

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)

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EU IMPORTS FOR GM RAPESEED FOR BIOFUELS POSSIBLE

The European Union biotech regulations for food and feed do not apply to products used for direct technical applications such as biofuels. This was stipulated in the report "EU-25: oilseeds and products: Imports of GM rapeseed

and rapeseed oil for biodiesel 2005” released by the United States Department of Agriculture Foreign Agricultural Service. The report said that “Imports to the European Union of genetically modified (GM) rapeseed to produce rapeseed oil for the production of biofuels are possible. However, the import and transformation of rapeseed and all the products that go into the food and feed chain are subject to the GM regulations.”

The report added that it is advisable to apply for a Binding Tariff Information (BTI), which is issued by customs authorities. A BTI ensures uniform treatment of the respective product in all EU Member States. More information on BTI can be accessed from

http://europa.eu.int/comm/taxation_customs/common/databases/ebti/index_en.htm. USDA reports are accessible at <http://www.usda.gov>.

EU COUNCIL REJECTS EFSA ADVICE ON BIOTECH CROPS

Despite positive assessments of the European Food Safety Authority (EFSA), the European Union Agriculture Council failed to reject Greece's temporary ban on the selling of EU licensed biotech maize seeds (MON 810). It also did not reach agreement on decisions to approve foods and food ingredients produced from GM maize GA 21 and MON 863.

“Neither the Greek Government nor any of the authorities have provided any validated scientific evidence to support either a ban or withholding approval to use these products in food. Consequently it is disappointing to see the Council's lack of support for the law especially as it is was the Council that put in place the GM rules in the first place,” said Simon Barber, Director of the Plant Biotechnology Unit at EuropaBio, Europe's association of bioindustries.

Background briefing to the Council meeting is available at:

http://www.fco.gov.uk/Files/kfile/AgricFish_BackNote_24-25Oct.pdf.

The EuropaBio response to this development is at

http://www.europabio.org/articles/EUfood_251005.doc

VIETNAM LEGISLATORS: SUBSIDIZE CROP IMPROVEMENT

Vietnamese lawmakers voiced out the need for government to fund research on the diversification and improvement of plant species as well as to introduce policies that would encourage researchers to work on this area. These proposals

were articulated during the debate on the passage of the Intellectual Property Bill in Hanoi.

The legislators explained that these moves would help improve crop productivity and should eventually benefit farmers. The discussion came about when the draft bill tackled stipulations defining the criteria for plant protection.

More news summaries from Vietnam are available from Le Hien of Biotech Vietnam at hienbiotechvn@omail.vnn.vn.

KU LEUVEN: CENTER FOR CONSERVATION OF VEGETATIVELY PROPAGATED PLANTS

Katholieke Universiteit Leuven (K.U.Leuven) in Flanders, Belgium has been established as the Global Centre of Excellence on Plant Cryobiology. It will be involved in the long-term conservation of vegetatively propagated plants. This was agreed upon by the International Plant Genetic Resources Institute (IPGRI) and K.U.Leuven on 18 October 2005 to commemorate World Food Day. Conservation efforts will include tropical staples such as banana, taro, and cassava.

“This is a significant step forward in our efforts to conserve agricultural diversity,” said Emile Frison, Director General of IPGRI. “The point, however, is not simply conservation. Breeders and farmers need the conserved material to adapt crops to meet challenges such as new pests and diseases.”

Read more on K.U.Leuven at <http://www.kuleuven.ac.be/english>. IPGRI's release on the global center of excellence is at <http://www.ipgri.cgiar.org/system/page.asp?frame=institute/pawareness.htm>

CSIRO STRENGTHENS RNAI PATENTS

RNAi technology, or a molecular means by which to silence genes and allow plants, animals, or bacteria to have desirable characteristics, is a well documented, widely used research tool. The technology has allowed scientists to identify the functions of genes, develop better agricultural crops, and among others. The Australian Commonwealth Scientific and Industrial Research Organisation (CSIRO) is a key player in the RNAi arena, and it has used the technology to develop new traits for plants and livestock.

CSIRO recently gained a greater foothold on the technology as three of its RNAi patents were approved. The hairpin RNAi patent (No. 760041), which covers the use of the technology in plants, animals, and humans, was granted recently. CSIRO was also able to successfully oppose a patent application (No. 747872) with broad claims to RNAi gene silencing, in the name of Syngenta Ltd; and maintain two patents (Nos. 743316, 2001100608) co-owned by CSIRO and Benitec Australia Ltd, following re-examination of the technology, which involves the use of DNA-delivered RNAi in animal and human cells.

“Resolution of these patent cases provides greater clarity and confidence for users of RNAi. CSIRO will keep providing access to the technology through research and commercial licenses,” Dr Rob de Feyter, Intellectual Property Manager at CSIRO Plant Industry, discloses.

Read the news release at

<http://www.csiro.au/index.asp?id=200patents&type=mediaRelease> or <http://www.csiro.au/index.asp?type=mediaRelease&id=200patents>. For more information, you may also contact Ms. Sophie Clayton, CSIRO's communication officer, at Sophie.Clayton@csiro.au.

