

## Kenya Finally Publishes Bio-Safety Bill

Source: <http://www.absfafrica.org/new/>

After detailed consultations between policy makers and key stakeholders in biotechnology, the government of Kenya has finally published a Bio-Safety bill to be tabled in parliament for debate beginning July 2007. This is a significant step in the right direction for a country that heavily depends on agriculture both for food and income generation since it brings hope for efficiency in agriculture.

Once the bill is legislated, Kenyans will have an internationally recognized Bio-safety framework within which to tap the benefits of biotechnology. Potential benefits include higher yields and improved crop resistance to pests and diseases. This may just mark a turning point for millions of food insecure Kenyan households who may now harvest enough food from their farms. Biotechnology applications will also enhance income generation for small holder farmers who contribute over 70% of the country's agricultural output.

## Kenya's Biosafety Bill Debate

Source: Africa Science News Service <http://africasciencenews.org>

Contributed by ASNS Kenya Correspondent

Tuesday, 21 August 2007

The debate on agricultural biotechnology in Kenya boiled over again last week when peasant farmers and GMO critics staged a demo against GMO proponents who see it as a panacea to low yields. Farmers in Kenya's breadbasket district of Kitale, Western Kenya held a demonstration last week protesting against the Biosafety Bill 2007 that is awaiting Parliamentary debate, saying it should be shelved till after the general elections scheduled for December.

During the peaceful demonstration which involved representatives from Uganda, Rwanda, Zambia, Ethiopia and Madagascar, demonstrators said: "The Biosafety Bill is aimed at introducing genetically modified organisms through the backdoor". They said the GM foods aid was being forced on African countries as a dumping alternative because it had already been rejected in the West. They said the Bill excludes more pertinent bio-safety issues such as pharmaceutical drugs obtained from crops and animals. The demonstrators said the government should strengthen the Biosafety Bill by putting in place liability and redress regarding GMOs, their products and other related biotechnology products. Henry Waswa, a demonstrator, said sustainability could be maintained if it empowered small scale farmers and local communities as well as increasing their knowledge-base capacity. Scientists however are pushing for the Bill which they say will provide a legal framework to a wide range of research and study that biotechnology brings besides bringing more efficiency in agricultural food production. "The Bill will give an internationally recognised biosafety framework within which to tap the enormous benefits of biotechnology", says Dr Simon Gichuki, head of the Kenya Agricultural Research Institute's (KARI) bio technology centre.

Kenya, being one of the African countries with a high level of scientific capacity in biotechnology, commercial use of the products that have already been developed will be made possible by the new law. Already, the government approved a biotechnology and Biosafety policy last September through the Cabinet. That notwithstanding, however, Kenya has in recent years applied an interim system for use and handling of biotechnology products. To date, five approvals for research and development and six others for confined field-testing have been granted under the auspices of the

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## EU Approval

*EU must accept biotech crops, trade commissioner says*

Biofuels News, June 15, 2007

BRUSSELS - The European Union must accept more genetically modified foods to avoid renewed complaints about market barriers at the World Trade Organization, the EU trade commissioner, Peter Mandelson, said Thursday.

Any EU delay over the approval of genetically modified crops declared safe by scientists risks prompting legal challenges from farm exporters like the United States, Canada and Argentina, Mandelson said. In a case brought by these three countries, the WTO ruled last year that a 1998-2004 EU ban on new genetically altered foods was illegal.

The bloc ended the six-year moratorium after tightening labeling rules and creating a food agency to screen biotech applications. Since then, the EU has approved the import of some genetically modified products for food and feed use via a slow-track procedure and has yet to endorse any requests for cultivation.

"If we fail to implement our own rules, or implement them inconsistently, we can - and probably will - be challenged," Mandelson said.

He also said the EU may undermine European industries like livestock by falling behind in endorsing products in the global biotech crop market.

The European Commission, the executive arm of the 27-country EU, faces resistance to genetically modified foods from some member states, including Austria and Greece, and from more than half of European consumers, according to surveys.

The EU biotech-food approvals since 2004 resulted from the commission acting on its own after member states failed to muster a majority for or against. The delays followed EU scientific opinions that the products were safe.

