

CROPBIOTECH 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)

December 15, 2006

In This Week's Issue:

NEWS

Global

- National Level Alliances Against Hunger Increasing, Says FAO
- Cereal Prices Highest in Decade

Africa

- Engineering Wilt-Resistant Bananas for Africa
- New Maize Varieties for Kenyan Farmers
- Striga-Resistant Maize for Commercial Release in Kenya
- A Research Network for Sustainable Cocoa Production in Africa

The Americas

- Argentina Bets on Biotechnology
- Brazil to Include GMO Risk Assessment in Formal University Training
- Harvesting Corn and Stover in a Single Pass
- Hairy Nightshade Reveals Darker Side

Asia and the Pacific

- Philippines: Impact of Bt Maize Adoption
- DBT Funds Genomics Center of Excellence in India
- New Hybrid Rice for Malaysia
- Hybrid Research Center in Indonesia
- Central Asian Seed Association Established
- CSIRO Identifies Markers for Wheat Rust Resistance
- New Zealand to Review GM Import Standards
- Thailand: Imports of GM Crops on the Rise
- Bioactive Compounds from Agricultural and Food Processing Streams

Europe

- Study Shows Growing Acceptance of Green Biotech in Switzerland
- Glyphosate-Tolerant Sugar Beet Considered Safe by EFSA

RESEARCH

- Control of Pseudomonas-caused Diseases in Fruit Trees Reviewed
- Gene Flow from GM to Conventional Maize in Real Situations of Coexistence

ANNOUNCEMENTS

NEWS

*** GLOBAL ***

NATIONAL LEVEL ALLIANCES AGAINST HUNGER INCREASING, SAYS FAO

The Food and Agriculture Organization (FAO) reports an increasing number of national groups that are joining the International Alliance Against Hunger (IAAH), a voluntary association of local, national and international organizations that are working together to solve problems related to food security.

“With 49 national-level alliances currently operating under the IAAH aegis and many more countries expressing interest in joining the movement, momentum is clearly increasing to involve more people from more walks of life,” says Hervé Lejeune, FAO Assistant Director-General for World Food Summit Follow-up.

The international alliance was established by FAO in 2003. FAO provides examples of activities that have been made by countries such as Brazil’s Zero Hunger Strategy, Nicaragua’s support to family and school gardens, and Ghana’s school feeding program.

Read more on these activities at <http://www.fao.org/newsroom/en/news/2006/1000451/index.html>

CEREAL PRICES HIGHEST IN DECADE

Prices of cereal grains such as wheat and maize have surged to highest levels not seen in the last decade, says the Food Outlook report from the Food and Agriculture Organization (FAO). This is attributed to poor harvests in major grain producing countries and an increasing demand for biofuel production.

Production of coarse grains in 2006 currently stands at 981 million tons, a decrease of 2.1 percent from 2005 figures. World wheat production went down by 5.3 per cent of 2005 figures. No growth was registered by rice production which was affected by natural calamities worldwide.

FAO predicts that higher prices will probably encourage more plantings in 2007. However, with grains being used for industrial purposes such as ethanol, prices may continue to remain high.

More news from FAO at <http://www.fao.org/newsroom/en/news/2006/1000459/index.html>

*** AFRICA ***

ENGINEERING WILT-RESISTANT BANANAS FOR AFRICA

Millions of farmers in East Africa are dependent on banana for their livelihood. Unfortunately, bananas in the region are susceptible to the banana xanthomonas wilt (BXW) disease, which attacks all banana varieties resulting in absolute crop loss. Measures for managing BXW are already in place, but only a small percentage of the farmers are aware of these practices. Thus scientists from the International Institute of Tropical Agriculture (IITA) are spearheading the

development of wilt-resistant bananas to counter the spread of the disease. IITA will be working with Uganda's National Agricultural Research Organization, the Kenya-based African Agricultural Technology Foundation, and Academia Sinica in Taiwan in this project.

One approach being explored is to transform farmer-preferred banana cultivars by introducing a resistance gene from sweet pepper. Priority has been given to the major farmer-preferred banana varieties, including Kayinja. The improved varieties will be tested rigorously for efficacy against BXW and for environmental and food safety in compliance with regulations of each of the countries where such bananas could be grown and consumed.

