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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May 28, 2004

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DOCUMENT REMINDER
BT COTTON CASE STUDIES IN FRENCH
Two Bt cotton case studies in China and South Africa are now available in French, and are downloadable at http://www.isaaa.org/. These publications discuss the yield and economic advantages of Bt cotton, and the corresponding health benefits.

In This Issue:

EASAC: EU LACKS COHERENT RESEARCH STRATEGY

The lack of a coherent research strategy and the impact of legislation are hampering the successful use of new tools and methods in plant genetics to conventional farming. This was pointed out in a report published by the European Academies Science Advisory Council (EASAC).

Gian Tommaso Scarascia-Mugnozza, chair of the working group that produced the report, said “There is a major opportunity for policy-makers across the European Union, in the Commission, Parliament and Council of Ministers, to capitalize on the exciting new era in plant genetics. But we need a more coordinated approach and funding to realize the potential benefits that this area of science offers conventional farming.”

The report highlights the use of new tools and methods in plant genetics to create new industries, such as the production of crop plants that can be used as

renewable fuels or as more 'environmentally-friendly' sources of chemicals. It also recommended proposals to create 'banks' of seeds and plant varieties and urged the European Commission and Council of Ministers to focus more on the regulation of plant genetics and engaging the public as consumers about research developments.

EASAC was formed in 2001 to provide a means for the national academies of Europe to work together to inject high quality science into European Union policy-making. For more of EASAC visit http://www.easac.org.

See EASAC's press release at http://www.easac.org/PressreleaseMay2004.htm. The full report is available at http://www.easac.org/CPG%20report_fin5.pdf.

SOUTH AFRICANS STILL IN FAVOR OF GM FOOD

Majority (58%) of South Africans are still in favor of genetically modified (GM) food. This was the highlight of a public phone-in poll that was conducted two weeks ago to assess the South African public's acceptance of the safety of foods derived from GM crops. This opinion polling was done following a TV debate on GM food.

According to AfricaBio, an association of biotechnology stakeholders, public debates and media coverage of radio and TV panel discussions on the pros and cons of GM crops have proliferated the South African media for the past few months. These debates were conducted to provide the public information in lieu of the hearing on a class action litigation case filed by an activist group against South Africa's Department of Agriculture.

At present, the South African government has a national strategy on biotechnology in place, and has clearly accepted the potential benefits of modern genetic technologies. On the other hand, activists groups are calling for a moratorium on GM crops, and demand that local socio-economic studies and environmental impact assessments on such crops be conducted.

For more information about the opinion polling results, the recent debates in South Africa, and the class action litigation case, contact AfricaBio at africabio@mweb.co.za.

NEW CO-EXISTENCE STUDY ON GM AND NON-GM CROPS IN THE EU

Graham Brookes and Peter Barfoot, both from PG Economics Ltd, released the results of their research paper entitled "Co-existence of GM and non-GM crops: the non-GM and organic context in the EU." In their research, Brookes and Barfoot examined the context in which genetically modified (GM) crops are being developed, and the extent of the demand for non-GM crops in the European Union (EU). Also analyzed were the experiences of European arable farmers who have successfully implemented and managed the co-existence of specialist crops with other crops, and the commercial experience of growing GM crops in North America.

The highlights of Brookes and Barfoot's research are as follows:

* GM crops can co-exist with conventional and organic crops in the EU without causing any economic or marketing problems. The market for non-GM crops in the EU are for soybeans and maize (and their derivatives). Current EU requirements for non-GM ingredients of maize and soybeans account for about 27% of the total soybean/derivative use, and about 36% of total maize use. In the case of oilseed rape and sugar beet, there is no real market competition since no GM oilseed rape product is currently permitted for planting or importing; and no GM sugar beet crops are currently being grown commercially worldwide.

* Claims by anti-GM groups that GM and non-GM crops cannot co-exist are exaggerated. The researchers observed that GM crops grown commercially in the EU and North America have co-existed with conventional and organic crops without economic and commercial problems, except for some few isolated cases.

