

*Where Nature and Science Meet*

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**BioLines** is AfricaBio's 'Biotechnology Headlines' – a quick guide to what is topical. By design, the articles are not exhaustive, but references are given to follow up points of interest. Let us know what you like and dislike about **BioLines** and what you want to see as part of this service. Articles are edited and some shortened to meet space requirements. It is not the intention of this service to infringe on copyright. **BioLines** is issued free of charge and every effort is made to acknowledge the source of information.

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## NEWS FROM AFRICA

### **GHANA URGED TO BOOST AGRICULTURAL PRODUCTION**

<http://allafrica.com/stories/200608150629.html>

Ghana has to be innovative in addressing problems of land preparation, low yielding crops, livestock, and water management, among others. This was stated by Mr. Sylvester Adongo, Northern Regional Director of the Ministry of Food and Agriculture (MOFA), as he addressed agricultural extension officers in a recently concluded two-day training workshop.

"Conservative estimates show that the country imports 100% of wheat, 90% of sugar, 66% of rice, 50% of meat, 33% of chicken and 15% of milk. This shows that we are virtually eating outside and not at home. How long can we depend on other people to feed us?" Mr. Adongo asked.

### **BRAZIL, BOTSWANA SIGN ACCORD FOR TECH TRANSFER**

[http://www.embrapa.br/noticias/banco\\_de\\_noticias/folder.2006/agosto/foldernoticia.2006-08-01.1366936549/noticia.2006-08-23.0189333440/mostra\\_noticia](http://www.embrapa.br/noticias/banco_de_noticias/folder.2006/agosto/foldernoticia.2006-08-01.1366936549/noticia.2006-08-23.0189333440/mostra_noticia)

The Brazilian Agricultural Research Corporation (EMBRAPA) signed this week an accord with the government of the Republic of Botswana for a five year initiative aimed at the transfer of technology and the training of experts in the African nation. The transfer of technology will focus on two main areas: cattle husbandry and agricultural production in very arid areas, which comprise a large

proportion of the territory of Botswana, located in the proximity to the desert of Kalahari. The calendar of training courses for Botswana scientists is currently being drafted.

### **DIOUF CALLS FOR MORE ACTION**

<http://www.fao.org/newsroom/en/news/2006/1000390/index.html>

Reducing hunger and extreme poverty is a prerequisite for achieving the international community's Millennium Development Goals (MDG), the Director-General of the United Nations Food and Agriculture Organization (FAO), Dr Jacques Diouf, said as he addressed a high-level advisory committee set up to help FAO respond more effectively to the challenge of meeting the MDGs by 2015.

Dr Diouf noted that, as the lead UN agency for agriculture, forestry, fisheries, and rural development, virtually all of the organization's activities – including monitoring, analysis, resource mobilization, partnership building and field activities – supported progress towards the MDGs.

Whereas 20% of people in developing countries were undernourished in 1990 – the benchmark for the MDGs – FAO's most recent estimates pointed to 17% or 815 million people, still suffering from hunger in 2000/02 and projected 11% for 2015. According to the FAO, the goal of halving poverty between 1990 and 2015 is on track at the global level, but appears beyond reach in sub-Saharan Africa.

### **NEW NERICA INTRODUCED**

<http://allafrica.com/stories/200608220095.html>.

According to Kenya's The East African, a new high-yielding NERICA (New Rices for Africa) Rice variety has been introduced to the country, and is likely to turn Kenya into a leading rice exporter. The variety, a cross-breed between an African and Asian rice species, withstands pests and diseases unlike the commonly grown Basmati and Sindano varieties. Basmati and Sindano, moreover, thrive well under flood irrigation, while the new NERICA can grow on dry land.

The new variety was first developed in West Africa by the Africa Rice Center (WARDA). Experts predict that the NERICA will boost rice production from the current 70,000 tonnes, and save the country up to \$97.2 million that is used in importing the deficit.

### **AIDS AND HUNGER CONNECTED**

<http://www.irinnews.org/AIDSreport.asp?ReportID=6279&SelectRegion=Africa&SelectCountry=AFRICA>.