Read the complete news article at

http://www.iita.org/cms/details/news_details.aspx?articleid=580&zoneid=81.

NEW MAIZE VARIETIES FOR KENYAN FARMERS

To improve the livelihood of African farmers, scientists based at Kenya Agricultural Research Institute (KARI) and working within the Maize Breeders Network (MBNET) have been developing new maize varieties for commercialization. During a recently convened National Performance Trial Committee meeting in Nairobi, Kenya, ten improved maize varieties bred by KARI were recommended for pre-release or full release. The varieties produce higher yields than those currently grown by farmers, are also tolerant to drought and resistant to maize streak virus disease, stem borer damage, and leaf blight and gray leaf spot.

Read the news article at <http://www.africancrops.net/news/dec06/ininda.htm>.

STRIGA-RESISTANT MAIZE FOR COMMERCIAL RELEASE IN KENYA

Following extensive tests and farm trials, Striga-resistant maize, known in Kenya as Ua Kayongo, is now made available to small-scale farmers. The Partnership to Control Striga in Kenya has organized an event in Kisumu City, Kenya on 13-15 December 2006 to facilitate the commercial release of Ua Kayongo maize. The Partnership is led by Agricultural Technology Foundation, BASF, International Maize and Wheat Improvement Center (CIMMYT), and Forum for Organic Resource Management and Agricultural Technologies (FORMAT) in collaboration with a network of non-government organizations, seed companies, Kenya Agricultural Research Institute (KARI) and farmer associations in Kenya.

The new herbicide-resistant maize hybrid and seed coated herbicide technology is based upon inherited resistance of maize to a systemic herbicide (imazapyr), a mechanism widely recognized as imazapyr-resistance (I-R). When I-R maize seed is coated with the herbicide, Striga attempting to parasitize the resulting plant are destroyed. Imazapyr is marketed to Kenyan seed companies producing I-R Ua Kayongo maize (mixed vernacular for Striga killer) under the trade name Strigaway.

Readers can access the full article at <http://africancrops.net/news/dec06/index.htm>. Inquiries can be directed to Canon Savala (FORMAT), email: format@wananchi.com, Nancy Muchiri (AATF), email: n.muchiri@aاتف-africa.org and Fred Kanampiu (CIMMYT), email: f.kanampiu@cgiar.org.

A RESEARCH NETWORK FOR SUSTAINABLE COCOA PRODUCTION IN AFRICA

Cocoa farming is central to West Africa: Ghana and the Ivory Coast alone provide nearly 60% of the total world production, and a large proportion of the rural population depends on this crop for their living (6 million people in Ghana alone). However, cocoa farming in the region is facing a difficult time, as soil nutrients are depleted from older plantations due to shortages of fertilizers, and as the pressure of plant pests and parasites increase. These difficulties are pushing farmers to turn to forests in search of more productive land, a practice that will have serious economic, environmental and social implications

How can the sustainable production and exportation of this important crop be promoted? To this aim, CIRAD, a French agricultural research centre working for international development, has established an African Research Network, which falls under the auspices of the Cocoa Producers Alliance (COPAL) and the West and Central African Council for Agricultural Research and Development (CORAF/WE CARD). The network comprises 35 researchers from 32 research and development organizations in the leading five cocoa-producing countries in Africa: Ivory Coast, Ghana, Togo, Nigeria and Cameroon.

Read the full news at <http://www.cirad.fr/en/actualite/communiqué.php?id=589>

*** AMERICA ***

ARGENTINA BETS ON BIOTECHNOLOGY

How is biotechnology shaping Argentina's productive economy? An interdisciplinary team of researchers, with the support of the Secretariat for Science and Technology of Argentina, and the National University of de General Sarmiento (UNGS), set out to answer this question. The researchers reviewed 84 national biotech companies to determine gains in terms of sales, foreign trade and employment, and to review the innovations adopted. The companies fall in three main categories: agricultural production (54 companies), which include the development of improved new seed varieties; health; and food processing.

