

## CROP BIOTECH UPDATE

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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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### VIETNAM IDENTIFIES KEY STRATEGIES FOR AGRI DEVELOPMENT

The Ministry of Agriculture and Rural Development (MARD) in Vietnam has identified the application of advanced science and technology to agricultural production as a key task of the agricultural sector for 2004-2005. Other strategies include the development and production of advantageous agricultural exports and import substitutes; development of the processing industry, occupations, services and rural industries; and the development of the processing industry in combination with material zones and mechanized production activities.

In its development plan, MARD indicated its hope to link agricultural production and the processing industry with consumption market to raise the competitiveness of products and to put a premium on education and training, especially on occupational training for farmers.

Vietnam intends to shift paddy-farming land, especially one-crop land with low and unstable yield, into land area for aquaculture and other productive crops. Simultaneously, it is planning to apply intensive cultivation methods to raise productivity of rice and corn and to expand the farming area of new cassava seeds. In 2004, it will strive for a rice yield of 34.5 million tons including 4

million tons for export, a corn yield of 2.8 million tons, and a cassava yield of 5.5 million tons.

More information on Vietnam's agricultural development targets are available online at <http://www.agroviet.gov.vn/en/newsletter/2003/DevelopmentVision2004-2005.asp>

#### INDIAN FARMERS' COMMISSION TO ADDRESS AGBIOTECH

The Indian Government has set up a National Commission on Farmers aimed at building a farmer-friendly framework for biotechnology. The Commission will recommend policies, programs and measures to accelerate and diversify agricultural development. It will likewise address the issues of agricultural technology and input delivery mechanism.

The Commission will review the status of Indian agriculture and assess the conditions of different categories of farmers in various regions. It will identify factors responsible for imbalances and disparities and suggest measures for achieving sustainable and equitable agricultural development.

The Commission is headed by Shri Sompal, a former Union Minister of State for Agriculture. He will hold the rank of a Union Cabinet Minister.

#### GLOBAL FUNDING TO BOOST RESEARCH IN POOR COUNTRIES

The InterAcademy Council, a coalition of 90 scientific academies worldwide, submitted to Kofi Annan, secretary-general, United Nations (UN), a report entitled "Inventing a Better Future: A Strategy for Building Worldwide Capacities in Science and Technology," which calls for the establishment of two funds to boost research efforts in poor countries. Annan, however, stated that his top priority, if the said research funding will materialize, is the application of science and technology in agriculture.

The report recommends that a Global Institutional Fund be established to support the research efforts of 20 national or regional centers over a span of five to ten years. These centers will be selected based on the quality of their science, independence, management caliber, and relevance of their work to the needs of their respective regions. A second Global Program Fund would operate a competitive grant system, with international referees assessing proposed joint projects between laboratories in rich and poor countries.

Further, governments, foundations and existing international organizations are proposed to support these said funds - although the scale of their support is not yet specified.

The full story is available at [http://www.nature.com/cgitaf/DynaPage.taf?file=/nature/journal/v427/n6975/full/427577b\\_fs.html](http://www.nature.com/cgitaf/DynaPage.taf?file=/nature/journal/v427/n6975/full/427577b_fs.html).

## NO HEALTH RISK OF ANTIBIOTIC RESISTANCE GENES IN PLANTS

There are no objective scientific grounds to believe that bacterial antibiotic resistance genes will migrate to bacteria to create new clinical problems. This was the conclusion of the Working Party of the British Society for Antimicrobial Chemotherapy which examined the possibility that genetically modified (GM) plants containing antibiotic resistance (AR) genes could lead to transfer of the genes to bacteria.

In a report published in the Journal of Antimicrobial Chemotherapy, the working party noted that the "theoretical possibility of transfer by novel mechanisms can't be ruled out" but that the risk of transfer of AR genes from GM plants to bacteria is remote, and that the "hazard arising from any such gene transfer is, at worst, slight."

The Journal of Antimicrobial Chemotherapy can be viewed online at <http://www.jac.oupjournals.org>.

## PHILIPPINE NEWSPAPERS GENERALLY POSITIVE TOWARDS BIOTECH

A survey of national daily English newspapers in the Philippines in 2002 and 2003 reveal that journalists are writing about biotechnology, find it important enough to merit space and coverage, and follow developments in the biotechnology arena. Three important milestones on agri-biotechnology were reported extensively in the country. These were the signing of Administrative Order No. 8 in April 2002 on the rules and regulations for the importation and release into the environment of plants and plant produce derived from the use of modern biotechnology; the approval of the first genetically modified crop or Bt corn in the Philippines and in Southeast Asia in December 2002; and the hunger strike against the commercialization of Bt corn in May 2003.

