# Effect of copper on the aflatoxin contamination in dried figs

**V. Demopoulos, A. Monas, E. Souliotis, E. Manolopoulou, T. Varzakas**

Acta Horticulturae 963: 183-188. 2012.

## Abstract

Figs (*Ficus carica* 'Tsapela'), while still on the tree, were inoculated with an aflatoxigenic strain of *Aspergillus flavus*. The inoculation took place by spraying the figs with a spore suspension of the fungi in two different developmental stages: green with the eye (ostiole) open and yellow at a 15-day interval. In some of the treatments, prior to inoculation, an oxine-copper commercial product was applied. The figs were collected in three different harvests at 7-day intervals and analyzed for aflatoxin B1 contamination by the ELISA method. In the case of the inoculated green figs with the eye open, figs of the third harvest had almost five times the aflatoxin level of those of the first harvest. This can be explained by the fact that aflatoxin is mostly produced in mature figs and affected by incubation time. In the case of the yellow figs, the amount of aflatoxin produced, with the exception of the first harvest, was generally low and remained almost stable throughout the three harvests. This could be attributed to the high temperatures (>40°C), observed during this maturity stage which strongly reduced aflatoxin production. In all cases, aflatoxin production increased in the presence of copper ions. It is possible that the antibacterial action of copper which affects the antagonistic epiphytic microflora leads to an increased infection of the figs by the aflatoxigenic fungi.