The study shows that Argentina occupies number 8 in the list of economies investing in biotechnology, where the USA takes the lead with 1159 biotech companies, followed by Canada with 389. The majority (80%) of the Argentinean companies are small to medium businesses with one or two biotech products, supported by national investments. Between 2003 and 2004, the biotech private sector invoiced 950 million Argentinean pesos (about US\$ 310 million), and gave employment to 5000 people, 11% of which involved in R&D. "This is very significant in terms of national investment in the area, especially taking into account the nation's economic turmoil in recent years", said Roberto Bisang, UNGS economist. "Biotechnology can be defined as the industry of industries, as it is able to substantially promote several productive sectors of the economy", added Bisang.

More information (in Spanish) available at http://www.porquebiotecnologia.com.ar/doc/reportes/result_indiv.asp?id=3280

BRAZIL TO INCLUDE GMO RISK ASSESSMENT IN FORMAL UNIVERSITY TRAINING

Brazilian graduate entomology students are receiving for the first time formal training in the evaluation of risks to Brazilian biodiversity derived from the introduction of genetically modified organisms (GMOs). The 5-day course was conducted by specialists from the following institutions: the Brazilian Agricultural Research Corporation (EMBRAPA) Genetic Resources and Biotechnology; EMBRAPA Maize and Sorghum; EMBRAPA Environment; and the Federal University of Viçosa (UFV). These specialists are member of GMO-ERA, an international project aimed at perfecting existing methodologies and at developing new tools for the analysis of environmental risks of introducing GMOs. GMO-ERA is an initiative funded by the Swiss Agency for Development composed of 260 scientists working in public institutions, more than 70% of which represent developing countries.

"We aim to adapt and integrate the tools developed by the GMO-ERA into the program of formal courses in Brazil," said Eliana Fontes from EMBRAPA. Ultimately, the courses will be extended to other disciplines, such as agronomy and biology.

Read the full news (in Portuguese) at: <http://www.cenargen.embrapa.br/cenargenda/destaq3.html>

HARVESTING CORN AND STOVER IN A SINGLE PASS

Iowa State University researchers are testing a combine that can harvest grain and cut the remaining stover (stalks, cobs and leaves) in a single pass in the field. The prototype harvester works by dumping a crop of corn kernels into the combine's hopper and blowing the stalks, cobs and leaves into a trailing wagon. For farmers, they will only need the stover attachment which they can use on a standard combine.

Corn stover was identified to be an additional source of biomass. Cellulose from stover can be converted into ethanol and thus could feed the next generation of ethanol plants. Stuart Birrell of Iowa State University said that the supply of stover from the field will help the U.S. bioeconomy by providing supply to biorefineries.

The complete press release is at <http://www.iastate.edu/~nscentral/news/2006/dec/stover.shtml>

HAIRY NIGHTSHADE REVEALS DARKER SIDE

Scientists with the Agricultural Research Service (ARS) in Orono, Maine, discovered that the microorganism behind late blight disease is seeking refuge in potato fields, burrowed up in an alternate host plant: hairy nightshade. As a result of this ARS research, growers are now learning the importance of controlling hairy nightshade as part of their overall late blight management program.

The full story is available at <http://www.ars.usda.gov/News/docs.htm?docid=1261>.

*** ASIA AND THE PACIFIC ***

PHILIPPINES: IMPACT OF BT MAIZE ADOPTION

This publication describes a descriptive socio-economic study in order to determine the economic impact of the Bt corn variety in the Philippines. Results in all study locations showed a significant welfare effect of using Bt corn variety among corn farmers. Educational level and farm income were among the significant factors that influenced the adoption of Bt corn.

The study, carried out in selected Bt corn and non-Bt corn farms in two cropping seasons, was supported by the International Service for the Acquisition of Agri-biotech Applications (ISAAA) and done by independent economists from the College of Economics and Management, University of the Philippines, Los Baños.

To read the article “Economic Impact of Bt Corn in the Philippines” visit <http://www.isaaa.org/kc/Publications/pdfs/documents/Economic%20Impact%20of%20Bt%20Corn%20in%20the%20Philippines.pdf>

DBT FUNDS GENOMICS CENTER OF EXCELLENCE IN INDIA

A Center of Excellence in Genomics has been established at the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) in Patancheru, India through funding from India's Department of Biotechnology (DPT). A Memorandum of Agreement which was signed by Dr. William Dar, Director General of ICRISAT, and Dr. MK Bhan, Secretary of DPT, stipulates that the crop improvement research facility will be operational by 2007.

