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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In This Issue:

KENYA'S BIOTECHNOLOGY POLICY TO BE TABLED IN PARLIAMENT

The Kenya National Biotechnology Policy will soon be tabled in parliament for debate, leading to its adoption and implementation. This was announced by an Assistant Minister for Education, Science, and Technology, Dr. Kilemi Mwiria, as he officially opened this year's Scientific Revival Day of Africa seminar and exhibition recently held in Nairobi.

Dr. Mwiria, formerly of Kenyatta University in Nairobi, said inadequate funding and lack of a holistic science and technology policy in the country were stifling scientific innovation and invention. He challenged local universities, research institutions, and individual scientists to fight for competitive research grants and partner with local industries to fund their science and technology programs.

In the same seminar, Mr. Vimal Shah, Kenya's leading industrialist, made an appeal to the government to pass biosafety laws. Dr. Margaret Karembu of ISAAA also spoke on the role of agricultural biotechnology in poverty alleviation, using the example of the tissue culture banana in East Africa to illustrate how a research product could move all the way from the lab, to farmers' fields, and to markets. She also called for increased support for biotech education to empower farming communities with adequate knowledge on the technology to make informed decisions.

Scientific Revival Day of Africa was attended by about 100 participants, composed of policy makers, farmers, industrialists, students, scientists, academicians, teachers, local and international research institutions, and journalists, among others. The event was jointly organized by the African Technology Policy Studies Network (ATPS), the ISAAA AfriCenter, the African Academy of Sciences, and the African Center for Technology Studies.

For more information, e-mail Ms. Margaret Karembu at m.karembu@cgiar.org

WARDA RELEASES ANNUAL REPORT

The Africa Rice Center (WARDA) has released its Annual Report, along with its New Strategic Plan spanning the years 2003-2012. With continuing partnership-based research for development, WARDA reports that it will pursue its mission of contributing to poverty alleviation and food security in Africa, through activities aimed at increasing the productivity and profitability of the rice sector. It aims to significantly increase the quality, usefulness, and availability of knowledge and technology within the rice sector in order to support and improve the well-being of Africa's poor.

The four key elements of its work are the (1) pursuit of coherence and excellence in core research areas, (2) adaptation of the network-based model for research collaboration, (3) enhancing the institutional capacity of national agricultural research and extension systems (NARES) and (4) direct engagement with the rice development sector. Its core research programs will also include studies into integrated rice production systems, and rice policy and development.

To read the report and other related documents, visit http://www.warda.org.

PRRI TO PREPARE ACTIVITIES FOR 2005-2006

The Public Research and Regulation Initiative (PRRI) aims to involve the public research sector in international agreements that are relevant to modern biotechnology, such as the Cartagena Protocol on Biosafety, the Convention on Biological Diversity, and the Aarhus Convention.

The PRRI has since been operating in three phases. Its first phase involved raising awareness on involvement in international agreements and negotiations, and was aimed at informing and educating the public research community. The second phase involved the scientists directly participating in the Meetings of the Parties (MOP2) to the Biosafety Protocol and the Aarhus Convention in 2005. The last phase is a multi-year project for structured involvement of the public research sector in relevant international agreements and their national implementation, which will take place 2006 onwards.

More activities are thus set, including participation of the Initiative in March 2006's MOP3, as well as organization of preparatory meetings leading up to the third Meeting of the Parties. A project proposal for the third phase is likewise in the offing.

Detailed information about The Initiative and its activities can be found at http://pubresreg.org.

EC TO PROVIDE AID FOR NIGER, MALI

The European Commission (EC) has recently earmarked 6.6 million euros as humanitarian aid for Niger and Mali. The EC has moved to provide this funding mainly for nutritional support, dividing the funds into 4.6 million euros for Niger, and 2 million euros for Mali. The funds will be managed by the European Commission's humanitarian aid department (ECHO).

Niger and Mali are currently suffering a food crisis due to a destructive cricket infestation in 2004, followed by drought. Both disasters led to a poor harvest, and most families are currently subsisting on a diet made up almost exclusively of wild roots and herbs. Infant mortality and malnutrition rates have likewise increased sharply. The money provided may benefit an estimated 300,000 people in Niger, and 110,000 in Mali.

The Commission also has a longer term development strategy aimed at reducing poverty in Mali and Niger. This entails an allocation of 392.2 million euros for Mali and 332.8 million euros for Niger for the period 2002-2007.

For more information, read the press release at http://europa.eu.int/rapid/pressReleasesAction.do?reference=IP/05/832&format=HTML&aged=0&language=EN&guiLanguage=en.

