

## Abstract

**Full text article available at <https://core.ac.uk/download/pdf/249336149.pdf>**

Aflatoxins are secondary metabolites produced by several species of *Aspergillus* fungi, which occur in food crops due to exposure of pre-harvest and post-harvest conditions. Complementary foods are considered an important source of energy, protein and fat for children aged between 6-24 months. The study was carried out to explore the association between post-harvest handling practices and aflatoxins contamination in maize-based complementary foods. Complementary flour samples were collected from randomly selected household and analyzed by using HPLC. The presence and concentration of aflatoxins B1, B2, G1, G2 and total AFs was detected. About 48.95% of all samples were found to be contaminated with aflatoxins. A stepwise linear regression in generalized linear model was used to identify factors that significantly affected contamination of complementary food with aflatoxins. The analyzed sample was found to be less contaminated with aflatoxins B1 across all six villages with range of 0.24-1.39  $\mu\text{g}/\text{kg}$ , with mean value of 0.67 $\mu\text{g}/\text{kg}$  and total mean aflatoxins were found to be 4.79 $\mu\text{g}/\text{kg}$ . Results indicated that some of the post-harvest handling practices used by parents/caregivers to agricultural produce used to prepare complimentary food are highly associated with aflatoxins contamination ( $p < 0.05$ ). The occurrence of total aflatoxin levels in complimentary flour composite across the six villages was significantly associated with insect infestation, maize/cereals stored for more than 12 months, drying on bare ground, uses of pesticides to protect stored maize/cereals ( $p < 0.05$ ). Estimate from the linear regression model indicated that, insect infestation (0.3870), and drying on bare ground (0.0856) were positively associated with aflatoxins contamination. This study recommends education and awareness campaign are needed to inform farmers, traders, processors about the risk of fungal growth and toxins contamination.