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Sommario/riassunto

Annotation Mycotoxins are secondary metabolites produced by molds. Although the primary role of these toxins is thought to be related to the colonisation of the environment by the fungi--mycotoxins are able to kill other micro-organisms (antimicrobial effect) and/or plant cells (mycotoxin-producing fungi being necrophagic)--the exposure of animals and humans to mycotoxins through the consumption of mycotoxin-contaminated food and feeds leads to diseases and death. Among the different mycotoxins described (more than 350 mycotoxins have been identified), deoxynivalenol (DON or vomitoxin) produced by Fusarium species has attracted the most attention due to its prevalence and toxicity. DON is part of a family of mycotoxins called trichothecenes that are small sesquiterpenoids with an epoxide group at positions 12-13 allowing their binding to ribosomes causing the so-called ribosome stress response, characterized by the activation of various protein kinases that lead to alterations in gene expression and cellular toxicity in animals, humans and plants. Here, we compiled very recent findings regarding DON and its derivatives: i. their prevalence in human food; ii. the estimation of the exposure of humans to them using biological markers; iii. their roles during plant-fungi interaction; iv. the alteration caused by them in animals and humans, particularly at low doses that are close to those observed in farm animals and human consumers; v. possible strategies to decrease their presence in food

and feeds. Overall, this book will give the reader a clear and global view on this important mycotoxin produced by Fusarium species which is responsible for huge economic loss and health issues. Dr. Marc Maresca Guest Editor.