

# Evaluation of walnut contamination to *Aspergillus flavus* and aflatoxin collected from Semnan provinces (Iran)

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## Abstract

One of the major problems in Iranian nuts exporting is contamination of nut to *Aspergillus* sp. fungi and aflatoxin. In order to evaluate contamination of walnut to *Aspergillus flavus* fungi and aflatoxin in Semnan province, sampling of walnut was done in 10 points of Semnan province. For investigation of *Aspergillus flavus* fungus presence in samples, they were cultured in (AFPA) media and the HPLC method was used to assess aflatoxin contamination rate in samples. Converting the data and statistical analysis using Duncan's multi test demonstrated that the mean number of colonies of *Aspergillus flavus* in the different samples differed. From 10 samples, two samples (G5 and G7) had most contamination to *Aspergillus flavus* fungi. G7 and G5 had  $10.3 \times 10^3$  and  $8.6 \times 10^3$  average numbers of fungal colonies respectively. The G9 sample was contaminated with *Aspergillus flavus* fungi. ( $5.3 \times 10^3$  average numbers of fungal colonies) which was less than G5 and G7. The other samples did not show any contamination. As conclusion we found that walnut in Semnan province can be contaminated by *Aspergillus flavus* fungi at least in 30% of probability, however, results about aflatoxin production showed that none of the samples produced aflatoxin.