The commission aims for the EU to approve a request to plant a genetically modified potato developed by BASF, Barbara Helfferich, a commission environment spokeswoman, said. The approval would be the first EU authorization of a biotech product for cultivation in about eight years.

The Amflora potato, altered to increase its starch content, failed to win enough backing from member-state regulators in December and is going to EU ministers for a verdict and would go back to the commission for a decision should the ministers be split.

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# Editorial:

## *Confined Field Testing Starts*

Theresa Sengooba

Biovision congratulates NARO, specifically the Biotechnology Centre at the National Agricultural Laboratories, Kawanda, on getting started with confined field research with genetically modified (GM) bananas. Bananas are an extremely important crop for Uganda but unfortunately there are attacked by diseases and pests that have proved impossible to contain using conventional means. Exploring transformation technology to fight these constraints is logical and timely. The introduction of GM banana materials for the confined field testing (CFT) is a landmark in the application of modern biotechnology in Uganda. These materials were produced by a Ugandan scientist while pursuing his PhD in Belgium which was strategically designed to address a local problem.

Though just an initial step, the CFT work allows the scientists to test the materials under local field conditions and evaluate them for desirable traits like resistance to pests and diseases, growth period and yield potential and any other agronomic factors. Field testing is a normal procedure in crop research. In case of GM materials the trial is confined for purposes of separation so that there is no mix up between the experimental plants and others that may be growing in the vicinity. The trial is small in size and the way it is planted, managed and harvested follows standard operating procedures that are approved by regulators, observed by scientists and enforced by crop inspectors.

The banana CFT was introduced after considerable preparations by the regulators and scientists and when both infrastructure capacity and human expertise and documentation to handle the trial from planting through to evaluation and monitoring up to the post harvest phase were in place. Thanks to the Government for investing into this cutting edge science that is enabling local scientist to apply their knowledge and effectively tackle local problems. CFT of GM materials is currently being done in many countries of the world in both private and public sector organizations. Since the first CFT carried out in 1987, there have been over 20,000 carried out in different parts of the world, even in Europe in spite of all controversy. In Africa research in this technology is being conducted in over 10 countries and CFTs are underway in South Africa, Egypt, Burkina Faso, Zimbabwe, Kenya and now in Uganda. Kenya has already conducted CFTs of maize, sweet potato cotton and cassava.

CFT is a research stage that is designed to yield useful results and products in future. The expected products however can only be used when the country has a policy framework and legal provisions to regulate such products. Uganda is still a distance from realizing full benefits from the technology. While research on GM crops can be approved under the UNCST Act, more elaborate policy framework and legal provisions are needed for further advancement and increased support for this technology. Commercializing of GM products will only be possible after the country has an approved policy and laws to direct the use of such product.

# Zambia takes steps towards biosafety law

## **Genetically modified crops will be regulated by the new bill**

Michael Malakata

12 April 2007

Source: SciDev.Net

[LUSAKA] Zambian policymakers have adopted a biosafety bill that paves the way for legislation to deal with issues surrounding genetically modified organisms (GMOs). The bill was drafted by the Parliamentary Committee on Education, Science and Technology, and submitted to parliament on 3 April for scrutiny and adoption. Minister of Science and Technology Brian Chituwo said the bill was needed because GMOs were bound to find their way into Zambia. Currently, Zambia does not have a regulatory framework to regulate biotechnology issues, including the research, development, application, import, export, transit and use of genetically modified products.

If enacted into law, the bill will establish a National Biosafety Authority (NBA) and Scientific Advisory Committee. The NBA will ensure the bill is adhered to and provide guidelines on its implementation. The Scientific Advisory Committee will oversee the operations of the NBA. The bill will promote public awareness of biosafety with information and consultation services.

It also seeks to provide a mechanism for liability and redress for any harm or damage caused to human and animal health, non-GMO crops, socio-economic conditions, and biological diversity by any GMO or product. Minister of Justice, George Kunda, said the Zambian government was eager to have the bill passed and made into law to allow for the domestication of the Cartagena Protocol on Biosafety, to which Zambia is a signatory. The international agreement aims to provide protection in the transfer, handling and use of living modified organisms resulting from biotechnology. Kunda said Zambia needs the legislation to avoid becoming a 'dumping ground' for such products, as it currently does not have the technology to test imported material for GMOs.