* Attaching onerous co-existence and liability conditions to GM crop plantings would be inequitable and disproportionate. If strict conditions are required of all EU farmers who wish to grow GM crops, even though the vast majority of such crops would not be located near organic or conventional crops, few farmers would be encouraged to adopt the technology which is likely to deliver farm level benefits and provide wider environmental gains.

For more details about the research, email the authors at: peter.barfoot@pgeconomics.co.uk or graham.brookes@pgeconomics.co.uk. The full research paper can be downloaded at http://www.pgeconomics.co.uk/pdf/Co-existencestudyEU_PG_Economicsmay2004.pdf.

IMPACT OF GM CROPS IN ARGENTINEAN AGRICULTURE

Eduardo J. Trigo, and Eugenio J. Cap, of the Instituto Nacional de Tecnologia Agropecuaria (INTA), Buenos Aires, Argentina, started that “since the early 1990s, Argentinean grain production underwent a dramatic increase in grains production (from 26 million tons in 1988/89 to over 75 million tons in 2002/2003). Several factors contributed to this ‘revolution,’ but probably one of the most important was the introduction of new genetic modification (GM) technologies, specifically herbicide-tolerant soybeans.”

In their article entitled “The Impact of the Introduction of Transgenic Crops in Argentinean Agriculture,” Trigo and Cap analyzed the process that lead to this so-called “revolution,” and reported on the economic benefits accruing to producers and other stakeholders. They also analyzed the environmental and social impacts that could be associated with the introduction of new technologies. Institutional factors that led to the success of the adoption of GM technologies, such as the early availability of a reliable biosafety mechanism, a special intellectual property rights (IPR) situation, the favorable market pricing for GM soybeans and glyphosate, and agreeable trade relations with the European Union (EU) were, likewise, discussed.

Trigo and Cap concluded that “changes in Argentinean agriculture are much more comprehensive and far reaching than the incorporation of GM crops; nevertheless, genetically modified organisms (GMOs) have played a strategic role in the growth of the sector—not only because of their direct impact, but also due to their interaction with other technologies and their global macroeconomic effect through their impact on the country's agricultural exports.”

Read the full article at http://www.agbioforum.org/v6n3/v6n3a01-trigo.htm.

CANADA SC SIDES WITH MONSANTO ON PATENT CASE

Monsanto won its legal battle against Canadian farmer Percy Schmeiser who planted the company's Roundup Ready canola without paying the required license fee for using the technology. Canada's Supreme Court said that Schmeiser infringed on Monsanto's intellectual property rights.

Schmeiser insisted that he saved seeds from his 1997 crop and planted them across his farm in 1998, without knowing that the seeds included GM ones that Monsanto had patented. Justice Andrew MacKay of the Federal Court of Canada did not find Schmeiser's explanation of the events credible and held him liable for infringing Monsanto's patent.

As a result of his infringement, Schmeiser and employees of Schmeiser Enterprises face an injunction that prohibits planting, growing, cultivating, harvesting, selling, marketing or distributing the patented technology in the future. They are also ordered to deliver to Monsanto any seed in their possession known to contain the Roundup Ready gene.

View the Monsanto press release at
http://www.monsanto.com/monsanto/layout/media/04/05-21-04.asp

SAME PURCHASE INTEREST FOR DIFFERENT CORN TYPES

There appears to be a positive consumer response for corn grown using biotechnology with an environmental positioning at the same price as regular and organic corn. The environmental positioning for corn grown using biotechnology generates a similar purchase interest to that generated by regular corn. This was the perception of Californian respondents in a study entitled "Purchase interest in corn that was grown using biotechnology" by Marianne McGarry Wolf and Nicholas P. Giacalone of the California Polytechnic State University.

Wolf and Giancalone also noted that the corn grown using biotechnology rated higher than regular corn on two of the four most desirable attributes of corn: free of insects and free of pesticides; while regular corn rated higher than corn grown using biotechnology on the other four most desirable attributes: fresh tasting, fresh looking, good value for the money, and safe for the workman.

The organically grown positioning generates a higher purchase interest than an environmental positioning for corn grown using biotechnology and conventionally grown corn when they are exposed to consumers at the same price. Consumers perceive the quality of organic corn to be higher than biotech corn.