WORK BEGINS ON BETTER, BIGGER WHEAT

Work has begun on a new wheat variety that will combine the best of East and West – that is, the British and Mexican types, to increase yield and sustainability of agriculture in the United Kingdom (UK). This is being carried out by scientists at UK's University of Nottingham, in cooperation with the International Center for Wheat and Maize Improvement (CIMMYT). Funding support is provided by the Biotechnology and Biological Sciences Research Council (BBSRC).

Central American wheat varieties have bigger and more fertile ears, while the UK varieties have smaller ears, and increased capacity for photosynthesis. Through comparative genetics, developmental biology, and plant physiology, the researchers hope to find what genes allow Mexican wheat to have bigger ears. This will hopefully allow them to produce a new, improved UK variety which will not need extra water or fertilizer.

Read more at http://www.bbsrc.ac.uk, http://www.cimmyt.org, and http://www.nottingham.ac.uk/public-affairs/press-releases/index.phtml?menu=pressreleases&code=BIG-108/05&create_date=05-jul-2005

VIETNAM, US SIGN AGRI MOU

Vietnam's Minister of Agriculture and Rural Development (MARD) Cao Duc Phat and US Agriculture (USDA) Secretary Mike Johanns met during the Minister's recent visit to the US, and signed a memorandum of understanding on cooperation in agriculture and other related fields. Both statesmen likewise agreed to facilitate an active exchange of information, ideas, skills, and techniques between the two countries, while promoting cooperation opportunities in solving agricultural issues of common concern.

Under the memorandum of understanding, the USDA will help MARD conduct scientific research into agricultural technology, and assist in giving MARD access to biotechnology, farm produce processing technology, and other new technologies important to agricultural research.

With reports from http://www.agroviet.gov.vn/loadasp/tn/en/tn-spec-nodate-detail.asp?tn=tn&id=281951 and http://usinfo.state.gov/eap/Archive/2005/Jun/22-679998.html.

CBT NEWS FEATURE: Agricultural Practices of Ancient Civilizations: The Aztecs

Warriors from the White Land
Agricultural Practices of the Aztecs

A tribe of warriors arrived in Mexico, perhaps in the mid-12th century. According to tradition, they traveled from the Northwest – a "white land," or, in their language, Aztlan, from which they derived their name. They were known for the strangest rituals, grounded in their worship of the gods of Nature, some of them as gentle as the breezes of the mountains, others as brutal and exacting as the thunderstorms that swept the plains. The warriors lived on, and established their principal city in Lake Texcoco in the Valley of Mexico, baptizing it as the grand Tenochtitlan – The Stone Rising in the Water.

They were the heirs of the Olmecs, the Mayas, the Mixtecs, and the Toltecs – they became known as the Tenochas, or the Aztecs, a fierce people of thousands of gods, and hundreds of mysteries.

Ever since they discovered agriculture, the Aztecs called themselves "Agricultural Warriors," for only a war could call them away from their beloved land. Of the 365 days in a year, they dedicated 200 to taking care of their crops. The other 165 days were for rest, where each member of the Aztec family worked on a craft. Men usually specialized in pottery and sandal-making; women were skilled in weaving. In the 165 days of household devotions, the Aztecs could allow the land its own period of rest, so that it would continue to bring them its gifts.

That said, the surrounding land of the Valley of Mexico was infertile, and the Aztecs worked continuously on cultivating it and finding ways to increase their agricultural yield. For instance, they built irrigation systems, constructed terraces on nearby hillsides, and enriched the soil with fertilizer. They also developed a hitherto unknown technique for making farmland out of the swampy earth that surrounded their cities. Their chinampas – loosely translated as "floating gardens" – were created by piling soil from the bottom of Lake Texcoco onto weed rafts, sowing this fertile earth with crops, then floating the rafts onto the lake. Once the crops would grow, their roots would reach down to the lake bottom, anchoring the rafts.

Chinamperos worked on the floating gardens, and were in charge of sowing the chinampas, constructing them, and fertilizing them with human manure. A part of Lake Texcoco was saline, however, and the Aztecs constructed a system of dikes, dams, and aqueducts to supply the chinampas with fresh water. According to one Aztec chronicle, if the water flow was too high in one aqueduct, the emperor could sacrifice some high officials by throwing their hearts into it.

