Abstract

Aflatoxin poisoning resulting from consumption of contaminated maize has continued to recur in a yearly pattern in Eastern Kenya. The largest mycotoxin-poisoning epidemic in the last decade was reported in Kenya in 2004. Therefore, this study was carried out to determine the occurrence and levels of mycotoxin-producing fungi and aflatoxin B1 in maize and soils from Eastern Kenya. Maize, soils and mill dust samples were collected from farmers and traders in Machakos to determine the incidence of mycotoxin-producing fungi and aflatoxins during the 2007 harvest season. Fungal isolation was done by plating on agar medium, while aflatoxin B1 was determined by ELISA. The most frequently isolated fungi were Fusarium and Aspergillus species and the Aspergillus species identified were A. flavus, A. niger, A. terreus and A. versicolor. Aspergillus flavus was frequently isolated from mill dust and soils from under the stores. Aflatoxin levels of up to 160 µg kg-1 were detected in samples from areas with high A. flavus isolation and in whole maize than in semi-processed grain. Most mill dust samples were contaminated with aflatoxin up to 80 µg kg-1. The results indicate that A. flavus is the main producer of aflatoxins in maize Machakos and high inoculum levels of the fungus are present in soils, near stores and maize mills. Therefore, management of aflatoxin poisoning should include reduction of A. flavus inoculum in farms and storage environment.