

Title Distribution of aflatoxin in processed pistachio nut terminals
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Abstract

Aflatoxins are secondary metabolites that are produced in foods and feeds by some *Aspergillus* species in Section Flavi. Distribution of aflatoxins in pistachio bulks and their sources are the main factors in pistachio nuts contamination by aflatoxin. Sampling was done from final, small, yellow shell discoloration and floating pistachios at pistachio processing terminals in Kerman (6 terminals) and Yazd (1 terminal) provinces in 2002 and 2003. To determine the role of re-hulled pistachios in contamination, sampling was done from several terminals and samples were analyzed in stained and non-stained pistachios. The results indicated that concentration of aflatoxin B1 increased in final, small, and yellow shell discoloration pistachios and decreased in yellow shell discoloration, stained and deformed pistachios. The existence or percentage of yellow shell discoloration, stained and deformed pistachios can be used to determine contamination of pistachio bulks. Re-hulled, stained and non-stained pistachios had contamination by aflatoxin B1 and 66% non-stained pistachios contained aflatoxin B1 higher than the permitted limit. This is the first report to determine the role of non-stained re-hulled pistachios in contamination of pistachio nuts by aflatoxin. Aflatoxin concentration varies according to type of processing terminal and location. The least amount was observed in semi mechanized terminal and pistachio sample in Yazd province. Results of this research can be applied in sorting contaminated pistachios from healthy pistachios in processing stages.