The existing molecular breeding facilities at ICRISAT will be strengthened through this project and will also be made available for other researchers from other agricultural research institutes. In addition to upgraded facilities, the Center will also build capacity of scientists.

Additional details may be obtained by emailing David Hoisington, ICRISAT's Global Theme Leader on Biotechnology, at d.hoisington@cgiar.org.

NEW HYBRID RICE FOR MALAYSIA

A new hybrid rice, “Siraj” , that is capable of producing four times more yield than normal varieties has been developed by RB Biotech Sdn Bhd in Malaysia. This hybrid is a cross-breed between Indian Basmati and a Japanese rice variety using technology from China.

RB Biotech Director Tan Sri Chua Hock Chin said the Center was expected to start producing seedlings of the hybrid by March next year. He also added that the final objective was to supply high quality hybrid rice seedlings for at least 60 percent of the rice fields in the country.

For more information, contact Mahaletchumy Arujanan, program director, Malaysian Biotechnology Information Centre (MABIC) at maha@bic.org or visit their website at <http://www.bic.org.my>.

HYBRID RESEARCH CENTER IN INDONESIA

In the next six months, Indonesia will collaborate with China in setting up a Rice Hybrid Research Center. Indonesian Minister of Agriculture, Anton Apriyantono, made this announcement during the signing of a Memorandum of Agreement between Guo Hao Seed Industry, China with PT Sumber Alam Sutera, and Indonesian Institute for Rice Research (BALITPA).

According to Anton, various research studies in Indonesia showed that yields of hybrid rice was 10 to 20% more than the most popular varieties, such as IR 64, Ciherang and Way Apo Buru. He believes that in the next three years, Indonesian rice production will increase to 2 million tons per year.

To see the full article visit <http://www.litbang.deptan.go.id/berita/one/390/> or email Elfa Hermawan at l4hermawan@yahoo.com for more information.

CENTRAL ASIAN SEED ASSOCIATION ESTABLISHED

Bishkek, Kyrgyzstan is the site of the newly established Central Asian Seed Association (CASA) which seeks to harmonize seed regulations, facilitate seed trade, and forge interfaces with national seed associations of the region. Initial members include the Republic of Tajikistan and Kyrgyzstan.

CASA was established through the support of the Swedish International Development Cooperation Agency and the Svalöf-Scanagri consortium which provides technical assistance.

Visit CASA's website at <http://www.centralasiaseed.com>.

CSIRO IDENTIFIES MARKERS FOR WHEAT RUST RESISTANCE

Australia's CSIRO Plant Industry researchers have discovered a DNA marker for two important rust resistance genes in wheat, Lr34 and Yr18. These two genes are often inherited together and provide wheat plants with improved protection against leaf rust and stripe rust – two major diseases of wheat in Australia and worldwide.

CSIRO scientist Evans Lagudah said that the DNA marker is 99 percent effective in determining the presence of Lr34 and Yr18 in different wheat from Australia, India, China, and North America. The markers are now being used in Australia and worldwide.

The complete press release is at <http://www.csiro.au/csiro/content/standard/ps2kc.html>. CSIRO's information sheet detailing the discovery can also be accessed at <http://www.csiro.au/files/files/pbb8.pdf>.

NEW ZEALAND TO REVIEW GM IMPORT STANDARDS

New Zealand's Ministry of Agriculture and Forestry (MAF) has commissioned this week an independent enquiry into the circumstances surrounding the importation of sweet corn seeds containing low levels of genetically modified materials. The enquiry is intended to assist MAF to strengthen its processes and procedures and prevent future incidences. MAF's objective is to ensure that the country's GM-free status is maintained.

MAF tracked where all the corn seeds that was inadvertently cleared by its Quarantine Service went and where they were planted. After testing, MAF announced last week that it has cleared the country's Mid-Canterbury and Hawkes Bay region for absence of genetically modified materials. These regions have Krispy King and GH2042 sweet corn varieties. However, seed tests for the Jubilee Plus/Dominion consignments planted in the Gisborne and Hawkes Bay regions have produced positive results and the crops there will be destroyed.