The major Aztec crop was corn, and farming revolved around the tilling and care of the maize field, or milpa. Milpas were 2-15 miles from dwellings, and were created by clearing and burning nearby forests. Maize plantings happened in March, where the corn was planted in holes 4-5 inches deep, where beans and squash were put into the same holes so that the growing maize could eventually act as support for the climbing plants, and where no other fertilizer was used except human feces. Upon harvesting the maize, the Aztecs would grind it using a stone and turn it into corn meal. This meal was then used to make tortillas, the principal food of most of the tribe.

The Aztecs also grew beans, peppers, avocadoes, tomatoes, squash, cotton, sweet potato, amaranth (or pigweed), pineapple, and flowers. They planted the spiny-leafed maguey and agave, which were used to produce cord, sacks, and sandals, or substitute for cotton in clothing. Maguey juice was fermented to produce pulque, a ceremonial drink which only old men were allowed to consume.

Of the principal crops of the Aztec, perhaps the most fascinating is chocolate – the Drink of the Gods, which found its way to cacao's Latin name, Theobroma. Chocolate beans were so valuable to the Aztecs that they stood as the principal currency, and were traded for commodities such as quetzal feathers (from a tropical bird native to the country), brightly woven cloth, salt harvested from the lake bed, jaguar skins (for ceremonial garments), cotton, rubber, maize, or slaves.

Another major part of Aztec life was religion, which was promptly based on farming and nature. The Aztecs believed in a natural balance: all living things were dependent upon a delicate equilibrium, and the destiny of all was dependent upon the will of the gods. This special power and control by the gods was especially important to the Aztecs, and their many rites and rituals pay testament to this almost unbelievable obsession with keeping the balance. Numerous temples were constructed, and elaborate offerings were made to avoid catastrophes, oftentimes involving the most precious of all commodities: human life. Human sacrifices were common in the Aztec rites, as were the rituals of intense physical pain.

For instance, the Aztecs believed, the rains would come in April only after an appropriate human sacrifice. Their rain god could be appeased, however, only by

a constant diet of human hearts from prisoners taken in battle. Agricultural warriors that they were, the Aztecs dreaded any long periods of peace.

The Aztecs ruled the land for a few centuries, building their pyramids and their terraces, tilling their soil and weaving their cloths – all until the Old World arrived on the shores of the New, and brought the Gold of the Earth and the Drink of the Gods across the seas. With the arrival came change, but while dust gathered on paintings of vengeful deities demanding blood as payment, and while pyramids crumbled beneath the sands of the plains, the Aztecs left an indelible mark on those who came after. Their language is still spoken, their myths and tales are still told, and their legacy endures.

For more information, visit http://www2.truman.edu/~marc/webpages/nativesp99/aztecs/aztec_template.html .

ANNOUNCEMENTS

ABIC 2006 TO BE HELD IN MELBOURNE

The Agricultural Biotechnology International Conference (ABIC) 2006 will be held from August 6 - 9, 2006, in Melbourne, Australia. Organized in association with AusBiotech, ABIC 2006 aims to bring together leading international researchers in the AgBio sector with industry partners and investors.

With the them “Unlocking the potential of agricultural biotechnology,” ABIC will organize speaker sessions that allow leading international experts to exchange ideas and nurture innovation; provide informative and educational speaker sessions that highlight the benefits of agricultural biotechnology to the non-scientist; hold forums that address key policy and risk management issues, such as commercial trials and regulatory approval for GM products; provide an opportunity for agricultural biotechnology companies and research organizations to meet with industry partners; and bring major investors in the agricultural biotechnology sector together with companies and research organizations seeking funding to develop their innovations.

For more information, visit http://www.abic2006.org/

EUROPABIO SUPPORTS CORDIA, BIOPARTNERING EVENTS

EuropaBio supports two biotechnology-related events to be held this October in London, England. BioPartnering Europe takes place on the 9th-11th, while CORDIA is slated for the 11th-13th. Featured in both events are meetings and discussions between industry and scientists.

EuropaBio members can save up to 600 British Pounds if they register before July 11. For more information, visit http://www.cordiaconvention.com

EC TO HOLD BIOTECH CONFERENCE

The European Commission (EC) will hold a conference in Brussels, Belgium from the 15th-16th of September, 2005 to chart a course towards a modern, knowledge-based bio-economy. The following issues will be discussed: the Lisbon Strategy and the knowledge based bio-economy; plants for the future; industrial biotechnology; knowledge-based agriculture; micro-organisms as untapped genetic resources; food research and competitiveness in the bio-economy; advanced genomics and biotechnology for eco-efficient innovations; converging technologies and disciplines, and new opportunities.

For further information, visit http://europa.eu.int/comm/research//conferences/2005/kbb/index_en.html

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