**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)

---

**November 18, 2005**

**News**



**Research**



**Announcements**

**Document Reminders**

---

**NEWS**

---

## FARMERS CONSULTED ON INDIA'S DRAFT BIOTECH POLICY

A consultation with the National Commission on Farmers (NCF) was recently held in India, and was organized to assess farmers' perspectives for developing a national policy on this frontier technology, which may help improve food, livelihood and economic security of the Indian farmer. Under the chairmanship of Prof M.S. Swaminathan, the meeting also yielded a draft biotechnology policy.

Among others, the consultation resulted in the following: Biotechnologies can offer new hope for increased productivity, sustainability and profitability if the research priorities are right;  science-based pre- and post-release testing and monitoring systems should be followed when biosafety issues are concerned; biotechnology awareness and genetic literacy should be enhanced; unofficial

release of transgenics must be prevented; Bt cotton hybrids and non-hybrid Bt cotton varieties should be released in order to reduce seed prices and encourage competition in the market; and drought and other abiotic stresses, tolerance to saline conditions, nutritional enrichment for crops are priority areas for biotech applications in Indian agriculture.

Read more at **http://krishakayog.gov.in/biotech.pdf**

## ARS PROGRESSES ON ANTI-APHID SOY

The soybean aphid is a widespread pest of the crop, and, in high levels of infestation, can stunt soybean growth, disfigure leaves, and cause plants to die. Growers have hitherto fought the pest with insecticides, which add as much as $25 per acre to production costs.

Scientists from the Agricultural Research Service of the United States Department of Agriculture (ARS-USDA) have made considerable progress in finding a way to combat the pest. A team led by plant pathologist Glen Hartman and University of Illinois (UI) collaborators at Urbana have found that a single gene, called Rag1, can confer resistance to soybean aphid.

Researchers found the gene by screening 800 commercial cultivars and 3,000 germplasm accessions. They have already published their findings in the March 2005 issue of Crop Science, and since then have mapped the gene and its location on the resistant cultivar's genome. They have also identified marker regions, and devised technology to detect such markers, so that breeders may immediately identify resistant plants.

With current progress, high yielding cultivars expressing Rag1 may be available by 2008.

Read the complete article at:
**http://crop.scijournals.org/cgi/content/full/45/2/639?maxtoshow=&HITS=10&hits=10&RESULTFORMAT=&author1=Hartman&andorexacttitle=and&andorexacttitleabs=and&andorexactfulltext=and&searchid=1131594020854_4380&stored_search=&FIRSTINDEX=0&sortspec=relevance&journalcode=cropsci.** Access the press release at
**http://www.ars.usda.gov/is/AR/archive/nov05/soy1105.htm**

## COMEPRA RELEASES VIEWS ON GM

Recognize the potential, but be cautious all the same. This is the view that France's Ethics and Safety Committee for Agricultural Research Applications, or COMEPRA (Comité d' Ethique et de Précaution pour les applications de la

Recherche Agronomique), advocates with regard to products of or derived from genetically modified organisms (GMO).

COMEPRA released a document on its views, dividing concerns and effects of GMOs into two general categories. The first looks at material effects, including the impact of GM crops on the environment, and on the societal, economic and political organization of human communities. The second includes non-material effects, such as worldviews, the concept of living things, and the metaphysical, epistemological, and ethical principles surrounding the use of GMOs.

Among others, the report concludes that the risks, issues, and even techniques used to make GMOs cannot be simplified or thought to be "merely [emulating] nature." COMEPRA recommends that "a trade-off has to be worked out, and this should not result solely from the balance of political and economic forces in action at the time but should mobilize public authorities to organize the coexistence of the various production methods."

As advisory board of the National Institute for Agricultural Research (INRA), COMEPRA also recommends that the institute should guarantee the relevance of any field trials it may wish to conduct.

Download the complete document at
**http://www.inra.fr/english/COMEPRA_OGM_Dave_lindsay231-2.pdf**

## ROOTWORM ROUTE TO EUROPE UNDER STUDY

The Western Corn Rootworm, once native to the United States, has already spread throughout Europe since an accidental introduction in 1992. The pest itself, which feeds on the crop's root hairs or primary roots, depending on the larval stage, causes billions of dollars of losses annually.

How the pest was able to escape into Europe has been a matter of speculation. Lately, however, the United States Department of Agriculture's Agricultural Research Service (USDA-ARS) has found that the spread of the pest throughout the European continent was achieved through at least three independent transatlantic introductions. The research team, headed by Thomas Guillemaud and Nicholas Miller at Institut National de la Recherche Agronomique (INRA) in Sophia Antipolis, France, also suggests that such crossings of the pest may be occurring more often than previously thought.

