desired colors. This will add value to the orchids. Farmers can generate more income while consumers will have more variety and better quality hybrids."

The news story is found at http://pewagbiotech.org/newsroom/summaries/display.php3?NewsID=687. More news from the New Strait Times (Malaysia) at http://www.nst.com.my/.

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