Farmers' Guide to Management of Aflatoxin in Maize and Groundnuts in Africa

Trainer's guide

Pre-harvest recommendations

1 Use improved seed varieties

Plant maize and groundnut varieties recommended in your area and contact extension agents for advice.

2 Source seeds and inputs appropriate for growth conditions

Obtain seeds for planting and other inputs from a reliable source, such as an agro-dealer. Follow good agronomic practices to grow the crop.

3 Plant on time

Plant at the right time to avoid crop stressors, synchronise with rainfall patterns for growth, and have enough rain for growth and maturity towards the end of the season.

Do not plant too early to avoid crops maturing during the rains.

4 Apply fertilizer and other inputs

Crops grown under stress are more susceptible to infection by the aflatoxin-producing fungi that cause contamination. Applying fertilizer and other key inputs reduces crop stress.

5 Control insect damage

Control insects, particularly stem borer, during crop growth. Insects create wounds on the crop that may facilitate fungal infection.

Sometimes insect attack may completely damage the crop.

6 Remove weeds

Undertake timely control of weeds to avoid them competing with the crop.

Weed control can be done manually with a hoe, bull, tractor, or herbicide.

7 Apply Aflasafe at the right crop stage

The atoxigenic beneficial strains of Aflasafe require moisture to grow, therefore apply Aflasafe after rains, when rains are expected or when the soil is wet.

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Post-harvest recommendations

1 Harvesting

Timely harvest of crops limits aflatoxin contamination. Harvest immediately after the crop is mature.

2 Lodging

Plants should remain erect during harvesting. Maize plants that are fallen on the ground should be lifted up and tied together.

3 Heaping

Farmers often heap the maize plants in the field and allow for drying.
The heaps should remain erect in the form of a cone.

4 Sorting of damaged cobs

Separate crops from immature, insect damaged or diseased ones to avoid contamination. Damaged crops may have been infected by aflatoxin-producing fungi and may contain high aflatoxin concentrations.

5 Dehusking

Dehusk the cobs directly into a bag and avoid contact with the soil.

6 Drying

During drying, sort to remove immature cobs, infected cobs/ grains, debris, and broken cobs.

Do not dry grains on bare ground either in the field or at home. Avoid crops coming in contact with water/ moisture during drying.

7 Sorting during drying

Do not dry grains with symptoms of infection or diseased along with healthy ones.

Separate the healthy cobs from immature, insect damaged or diseased cobs

8 Determining safe moisture content

Farmers can test for properly dried maize by cracking kernels between the teeth. If it shatters then kernels are dry. If it is sticky then kernels are not dry.

9 Threshing

Use well calibrated threshers in order to maintain good grain quality in maize.

Do not thresh maize by beating with sticks; this may increase proportions of broken kernels.

10 Storing

Clean, repair, and disinfect the storage structure before bringing in new harvest
Fumigate the storage structure to control insects and rodents.

11 Sanitation

Maintain good hygienic conditions during threshing to avoid further contact with soil or contamination by livestock.

12 Transport

Avoid transportation in uncovered trucks.

Transport maize and groundnut in water-proof vehicles to avoid re-wetting of the crop.

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