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Kenya Agricultural Research Institute. Most investments in biotechnology in Kenya have been in the field of agriculture. The rapid development and diffusion of biotechnology, especially genetic engineering, is happening at a time when the African continent is faced with daunting challenges including declining agricultural productivity and increasing poverty, leading to greater food insecurity and malnutrition.

Conversely, concerns have been raised about the potential risks to the environment and human health from GMOs. Kenya's Minister for Agriculture, Kipruto Arap Kirwa, acknowledges that attempts to introduce and implement agricultural biotechnologies have received varied reactions in country. He argues that Kenya should weigh both potential benefits and risks by putting in place frameworks that address controversial concerns raised regarding the adoption of GMOs. "It is important that we develop clear biotechnology and biosafety policies and build adequate regulatory frameworks that address these issues to enable efficient and informed decision making," Kirwa says. Though multifaceted, biotechnology has been viewed as a single discipline, weak scientific and technical capacity has been indicated as a major hindrance, compounded by the absence of operational and functional policies and regulatory regimes for GMOs in most of the countries.

In recent years, the implications of biotechnology for trade have also emerged as a major concern. It is feared that risks to potential or real commercial exports associated with planting of GMOs could be enormous. Concerns are growing that agricultural commodities exported from countries growing GMOs to destinations sensitive to GMOs such as the European Union may encounter market access barriers.

# Launch of the KAZARDI tissue culture laboratory

A tissue culture Laboratory was launched in Kachwekano Zonal Agricultural Research and Development Institute (KAZARDI) in Kabale. KAZARDI is one of NARO's institutes. It serves the districts in the southwestern part of Uganda namely; Kanungu, Kabaale, Kisoro and Kamwenge which mainly grow semi-tropical and temperate crops like apples, Irish potatoes, etc. The current goal of the laboratory is to ensure mass production of disease-free Irish potato planting materials for the farmers in the sub-region.



L-R: Dr. E. Twinamasiko, Deputy DG NARO (in charge of Research), Dr. T. Sengooba, Coordinator PBS, Mr. O. Okasai, Commissioner for Crop Production, MAAIF and Dr. J. Ogwang, Director NaCRRRI, Namulonge were in attendance



L-R: Dr. W. Wegoore, Head KAZARDI TC lab, Dr. D. Kyetere, Director General NARO, Rev Dr. H. Kabushenga, Chairman, Board of KAZARDI and Prof. F.I.B Kayanja, Chairman, Board of NARO, and Dr. I. Kashajja Director KAZARDI at the launch



Prof. F.I.B. Kayanja, Chairman, Board of NARO launches the lab



Inside the tissue culture laboratory



The inside of the screen-house adjacent to the laboratory



Kabaale community attended the launch

# GM COTTON TRIAL APPROVED IN UGANDA

Arthur Makara, UNCST

The National Biosafety Committee (NBC), that is housed by the Uganda National Council for Science and Technology (UNCST), sitting at its Ordinary meeting held on 23rd August 2007 discussed the report of its Technical Subcommittee that had been reviewing the application by National Semi-Arid Resources Research Institute (NaSARRI) to tests Genetically Modified (GM) Cotton with resistance to the bollworm and herbicide tolerance. The NBC made an approval in 'Principle' for the trials to be conducted. The approval in 'Principle' implies that the NBC recommended that before the research permit is issued by UNCST to the applicant, a number of conditions have to be met including taking the members of the NBC Technical Subcommittee to Mubuku, Kasese where one of the trials is proposed to be conducted so that they can carry out an on-site inspection. The other proposed site of

trials is at NaSARRI, Serere. Confined Field Trials (CFTs) are studies that are made by scientists to collect data on any new varieties developed at research stations within the country or outside. Dr. Emeetai Areke, who is also the Director of NaSARRI, is the principal investigator of this research and heads a team of prominent Ugandan scientists who interested in researching in this new frontier of science for improvement of cotton productivity in Uganda. Dr. Areke says that the CFTs NaSARRI intends to conduct are just experimental studies and proof of concept from which the scientists shall gather data that will in future help them in the development of GM cotton suited for the Ugandan conditions. He further emphasizes the economic importance of the bollworm and weeds as major production constraints for small-scale cotton farmers in Uganda.

