Title	Study of aflatoxin B1 and ochratoxin A production by natural microflora and *Aspergillus parasiticus* in black and green olives of Greek origin
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Abstract

Aflatoxin B_1 (AFB_1) is a carcinogenic metabolite produced by certain *Aspergillus* species. Ochratoxin A (OTA) is classified as "possible carcinogen" and it is a metabolite of *Aspergillus ochraceus* and *Penicillium verrucosum*. Fungi contaminate natural and processed olives which support AFB_1 and OTA production. The aim of this study was to compare and investigate AFB_1 and OTA production in three different varieties of damaged olives. For each variety two different treatments were applied: (1) olives with natural microflora and (2) olives inoculated with *A. parasiticus* after natural microflora elimination. AFB_1 and OTA have been extracted simultaneously from olives, purified with immunoaffinity columns and quantitated by HPLC using fluorescence detector. The recoveries and detection limits of AFB_1 and OTA were 94% and 0.15 ng AFB_1 g^{-1} and 102.7%, 0.41 ng OTA g^{-1} respectively. Results showed that, meanwhile OTA was not found in any olive sample, AFB_1 production within the three varieties of olives with natural microflora was significantly ($P \leq 0.05$) different regarding their substrate and time of incubation (18 days). AFB_1 production in two different varieties of black olives after inoculation by *A. parasiticus* was not significantly higher compared with control samples. On the contrary, AFB_1 production in green olives was stimulated after the 12th day. Additionally, investigation on the occurrence of AFB_1 and OTA in 30 samples of olives and olive pasta from Athens market showed OTA's presence in two samples of olives contaminated at the levels of 1.18 and 1.86 ng OTA g^{-1}. Aflatoxin B_1 was found at levels 0.15–1.13 ng AFB_1 g^{-1} in all samples tested.