AUSTRALIA OKS GM TRACES IN CANOLA

Federal and state agriculture ministers in Australia agreed during the Primary Industries Ministerial Council meeting in Launceston, Tasmania that grains with traces of genetically modified material will be allowed to be traded. They permitted tolerate levels of GM material of up to 0.9 per cent which Victorian Agriculture Minister Bob Cameron said was consistent with the standard accepted by the European Union.

Moratoriums would now be lifted to allow for the unintended or accidental presence of GM canola in conventional canola crops. A spate of contaminated canola was detected in crops this year.

Read the full report at <http://www.theage.com.au/news/national/ministers-give-nod-to-gm-traces-in-canola/2005/10/26/1130302839903.html>.

RESEARCH

BT CORN EFFECTS ON GENERALIST NON-TARGETS ASSESSED

Bt corn is designed to combat Lepidopterans. Any corn field, however, is home to a good number of insects, some of them natural predators of Lepidopterans, and others generalists. It is these non-target arthropods which provide an ecological balance for any corn field, and which should not be affected by whatever pesticides might be used to control Lepidopteran infestations.

Clinton Pilcher and colleagues assess the "Impact of Transgenic *Bacillus thuringiensis* Corn and Crop Phenology on Five Nontarget Arthropods." Their findings appear in the latest issue of Environmental Entomology.

Authors investigated the effects Bt corn would have on the seasonal abundance of *Coleomegilla maculata* (pink spotted lady beetle), *Orius insidiosus* (pirate bug), *Chrysoperla carnea* (green lacewing), *Cycloneda munda* (spotless ladybird beetle), and a specialist parasitoid, *Macrocentrus cingulum* (parasitoid wasp). By trapping the insect, researchers found that there was no significant difference in insect abundance of any of the generalist predators. However, adult densities of *M. cingulum* were reduced by as much as 60% in the presence of Bt corn. They also found that the generalists were more affected by differences in crop phenology rather than differences between Bt and non-Bt corn.

Read the complete article at

<http://puck.esa.catchword.org/vl=5633566/cl=15/nw=1/rpsv/cw/esa/0046225x/v34n5/s34/p1302>

AUSTRALIAN BT, NON-BT COTTON ARTHROPODS COMPARED

Australia's cotton industry has benefited from transgenic Bt cotton, although the impact of the crop on other arthropods has still not been fully assessed. To undertake an initial study, M.E.A. Whitehouse and colleagues conduct "A Comparison of Arthropod Communities in Transgenic Bt and Conventional Cotton in Australia." Their findings appear in the latest issue of Environmental Entomology.

Researchers compared canopy invertebrate community densities amongst sprayed conventional, unsprayed conventional, and unsprayed Bt cotton over three planting seasons. They found that species diversity of beneficial insect communities was greatly reduced in the sprayed crops.

They also found that, of over 100 species groups examined, there were slightly higher numbers of Helicoverpa, Chloropidae, Drosophilidae, damsel bugs, and jassids in conventional crops than in Bt crops. Researchers recommended that these small differences be monitored in the long term to assess if any modifications to cotton management practices should be made.

The same edition of the journal contains a good number of research articles devoted to reporting results gleaned from long term field trials of GM cotton. One such report by Steven Naranjo was featured in last week's issue of the Crop Biotech Update, but the news summary incorrectly referred to the pests *Bemisia tabaci*, *Lygus hesperus*, and *Pectinophora gossypiella* as predators of *Lepidoptera*. The three are actually key pests in the crop system, and *Pectinophora*, in fact, is a target of Bt cotton.

Read the complete article at

<http://puck.esa.catchword.org/vl=5633566/cl=15/nw=1/rpsv/cw/esa/0046225x/v34n5/s29/p1224>

RICE RESISTANCE GETS LIFT FROM MAIZE GENE

Xanthomonas oryzae pv. *oryzicola* is an important pathogen which causes bacterial streak disease in rice. It is especially significant in Asia, since rice has no inherent source of resistance to the bacterium. Bingyu Zhao and colleagues of Kansas State University, however, take a leap into maize territory and bring back news that "A maize resistance gene functions against bacterial streak disease in rice." Their work is published in the latest issue of the Proceedings of the National Academy of Sciences online.

Rice diverged from maize around 50 million years ago, but a gene still exists in the latter that could benefit rice crops all over the world. Researchers aimed to isolate this gene, Rxo1, and see if it would function in rice. The rice pathogen does not cause disease in maize, but Rxo1 conditions a resistance reaction to various pathogen strains, including *Burkholderia andropogonis*, which causes bacterial stripe of sorghum and maize; and the said *Xanthomonas*.

Using probes to fish out Rxo1 and four other family members from rice, and transferring this gene into rice plants, researchers found that Rxo1 still functioned despite being in a new host. Their resultant transgenic rice was able to withstand bacterial streak disease.