# Scientists Must Improve their Communication

Barbara Z. Mugwanya

Many will agree with me that it is rare to find a scientist who is a good communicator especially to a non-scientific audience. This is probably the main cause of much of the tension between scientists and the media. Many scientists will argue otherwise and others believe communicating science is not their responsibility. This subject was debated during a recently concluded workshop held at Imperial Botanical Gardens, Entebbe on 25-27th September 2007. The purpose of the workshop was to enhance the communication of science and technology by researchers to the media and other stakeholders. By the end of the two and a half days training scientists appreciated that there is a problem and they have to improve their communication strategies.

This training was organized by Program for Biosafety Systems (PBS) in collaboration with the Uganda National Council on Science and Technology (UNCST) and was attended by 17 participants from Ministry of Agriculture, UNBS, UNCST, NEMA, Makerere University and various NARO institutes involved in biotech research. The training equipped participants with skills to design, execute and evaluate a comprehensive communications strategy that is tailored to the specific needs of their organizations, and to communicate their organization's position to the press, policymakers, and other key audiences. The training also provided an opportunity for scientists to interact with media and consumer representatives.

As a way forward, participants identified the following as priority areas to enhance science communication:

- ✿ Put in place/facilitate institution communication policies
- ✿ Identify and support communication experts for the biotech laboratories
- ✿ Conduct audience's information needs assessment
- ✿ Improve relationship with media and consistently provide them with up to date information
- ✿ Identify appropriate communication channels for various audiences
- ✿ Simplify messages
- ✿ Improve outreach and ensure communication sustainability
- ✿ Improve networking to ensure consistency in communication.

It was recommended that scientists need to have follow-up training in Media relations.



Participants in the training: Extreme left, P. Luganda a veteran science journalist, and extreme right, Dr. M. Karembu a communication specialist from ISAAA-Nairobi were among the resource persons.

## GM Banana Trial in Uganda

Andrew Kiggundu, NARO

The National Agricultural Research Organization (NARO) is preparing for Uganda's first-ever confined field trial of a transgenic crop. A confined field trial is a test conducted under conditions that restrict all plant materials to a specific site. The trial will test a transgenic banana for possible resistance to black Sigatoka disease. The plant was developed by a team of NARO and Katholic University of Leuven (KUL/Belgium) scientists. The confined field trial will be held at the National Agricultural Research Laboratories Institute in Kawanda. Approval for this trial was granted by the National Biosafety Committee, a panel of Ugandan experts under the Uganda National Council for Science and technology, which is mandated to scrutinize introduction of GMOs in the country and ensure that the research being conducted is safe. Importation of the plants was permitted by Ministry of Agriculture and the plants are already at Kawanda.

The trial will test the performance of genes isolated from rice and inserted into banana to increase resistance to black Sigatoka a banana disease that causes premature drying and death of banana leaves leading to significant reduction in yields. The genes have been inserted into Gross Michel (Bogoya) which serves as a model banana for transformation. The purpose of this trial is to prove that these genes from rice can confer resistance to a model banana variety (Bogoya) under Ugandan conditions. If the trial proves positive, the next phase will involve transferring the genes to the most preferred Matooke types to develop resistant varieties relevant to Uganda. It is important to note that this first confined field trial is not expected to result into a resistant variety for farmers to use. It will provide information which our scientists will subsequently use to develop the appropriate resistant varieties.

This trial is of great significance because it is the first field testing of GM plants in Uganda, and the technology transfer project was originally conceived and funded by Uganda government, who later invited USAID and the Rockefeller Foundation to form a funding consortium. The plants were developed by a Ugandan Ph.D student, G. Arinaitwe under the supervision of Prof. R. Swennen at KUL in Belgium. The trial is being supported by USAID through ABSPII as part of the project aimed at supporting Uganda to apply modern biotechnology to develop varieties relevant for the Eastern Africa Region. Through USAID/ABSPII and other partnerships including PBS, capacity has been developed in form of trained high caliber Ugandan scientists and technicians; state of the art equipment have been acquired and installed, and level two Biosafety Greenhouse has been built at Kawanda.

Banana is one of the most important food and cash crops in Ugandan agriculture feeding over 65% of the population. A total of 1.5 million hectares, accounting for over 38% of utilized arable land, is under banana cultivation in Uganda. The country is the second largest banana producer in the world after India.

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