

6th Global Summit and Expo on **Food & Beverages** August 03-05, 2015 Orlando-FL, USA

Mycotoxins in a changing global environment-A review

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Mycotoxins are toxic metabolites produced by fungal species that commonly contaminate staple foods and feeds. They represent an unavoidable problem due to their presence in globally consumed cereals such as rice, maize and wheat. Most mycotoxins are immunosuppressive agents and some are carcinogens, hepatotoxins, nephrotoxins and neurotoxins. Worldwide trends envision a stricter control of mycotoxins, however, the changing global environment may not be the ideal setting to control and reduce exposure to these toxins. Although new technologies allow us to inspect the multi-mycotoxin presence in foods, new sources of exposure, gaps in knowledge of mycotoxins interactions, appearance of “emergent” mycotoxins and elucidation of consequent health effects can complicate their control even more. While humans are adapting to cope with environmental changes, such as food scarcity, decreased food quality, mycotoxin regulations, crop production and seasonality and other climate related modifications, fungal species are also adapting and increased cases of mycotoxin adverse health effects are likely to occur in the future. To guarantee access to quality food for all, we need a way to balance global mycotoxin standards with the realistic feasibility of reaching them, considering limitations of producers and designing strategies to reduce mycotoxin exposure based on sound research.

Biography

A Wallace Hayes has served on committees for NAS, NIH, FDA, EPS and DOD and is currently a member of the FDA Food Advisor Committee. He has authored 250 peer reviewed publications, is editor of Hayes' Principles and Methods of Toxicology, Human and Experimental Toxicology, Cutaneous and Ocular Toxicology, Food and Chemical Toxicology and Target Organ Toxicity Series. He is diplomate of American Board of Toxicology, Academy of Toxicological Sciences, American Board of Forensic Medicine, and American Board of Forensic Examiners and Fellow of Academy of Toxicological Sciences, Institute of Biology, American College of Forensic Examiners and American College of Nutrition and is registered toxicologist in the EU and certified nutrition specialist.

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