

Screening of atoxigenic *Aspergillus flavus* isolates in pistachio producing areas of Iran

M. Moradi, R. Dargahi, A. Sherafati, S.R. Fani, E. Sedaghati, M. Mohammadi-Moghaddam, M. Mirabolfathy

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Abstract

Aflatoxins are highly toxic compounds produced by several *Aspergillus* species in various substrates. Atoxigenic strains of *Aspergillus flavus* have been successfully applied to reduce aflatoxin contamination in different crops. To determine distribution of atoxigenic strains of *Aspergillus flavus* sampling was done from soil and nut samples in different agro-ecological zones. A serial dilution method and AFPA medium was used to isolate *A. flavus* strains. The isolates were identified according to species-specific primers. The ability of the isolates to produce aflatoxins was assayed using YES medium amended with MBC (methyl- β -cyclodextrin) as a general assessment and TLC after culturing on rice for 10 days. The results showed that out of 350 isolates, 17 were not able to produce aflatoxins using different methods. The comparison of two methods showed that the YES medium will overestimate the frequency of atoxigenic strains of *A. flavus* isolates. Specific detection the ability of strains to produce aflatoxins requires molecular assays.