

عنوان مقاله:

Potential of Aflatoxin Production in *Aspergillus* Section *Flavi* Isolates of Pistachio in Iran

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خلاصه مقاله:

Introduction: Aflatoxin analysis shows that *Aspergillus* section *Flavi* strains include mixtures of strains that are highly toxic to human with high level of aflatoxins while some others produce moderate level of aflatoxins and also there are nontoxigenic strains. **Methods:** To determine the aflatoxin producing abilities of *Aspergillus* section *Flavi* isolates in pistachio orchards, 180 pistachio nut samples were collected and fungal isolation was performed by *Aspergillus* *Flavus* and *Parasiticus* Agar (AFPA) medium. Distinct colony morphology in Coconut Agar Medium (CAM), Yeast Extract Sucrose (YES) medium supplemented with Methyl- β -cyclodextrin, and Sodium Low Salt (SLS) medium were used for distinguishing and screening between toxigenic and atoxigenic isolates. Toxigenicity and aflatoxins production level of isolates assayed by thin layer chromatography (TLC). **Results:** One hundred and twenty isolates of various parts of the pistachio growing areas belonging to *Aspergillus* section *Flavi* was identified by AFPA. Out of 120 isolates, 89.15% were able to produce one or several types of aflatoxins while in 10.83% isolates there was no toxin production. Of isolates investigated in this study, 14.16% of total produced aflatoxins were B1, B2, G1, and G2, whereas 10.83% of the isolates produced B1, B2, and G1, 34.16% of the isolates produced B1 and B2, and only 30% of the isolates were able to produce B1 type aflatoxin. Generally, aflatoxin production between toxigenic isolates was in different ranges from 39-21548, 37-8432, 97-2111, and 31-810 ng/g for aflatoxin B1, B2, G1, and G2 respectively. **Conclusion:** Out of 120 investigated isolates, 13 isolates produced no aflatoxins and toxigenicity of other .isolates was potentially variable from very low to high level

کلمات کلیدی:

Food safety, Mycotoxin, Chromatography, Screening, Cultural method

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