Consecutive news releases on the topic can be found at <http://www.maf.govt.nz/mafnet/press/#Issues%20in%20the%20News>

THAILAND: IMPORTS OF GM CROPS ON THE RISE

Vithet Srinet, from the Office of Policy and Planning, Ministry of Natural Resources and Environment of Thailand has indicated that the import of genetically modified (GM) agricultural products to the country, such as corn and soybean, is on the rise. Soybean import went up from 418,788 ton in 1996 to 1,435,801 ton in 2004. In 2007 Thailand is predicted to import 1.7 million ton worth 12,000 million Baht (US\$340.7 million), and 85% of these imports will be GM. Imported soybeans are mainly used for oil extraction and for animal feeds, and a small amount is used in the food industry to produce bean curd and soybean sauce.

Mr. Setasan Setakarun, President of Soybean Oil Producer Association, has asked the government to review the Thai GMO policy, indicating that there are several markets open for biotech products, and that GM and organic markets can coexist.

For more information, contact the Biotechnology and Biosafety Information Centre of Thailand at safetybio@yahoo.com.

BIOACTIVE COMPOUNDS FROM AGRICULTURAL AND FOOD PROCESSING STREAMS

The Concentration and Separation of Bioactives in Food Science Research Cluster, a Flagship Collaboration Fund Cluster involving CSIRO's Food Futures Flagship, Monash University and the University of Melbourne was launched recently to transform products from agricultural and food processing streams into health-enhancing ingredients for use in a variety of foods and nutraceuticals. "Grape skins and seeds, olive leaves, cartilage and cow hides are commonly thrown away by the food industry, but some of these materials are known to contain compounds with valuable bioactive properties," says Food Futures Flagship Director, Dr Bruce Lee.

Over the next three years the Cluster will develop environmentally acceptable techniques to extract these materials in the laboratory.

The news article can be read at <http://www.csiro.au/csiro/content/standard/ps2l3.html>.

*** EUROPE ***

STUDY SHOWS GROWING ACCEPTANCE OF GREEN BIOTECH IN SWITZERLAND

A study conducted between 2000 and 2006 by DemoSCOPE, a polling institute based in Adligenswil, Switzerland, confirmed that resistance to the application of gene technology in

agriculture is steadily and slowly declining in Switzerland. With a representative selection of 2,008 interviewees from German- and French- speaking regions, the 2006 poll showed that 45 percent were against the use of gene technology in agriculture, 31 percent advocated it, while 24 percent were still undecided. The number of respondents expressing negative attitude towards gene technology has decreased from 58 percent in 2000.

The most important differences in the single population groups concerned the French-speaking region in which opponent (31%) and advocate (33%) were almost equally strong. Generally, greater acceptance of gene technology in agriculture was notable among interviewees under the age of 30. The statistical reduction of resistance towards agricultural applications may be attributed to better information: through increasing global experience with green gene technology, individuals originally identifying themselves as opponents have become more broadly informed. However, the increase in undecided individuals may point to the need for further public information.

For the news article, visit <http://www.gmo-compass.org/eng/news/messages/200612.docu.html#79>. A summary of the DemoSCOPE study is available in German at http://www.demoscope.ch/pages/index.cfm?Artikel_ID=2222.

GLYPHOSATE-TOLERANT SUGAR BEET CONSIDERED SAFE BY EFSA

The European Food Safety Authority has assessed the sugar beet H7-1 with reference to its intended use and the risk assessment principles described in the Guidance document of the Scientific Panel on Genetically Modified Organisms for the Risk Assessment of Genetically Modified Plants and Derived Food and Feed. The GMO Panel concluded that sugar beet H7-1 is equivalent to non genetically modified sugar beet, except for the trait that has been introduced. Products produced from sugar beet H7-1 are also considered safe to human and animal health or the environment in the context of its intended uses.

Readers can access the EFSA press release at http://www.efsa.europa.eu/en/science/gmo/gmo_opinions/gmo_op_ej431_sugar_beet_H7-1.html.

