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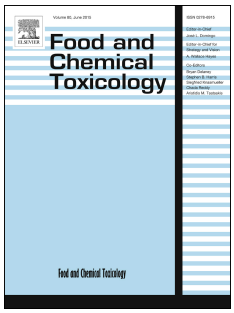

Presence of mycotoxins in ready-to-eat food and subsequent risk assessment

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Presence of mycotoxins in ready-to-eat food and subsequent risk assessment

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Abstract

A study on a set of ready-to-eat meals (n=328) based on cereals, legumes, vegetables, fish and meat was carried out to determine the natural presence of twenty-seven mycotoxins by both liquid chromatography and gas chromatography coupled mass spectrometry in tandem (MS/MS) after QuEChERS extraction. The occurrence of mycotoxins was headed by cereal samples with 35% of samples contaminated by at least one mycotoxin followed by vegetables (32%), legumes (15%) and lastly, 9% of fish and meat samples were contaminated. DON was the most detected mycotoxin in vegetables, meat, fish and cereals with an incidence of 13% 18% 19% and 60%, respectively, and the highest mean levels were found in fish (1.19 µg/kg) and vegetable (1.53 µg/kg), respectively. The highest levels means were for HT-2 toxin ranging from 4.03 to 7.79 µg/kg, in cereal and legume samples respectively. In this last, HT-2 toxin was also the most prevalent (54%). In meat samples, OTA resulted with highest value with 8.09 µg/kg. Likewise, PCA analysis revealed a high correlation between the mycotoxins and the food groups analyzed. The findings indicate that there is no toxicological concern associated with exposure to mycotoxins for consumers as all levels were in accordance with the legislation.

Keyword: mycotoxins - ready-to-eat food – liquid chromatography – gas chromatography – risk assessment