

**Good Agricultural Practices
for
Minimizing Aflatoxin Contamination
in Groundnut**



**हर कदम, हर डगर
किसानों का हमसाफर
भारतीय कृषि अनुसंधान परिषद**

AgriSearch with a human touch



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Aflatoxins



Aflatoxins are naturally occurring mycotoxins and at least 20 different types are known to be produced by species of *Aspergillus*. Aflatoxins B1, B2, G1 and G2 are important in view of trade, produced by *Aspergillus flavus* and *A. parasiticus*. Aflatoxin B1 is genotoxic carcinogen and its presence in commodities is a great health hazard especially to liver. Aflatoxin producing fungi can colonize and contaminate grains before harvest or transit or during storage.

Management of aflatoxin contamination in groundnut

The problem of aflatoxin can be overcome by adopting good agricultural practices, hygienic storage practices and good manufacturing practices. In addition to the recommended practices for groundnut cultivation, special practices to be followed for production of groundnut free of aflatoxin contamination.

Recommended practices for groundnut cultivation



Follow deep ploughing (8-10 inches) in summer.



Apply well decomposed farmyard manure/ compost @ 5-10 tons/ha.



Apply neem/castor cake @ 500kg/ha in furrow at the time of sowing, if available. Also, mix 2.5 kg of commercial formulation of *Trichoderma* with the neem/castor cake, a week before applying to the soil.



Select quality seeds and treat with Carbendazim 50WP (Bavistin) @ 2g/kg seed OR with commercial formulations of *Trichoderma harzianum* or *T. viride* @ 10g/kg seed.



Follow recommended nutrient, weed and plant protection measures.



Apply gypsum @ 400-500 kg/ha at flowering.



Harvest the crop at full maturity in that inner wall of the shell turn brown.



Dry the uprooted plants along with the pods by keeping them up-side-down (windrow drying) i.e. foliage towards ground and pods upwards.



Store the produce in clean polythene lined gunny bags and stack them on wooden or plastic planks or on tarpaulin.



To prevent damage of pods by insects in storage, fumigate with aluminum phosphide 56% @ 10g/tons of pods.

Keep the storage space free from any kind of seepage or leakage water.



Special practices for management of aflatoxin contamination in groundnut

Aflatoxin contamination in groundnut is contained at

- i] Pre harvest stage and
- ii] Harvest and post harvest stages.

Post-harvest management practices

- ◆ Follow crop rotation with onion/garlic.
- ◆ Select short/medium duration variety.
- ◆ Advance sowing by a fortnight with a pre-sowing irrigation to evade end-of-season drought.
- ◆ Follow inter-row water harvesting by adopting paired row method of planting for conservation of moisture.
- ◆ Avoid end-of-season drought by providing supplemental irrigation for rain-fed groundnut.



Harvesting and Post-harvest management practices

- ◆ The patches of field that have undergone stress or harboured diseases or pest infested should be harvested, dried and stocked separately as their produce is likely to contain aflatoxin.
- ◆ Avoid mechanical damage to the pods during harvesting.
- ◆ Pick the immature pods and mechanical or insect damaged pods and do not mix them with harvested mature pods. Also, keep the gleaned pods separately.
- ◆ Dry the pods to a safe moisture level of 8%.
- ◆ Defective (mouldy, discoloured, rancid, decayed, shrivelled, insect damaged) kernels should be separated.
- ◆ Post-harvest processing technologies viz., dry shelling, blanching, sorting of peanuts with camera or laser sorter are likely removes aflatoxin contaminated kernels.