These were highlights of a media monitoring study conducted by the Global Knowledge Center on Crop Biotechnology of the International Service for the Acquisition of Agri-biotech Applications in collaboration with a country network contact. The network contact scanned national papers and sent monthly summaries of all news stories that were featured for the specific time period. The study is a part of a bigger project that will compare the media situation in six other Asian countries.

Nine national English dailies published a total of 446 articles for a 17-month period or a monthly output of 25 articles. The three major newspapers (Manila Bulletin, Philippine Star, and the Philippine Daily Inquirer) accounted for 61% of all articles published. Generally, articles were positive, supportive of government and private sector initiatives, and guided by social/cultural interest. Majority of articles were positive in tone, or those that were in support of biotechnology. Topics on government regulations dominated the articles in agri-biotech due to government approval of guidelines related to the use of genetically modified organisms, and approval of the first GM crop for commercialization.

For more information on this study, email [m.navarro@isaaa.org](mailto:m.navarro@isaaa.org).

## IPR AND AFRICA'S INVISIBLE WEALTH

"Africa must urgently seize (the) opportunity of protecting intellectual property not only in order to protect her own and make her people more innovative and provide solutions to African problems, but also to attract more investment and exchange of goods from other countries." Says James Shikwati, director, Inter Region Economic Network and Africa Resource Bank Coordinator, in his article entitled "Africa: Time to Focus on Invisible Wealth" featured in the AfricaBiotech.com.

According to Shikwati, Intellectual Property Rights or IPR is a useful tool in maintaining the innovation process that is needed to make Africa industrious. States the author, "It's only through Intellectual Property that Africa will move from focusing only on the 'visible wealth' to the invisible. This will not only improve the economies, give more avenues for investment but also reduce conflicts in the continent."

The author added that the challenge facing Africa now is basically how to produce high quality goods and services while, at the same time, addressing problems concerning poverty and unemployment. Shikwati opines that "Africa is seen to participate in IPR as late comers already faced with other priority issues and lacking (the) capacity to enforce IPR regimes."

Download James Shikwati's article at  
<http://www.africabiotech.com/news2/article.php?uid=59>.

## AUSTRALIAN PERCEPTION OF RISK IS CHANGING

Australians are more likely to be concerned about pollution, the greenhouse effect and nuclear waste than the use of gene technology. This is the finding of a four-year study by Biotechnology Australia to track changes in public attitudes towards biotechnology. Biotechnology Australia is a multi-departmental government agency, responsible for coordinating non-regulatory biotechnology issues for the Australian Government.

"The general trend from 1999 to 2001 was an increase in support for many applications of gene technology. From 2001 to 2003 there was an increase in risk perception, but no parallel increase in concern," said Craig Cormick of Biotechnology Australia. He noted that the concept of risk has changed enormously in the last two years fuelled by global insecurities such as September 11 and the Bali bombing.

The major findings of the study showed a continued high support for the use of gene technology in medicine. The public perception of risk from biotechnology pertaining to agriculture was less straightforward, with 56% stating a belief that Australian farmers need access to gene technology to remain internationally competitive. About 45% of the population said they would eat GM foods, which is down from 49% in 2001. Opposition to GM foods is largely based on a perceived lack of benefit for consumers.

View more of Biotechnology Australia at <http://www.biotechnology.gov.au>. Details of the study can be obtained from Millward Brown at <http://www.millwardbrown.com>.

#### BIOTECH FOR WHEAT IMPROVEMENT

The development of wheat, in terms of using new technologies, has been rather slow as compared to other crops such as corn, rice or tomato. This is due to certain characteristics of the crop such as its ploidy level, size and complexity of its genome, its very high percentage of repetitive sequences, and its low level of polymorphism.

For years, scientists have observed that wheat is a difficult species for the application of molecular genetics. The low level of polymorphism between elite wheat varieties and the hexaploid nature of the crop provide challenges for scientists who are attempting to develop molecular markers to be used in genetic studies.

In a paper entitled "The application of biotechnology to wheat improvement" written by David Hoisington of the International Maize and Wheat Improvement Center (CIMMYT) in Mexico, and colleagues, and recently published in the Food and Agriculture Organization's (FAO) Plant Production and Production Series, the said authors stated that studies are currently being conducted to analyze the genetic basis of the different important traits of the wheat crop. Gene isolation, and how to store, process and access the information generated using new marker systems in wheat are the envisioned future challenges for wheat scientists.

