

International Training on Detection and Integrated Management of Aflatoxin Contamination in Crops for Safe Food and Fair Trade



Organized by
International Crops Research Institute for the Semi-Arid Tropics (ICRISAT)

Under the aegis of
Indian Technical and Economic Cooperation (ITEC)
program of Government of India

24 February 2025 to 07 March 2025
ICRISAT, Patancheru, Telangana, India

Background

Many agricultural commodities are vulnerable to attack by a group of fungi that can produce toxic metabolites called mycotoxins. Among various mycotoxins, aflatoxin contamination of agricultural products has gained global significance because of their deleterious effects on human as well as animal health and its importance to international trade. Aflatoxins are potent carcinogenic, mutagenic and immuno-suppressive agents, produced as secondary metabolites by the fungus *Aspergillus flavus* and *A. parasiticus*. Many food commodities are contaminated by aflatoxins, including cereals (maize, sorghum, pearl millet, rice etc.), oil seeds (groundnut, soybean, sunflower) spices (chillies, black pepper, turmeric, ginger, coriander), tree nuts (almonds, pistachio). Health hazards from the ingestion of aflatoxin contaminated food are much greater in the developing countries than in the developed world. Most developing countries lie in the tropics, where temperature and relative humidity often favor mold growth, and where no or only limited facilities exist for monitoring groundnut and groundnut products for aflatoxin contamination. Developed countries, which import groundnuts, have set aflatoxin contamination limits for foodstuffs ranging from zero to 20 µg/kg and this has resulted in import restrictions on aflatoxin-contaminated produce. As a result, many developing countries have been unable to export their groundnuts and groundnut products.

For exporting countries to satisfy the regulations, they must produce groundnuts with no or extremely low aflatoxin contents. This can only be achieved by following suitable management practices and by storing produce under conditions that minimize the growth of aflatoxin-producing fungi. The research, development and monitoring needed to ensure this is dependent upon having simple, specific and cost-effective methods for the detection and estimation of aflatoxins in various agricultural commodities.

The two-week training program on “**Detection and Integrated Management of Aflatoxin Contamination in Crops for Safe Food and Fair Trade**” can have a multifaceted impact, touching on economic, nutritional, and social aspects. By equipping participants with the necessary skills and knowledge, it has the potential to improve food safety, trade and thus public health across the globe.

Who should attend?

Research workers actively involved in food safety and/or crop improvement programs in the universities and industries of Global South representing sub-Saharan Africa, Latin America and the Caribbean, South and South-east Asian countries. Participants from Departments of Agriculture and Veterinary Science, NGOs engaged in agriculture, personnel from food and feed industries, agricultural

commodity exporters, traders and government policy makers will also be ideal for this training program.

Objectives of the course

- To provide hands-on training to the participants using laboratory assays on quantifying aflatoxins in agricultural commodities
- To provide necessary technical know-how on setting up of laboratories, monitoring aflatoxin contamination along the crop value chains and possible management approaches

Outlines of the course (Topics covered during the course)

- Hands-on training on quantification of aflatoxins using immunoassays like competitive ELISA
- Sampling strategies
- Screening groundnut seed for resistance to *Aspergillus flavus* infection and subsequent aflatoxin contamination
- Host plant resistance to *A. flavus* infection and aflatoxin contamination
- Knowledge of the health-related problems associated with chronic exposure to aflatoxin contaminated food
- Good Agricultural Practices (GAPs) that include pre-harvest and post-harvest measures to reduce aflatoxin contamination in crops.
- Transfer of technology: case studies

Approach and methodology of the course: Hands-on training in the laboratory and classroom lectures

Number of participants: up to 35

Application:

Prospective applicants from any country except India can be able to apply for the course on the website of ITEC, Govt of India.

[ITEC :Indian Technical and Economic Cooperation](#)

Note: The potential candidate after filling the form online, may need to submit a copy of the filled application to the Indian Embassy/consulate in their country for funding approval.

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