Read the complete article at <http://www.pnas.org/cgi/content/full/102/43/15383>

RESEARCH SHOWS DELAYED RESISTANCE OF COTTON PEST

Bt crops have been planted all over the world since 1996. Their widespread use has prompted scientists to surmise that target pests may rapidly evolve resistance to their built in pesticides - worst case scenarios once predicted that pests would evolve resistance to Bt crops in as little as three years. One such pest is the pink cotton bollworm (*Pectinophora gossypiella*), a lepidopteran that has experienced particularly intense selection for resistance. In Arizona, for instance, their larvae feed almost exclusively on cotton, and nearly 100% of them are killed upon eating the genetically modified crop.

Bruce E. Tabashnik and colleagues of the University of Arizona in Tucson use the pest as a model in tracking if resistance to Bt is evolving in pests, and at what rate. They report that they have found "Delayed resistance to transgenic cotton in pink bollworm." Their work appears in the latest issue of the Proceedings of the National Academy of Sciences online.

By monitoring resistance of the pink bollworm to the Bt toxin for 8 years through laboratory bioassays of strains derived annually from cotton fields in the state of Arizona, researchers found that there has been no net increase in the mean frequency of the pest's resistance to Bt from 1997 to 2004. They attribute their results to well implemented measures on planting Bt cotton with refugia, the recessive inheritance of resistance, incomplete resistance, and fitness costs associated with resistance.

Read the complete article at <http://www.pnas.org/cgi/content/full/102/43/15389>

UPDATES FROM THE BIOTECHNOLOGY INFORMATION CENTERS

PHILIPPINE BIOTECH JOURNALISM WRITERS RECOGNIZED

The Biotechnology for Life Media & Advocacy Resource Center (BMARC), a consortium of the Department of Agriculture, Biotechnology Coalition of the Philippines (BCP), SEARCA-Biotechnology Information Center (BIC), and the Philippine Council for Agriculture, Forestry and Natural Resources Research and Development (PCARRD), gave plaques of recognition to Filipino writers of biotechnology articles at ceremonies held at Club Filipino, Metro Manila, Philippines.

Reporters led by Melody M. Aguiba from the Manila Bulletin were cited for their outstanding and dedicated efforts in communicating and disseminating

biotechnology information to the public. The Philippine Star received the institutional award for its sustained support to science-based information dissemination on biotechnology.

For additional details on the awards, email Rochella B. Lapitan of SEARCA-BIC at rpl@agri.searca.org.

JOURNALISTS TACKLE BIOTECH

A 'seeing-is-believing' tour of Bt cotton field trial sites in Burkina Faso in Western Africa opened the eyes of visiting journalists from seven West African countries to biotechnology initiatives that can contribute to agricultural productivity on the continent. Hosted by the Institut de L'environnement et de Recherches Agricoles (INERA), the field trip enabled participants to have basis for accurate reporting of biotech concepts and applications. For more information, contact Daniel Otunge of KBIC at dotunge@absfafrica.org

Meanwhile, Bangladeshi journalists exchanged ideas with scientists during a discussion on “Biotechnology and biosafety issues: Public perception through civil society and media professionals” organized by the Bangladesh Biotechnology Information Centre (BdBIC) in Dhaka. The event enabled writers to seek science-based information to queries on biotechnology. Contact Khondoker Nasiruddin of BdBIC at k.nasiruddin@isaaa.org for additional information.



Prof. Shahria Akhtar Hossain MP, addresses journalists during the opinion exchange conference with journalists in Dhaka, Bangladesh

ANNOUNCEMENTS

BECA APPOINTS NETWORK DIRECTOR

Biosciences Eastern and Central Africa (BecA) has a new director. Dr. Bruno Kilunga Kubata, a citizen of D.R. Congo, will assume the post effective from 1st December 2005. Dr Kubata will take over from Dr Eugene Terry, who has served as the Interim Network Coordinator for the design phase of BecA.

Dr Kubata is a bio-scientist with in depth knowledge of new and advanced biosciences techniques and applications, gained through extensive experience in Africa and Japan. He is deeply committed to building biosciences capacity in Africa through the training and development of African undergraduate and postgraduate students.

Visit <http://www.biosciencesafrica.org/news.htm> to read the press release.

TROPICAL CROP BIOTECHNOLOGY CONFERENCE ANNOUNCED

The Tropical Crop Biotechnology Conference 2006 will be held in Cairns, Australia on August 16-19, 2006. The conference will cover the following fields: the potential for crops as biofactories in the production of industrial biomaterials, renewable energy, functional foods and pharmaceuticals; and the molecular breeding of improved crops through the application of genomics science in plant improvement, including the development of stress-tolerant staple food crops with enhanced nutritional value.

Visit <http://www.tcbc2006.com.au> for more information.

BIOTECH CONGRESS TO BE HELD IN TUNISIA

The "1st Mediterranean Congress on Biotechnology" will take place in Hammamet, Tunisia on March 25-29, 2006. Aside from oral and poster presentations, at least 4 plenary lectures and 16 symposium lectures starting Congress sessions will be given by well-known speakers covering all aspects of Biotechnology and Industries, Biotechnology and Environment, Biotechnology and Health, and Biotechnology and Agriculture.

Please visit <http://www.fmcb.africa-web.org/>, or contact Professor Samir Bejar, Centre de Biotechnologie de Sfax at samir.bejar@cbs.rnrt.tn.

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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