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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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SOUTH AFRICA APPROVES NEW BT COTTON VARIETY

http://www.businessday.co.za/articles/national.aspx?ID=BD4A103269

Farmers in South Africa can now plant a new Bt cotton variety that has the stacked genes for insect and herbicide resistance. The official permit for Monsanto's new cotton will be issued by the Department of Agriculture in time for the 2005/6 planting season.

Tamar Kahn of Business Day quotes Wally Green of Monsanto's regional biotechnology regulatory manager as saying that the crop is already being grown in the United States and Australia. The variety combines the features of its Bollgard cotton that resists bollworms, and Roundup Ready cotton that is resistant to the weed-killer glyphosate.

SA FALSE MORATORIUM CLAIM

The Star
Friday 18/11/05

A report was published in South African daily newspaper *The Star* on November 10, entitled "GM war of words set to boil over in SA", by Penny Sukhraj, in which it was claimed that the Department of Trade and Industry has placed a moratorium on the imports if Genetically Modified maize, this is completely untrue.

It has been confirmed by Dr. Shadrack Moephuli, assistant director-general, Department of Agriculture that this statement is incorrect and untrue and he added that such a moratorium is not even being considered.

EFFECT OF Bt MAIZE ON NON-TARGET INSECTS

http://puck.esa.catchword.org/vl=5633566/cl=15/nw=1/rpsv/cw/esa/0046225x/v34n5/s34/p1302

Bt maize is designed to combat Lepidopterans. Any maize field, however, is home to a good number of insects, some of them natural predators of Lepidopterans, and others generalists. It is these non-target arthropods which provide an ecological balance for any maize field, and which should not be affected by whatever pesticides might be used to control Lepidoptera infestations.

Clinton Pilcher and colleagues assess the "Impact of Transgenic Bacillus thuringiensis Corn and Crop Phenology on Five Non-target Arthropods." Their findings appear in the latest issue of Environmental Entomology.

Authors investigated the effects Bt maize would have on the seasonal abundance of *Coleomegilla maculata* (pink spotted lady beetle), *Orius insidiosus* (pirate bug), *Chrysoperla carnea* (green lacewing), *Cycloneda munda* (spotless ladybird beetle), and a specialist parasitoid, *Macrocentrus cingulum* (parasitoid wasp). By trapping the insect, researchers found that there was no significant difference in insect abundance of any of the generalist predators. However, adult densities of *M. cingulum* were reduced by as much as 60% in the presence of Bt maize. They also found that the generalists were more affected by differences in crop phenology rather than differences between Bt and non-Bt maize.

AUSTRALIAN Bt AND NON-Bt COTTON ARTHROPODS COMPARED

http://puck.esa.catchword.org/vl=5633566/cl=15/nw=1/rpsv/cw/esa/0046225x/v34n5/s29/p1224

Australia's cotton industry has benefited from transgenic Bt cotton, although the impact of the crop on other arthropods has still not been fully assessed. To undertake an initial study, M.E.A. Whitehouse and colleagues conduct "A Comparison of Arthropod Communities in Transgenic Bt and Conventional Cotton in Australia." Their findings appear in the latest issue of Environmental Entomology.

Researchers compared canopy invertebrate community densities amongst sprayed conventional, unsprayed conventional and unsprayed Bt cotton over three planting seasons. They found that species diversity of beneficial insect communities was greatly reduced in the sprayed crops.

They also found that, of over 100 species groups examined, there were slightly higher numbers of Helicoverpa, Chloropidae, Drosopillidae, damsel bugs, and jassids in conventional crops than in Bt crops. Researchers recommended that these small differences be monitored in the long term to assess if any modifications to cotton management practices should be made.

The same edition of the journal contains a good number of research articles devoted to reporting results gleaned from long term field trials of GM cotton. One such report by Steven Naranjo was featured in last week's issue of the Crop Biotech Update, but the news summary incorrectly referred to the pests *Bemisia tabaci*, *Lygus hesperus*, and *Pectinophora gossypiella* as predators of Lepidoptera. The three are actually key pests in the crop system, and *Pectinophora*, in fact, is a target of Bt cotton.

