

# **IDENTIFICATION OF PREDISPOSING FACTORS TO AFLATOXIN CONTAMINATION OF MAIZE VALUE CHAIN IN EASTERN KENYA**

<sup>1</sup>Mureithi, B. K., <sup>2</sup>Muthomi\*, J. W., <sup>2</sup>Chemining'wa, G. N. and <sup>2</sup>Mutitu, E. W

1. Ministry of Agriculture, P.O. Box 30028, Nairobi, Kenya.
2. Department of Plant Science and Crop Protection, Faculty of Agriculture, University of Nairobi, P. O. Box 30197, Nairobi, Kenya

\*Corresponding author: james\_wanjohi@yahoo.com; james.muthomi@uonbi.ac.ke

## **Abstract**

Maize is the staple diet of majority of Kenyan population but repeated outbreaks of mycotoxin poisoning in Eastern Kenya is a major food safety constraint. This study was conducted to determine maize production and handling practices that contribute to aflatoxin contamination in maize in Eastern Kenya. A survey was conducted in Makueni, Machakos, and Kitui Counties of Eastern province during 2008 and 2009 cropping seasons. Information gathered included agronomic practices, harvesting, drying, transportation, storage materials and structures used, processing and weather conditions during harvesting and storage. The survey revealed that such practices as planting of uncertified seeds, harvesting maize before safe moisture content, drying grain on bare ground, storage in living houses and use of synthetic (polypropylene) bags. Aflatoxin B<sub>1</sub> was detected in maize and maize products at levels above the national legal limit of 10µg/kg. Such inappropriate handling practices in Eastern Kenya may predispose maize to fungal and mycotoxin contamination. In addition, high temperatures and periodic drought contribute to the higher fungal and aflatoxin contamination. Therefore, there is need for continued mycotoxin awareness campaigns to educate farmers, traders, transporters and processors on proper pre- and post-harvest handling practices to avoid contamination with aflatoxin.

**Key words:** Aflatoxin, Eastern Kenya, handling practices, maize, mycotoxins, storage structures