The authors added that the challenge that these new innovations present for developing countries is for them to be able to tap as much of this emerging technology as possible. It is imperative that developing countries recognize the importance of the new approaches and ensure that appropriate legislation and regulations are enacted to allow them to acquire, evaluate and deploy new plant varieties produced thru biotechnology.

Read the full paper at <http://www.fao.org/DOCREP/006/Y4011E/y4011e0d.htm#bm13>.

#### GM CORN WITH GREATER FROST TOLERANCE

Iowa State University in the United States reports that they have discovered a way to increase corn's frost resistance by incorporating a tobacco gene that activates the crop's natural defense systems against cold temperatures.

Kan Wang, associate professor of agronomy and director of the Center for Plant Transformation, and colleagues inserted a tobacco gene with an activator protein called NPK1 which sets the corn's defense systems to stabilize and protect cells in times of stress from heat, cold or water loss. "Plants naturally acclimate to environmental stresses, for example when they are gradually introduced to cold temperatures. During the acclimation process, many genes that protect the plants from stress are turned on. The tobacco gene we inserted encodes a protein that mimics the acclimation effect and activates corn's

natural responses to stress faster than through natural acclimation," Wang explained.

More details of this research can be viewed online at <http://www.iastate.edu/%7Enscentral/releases/2004/jan/wang.shtml>

#### NEW INSIGHTS ON PAPAYA EVOLUTION

Scientists led by a team from the U.S. Department of Agriculture's Agricultural Research Service (ARS) report the first direct evidence that papaya sex chromosomes are evolving from other chromosomes. This discovery may help scientists understand inheritance or traits responsible for the size, shape, and quality of the fruit. Papaya trees inherit a specific combination of genes on their sex chromosomes that produce fruit with the desired shape that consumers refer.

Genetic material from more than 2,000 fresh papayas were analyzed. Scientists found a chromosome with a small region of genes for male traits. This comprises only about 10% of the chromosome's length which actually determines sex in papaya.

The full article is available in the journal Nature but a short article from ARS can be viewed at <http://www.ars.usda.gov/news>.

#### ANNOUNCEMENTS:

##### ASIAN CONFERENCE ON BIOTECH

The Second Asian Conference on Biotechnology and Development will be held on April 7 to 8, 2004 in New Delhi, India. Organized by the Confederation of Indian Industry, Research and Information System for the Non-Aligned and Other Developing Countries (RIS), and the Regional Biodiversity Programme-Asia, the conference hopes to discuss these major issues:

- \* Agriculture, food security and economic contribution of biotechnology
- \* Public-private partnership in financing of biotechnology
- \* Biotechnology, trade and IPR related issues
- \* Implementation of biosafety protocol, national legislations and other regulatory issues

For more information about the conference, email Dr. Nagesh Kumar of RIS at [dgoffice@iris.org.in](mailto:dgoffice@iris.org.in).

##### EUROPEAN WHITEFLY SYMPOSIUM

The 2nd European Whitefly Symposium will be held on October 5 to 9, 2004 in Cavtat, Croatia. The latest developments in all areas of whitefly study and control will be discussed. Contact the symposium secretariat at [liz.robertson@bbsrc.ac.uk](mailto:liz.robertson@bbsrc.ac.uk) or visit their website at <http://www.whitefly.org>.

NEW DISCUSSION PAPER FROM IFPRI

The discussion paper entitled "Public-Private Partnerships in Agricultural Research: An Analysis of Challenges Facing Industry and the Consultative Group on International Agricultural Research," authored by David J. Spielman and Klaus von Grebmer of the International Food Policy Research Institute (IFPRI) is now available at the <http://www.ifpri.org> together with other recent discussion papers.

BIO-SCIENCE WEEK IN CANADA

The Ag-West Biotech Inc, Bio-Products Saskatchewan Inc, and the Saskatchewan Nutraceutical Network are jointly sponsoring the Bio-Science Week in Saskatoon, Canada on May 16 to 20, 2004. Presenting the latest developments in their industries, the schedule is as follows:

- \* Co-Existence: The Challenges and Opportunities (May 16 and 17)
- \* Bio-Logical Futures II (May 17 to 19)
- \* Forging Links to Health Care (May 20)

For more details, visit <http://www.bio-science.sk.ca>.

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