Highlights of the study were presented during the 7th International Consortium on Agricultural Biotechnology Research (ICABR) on "Public Goods and Public Policy for Agricultural Biotechnology" held in Ravello, Italy. Conference papers are available online at

http://www.economia.uniroma2.it/conferenze/icabr2003/papers/papers.htm#ECONOMIC%20IMPACT.

FARMERS ORGANIZATION IN SUPPORT OF GM WHEAT

Grain farmers from North Dakota and Montana, in the United States, have organized a new farmers group called “Growers for Wheat Biotechnology Inc” (GWB) to advocate the research, development and acceptance of biotechnology in wheat. GWB’s aim is to provide factual, credible information on biotechnology in wheat to enable wheat farmers to make informed decisions about the future of the wheat industry.

Says Al Skogen, chairman, GWB, and a farmer from Valley City, North Dakota, "for those of us who believe that biotechnology is a promising tool to keep our industry viable, we felt there was a need for a voice to tell the positive side of the story. We felt it was no longer acceptable to stand by and allow others to influence producer and public opinion without a reasonable discussion about the sound science, and tangible economic and environmental benefits that could be gained with biotechnology in wheat."

Growers involved with GWB say opposition to biotechnology in wheat discourages research and development efforts that could improve the economics of growing wheat, and promote a healthy environment. At present, wheat is still the main crop produced in North Dakota and Montana. New technological advances could enhance the wheat farmers’ productivity to become competitive in the global market.

More information on Growers for Wheat Biotechnology Inc. at http://www.growersforwheatbiotechnology.org.

NEW HERBICIDE RESISTANT CROP TRAIT DEVELOPED

Dupont’s Pioneer Hi-Bred International and Maxygen Inc,’s Verdia have developed a novel glyphosate-resistant crop trait. Maxygen's MolecularBreedingTM directed evolution platform was used to develop enzymes exhibiting glyphosate N-acetyltransferase (GAT) activity that confer glyphosate tolerance to plants.

Maxygen reported that “This improvement in enzyme activity may provide an alternative strategy for supporting glyphosate use on major crops such as corn, soybean and cotton.” It likewise validates the company’s ability to create novel commercial opportunities in crop protection and plant quality traits.
Glyphosate is one of the most commonly used herbicides on many food and non-food crops. It is known to be effective, economical, and has low environmental impact.
The full article entitled “Discovery and Directed Evolution of a Glyphosate Tolerance Gene” is published in the May 21 issue of the journal Science. View an online article about this discovery at http://www.eurekalert.org/pub_releases/2004-05/mi-msv052004.php or contact Maxygen’s Jeannine Medeiros at jeannine.medeiros@maxygen.com.

SYNGENTA DONATES GENOMICS SEED COLLECTION

Syngenta donated a substantial portion of its Arabidopsis functional genomics seed collection to the Arabidopsis Biological Resource Center (ABRC) hosted by the Ohio State University, USA. The agribusiness company said that the ABRC will distribute the collection of about 48,000 seed lines in collaboration with the Nottingham Arabidopsis Stock Center in Nottingham, United Kingdom. The sequence information will also be universally available in the international gene database GenBank by May.

Arabidopsis thaliana is an important reference plant for genetic research as it was the first plant to have its genome fully sequenced.

For more details, visit
http://www.syngenta.com/en/media/article.aspx?article_id=407.

ANNOUNCEMENT: 4TH INTERNATIONAL CROP SCIENCE CONGRESS (4ICSC)

The 4th International Crop Science Congress (4ICSC) will be held on September 26, 2004 to October 1, 2004 in Brisbane, Australia. The Congress, to be held in conjunction
with the 5th Asian Crop Science Conference (5ACSC) and the 12th Australian Agronomy Conference (12AAC), will review the disciplines involved in the development of sustainable agriculture. Themes that will be explored at the Congress include: 1) Crop science for a sustainable future; 2) Crop science for harnessing genetics; 3) Crop science for addressing water scarcity; 4) Crop science for improving human diets in Asia; and 5) Australian agriculture. The deadline for early registration is on May 31, 2004. The Congress Managers can be contacted at +617 3858 5554 or at 4icsc04@im.com.au. More information is also available online at the link below http://www.cropscience2004.com.
