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Global Agricultural Information Network

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Aflatoxin Control in Kenya

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Pest/Disease Occurrences

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Report Highlights:

Kenyans, after years of suffering from consuming aflatoxin-contaminated maize, may soon benefit from a simple and natural aflatoxin-mitigation strategy currently being tested in Kenya. Scientists from Kenya's Agricultural Research Institute (KARI), Pest Control and Produce Board (PCPB), the Ministry of Agriculture (MOA), the African Agriculture Technology Foundation (AATF), and the Kenyan Plant Health Inspectorate Service (KEPHIS) have started collaborating at three Kenyan test sites to generate initial results to deploy this technology to reduce aflatoxin exposure. Successful trials in several years could lead to effective and inexpensive local production and disbursement of the natural aflatoxin-mitigating agent now undergoing trials.

New Control Method for Aflatoxin

Experts from USDA, the Government of Kenya (GOK), Kenyan research organizations, and the Nigerian- based International Institute of Tropical Agriculture (IITA), have started collaborating to develop and implement a bio-control method to reduce the amount of aflatoxin contamination in Kenyan food. This type of technology, developed in the United States (U.S.) by USDA/ARS scientists, has successfully prevented high levels of aflatoxin contamination in maize and peanuts in the United States, Nigeria and Senegal. A Nigerian specific bio-control product called AflaSafe ^{TM} proves to be a highly effective method for reducing aflatoxin contamination by up to 80 percent. For this success to translate to Kenya, organisms native and endemic to Kenya will be used for effective aflatoxin management.

Currently, KARI has begun testing thirteen aflatoxin strains to extract a minimum of four strains that hold the highest potential for controlling aflatoxin. Successful preliminary results, expected to be completed by July/August 2011, will enable KARI to move to on-the-farm field trials. KARI envisages creating a bio-pesticide product, made from indigenous material, to control aflatoxin by June 2012. KARI will work closely with the PCPB and KEPHIS to gain approval for mass production and farmer use, allowing Kenyan famers to significantly reduce high aflatoxin contamination levels and thereby improving the quality of major crops.

Aflatoxin a Major Impediment to Food Security

Aflatoxin contamination remains a primary and significant constraint for Kenya to achieve food security. According to IITA, contamination of 2.3 million bags (90 kg per bag) of maize resulted in a loss of Kenya Shilling 4.1 – 5.3 billion revenues for farmers, as well as high prices of maize flour meal for consumers in 2010. Some of the negative impacts of aflatoxin contamination in humans include more than 200 people dying since the1980s and 35 percent of children five years or younger experiencing stunting. Moreover, indicators show that the effects from aflatoxin exposure are more pervasive and detrimental than is being reported, according to the University of Nairobi. Because maize consumption accounts for a large majority of the Kenyan diet and most Kenyans lack adequate understanding of aflatoxin's harmful and potentially deadly effects, both Kenyan producers and consumers will benefit from the implementation of the ongoing USDA sponsored bio-control project on aflatoxin abatement in Kenya.

USDA Outreach in Kenya

On March 16, 2011, FAS/Nairobi, in collaboration with the Public Affairs Office, hosted a seminar to discuss the collaborative efforts among U.S. Government agencies, IITA, and the GOK on aflatoxin abatement in Kenya. About 65 representatives from the GOK, agriculture research, farming, industry, trade, academia, UNEP, Embassy staff, and local media outlets listened to and questioned Dr. Peter Cotty of the USDA's Agricultural Research Service and Ranajit Bandyopadhyay of the IITA, and Ms. Johnni Daniel of the CDC National Center for Environment Health.

Their presentations focused on bio-control technologies, and the health and trade impacts of aflatoxin in the U.S. and Africa. Participants learned about the high levels of aflatoxin contamination in Kenya and the limited knowledge, even among the local experts, of aflatoxin's impacts on human and animal health. In addition, CDC highlighted the increasing rates of exposure in communities that produce and consume their own food. Without collaboration from agriculture, health, and economic sectors of the government to combat this problem, the aflatoxin problem will continue to negatively impact Kenyans. However, the bio-control tool provides a path for an effective remedy.

The USDA funded project in Kenya is part of a wider initiative supported by the United States Government, Bill and Melinda Gates Foundation, the World Bank various international research institution s and private food companies, to explore holistic approaches to reducing aflatoxin in Africa.

10-kg Boxes of AflaSafe™ Ready for Deployment

Source: IITA

Easy Application of AflaSafe™ by African Farmers

Source: IITA