AIDS is part of a vicious cycle that drains families of their financial resources, as well as the labor communities need to grow food. This was the conclusion of a study of 15,900 households in southern Africa, presented by Robin Jackson of the World Food Program at the AIDS 2006 conference in Toronto, Canada.

Other experts presented similar findings on the subject of AIDS and hunger. According to Stuart Gillespie of the International Food Policy Research Institute, food insecurity not only creates greater biological susceptibility to HIV by weakening the immune system, but encourages people to move to higher prevalence areas in order to earn money.

The Food and Agriculture Organization (FAO) has been running agricultural training programmers for AIDS orphans who have missed the opportunity of learning these skills from their parents. The goal is to move from short-term interventions, such as the distribution of food aid or nutritional supplements, to helping affected communities restore agricultural production and develop alternative livelihoods.

### **MALAWI TO FORMULATE NATIONAL BIOTECH POLICY**

<http://www.nrcm.org.mw>.

According to the African News Dimension, Malawi is in the process of formulating its own national biotechnology policy, as "it is imperative for Malawi as a developing nation to put much emphasis on

biotechnology research and development.” This was stated by Patrick Kachimera, Malawi's secretary for science and technology, as he spoke before a recently concluded meeting for stakeholders.

According to Kachimera, a policy is already under development. He reiterated that the government wants to ensure that all caution is exercised, and that biosafety will be given utmost consideration. Malawi's National Research Council is in the process of drafting the policy, which will regulate the use, importation, export, and research on biotechnology in the country.

### **IITA HOSTS WORKSHOP ON PUBLIC AWARENESS OF BIOTECHNOLOGY**

<http://www.iita.org>.

A one-day public awareness workshop on biotechnology was held recently in Ibadan, Nigeria. The workshop was aimed at disseminating biotechnology-related information to a broad range of stakeholders, including farmers, public officers, and the media. The event was organized by the International Institute of Tropical Agriculture (IITA) and was attended by over 100 people.

Professor J. D. Amin, Vice Chancellor of the University of Maiduguri, said that the University has established a Biotechnology Center, which would be a center of excellence for the northeast zone of the country. Another speaker at the workshop, Dr. Christian Fatokun, said that research is advancing Cassava Mosaic Disease (CMD)-resistant cassava, and pest-resistant cowpea. Other speakers, such as Professor Babatunde Solomon, Director General of the National Biotechnology Development Agency (NABDA), and Dr. Danaladi Kuta of the Sheda Science and Technology Complex (SHESTCO) highlighted the importance of biotechnology in producing better crops and higher yields.

### **COMESA SIGNS DEAL TO IMPROVE AGRICULTURAL PRODUCTION**

[dotunge@absfafrica.org](mailto:dotunge@absfafrica.org)

The Common Market for Eastern and Southern Africa (COMESA) has signed a Memorandum of Understanding (MoU) with the Food Agriculture and Natural Resource Policy Analysis Network (FANRPAN) to exchange information on food, agriculture, and natural resources policy and institutional issues relevant to sub-Saharan Africa (SSA). It will also facilitate, where possible, access to relevant research and published materials on agriculture.

The MoU will enable the two organisations work together to strengthen the understanding of regional international trade agreements and support the formulation of national trade agreements on agriculture, support the formulation of national and regional policies, build shared market information and communication systems, and establish a database and promote advocacy on farmer issues.

Both FANRPAN and COMESA have agreed to cooperate with relevant national, regional, and international institutions operating within the region in the design, implementation, and assessment of capacity building initiatives to achieve maximum impact on matters of common interest.

### **FERTILIZER TREES BOOST CROP YIELDS IN SOUTHERN AFRICA**

<http://www.worldagroforestrycentre.org/news/default.asp?NewsID=FAA07246-6A5B-4525-AF74-AFA06E87C134>

Maize production is hampered by low soil fertility and nutrient mining in southern Africa, where soils are depleted of nitrogen, and where smallholders cannot afford chemical fertilizers. A solution was formulated in the early 1990's by researcher from the World Agro-Forestry Center and their national partners in Zambia. After years of work on cropping solutions, they have discovered that fast-growing, nitrogen-fixing trees, such as species of *Sesbania* and *Gliricidia*, and *Tephrosia vogelli*, can improve fallows and even change soil structure.

