# Effect of mycotoxins in dried figs production

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## Abstract

Dried figs are the significant annual production and export in some countries such as Turkey, USA and Iran. Fungi activity, infection and mycotoxin contamination is the main risk of the fruit. Dried figs are produced and collected when fruits are ripened and shrivel on the tree in Iran. As a general rule, infection starts in-field, but it depends on both the product and the fungus. Emphasis should be placed on the fact that the strategies for a particular fig crop depends on the ambient or controlled climatic conditions. Usually, during the harvest and post-harvest stages suitable humid temperatures predispose the plant for penetration of spore-contaminated dust or insect transmission to the fruit. An important variety of fungi have been found to contain cyclopiazonic acid, aflatoxins, ochratoxin A and patulin. The recent research shows cyclopiazonic acid is a more common mycotoxin than aflatoxin in dried figs. The formation of aflatoxins is mainly due to contamination by *Aspergillus* species and especially *A. flavus* and *A. parasiticus*. Under stress conditions, aflatoxin contamination is probably high. Levels of the mycotoxins in dried figs are measured by Thin- Layer Chromatography (TLC), Liquid Chromatography (LC), High Performance Liquid Chromatography (HPLC), Gas Chromatography-Mass Spectrometry (GC-MAS) and Bright, Greenish Yellow Fluorescent (BGYF). It is important to provide good techniques for management and reduce mycotoxins such as decreasing *A. flavus* spores in the orchard, removal of damaged fruits, additional drying in a solar drier, fluorescence sorting, use sulfur dioxide followed by drying, sodium and potassium metabisulfite, ozone treatment and storage management. This review describes the production of dried figs in Iran, summarizes the available data on figs providing insights into possible infection routes and related studies on export products.