

# **Uganda: Adopting Agricultural Biotechnology**

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By the time you read this article, it is likely that Genetically Modified (GM) bananas that have been imported from Belgium will be at Kawanda Agricultural Research Centre for field trial on their possible adoption in Uganda in a wake to introduce GM bananas crops.

Dr Yona Baguma, a Senior Research Officer National Research Organization (NARO) told agriculture extension workers, farmers' leaders and communicators at Lake View Resort Hotel on May 24 that the bananas were being brought for field trial in a week's time, from Belgium where a Ugandan engineered them during his PhD studentship.

"There are some GM bananas that are imported from Belgium that will arrive in Uganda next week. These bananas are going to be tested under confined field trials in Kawanda. The cultivars are not Ugandan so we are going to import the technology to see if it works in Uganda. If it works then we shall transfer it to the popular East African Highland banana cultivars. We have the capacity to this technology." Baguma said.

Government through NARO is building confined field trial sites at Mubuku (Kasese), Serere (Eastern) and Namulonge for testing genetic engineered Cotton, Cassava and crops hoping to adopt this technology after the trials on crops confirm they can grow well. Biotechnology is the modification and exploitation of living things or part of living things to produce new tools, goods and products for human use.

Through the advancement of technology, scientists have been able to develop more precise and powerful tools to produce crops and animals with selected traits that aim to benefit farmers and consumers.

Crops and animals are engineered to produce better ones, pharmaceuticals such as vaccines, antibodies and many other industrial raw materials. Baguma says application of agriculture biotechnology can help improve the nutritive value and productivity thus reducing, malnutrition, food insecurity and poverty with in Uganda. The substantial achievements, he said, being recorded with this technology in some developing and developed countries should not simply be ignored.

Most of the research about GM crops and commercial growing has been carried out in developed countries, mainly in USA, Argentina, Brazil Canada and Spain. Developing countries; India, South African and China among others have also spotted the potential benefits of GM crops and are now growing them.

Like her East African counterpart economy Kenya, Baguma said Uganda ought to put the policy in place and adopt agricultural biotechnology. And a delay in having a biosafety law will make Uganda vulnerable to illegal importation of Genetically Modified Organisms.

Lack of enabling policy

He said agricultural scientists at various centres in Uganda have been able to make genetically engineered cassava, maize and cotton among others but have not been exploited by farmers due to lack of an enabling policy. "Government should put in place biotechnology and biosafety policy to make Uganda utilize the technology for its national development." Baguma said. The policy that was drafted in 2004 is yet to be approved by the cabinet. The reasons for planting GM crops include but are not limited to increased food production, lower food prices, environmental conservation and improved food quality.

By the year 2050, it's projected that there will be 9.3 billion people living on this planet. This means that less than 50 years world population is expected to increase by 3 billion. Feeding those people will mean massive changes in the production, distribution, and stability of food products.

Uganda's population is expected to increase from 28 million people to 47 by the year 2020. "We cannot sustain the country's food needs with conventional and organic farming. Our population is increasing and we need to supply them food in the next 50 years." Baguma said.

GMO proponents in Uganda say the crops do not only give better harvests, but also get effective protection from pests and diseases, bring more profit to the farmer as result of increased yields and conserve environment because of reduced pesticides use and tillage.

In the developed countries, GM crops have been integrated into commodity markets. According to a report prepared by the United States Development Agency (USDA) Advisory Committee on Biotechnology and 21st Century Agriculture (Opportunities and Challenges in Agriculture Biotechnology), in 2005, 52% of corn (maize), 87% of soybeans, and 79% of cotton planted in the United States were genetically engineered. Biotechnology however, requires some investment.

There is need for scientific capacity to assess the biosafety of the GM crops, economic expertise to evaluate their worth, regulatory capacity to implement guidelines for safe deployment and legal systems and punish transgressions in law. Therefore, the proposed National Biotechnology and Biosafety Policy should address such concerns especially building and strengthening national capacity in biotechnology research and development and providing a regulatory and institutional framework for biotechnology development and applications.

Much as the technology is becoming popular, there is a heated debate over genetically modified crops, featuring science, economics, politics and religion. In some countries, there have been increased risk management requirements as well as opposition to introduction of the transgenic seed varieties and the foods produced from those crops.

Some of the food processors and retailers have been reluctant to introduce food products developed from transgenic crops in markets due to perceived consumer resistance to genetic engineering technology, while other markets there is a requirement for mandatory labeling of food products.

The resistance stems from some consumers' perception that there are unknown risks associated with genetically engineered foods and an absence of obvious consumer benefits. The frequently asked questions are about quality of the output, marketing and adoptability of the new crop varieties to the climatic conditions, and the crop impact on the human fertility.

Dr. Thomas Egwang, Director General Medical Biotech Laboratories Kampala says "Biotechnology will be an engine for Uganda's social economic development that would enable it catch up with the countries so far ahead of it." He said people who are ignorant about biotechnology are the ones bent on talking about its ill effects.

Despite the diversity of ethical issues in agricultural biotechnology, there is a need to understand beliefs and doctrines as this allows coexistence with in a cross societies, and prevents social conflict.

Technology's acceptance is based not only on technological soundness but also on how it's perceived to socially, politically and economically. A strong public awareness is therefore very necessary before the technology is finally taken up by the farmers in Uganda.

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