Soils fallowed with these “fertilizer trees” are lighter and airier, with reduced crusting, and better water infiltration and holding capacity. In southern Africa, permanent maize-*Gliricidia* intercrop systems have been found to sustain yields that are very close to a fully fertilized system. In line with this, Malawi's Ministry of Agriculture has partnered with United Nations (UN) agencies in

incorporating fertilizer tree agroforestry options as a sustainable strategy in the overall programmatic approach of establishing a Millennium Global Village in the country.

### **INIBAP, TSBF-CIAT, IITA JOIN TO SAVE BANANA**

[http://www.inibap.org/news/ressources/File/cialca\(1\).pdf](http://www.inibap.org/news/ressources/File/cialca(1).pdf).

The International Network for the Improvement of Banana and Plantain (INIBAP), the Tropical Soil Biology and Fertility Institute of the Centro Internacional de Agricultura Tropical (TSBF-CIAT), and the International Institute of Tropical Agriculture (IITA), along with local agricultural research services, NGOs and private sector partners, have united to help banana and plantain farmers in Africa's Great Lakes region.

Bananas and plantains are an important source of food and income for rural people throughout the humid tropics, but nowhere more so than in this part of Africa. The consortium hopes to rebuild the banana and plantain sectors through projects funded by the Directorate General for Development Cooperation of Belgium. The INIBAP-led project will develop mechanisms to access dispersed expertise and knowledge, adapt it to meet local needs, and use it to solve, on a pilot scale, problems at the farm, community, and institutional levels. TSBF-CIAT will develop a strategy integrating natural resource management, improved nutrition, and access to markets to increase the resilience of agro-ecosystems. IITA will develop and disseminate technologies to increase the sustainability of the banana production system.

### **USDA TEST KIT DETECTS UNAPPROVED BIOTECH RICE**

[http://www.usda.gov/wps/portal/lut/p/s.7\\_0\\_A/7\\_0\\_1OB?contentidonly=true&contentid=2006/09/0336.xml](http://www.usda.gov/wps/portal/lut/p/s.7_0_A/7_0_1OB?contentidonly=true&contentid=2006/09/0336.xml).

The U.S. Department of Agriculture's (USDA) Grain Inspection, Packers and Stockyards Administration (GIPSA) has verified a strip kit that detects the presence of the Liberty Link 601 protein at a detection limit of 2% sensitivity level. The test takes approximately 10 minutes to complete.

This test was validated at the request of Strategic Diagnostics Inc. USDA is not involved in the distribution of this test for use in the marketplace.

### **ECOLOGICAL RISK ASSESSMENT ASSESSED**

<http://www.isb.vt.edu/news/2006/news06.Sep.htm>

In "Does The ERA Process Work For GE Crops?" Jeff Wolt and Saharah Moon Chapotin of Iowa State University's Biosafety Institute for Genetically Modified Agricultural Products (BIGMAP) have looked at how reliable the ecological risk assessment (ERA) has been in assessing genetically engineered (GE) crops. Their article appears in the latest Information Systems for Biotechnology newsletter.

ERA is "the process that evaluates the likelihood that adverse ecological effects may occur or are occurring as a result of exposure to one or more stressors [or actions]." ERA is a specific approach to performing risk assessment, and it does so by presenting a logical scheme for organizing complex information describing environmental exposure scenarios and effects to ecological entities of concern. ERA is carried out on GE crops once substantial equivalence has been established; however, and despite 10 years of experience in safely growing GE crops, ERA has been criticized as inadequate in addressing long term ecological concerns arising from wide scale commercial production of GE crops.

The authors state some cases in which the ERA framework has proven useful, and conclude that it has proven sufficiently flexible to deal with concerns surrounding biotechnology.

