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:

* Access to Research Tools in Biotech Through Experimental Use Exception
* Asia to Determine Future of GM Food Says Yale Global
* The Market Potential of A New GM Soybean
* Study Shows GM Corn Can Benefit Africa
* Agrobacterium Transfer Technology Resolved
* NZ Seeks Public Comment on Use of GM Cotton
* GM Plants Potential to Clean Polluted Soils
* CBTNews Feature: Dr. Arthur Kornberg
* Document Reminder: Updated Pocket K 6 Now Available
* Announcement

ACCESS TO RESEARCH TOOLS IN BIOTECH THROUGH EXPERIMENTAL USE EXCEPTION

The biotechnology industry's shifting ideology and the increasingly proprietary nature of research tools are hampering research efforts. Access to key data and research tools to deal with new scientific initiatives like plant biotechnology has become limited. Hence, there is a need for reforms to the current patent system to deal effectively with these problems. This is the gist of an article by David Faye of Canada's Borden Ladner Gervais LLP.

Faye noted that the proliferation of patent rights can impede or effectively preclude use of the research tools. As such, Faye reported that some studies have shown that researchers are forced to circumvent the patent system, with one-third of private and public firms indicating that they use patented research tools without a license.

Faye proposes a renewed focus on the experimental use exception in patent law in the United States and the United Kingdom as a possible means to solve the problem. “If resent trends to narrow policy initiatives can be reversed or, at the very least, halted, the potential may exist for public policy initiatives to permit use of the exception in a manner which would ultimately benefit the intended sectors,” Faye said.

See the article entitled “Exploitation of research tools in plant biotechnology: Access through application of the experimental use exception (Part 1)” in http://pharmalicensing.com/features/disp/1107861077_42089e55c060d

ASIA TO DETERMINE FUTURE OF GM FOOD SAYS YALE GLOBAL

Asia is home to the world's largest consumer base and the greatest number of farmers, and thus will set the future for genetically modified (GM) food. The GM struggle will be determined on which side Asia takes with regards the biotechnology debate. This is the premise of an article of John Feffer, a Pantech Fellow from Stanford University, in YaleGlobal, an online publication of the Yale Center for the Study of Globalization.

Feffer notes that “The stakes in Asia's decision on GM food are enormous: a huge market in seeds and crops, a total restructuring of farming practice, and a test of civil society's strength in countries where governments routinely dictate agricultural policy. The backlash against new technologies can be either a temporary speed bump or a significant obstacle.” Which side Asia accepts, Feffer adds, will determine the state of biotechnology.

A certain ambivalence among Asian countries suggests cautious entry into the GM arena with strong GM research activities tempered with moratorium on planting food crops. China for example, has an active research and development system on GM, remains the largest importer of GM soybeans, is growing a significant amount of GM cotton, but has not yet approved any GM crop for consumption.

See the article online at http://yaleglobal.yale.edu/display.article?id=4956.

THE MARKET POTENTIAL OF A NEW GM SOYBEAN

The market and welfare effects of introducing high-oleic soybeans are determined by the relative prices of products using the new soybeans as an input

in their production process, the distribution of consumer preferences, and the benefits consumers perceive from the new product. This is the main point raised by Konstantinos Giannakas and Amalia Yiannaka of the University of Nebraska-Lincoln, USA in an ex-ante analysis they conducted to analyze the market potential of a second-generation, genetically modified, high-oleic soybean developed at the University of Nebraska.

The authors note that the lower the prices of products using the new soybeans and/or the greater the value consumers place on the new product attribute, the greater the market acceptance of the new high-oleic soybeans, the market share of the US in the world market for soybeans, and the domestic producer welfare gains from the introduction of the new technology.

On the other hand, if the value consumers place on the new product attribute is sufficiently high, introducing high-oleic soybeans will drive the conventional soybeans out of the market, attract consumers of substitute products, and give considerable benefits to all domestic soybean producers.

Hence, the authors suggest that a successful commercialization strategy might need to focus on the consumer to include determining the value that high oleic content adds to different products (such as soy oil). An effective communication of potential health and other benefits to consumers is also necessary.
See the full report at http://www.agbioforum.org/v7n3/v7n3a02-giannakas.htm.

STUDY SHOWS GM CORN CAN BENEFIT AFRICA

Poorer farmers in low potential areas in Africa can benefit more from planting Bt corn. So says a study on “Assessing the benefits and risks of GE crops: Evidences from the insect resistant maize for Africa project” by H. de Groote and colleagues. Results of the study showed that most objections to Bt corn cannot be substantiated. These objections include inability of the technology to address small farmers’ needs, irrelevant crop traits relative to demand, and agro-businesses benefiting more from it.

An evaluation of the Insect Resistant Maize for Africa (IRMA) project that started in 1999 was done and “after five years of research in the first phase, it can be shown that most, but not, all concerns against Bt maize can be answered.” The project used both conventional breeding and biotechnology and considered both biophysical as well as social aspects of the technologies.

