



**XI INTERNATIONAL SYMPOSIUM OF
AGRICULTURAL SCIENCES**

BOOK OF ABSTRACTS

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**26-28, May, 2022
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PI_35

Climate change: the impact on aflatoxin contamination in cereals

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Abstract

It is considered that one of the greatest food safety concerns worldwide is aflatoxins (AFs) contamination of cereals, due to its carcinogenic effects, high number of associated notifications in cereal based food and feed products, as well as in milk and dairy products. AFs produced mainly by *Aspergillus flavus* and *Aspergillus parasiticus*, are the most toxic and frequent contaminants of cereals, especially in areas with hot and humid climates. Changes in temperature and water availability related to global climate changes (increased temperature, heavy rainfalls, and droughts) are modulating factors of filamentous fungi growth and production of mycotoxins. Amongst all favouring factors, environmental factors (temperature, water activity (aw) and relative humidity (RH)) and climate change have been identified as the primary factors. The main secondary factors influencing AFs production in cereals are pH of the substrate, CO₂ levels in the gaseous environment, agronomic and socioeconomic determinants. Global climate change predictions indicate that AFs contamination of cereals could become a future food safety issue, in Europe as well, especially in the Mediterranean region. This review aims to give an overview based on the available information regarding AFs presence in cereals to reinforce AFs management, reduce economic losses, and prevent health issues related to the AFs exposure in the light of global climate change.

Key words: climate change, aflatoxins, cereals

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