

Good Agricultural Practices (GAP) to minimize aflatoxin contamination in Groundnut

Groundnut is an important oilseed and ancillary food crop. India has the largest peanut growing area in the world and is the second largest producer after China. Gujarat, Andhra Pradesh, Tamil Nadu, Rajasthan, Karnataka, Maharashtra and Madhya Pradesh are the major groundnut growing states of India and together account for about 90% of the national area under groundnut. Owing to its sensory properties, groundnuts from India are in great demand world over. The export of groundnut from India, however, is hampered by aflatoxin contamination. The European Union (EU) has set a very stringent maximum permissible limit of (2 ppb B₁ and 4ppb B₁+B₂+G₁+G₂) for aflatoxin in groundnut.

Due to aflatoxin contamination, several consignments have been rejected at the destination ports, in the past several years. The aflatoxin contamination is now recognized as the chief non-tariff trade barrier for export of groundnut from India. Production of material completely free from aflatoxin, however, is not possible as fungus responsible for the toxin is ubiquitous and is abundantly present in soils where groundnut is generally grown. The problem of aflatoxin, however, can be overcome by adopting good agricultural practices, hygienic storage practices and good manufacturing practices. The cultivation of peanuts is undertaken by numerous small farmers, who are not aware of GAP.

GOOD AGRICULTURAL PRACTICES (GAP) FOR MANAGEMENT OF AFLATOXIN CONTAMINATION IN GROUNDNUT IN ADDITION TO RECOMMENDED PRACTICES

Pre-harvest management practices

- ✚ 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.
- ✚ Harvest at right maturity. Avoid mechanical damage to the pods during harvesting and adopt inverted method of drying.





- ✚ 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 below 7%.
- ✚ Defective (mouldy, discoloured, rancid, decayed, shrivelled, insect damaged) kernels should be separated.
- ✚ Store the pre-cleaned pods at below 7% moisture content in high density polythene (HDPE) bags with the thickness of 160µ.
- ✚ Post-harvest processing technologies viz., dry shelling, blanching, sorting of peanuts with camera or laser sorter, roasting at 120-140 degree C are likely to remove aflatoxin contaminated kernels.



Farmers trained to follow GAP through workshops at ICAR-DGR, Junagadh and KVK, Kodinar during 2011 and 2012.

Farmers from Mendarda, Vanthli, Borvav, Dhoraji Bhesan, Navagam and Junagadh trained to adopt the recommended GAP during *kharif* 2014 and 2015. Samples collected from these farmers' fields shown low amount of aflatoxin contamination compared to farmers not adopted the GAP.

Export oriented processing units procured these groundnuts directly from farmers adapted GAP at a premium price.