Groote and colleagues noted that demand for Bt maize is likely to be high since corn is a major food crop in Kenya yet production remains low. Among the top constraints that can be addressed by the technology include problems related to

seed quality, pest problems, and yield losses. Farm surveys showed that most areas had enough alternative hosts that form natural refugia and prevent the build-up of resistance against the toxins.

View the complete article at http://www.isb.vt.edu/news/2005/artspdf/feb0503.pdf or http://www.isb.vt.edu/news/2005/news05.feb.html#feb0503.

Contact de Groote at h.degroote@cgiar.org.

AGROBACTERIUM TRANSFER TECHNOLOGY RESOLVED

Bayer CropScience, Monheim, the Max Planck Society and their affiliate Garching Innovation GmbH, both based in Munich, Germany and Monsanto Company have reached an agreement that resolves long-standing patent interference or other proceedings in different countries involving the use of Agrobacterium-mediated transformation to create transgenic crops. Agrobacterium transformation technology allows scientists to transfer DNA to plant cells.

Under the agreement, the three institutions will cross license their respective Agrobacterium-mediated transformation technologies worldwide. Bayer CropScience, Max Planck's exclusive licensee, and Monsanto will provide each other, in selected areas of the world, non-exclusive licenses related to the development, use and sale of transgenic crops. Monsanto will also provide Max Planck Society with a license in the United States for research purposes.

"This agreement secures freedom for the involved parties in the field of Agrobacterium-mediated transformation technology, thereby ensuring present and future market access for their respective technologies in the United States and Canada," said Dr. Bernward Garthoff, member of the Bayer CropScience Board of Management, responsible for R&D.

View the Bayer CropScience information release at: http://www.bayercropscience.com/bayer/cropscience/cscms.nsf/id/Patent_dispute_resolved?Open&ccm=500050000&L=EN&markedcolor=%23003399 or contact Annette Josten of Bayer CropScience at annette.josten@bayercropscience.com.

NZ SEEKS PUBLIC COMMENT ON USE OF GM COTTON

Food Standards Australia New Zealand (FSANZ) is seeking public comment on the application by Monsanto Australia Limited to approve the sale of food derived from a genetically modified (GM) cotton line. The variety is genetically modified for tolerance to the herbicide glyphosate.

Cotton is currently the only GM crop grown commercially in Australia, with about 40 per cent of the New South Wales and Queensland cotton crop coming from a GM source.

The Draft Assessment report which incorporates inputs from the public comment is scheduled for release in mid-2005. The Initial Assessment report for this application can be found at http://www.foodstandards.gov.au, along with details of how to make a submission. See the release from FSANZ at http://www.foodstandards.gov.au.

GM PLANTS POTENTIAL TO CLEAN POLLUTED SOILS

A team of researchers from the University of California Berkeley, and the Agricultural Research Service (ARS) of the U.S. Department of Agriculture have shown that genetically modified (GM) plants have a potential to clean polluted soil. Three transgenic lines of the Indian mustard plant *Brassica juncea* were observed to have absorbed two to four times more selenium from contaminated soils than the wild type plants.

The research findings published in Environmental Science and Technology were a follow-up of previous laboratory tests where GM plants performed up to three times as well as wild plants in cleaning up selenium-polluted soil.

Norman Terry, professor at UC Berkeley and one of the researchers, explained that the Indian mustard is a fast growing plant and is tolerant to many toxic conditions. He added that a promising aspect about mustard plants is that they can metabolize selenium into a gas called dimentyl selenide. “Getting inorganic selenium into gas form will allow it to just dissipate harmlessly into the atmosphere. No other form of remediation can do that,” Terry explained.

See the UC Berkeley release at http://www.berkeley.edu/news/media/releases/2005/02/01_plantremediation.shtm.

DOCUMENT REMINDER: UPDATED POCKET K 6 NOW AVAILABLE

A revised version of Pocket K No. 6 on "Bt Insect Resistance Technology" is now available online at http://www.isaaa.org/kc. It provides an overview of the Bt technology and its mode of action, safety aspects of the technology, advantages of Bt crops, and insect resistance management.

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 16 Pocket Ks which are all available at http://www.isaaa.org/kc.

ANNOUNCEMENT:

The International Service for the Acquisition of Agri-biotech Applications has added Bangladesh to its growing network of Biotechnology Information Centers (BICs) situated in pivotal developing countries in Asia and Africa with some links to countries in Latin American. Dr. Khondoker Nasiruddin, on leave from the Bangladesh Agricultural University where he was professor and head of the biotechnology department, is the national coordinator. He will be responsible for developing and supervising projects and activities to enhance agri-biotechnology public awareness among various stakeholders in Bangladesh. The office is being hosted by the International Maize and Wheat Improvement Center (CIMMYT) liaison office in Dhaka.

South Asia is also represented by an ISAAA office in New Delhi, India which is headed by Bhagirath Choudhary, who used to head the biotechnology group of the Federation of Indian Chambers of Commerce and Industry. The office is being hosted by the International Crops Research Institute for the Semi-Arid Tropics liaison office in Delhi.

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:
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