

Distribution of aflatoxin contamination in small and normal size pistachios in orchard

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Abstract

Separation of aflatoxin-contaminated pistachio in orchards is one of the most important functions of processing. Removal of pistachio nuts with high aflatoxin contamination by sorting during processing caused a decrease in contamination of processed pistachios compared to non-processed pistachios. In this research, the efficiency of small separator machines in order to separate contaminated pistachios in orchard was evaluated. To predict aflatoxin contamination, 'Owhadi' pistachio was harvested in three replications in suitable time of harvest. After dehulling, washing and pre-drying, small pistachio nuts were separated by small separator machines. Aflatoxin content in small and normal sized pistachios was measured by HPLC method. Results showed that there was positive correlation between the nut size and aflatoxin contamination. Around 77.1% of small pistachios were contaminated with aflatoxin, whereas 28.8% of aflatoxin contamination existed in normal size pistachios. It is due to the fact that almost all early split pistachios are smaller than other pistachios.