### **AATF TO HOLD TALKS ON BIOTECHNOLOGY IN NAIROBI**

<http://www.aatf-africa.org>

In a bid to create an environment conducive for the adoption of modern biotechnology in Africa, the Nairobi-based African Agricultural Technology Foundation (AATF) has initiated a series of talks to be held monthly in various African countries, beginning with Kenya on September 14, 2006. Prof. Ruth

Oniang'o, a renowned Kenyan nutritionist, academic and legislator, and Mr. Mark F. Cantley, a former European Commission adviser on Biotechnology, Agriculture and Food (Directorate of Life Sciences) will each make a keynote address to set the stage for the discussions.

The Open Forum on Agricultural Biotechnology in Africa (OFAB), as the talks will be known, are aimed at fostering "constructive debate on biotechnology with the aim of bringing out core issues that may have positive or negative impacts on acceptance, adoption, and application of the technology in Africa," said Dr. Mpoko Bokanga, AATF Executive Director. The initiative, he said, is in response to the need for better understanding of products, benefits, and concerns associated with biotechnology.

They are targeted, therefore, "at individuals who impact the development of biotechnology in Africa in one way or another," the Director said.

### **NAMIBIA TURNS TO *JATROPHA* FOR FUEL**

<http://allafrica.com/stories/200609050449.html>.

*Jatropha curcas* has been grown in Namibia for decades. Soon, its oils can be added to diesel and used by farmers to run their tractors and generators. It may also replace paraffin, which is used for cooking and lighting. *Jatropha* plants do not require irrigation, and nuts, from which the oil is extracted, can be harvested in the third year after planting. All these make the plant an attractive source of fuel, and, according to an article in The Namibian, have prompted the government to establish a Bio-Oil Energy committee to see to it that about 63,000 hectares of the bush can be planted by 2013 to earn this new agro-industry N\$189 million a year.

Blending *Jatropha* oil with diesel is now common practice in southern Africa. In line with developing the industry, member states of the Southern African Development Community (SADC) are embarking on a regional strategy to use bio-fuels like *Jatropha*, maize, and sugar on a larger scale.

### **NEWS FROM OTHER COUNTRIES**

#### **FUNGUS KEEPS GRASS COOL, SCIENTIST REPORTS**

<http://sciencenow.sciencemag.org/cgi/content/full/2006/810/4>

A fungus protects grasses and some plants from heat and salinity by simply living with the plant. Rusty Rodriguez, a microbiologist at the U.S. Geological Survey in Seattle, Washington, reported this at the fourth International Symbiosis Society Congress held in Halifax, Nova Scotia, Canada.

The fungus, Rodriguez and colleagues found, protected panic grass from geothermal heat in Yellowstone Park, and coastal dune grass from salinity in Washington State. They also found that maize, tomatoes, watermelon, and other plants became quite heat tolerant when they took up fungi from panic grass, but not when they took up fungi from grasses growing in slightly cooler soil. In addition, these species acquired salt tolerance only when they carried the fungi from grasses that grow close to saltwater. These findings suggest a way to give crops a boost in unfavorable soils.

#### **ANDEAN FARMERS READY FOR GM POTATO**

<http://www.edpsciences.org/articles/ebr/pdf/2005/03/ebr0511.pdf>.

Potato production in Peru is affected by a high number of pests and diseases, all of which result in low yields or extensive use of pesticides. Is it time for GM potatoes to enter the scene? Jasper Buijs and colleagues of the International Potato Center (CIP), Peru, report on the "Potential adoption and management of insect-resistant potato in Peru, and implications for genetically engineered potato" in a recent issue of Environmental Biosafety Research, where they survey farmers in Peru's major potato producing areas and use their data to analyze important issues surrounding the possible adoption of the GM crop in the country.

According to the survey, farmers considered insect damage (mainly due to Andean potato weevil and potato tuber moth) the biggest constraint to potato cultivation. In addition, the team reports:

- 97% of smallholder farmers would be willing to pay more for an insect-resistant potato variety, although a majority would buy it only once every 2-4 years;
- Farmers would be willing to pay a premium of 50% on seed cost for insect resistant potatoes, which would still increase their net income, assuming insect resistance is high and pesticide use is strongly reduced;
- 55% of farmers indicated preference for insect-resistant potato over their current varieties;
- 68% of farmers would not always be able to sow insect-resistant varieties next to one of their current susceptible varieties; and
- 89% stated that they could refrain from mixing insect-resistant lines with conventional varieties.