RESEARCH

CONTROL OF PSEUDOMONAS-CAUSED DISEASES IN FRUIT TREES REVIEWED

Bacterial canker, blossom blast, and apical necrosis are some of the diseases caused by the *Pseudomonas* bacteria. These pests cause significant damage to fruit trees, severely reducing crop yields or even killing the plants.

In a recent article in the journal *Plant Pathology*, Megan Kennelly and colleagues presented a review of the progress made in controlling these pests. The paper provides an overview of several *Pseudomonas*-caused diseases of fruit trees, discusses the current and emerging understanding of virulence factors such as toxins, phytohormones, and effectors in these diseases, and also presents the current and possible future management strategies.

The authors suggest that comparative genomic analyses and genetic studies are important in adding knowledge that will lead to improving host resistance, and may also lead to the development of transgenic fruit trees. This would be the best approach since current conventional methods cannot adequately control the disease.

The complete review paper is available to subscribers at <http://www.apsnet.org/pd/SubscriberContent/2007/PD-91-0004.pdf>.

GENE FLOW FROM GE TO CONVENTIONAL MAIZE IN REAL SITUATIONS OF COEXISTENCE

The concept of coexistence has been established as 'the principle that farmers should be able to cultivate freely the agricultural crops they choose, be it genetically-engineered (GE) crops, conventional, or organic crops'. The effect of cross-pollination on coexistence is usually evaluated in field trials that were designed by planting a nucleus of maize (GE or a cultivar with a special phenotypic trait) and then studying the occurrence of cross-fertilization in an adjacent field. In most trials, both genotypes had been sown at the same time to increase synchronicity of flowering, in order to detect cross-fertilization in the worst situation that could be found in an area in which GE and non-GE maize coexist. However, could these results be applied to real situations of coexistence?

A recent study was conducted in real situations of coexistence in which GE and non-GE maize fields are sown with different cultivars, with different sowing dates, mixed with other crops, and with different barriers that may influence pollen dissemination. In this study, two crop regions located in Catalunya, Spain were chosen during the 2004 growing season in which irrigated transgenic Bt (resistant to the corn borer attack) and conventional maize fields coexisted with other crops. Five conventional fields in the Tèrmens area and seven in the Foixà area were chosen to detect and quantify the rate of cross-fertilization. In general, the rate of cross-fertilization was higher in borders and decreased towards the center of the field.

Results obtained in this study perfectly match those obtained in field trials specially designed to study pollen mediated gene flow in maize.

The article is available at <http://gophisb.biochem.vt.edu/news/2006/news06.dec.htm#dec0604>.

ANNOUNCEMENTS

ONLINE DISCUSSION ON PESTS AND DISEASES

The African Crops Message and Discussion Board will be holding an online discussion on the control of pests and diseases afflicting African crops. The discussions will be hosted by the Pests and Diseases Forum and everybody is invited to participate. The discussion will run for 6 weeks, and a summary with full acknowledgement of contributors will be prepared and disseminated. Topics selected for the discussion include integrated pest management, crop husbandry and indigenous knowledge, post-harvest crop losses, managing resistance and its development among transgenic crops, technology transfer, biopesticides and effects of intercropping in the spread of pests and diseases.

For more information about the discussion visit www.africancrops.ipbhost.com, or contact the Moderator by email: jmsonga@africaonline.co.ke or the Board Administrator, africancrops@wananchi.com.

DOCUMENT REMINDERS

ONLINE ACCESS TO RESEARCH IN THE ENVIRONMENT

Online Access to Research in the Environment (OARE), an international public-private consortium, enables developing and low income countries to gain free access to more than a thousand scientific journal titles covering a range of discipline including biotechnology, botany, ecology, environmental chemistry, geology, meteorology, and many others.

The portal is available at <http://oare.oaresciences.org/content/en/journals.php>. To view eligible countries please visit <http://www.oaresciences.org/eligibility/en/index.html>.

CANOLA POD

Canadian canola growers can now access the canola POD (Performance On-line Database), developed by the Canola Council of Canada. The canola POD allows farmers to explore canola performance trial results. The information in the database often includes on-site management details obtained by private seed companies.

The performance database is at <http://81.137.139.227/pod3/index.aspx>.

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.

Copyright (c) 2006. CropBiotech Net.