Read more at **http://www.ars.usda.gov/is/pr/2005/051110.2.htm**

## COTTON IMPROVEMENT PROGRAM FOR WEST AFRICA LAUNCHED

According to U.S. Secretary of Agriculture Mike Johanns and U.S. Trade Representative Rob Portman, USAID is allocating US$7 million (with US$5 million in fresh funding) as part of a new West Africa Cotton Improvement Program (WACIP) aimed at the cotton sectors of Benin, Burkina Faso, Chad, Mali, and Senegal.

According to Johanns and Portman, the National Cotton Council (NCC) will be a key WACIP partner, and will provide assistance to Africa during the cotton harvest. For its part, WACIP will focus on reducing soil degradation and expanding the use of good agricultural practices; strengthening private agricultural organizations; establishing a West African regional training program for cotton ginners; improving the quality of C-4 cotton through better classification of seed cotton and lint; improving linkages between U.S. and West African agricultural research organizations involved with cotton; improving the enabling environment for agricultural biotechnology; and policy/institutional reform.

Read the press release at
**http://www.ustr.gov/Document_Library/Press_Releases/2005/November/US_Announces_Launch_of_West_Africa_Cotton_Improvement_Program.html.**

## POLL SHOWS MIXED RESULTS ON GM

A recently concluded poll, conducted by the Pew Initiative on Food and Biotechnology, revealed, among others, that Americans' knowledge of genetically modified (GM) foods and animals continues to remain low.

The poll shows that consumers do not support banning new uses of GM technology, but rather seek an active role from regulators to ensure that new products are safe. Other results include: Overall awareness of GM foods and biotechnology is up slightly, but overall attitudes are unchanged, with only 41% of consumers saying they have heard about GM food that is sold in grocery stores; when asked about GM animals, 63% of respondents believe government agencies should include moral and ethical considerations when making regulatory decisions about cloning and genetically modifying animals.

The nationwide survey consisted of telephone interviews of 1,000 American consumers. View a summary of the findings from the survey, as well as the statistical results at **http://pewagbiotech.org/research/2005update/.**

---
## RESEARCH
---

### BETTER SAFFLOWER MOVES TO THE FIELD

Arcadia Biosciences, of the United States, has recently announced that they have engineered safflower plants to contain more than 35% gamma linolenic acid (GLA) oil. The company is now in the process of validating the transgenic safflower in the field, and may broadly commercialize the crop in 2008.

GLA is an omega-6 fatty acid, and has been shown in recent literature to have significant anti-inflammatory effects. GLA can act as a supplement for those affected with atopic eczema, dermatitis, diabetic neuropathy, breast pain, infant nutrition, premenstrual syndrome symptoms, rheumatoid arthritis, high blood pressure, skin health, and general inflammation.

"By developing safflower plants that produce seeds that contain high levels of GLA," says Eric Rey, president of Arcadia, "We can make the health-promoting benefits of the omega-6 fatty acid more available to the people who need them."

Read the company's press release at
**http://www.arcadiabio.com/media/press_05.11.14%20GLA.pdf**

### PAPER LOOKS AT POTATO LATE BLIGHT CONTROL

W.W. Kirk of Michigan State University and colleagues, take a look at another angle of pest control for potatoes as they conduct "Evaluation of potato late blight management utilizing host plant resistance and reduced rates and frequencies of fungicide applications." Their paper is published in the latest issue of Crop Protection.

In their experiments, researchers evaluated the efficacy of combining host resistance with reduced rates and frequencies of the residual contact fungicide fluazinam to control foliar potato late blight. By varying levels of fungicide applications, as well as the duration of the applications, they found that applications made at 7-10 day intervals, combined with the use of potato less susceptible to late blight, were sufficient in providing acceptable levels of control of the pest.

Researchers say that such a technique can provide a cheaper way of controlling late blight in the crop.

Subscribers to Crop Protection can read the complete article at
**http://dx.doi.org/10.1016/j.cropro.2004.12.016**

## RESEARCH MAPS MAIZE GENE DIVERSITY

Maize was domesticated from the teosinte grass through a single domestication event which may be traced to southern Mexico. This occurred between 6000 to 9000 years ago, and resulted in the original landraces which were then spread throughout the Americas by Native Americans and adapted to a wide range of environmental conditions. But what gene, or genes were responsible for the improvement and domestication of maize?

Masanori Yamasaki of the University of Missouri, and colleagues, find their answer as they report that “A Large-Scale Screen for Artificial Selection in Maize Identifies Candidate Agronomic Loci for Domestication and Crop Improvement.” Their work appears in the latest issue of Plant Cell.

By sequencing 1095 maize genes from a sample of 14 inbred lines, researchers chose 35 genes with zero sequence diversity as potential targets of selection. These 35 genes were then sequenced in a sample of diverse maize landraces and teosintes and tested for selection. Using two statistical tests, researchers identified eight candidate genes, with three domestication candidates (designated as AY108876, AY105060, and AY106371) and three improvement candidates (AY107195, AY110109, and AY108178). The eight genes, the researchers report, “have functions consistent with agronomic selection for nutritional quality, maturity, and productivity.”