The survey indicates that smallholder farmers in Peru are interested in new varieties, and have a positive perception of improved varieties. The authors propose that a variety-based segregation scheme be developed to separate GM from conventionally-bred potatoes. They also advise that a two-gene approach be used to engineer GM potatoes; and that male-sterile lines be used to control of gene flow without preventing farmers from multiplying their own planting materials clonally.

## **DUPONT, BUNGE EXPAND COLLABORATION TO BIOFUELS**

[http://vocuspr.vocus.com/VocusPR30/Newsroom/Query.aspx?SiteName=DupontNew & Entity=PRAsset&SF\\_PRAsset\\_PRAssetID\\_EQ=102994&XSL=PressRelease&Cache=False.](http://vocuspr.vocus.com/VocusPR30/Newsroom/Query.aspx?SiteName=DupontNew&Entity=PRAsset&SF_PRAsset_PRAssetID_EQ=102994&XSL=PressRelease&Cache=False)

The Bunge - DuPont Biotech Alliance, composed of food and feed ingredient company Bunge and chemical manufacturer DuPont, has announced the expansion of its soy collaboration, beyond food and nutrition products to include industrial applications, biofuels, and other opportunities. To reflect this, the Alliance is launching TREUS, a new brand name for its soy products. In its product pipeline are several new soy varieties that can be grown across broader geographies and maturity zones.

These new varieties, to be released in 2007, include soy oils with high oleic and a combination of high oleic and high stearic oil content. These oils can offer a low trans-fat, high solids baking ingredient for use in packaged foods requiring an extended shelf life, such as cookies, crackers, and breakfast cereals. They can also provide products with better frying performance, as well as renewable, environmentally friendly options to petroleum-based products. Research is also underway to develop soybean varieties that produce meal with enhanced amino acid content.

## **NOTICE BOARD**

- 21 September 2006** - "A Seminar on Biotechnology: Wealth Creation and Planning for Prosperity in Malaysia" will be held at the Putra World Trade Center (PWTC), Kuala Lumpur, Malaysia. The program will explore the links between business development and technology, covering intellectual property, technology commercialization, and funding plus capital formation. Download the brochure at <http://www.bic.org.my/downloads/Biotechnology-gtim.pdf>.
- 23 – 30 September 2006** – Canada to celebrate biotechnology. This week will highlight the imagination and innovation of Canadian scientists. Participants will take part in career fairs, tour Canadian biotech companies, and see how biotechnology is vital to the country's future. For more information, visit <http://www.biotech.ca/imagenation/biotechincanada.html>.
- 24 – 27 September 2006** - The 2nd Networking Symposium on innovations in Agricultural Advisory Services (AAS) is part of efforts to foster and enhance experience and lesson-sharing on AAS in the Sub-Saharan African (SSA) region will be held in Hotel Africana, Kampala, Uganda. The Symposium will bring together 140 participants from 19 African countries implementing innovative approaches and experiences in agricultural extension delivery. The theme for this second symposium will be "Enhancing Innovations in Agricultural Advisory Service Provision with Special Focus on Farmer Empowerment and Market Orientation. For more information, visit <http://www.naads.or.ug/news.php?id=75>.
- 25 – 27 September 2006** - The "International Workshop on Global Irrigated Area Mapping (GIAM)" will take place in Colombo, Sri Lanka. The workshop aims, among others, to gather a group of experts on global application of remote sensing and GIS to present,

discuss, and refine products and associated methodologies, with specific focus on mapping irrigated areas; disseminate GIAM products, data, methods, techniques, and protocols to a wide group of users and experts; and define future work programs to refine and improve products and methodologies. More information is available at <http://www.iwmidsp.org/iwmi/giam-workshop/>.

