



toxins

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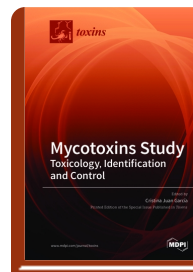
Mycotoxins Study: Toxicology, Identification and Control

www.mdpi.com/books/reprint/3900

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ISBN 978-3-0365-1416-1 (Hardback)

ISBN 978-3-0365-1415-4 (PDF)



This *Book of Toxins* comprises 11 original contributions and one review. New findings regarding presence of mycotoxins in aromatic and medicinal plants, mango and orange juice, juices, pulps, jams, and beer, from Morocco, Pakistan, and Portugal are reported. In these studies, innovative techniques to study their presence has been developed, including liquid chromatography coupled with time-of-flight mass spectrometry to analyse mycotoxins and conjugated mycotoxins. Novel strategies to detect mycotoxin presence and comparisons the characteristics of a rapid quantitative analysis of different mycotoxins (deoxynivalenol, ochratoxin A, patulin, sterigmatocystin, and zearalenone) are also presented using acetyl- and butyrylcholinesterases and photobacterial strains of luminescent cells. Additionally, toxicological effects of zearalenone metabolites and beauvericin on SH-SY5Y neuronal cells are presented. One important point in the control of mycotoxins is related to decontaminated strategies, and in this sense the efficacy of potentially probiotic fruit-derived *Lactobacillus* isolates in removing aflatoxin M1 (AFM1) is presented. Other mycotoxin decontaminated techniques included in this book are electron beam irradiation (EBI) and degradation of zearalenone and ochratoxin A using ozone. Finally, a review that summarizes the newly discovered macrocyclic trichothecenes and their bioactivities over the last decade is included. The evaluation of the presence of mycotoxins in different matrices is achieved through different analytical tools (including quantitative or qualitative determinations). Studies of mycotoxin isolation, using chromatographic equipment coupled to spectrometry detectors (QTrap-MS/MS, MS/MS tandem, QTOF-MS/MS) are the most useful tools to control their presence. In addition, decontaminated strategies, as well as control and evaluation of exposure, are demanded by authorities and consumers.



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