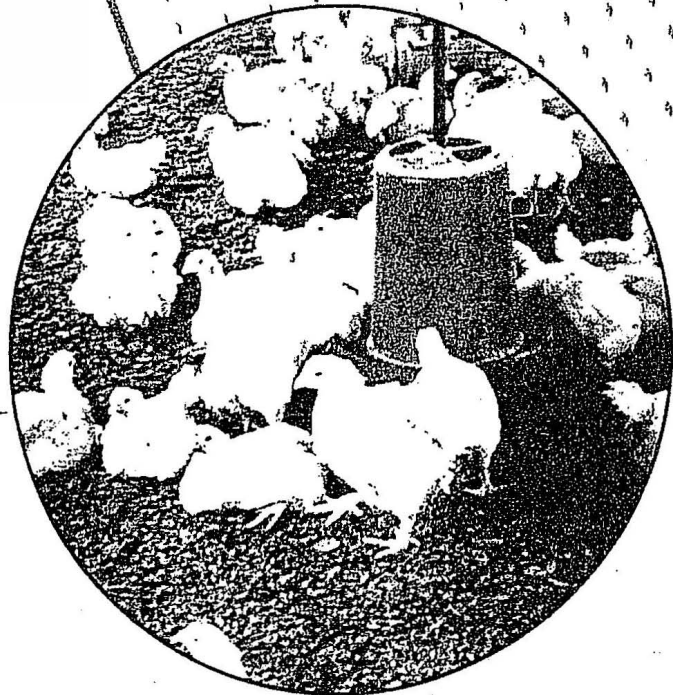


# **Aflatoxin Detection, Quantitative Estimation and Management**

8th and 9th January 2001  
at ICRISAT

Edited by  
M A Mayo  
& DVR Reddy



*Scottish Crop  
Research Institute*

# **Aflatoxin Detection, Quantitative Estimation and Management**

**Proceedings of a Consultative Meeting**

**8<sup>th</sup> and 9<sup>th</sup> January 2001**

**ICRISAT- Patancheru**

sponsored by



**ICRISAT**

**International Crops Research Institute for the Semi-Arid Tropics (ICRISAT),  
Patancheru 502 324, Andhra Pradesh, India**

**DFID**

**Department for International Development, UK**



**FAO**

**Food and Agricultural Organization  
Regional Office for Asia and the Pacific, Bangkok, Thailand**

Edited by

**M A Mayo and D V R Reddy**

Published by Scottish Crop Research Institute, Invergowrie, Dundee, DD2 5DA, UK.

ISBN 0 9058 75192

© Scottish Crop Research Institute 2002

# Aflatoxin management: Host-plant resistance

S N Nigam

ICRISAT, Patancheru 502 324, Andhra Pradesh, India

Aflatoxin contamination can be minimized by adopting certain cultural, produce-handling, and storage practices. However, these practices are not being widely adopted by smallholders in developing countries.

One possible way of reducing aflatoxin contamination of groundnut is the cultivation of genotypes that are resistant to seed invasion by aflatoxin-producing fungi or to aflatoxin production. These genotypes will be of great value as no-cost inputs to the farmers in both developed and developing countries. Therefore, breeding for resistance to *A. flavus*/*A. parasiticus* and/or aflatoxin production is considered to be important to reduce aflatoxin contamination. Despite progress in breeding for resistance, achievements have contributed only marginally to the reduction of aflatoxin contamination.

The main strategy to develop with resistance to aflatoxin contamination will be by pyramiding genes from different sources of resistance. Genes that can influence aflatoxin contamina-

tion levels have been identified. These should be utilized in generating sources with resistance to aflatoxin contamination.

Resistance to aflatoxin contamination may be due to a lack of pod infection or seed invasion by *A. flavus* and *A. parasiticus*, or to a decrease in aflatoxin production in the seed. No absolute resistance has so far been reported. The best genotypes (J 11, PI 337394F, PI 337409 or 55-437) show up to 15% seed colonization. The relationships among different resistance mechanisms, their interactions and their influence in reducing aflatoxin contamination are yet to be understood clearly.

Many reports on the location of genotypes with resistance to seed colonization have been published. At ICRISAT, many breeding lines have been evaluated for yield and for resistance to the infection and colonization of seed. Of these ICGVs 88145, 89104, 91278, 91283 and 91284 have been released as improved germplasm lines.