AFRICAN PANEL PUSHES FOR BIOTECHNOLOGY AT GRASSROOTS LEVEL

http://www.whybiotech.com/index.asp?id=5266

The African Panel on Biotechnology is advising the African Union, an organization of African states, on how to adopt biotechnology to address grassroots development, particularly one that involves local growers and integrates community customs. "Africans Embrace Biotech Future" by The Council

of Biotechnology Information (CBI) presents trailblazing biotechnology initiatives that local farmers and institutions in Kenya, Tanzania, South Africa, and Uganda have made.

CBI quotes Calestous Juma, former executive secretary of the United Nations Convention on Biodiversity and Panel co-chair, as saying that issues facing African agriculture require an aggressive approach. "Africa must take charge of its future and assess the usefulness of all existing technological options for meeting its needs. The challenge is how to make biotechnology relevant to local needs and how to ensure that existing institutions meet this challenge."

INERA HEAD CALLS FOR BIOSAFETY FRAMEWORK FOR WEST AFRICA

http://www.ghananewsagency.com.

West African governments should work towards having a biosafety framework to harness the use of biotechnology in the region. This was stressed by Hamidou Boly, Director of the Institute of Environment and Agricultural Research (INERA), during an interview with West African journalists in Burkina Faso. He added that the framework would allay fear among people regarding biotechnology.

Boly said that countries within the Sub-Region needed a visionary leader, a strong political commitment, and an adequate regulatory framework to foster technological independence by supporting innovation.

INERA organized the visit for journalists to the Bt cotton trial fields in Fada and Bobo-Dioulasso in the Eastern and Western parts of Burkina Faso.

NEW APPROACHES NEEDED FOR AGRIC IN DEVELOPING WORLD

http://www.pnas.org

Enhancing agricultural productivity in developing countries requires new approaches that provide incentives and funding mechanisms that will translate new innovations in plant science into concrete benefits for poor farmers. This was articulated by Deborah Delmer of the Rockefeller Foundation in "Agriculture in the developing world: Connecting innovations in plant research to downstream applications", published online by the Proceedings of the National Academy of Sciences of the United States of America.

Delmer analyzes the constraints and opportunities presented by the challenge to translate new discoveries in plant sciences into successes in agriculture for the benefit of the poor. In particular, she notes the lack of systems that promote and reward efforts to "create a strong interface between fundamental and applied research in support of global agriculture."

CIMMYT DRAWS UP NEW MAIZE MAP

http://www.cimmyt.org/english/wps/news/2005/oct/hotSpots_maize.htm

Maize is an important crop, especially throughout the developing world, but its yields are hampered by problems such as soil infertility and insect infestation. The second greatest constraint to its production, however, is drought, and such a phenomenon is thought to reduce yields worldwide by more than 15%, or over 20 million tons, annually.

Maize is also a complex crop, at the genetic level. Domesticated from the grass teosinte, it contains high levels of genetic diversity compared with other cereal crops such as rice and wheat. There are portions of its genome, however, which may be able to improve the crop from within. For instance, Quantitative Trait Loci (or QTLs), are potential hotspots for genes which can make the crop better.

With a view of using these QTLs to improve maize's drought resistance, scientists from the International Maize and Wheat Improvement Center (CIMMYT) and its partner organizations have developed a singe genomic map for maize that identifies regions of DNA that are involved in

conferring drought tolerance. Such maps have already been drawn for the crop, but applying only to specific maize lines and populations. The latest map combines data from many trials of different tropical maize types in diverse environments.

"Having all the QTL information integrated into a single map should allow us to identify the outstanding genomic regions involved in drought tolerance," Jean-Marcel Ribaut, director of the Generation Challenge Program of the Consultative Group on International Agricultural Research (CGIAR) said, "The idea is ambitious for it should allow maize breeders to select the right parents for drought tolerant maize by ensuring they have these important regions on their genome."