Subscribers to Plant Cell can read the complete article at **http://www.plantcell.org/cgi/content/full/17/11/2859.**

## NUMBER OF GM LITERATURE TALLIED

Philip Vain documents “Published Literature on Plant Transgenic Science: Pace and Geographic Distribution” in the latest issue of Nature Biotechnology. In his article, he tracks the number of plant transgenics related articles collected from the ISI Web of Science and CAB Abstracts published between 1973 and 2003. Vain found a total of 30,624 articles, with 4,545 focusing on the development of plant transgenic technology; 21,843 focusing on the applications of these technologies; and 4,236 concerned with the development of GM crops. He also found that the number of published articles on the development of genetically modified (GM) crops and the application of plant transgenic technology has increased annually, but not significantly since 1995.

Geographic analysis of the data shows that historically, North America and Western Europe jointly led research on plant transgenic science. In the last ten

years, however, Vain found there has been a sustained expansion of scientific literature in North America, a dramatic increase in Asia, and recently, a slow-down in the rest of the world, including Western Europe.

Read more at **http://www.nature.com/nbt/journal/v23/n11/full/nbt1105-1348.html.** You may also visit http://www.esi-topics.com/gmc/ for additional information.

---

## ANNOUNCEMENTS

---

### ICGEB TO HOLD WORKSHOP

A workshop entitled "Introduction to biosafety and risk assessment for the environmental release of genetically modified organisms (GMOs): Theoretical approach and scientific background," will take place March 6-10, 2006 in Treviso, Italy. The workshop is being organized by the International Center for Genetic Engineering and Biotechnology (ICGEB) in collaboration with the Instituto Agronomico per l'Oltremare. The closing date for applications is November 30. More information is available online at **http://www.icgeb.org/MEETINGS/CRS06/6_10marzo.pdf**

### CONFERENCE ON SCIENCE CENTRES, MUSEUMS SLATED

The Center for Science and Technology of the Non-Aligned and Other Developing Countries (NAM S&T Centre) announces the organization of an African Regional Conference on “Enhanced Role Of Science Centres and Museums In Developmental Strategies” during 10 - 14 January, 2006 in Lusaka, Zambia. The Center invites nominations for participation in the same from the member countries of the NAM S&T Center, and other developing countries. Request for participation may please be sent to the NAM S&T Centre at namstct@vsnl.com and apknam@gmail.com before December 15, 2005 by completing the Nomination Form available at **http://www.namstct.org.**

### BARCELONA HOSTS BIOTECH, FINANCE FORUM

A Biotech and Finance Forum will be held on the 1st of December 2005, in Barcelona, Spain. The Forum will present about 50 European fast-growing (venture-backed) biotech and Life Sciences companies seeking for market visibility, partnership opportunities, or capital to an audience of international venture capital investors, key corporate contacts, and senior advisors. For more information on both events please visit **www.e-unlimited.com** or contact Anneli Prohaska, Europe Unlimited at anneli@e-unlimited.com.

---
**DOCUMENT REMINDERS**
---

## IFPRI RELEASES ECON BOOK

The International Food Policy Research Institute (IFPRI) has recently released Economic Reforms and Food Security: The Impact of Trade and Technology in South Asia, a book edited by Suresh Chandra Babu and Ashok Gulati. The book is available for purchase at **http://www.ifpri.org/pubs/otherpubs/econreforms.asp.** The 21st chapter, Converting Policy Research into Policy Decisions: the Role of Communication and the Media, is also available as a free download at the same site.

## CBD ARTICLE AVAILABLE

“Implementing the Cartagena Biosafety Protocol through national biosafety regulatory systems: an analysis of key unresolved issues,” an article by Gregory Jaffe of the Center for Science in the Public Interest, is available to all subscribers of the Journal of Public Affairs. The article assesses the success of the Cartagena Protocol and concludes that while the Protocol is a good model for certain portions of a national biosafety regulatory system, it provides little guidance on several issues key to biosafety regulation. Read more at **http://www3.interscience.wiley.com/cgi-bin/abstract/112137064/ABSTRACT**.

---
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: SUBSCRIBE Crop Biotech Network

To stop receiving this newsletter, please send an e-mail message to knowledge.center@isaaa.org and write, "unsubscribe newsletter" in the subject box.

Please visit CropBiotech Net web pages (**http://www.isaaa.org/kc)** to view previous issues of this newsletter and see other available resources for download.

While we are still developing this site, feel free to e-mail (knowledge.center@isaaa.org) us for your views and comments on any crop biotechnology product and related issues.
---