

Relationship between dried figs' nutrition and aflatoxin B₁ contamination

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Acta Horticulturae 963: 79-82. 2012.

Abstract

Figs (*Ficus carica* 'Tsapela') were harvested in two different times at a ten-day interval and sun-dried according to the cultivation practices of the region of Kalamata (Peloponnese, Southern Greece, lat. 37°2'20"N; long. 22°6'51"E). The relationship between the concentration of nutrient elements (N, P, K, Ca, Mg, Na, B, Fe, Mn, Zn and Cu) in dried figs and aflatoxin B₁ contamination as a result of the infection by a naturally occurring aflatoxigenic *Aspergillus* spp. population was studied. The occurrence of aflatoxin B₁ was determined by the ELISA method and the measurements were calculated according to the recovery which showed a linear increase from 102% for lower concentrations to 227% for the higher ones. The results showed the occurrence of aflatoxin B₁ in all tested samples but ranged at much lower levels than the permissible limit of 2 µg kg⁻¹. Statistically no significant differences between the first and second harvest (average 0.62±0.11 and 0.59±0.07 µg kg⁻¹, respectively) were observed. All dried fig nutrient contents matched the concentration levels of the reference values reported for the 'Sarilop' (calimyrna) cultivar. The concentrations of Ca, Mg, K and Cu in dried figs between the first and second harvest were observed to be significantly different. Contrary to the findings of other published research, in this study there were no significant correlations between the nutrient elements of dried figs and aflatoxin B₁ contamination.