With funding from the Rockefeller Foundation, members of the project team will give courses on this approach to scientists in Kenya and China over the coming months.

AFRICA URGED TO FAST TRACK TRANSGENIC CROPS

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The Special Advisor to United Nations Secretary-General Kofi Annan on the Millennium Development Goals (MDGs) and UN Millennium Project Director Dr Jeffrey D. Sachs has called on African governments to fast track adoption of transgenic crops to boost food security on the continent.

He said more African scientists should be trained in cutting-edge biotechnology so that they can provide the much needed scientific advice on the use of genetically modified crops on the continent. "This is something the MDGs could look into as it explores various possibilities of achieving the goals in Africa," he observed.

Dr Sachs, who is also the director of The Earth Institute, was addressing via telephone about 200 delegates of the First Annual Conference of the African Science Academy Development Initiative (ASADI) that has just ended in Nairobi, Kenya. With the theme "Improving Public Policy to Achieve the Millennium Development Goals in Africa: Harnessing Science and Technology Capacity," the conference was attended top scientists, academicians, ministers, journalists, and politicians.

Dr Sachs said Africa would not achieve the MDGs unless her agricultural systems are modernized to produce more food, end hunger and famine, and boost nutritional content of foods. He likewise called on the African Academies of Sciences to be prepared to provide expert scientific advice to their governments on agriculture, health, climate change, water management, energy science, and good ecological science, which he identified as crucial to poverty reduction on the continent.

NOTICEBOARD

28 – 30 November 2005 - European Biotech Crossroads (EBC) – to be held in Lille France. For more details contact Perrine Moniot at pmoniot@eurasante.com.

1 – 5 December 2005 – Cassava Improvement to Improve the Livelihoods in Sub-Saharan Africa and North-eastern Brazil - to be held in Brasilia, Brazil. For more information please visit http://www.geneconserve.pro.br/meeting/.

7 – 9 December 2005 – ILSI 1st International Nutrigenomics Conference – The theme of the Conference, which is to held in Singapore, is "Opportunities for Asia". For more details visit http://www.nutrigenomics.ilsi.org/

9 – 11 January 2006 – Symposium on biotechnology for health - An international symposium on Biotechnology Approaches for Alleviating Malnutrition and Human Health will be held at Bangalore, India. The symposium seeks to explore the ways in which technology can help to improve human nutrition. The potential of biotechnology and educating the rural masses, especially women and children to alleviate the nutritional deficiencies of rural India will likewise be tackled. For more information, visit http://www.nutritionforall.org/.

16 – 20 February 2006 – American Association for the Advancement of Science (AAAS) will be holding a meeting in St. Louis with the theme "Grand Challenges, Great Opportunities. For more details visit **http://www.aaas.org/meeting/Annual Meeting/.**

8 – 10 March 2006 – BIO Square 2006 - to be held at the International Conference Centre, Geneva, Switzerland. For more information visit http://www.ebdgroup.com/biosquare.

25 – 29 March 2006 – 1st Mediterranean Congress on Biotechnology will take place in Hammamet, Tunisia. Aside from oral and poster presentations, at least 4 plenary lectures and 16 symposium lectures starting Congress sessions will be given by well-known speakers covering all aspects of Biotechnology and Industries, Biotechnology and Environment, Biotechnology and Health, and Biotechnology and Agriculture. Please visit http://www.fmcb.africa-web.org/, or contact Professor Samir Bejar, Centre de Biotechnologie de Sfax at samir.bejar@cbs.rnrt.tn.

9 – 12 April 2006 – BIO 2006 – to be held in Chicago Illinois. For more details visit http://www.bio.org/events/2006.

16 – 19 August 2006 - The Tropical Crop Biotechnology Conference 2006 will be held in Cairns, Australia. The conference will cover the following fields: the potential for crops as biofactories in the production of industrial biomaterials, renewable energy, functional foods and pharmaceuticals; and the molecular breeding of improved crops through the application of genomics science in plant improvement, including the development of stress-tolerant staple food crops with enhanced nutritional value. Visit http://www.tcbc2006.com.au for more information.