**29 – 30 September 2006** - The ILSI-India and ILSI International Food Biotechnology Committee in collaboration with the government of India are organizing the International Conference on Recent Scientific Developments in Agricultural Biotechnology: Sharing Experience and Knowledge, to be held in New Delhi, India. The conference will review the latest developments in agriculture biotechnology, with a view to assess how traditional breeding methods can be supplemented by the modern technological tools in breaking yield barriers in different crops, as well as in improving quality and nutritional value of foods with the objective of achieving food security for India. For more information, visit <http://india.ilsa.org/About+Us/forthcomingactivities.htm> or contact Ms. Rekha Sinha at [ilsindia@nda.vsnl.net.in](mailto:ilsindia@nda.vsnl.net.in).

**11 – 14 October 2006** - Venice, Italy will host the Fifth Plant Genomics European Meeting (Plant GEMs 5). The annual meetings are sponsored by national Plant Genomics programmers in Europe and the European Research Area Network Plant Genomics. Read more at <http://www.distagenomics.unibo.it/plantgems/>.

**5 – 11 November 2006** - "Integrating New Technologies for *Striga* Control: Towards Ending the Witch-Hunt" will take place in Addis Ababa, Ethiopia. Sponsored by the International Sorghum and Millet Collaborative Research Support Program (INTSORMIL), Purdue University, and the Ethiopian Institute of Agricultural Research (EIAR), the international symposium will bring together key leaders to initiate the discussion of strategies that will result in better control of *Striga*. The event is open to all scientists dealing with *Striga*; interested parties are encouraged to present posters of their most recent findings and observations. For more information, contact Gebisa Ejeta, Purdue University, USA at [gejeta@purdue.edu](mailto:gejeta@purdue.edu), or visit <http://www.agry.purdue.edu/strigaconference/>.

**6 – 8 November 2006** - BIO-EUROPE 2006 is to be held at the Congress Center, Duesseldorf, Germany. The conference brings together people in biotechnology, pharmaceutical and financial sectors to discuss collaborative endeavors. Activities include networking opportunities, workshop participation, and private, pre-scheduled one-on-one meetings. For more information on the conference, go to <http://www.ebdgroup.com/bioeurope/index.htm>.

**CROPPING FELLOWSHIPS** - The Bentley Cropping Systems Fellowship provides assistance to Canadian and developing country graduate students with a university degree in Agriculture, Forestry, or Biology, who wish to undertake post-graduate, applied on-farm research with cooperating farmers in a developing country. For more information, visit <http://www.gdnet.org/middle.php?oid=986>.

#### **VACANCY: PLANT BREEDING, GENETICS, AND BIOTECHNOLOGY**

The International Rice Research Institute (IRRI) is seeking a postdoctoral fellow for its biotechnology research program in the Plant Breeding, Genetics, and Biotechnology Division to develop tools and to study gene regulatory network and epigenetic mechanisms. Candidates should have:

- a PhD in molecular biology/genetics with strong emphasis on epigenetics and transgenic technologies;
- excellent background in genetics, molecular biology, and bioinformatics;
- outstanding knowledge of PCR methodologies; and
- proven ability to work in multidisciplinary and multicultural environments.

Fluency in written and spoken English or experience in an English-speaking country is required. Previous postdoctoral experience is preferred. Background in plant sciences is not required. Applicants should send via email a comprehensive curriculum vitae and names and email addresses of three referees to Ms. Selene M. Ocampo at [s.ocampo@cgiar.org](mailto:s.ocampo@cgiar.org). For more details, visit <http://www.irri.org/jobs/international.asp>.

**WRITING CONTEST** - The German/English magazine *entwicklung & laendlicher raum (e+lr)/agriculture & rural development (a+rd)* invites young post graduate and PhD students to enter an article writing contest focusing on 8 topical issues in the field of agriculture and rural development. The 7 most outstanding papers will be published in the January 2007 edition of *e+lr*, and will be rewarded with € 400. The overarching question to be addressed is: "What agricultural policies do we need to reach the poor

(MDG 1)?" For more information on the topics, visit [http://www.agricta.org/about/020806\\_Wettbewerb%20Ausschreibg1.pdf](http://www.agricta.org/about/020806_Wettbewerb%20Ausschreibg1.pdf). Deadline for submission is on October 6, 2006.