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Harmonization and Strengthening of Aflatoxin Standards Regulation for Human Food and Food Products to Promote Public Health

EXECUTIVE SUMMARY

Aflatoxin contamination in food is a Public Health concern. East African Community estimates of aflatoxin contamination in food are as high as 60% in some regions.

The EAC region has a weak system of enforcing the adopted standards for aflatoxin control. This is a challenge due to poor inter-agency coordination, lack of accessible testing technology, weak inspection capacities, and lack of clarity on roles and responsibilities of food regulatory bodies. The vast majorities of people in the region consume on-farm production, and both informal and formal markets remain largely unregulated, as is the food processing industry.

There is need to strengthen the capacity of Food Safety Regulatory Authorities to monitor and control aflatoxin levels in food and food products in the EAC Partner States. This will inform relevant authorities of the current status of aflatoxin contamination as well as enable relevant structures to take appropriate action to protect the EAC communities.

THE PROBLEM

Aflatoxin is a harmful agent released by fungi that contaminates food and animal products and is known to cause cancer of the liver. Food contamination occurs in the field, after harvest, during storage and food processing.

FAO/WHO member states adopt and enforce Maximum Levels (MLs) as set by the Codex Alimentarius Commission however for aflatoxin, Codex has not been able to formulate internationally acceptable MLs. Countries and region have set their own National and regional MLs. For instance, the US guideline has ML levels of 20 ppb while the EU has more stringent ML levels of 4 ppb for total aflatoxin in food. Standardized maximum levels of aflatoxin contamination were adopted in 2006 by the EAC for 28 selected foods, cereals, and pulses. They are 5 ppb for aflatoxin B1 and 10 ppb for total aflatoxin. The discrepancy in MLs set by different national and regional food safety regulatory bodies exerts considerable impact on trade.

The EAC region has a weak system of enforcing the adopted standards for aflatoxin control. The Partner States have complex institutional arrangements involving many stakeholders like the Ministries responsible for health, agriculture, trade, bureaus of standards and other agencies. This complex arrangement makes it difficult to guarantee that the products meet the required quality for aflatoxin control. This can result in increased risk of exposing consumers to aflatoxin contaminated products which is a public health concern and it can also limit trade as foreign and local markets are not assured that the products meet the required aflatoxin ML's standards.

High levels (60-90%) of on-farm consumption across the East Africa region also inhibit the monitoring of aflatoxin in household diets. As a result, aflatoxin-contaminated foods and feeds move through the food chain largely unchecked.

SIZE OF THE PROBLEM

In the East African Community (EAC), aflatoxin exposure due to consumption of aflatoxin contaminated staple foods is common. Estimates of aflatoxin contamination in staple foods have been reported to be as high as 60 percent in some areas within the EAC¹.

The first case of aflatoxin contamination in the region was reported in 1966 in Uganda. Surveys done in Uganda in 1990, 1991, 1992, and 1999 consistently indicated more than the maximum allowed level of 20 ppb for total aflatoxin in on-farm products, locally manufactured products and baby food². In Kenya, 60-64% of home grown maize had aflatoxin levels higher than 20 ppb while in Tanzania 4-43% of groundnuts and maize from several regions had aflatoxin B1 levels above 5 ppb³.

Trade costs, due to lost revenues from rejected food exports as a result of weak regulatory system are estimated to some total some \$1.2 billion per year for the African continent⁴.

References:

1. Daniel, J.H., Lewis, L.W. et al. 2011. Comprehensive Assessment of Maize Aflatoxin Levels in Eastern Kenya, 2005–2007 Environmental Perspective 119:1794-1799.
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3. Abt Associates and TFDA. 2012. *Aflatoxin contamination and potential solutions for its control in Tanzania*. A summary of the country and economic assessment conducted in 2012 and the aflatoxin stakeholder workshop held on December 3 and 4, 2012. Dar es Salaam, Tanzania
4. IITA. 2015. Aflatoxin standards for food: Knowledge platform 2014. TBS Standards Catalogue 2014 and EAC Secretariat Standards Office (reported in IITA, Aflatoxin Standards for Food – Knowledge Platform 2014). Situational Analysis East Africa Region.

CAUSE OF THE PROBLEM

Most of the countries in the EAC region operate a food safety regulatory system that is based on the multiple agencies model. Under this multiple agencies system, the food safety regulatory responsibilities are shared between government Ministries/agencies such as Health, Trade and Industry, Tourism, Livestock and Agriculture. Unfortunately, this organization leaves overlapping mandates, and often conflicts among these agencies. This greatly hampers the food control activity due to:

- poor inter-agency coordination
- Inadequate accessible testing technology
- weak inspection capacities
- lack of clarity on roles and responsibilities of food regulatory bodies
- inadequate human and technical resources

The question of controlling aflatoxin contamination in home-grown and informally traded products poses an even greater challenge since the vast majorities of people in the region consume on-farm production yet the on-farm products and informal trade remain largely unregulated.

In cases where contaminated commodities are rejected, they are seldom disposed of properly. More often, the rejected products end up making their way back into the informal marketplace to be sold to low-income consumers or used as animal feed.

POLICY OPTIONS

Policy Option 1: Partner States to Develop Capacities of national food safety regulatory Authorities to Monitor and Control Aflatoxin Levels in Food and Food Products.

Strengthening of regulatory capacities will significantly mitigate the impact and effects associated with aflatoxin on human health and the economy.



Recently, a new approach has been developed for reducing pre-harvest aflatoxin contamination in peanuts based on applying competitive, non toxigenic strains.

IMPLEMENTATION STRATEGIES

1. Partner states need to develop standards that are based on dietary consumption
2. Partner States should improve communication and coordination among existing regulatory bodies
3. Partner States should raise awareness among policy makers, farmers, traders, food processors, and consumers on existing aflatoxin control and regulation
4. Partner States should strengthen of food safety risk assessment, coordination, and inspection and analysis systems

Given the public health, economic, trade, and food security impacts of aflatoxin contamination of food, there is need for harmonization and enforcement of aflatoxin standards to enhance regional and national efforts to minimize the negative impact of aflatoxins on human health and the economy.

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