

## **Abstract**

Aflatoxin is a major mycotoxin contaminant endemic in Kenya. It is especially common among smallholder farmers who depend on their produce and a limited range of staples. Extensive research has gone into the prevalence, mitigation and control measures of aflatoxin. However, the link between aflatoxin-related knowledge and dietary diversity remains understudied in Kenya. This cross-sectional study assessed knowledge of aflatoxin contamination, handling practices, and dietary diversity among 123 smallholder farmers' households in Baringo County, Kenya. Dietary diversity was considered a potential indicator of food consumption patterns associated with aflatoxin exposure. Data was obtained through semi-structured questionnaires incorporating food frequency and 24-hour dietary recall sections. Dietary diversity was assessed using the FAO HDDS framework. Binary and multinomial logistic regression models were used to assess associations. While 71.5% of the smallholder farmers had heard of aflatoxins, only 36.6% demonstrated good knowledge of contamination risks. Over half (65.9%) of households had poor handling practices. Majority (83%) of households achieved medium dietary diversity, with maize and milk as key staples. Education was significantly associated with greater aflatoxin knowledge ( $p = 0.007$ ). Handling practices were significantly associated with education ( $p = 0.0449$ ), monthly household income ( $p = 0.0248$ ), and knowledge of aflatoxin ( $p = 0.038$ ). Knowledge of aflatoxin was not associated with low dietary diversity ( $p = 1.000$ ), and although positive, knowledge was also not significantly associated with medium diversity (AOR = 2.230,  $p = 0.100$ ), relative to high dietary diversity. These findings suggest that the smallholder farmers in this study remain vulnerable to aflatoxin exposure, given the reliance on aflatoxin-prone staples and observed gaps in knowledge and handling practices. Practical aflatoxin education through extension services, improved access to affordable post-harvest technologies, and promotion of healthier dietary choices are required.