

Abstract

Aflatoxin level in 300 farmers' stores in four agro-ecological zones in Benin, a west African coastal country, were determined over a period of 2 years. At sampling a questionnaire was used to evaluate maize storage practices. Farmers were asked what storage structure they used, their storage form, storage period, pest problems in storage and what was done against them. Beninese farmers often changed their storage structures during the storage period, transferring the maize from a drying or temporary store to a more durable one. Most of the farmers complained about insects damaging stored maize. Often, storage or cotton insecticides were utilized against these pests. Regression analysis identified those factors that were associated with increased or reduced aflatoxin.

Maize samples in the southern Guinea and Sudan savannas were associated with higher aflatoxin levels and the forest/savanna mosaic was related to lower toxin levels. Factors associated with higher aflatoxin were: storage for 3–5 months, insect damage and use of *Khaya senegalensis*-bark or other local plants as storage protectants. Depending on the agroecological zone, storage structures that had a higher risk of aflatoxin development were the "Ago", the "Secco", the "Zingo" or storing under or on top of the roof of the house. Lower aflatoxin levels were related to the use of storage or cotton insecticides, mechanical means or smoke to protect against pests or cleaning of stores before loading them with the new harvest. Fewer aflatoxins were found when maize was stored in the "Ago" made from bamboo or when bags were used as secondary storage containers.