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The impact of mycotoxins on human and animal host susceptibility to infectious diseases

Contamination of food and feed with mycotoxins is a worldwide problem. At present, acute mycotoxicosis caused by high doses is rare in humans and animals. Ingestion of low to moderate amounts of *Fusarium* mycotoxins is common and generally does not result in obvious intoxication. However, these low amounts may impair intestinal health, immune function and/or pathogen fitness, resulting in altered host pathogen interactions and thus a different outcome of infection. This presentation summarizes the current state of knowledge about the impact of *Fusarium* mycotoxins exposure on human and animal host susceptibility to infectious diseases. On the one hand, exposure to deoxynivalenol and other Fusarium mycotoxins generally exacerbates infections with parasites, bacteria and viruses across a wide range of animal host species. Well-known examples include coccidiosis in poultry, salmonellosis in pigs and mice, colibacillosis in pigs, necrotic enteritis in poultry, enteric septicemia of catfish, swine respiratory disease, aspergillosis in poultry, rabbits, reovirus infection in mice and *Porcine reproductive and respiratory syndrome virus* infection in pigs. However, on the other hand, T-2 toxin has been shown to markedly decrease the colonization capacity of *Salmonella* in the pig intestine. Although the impact of the exposure of humans to *Fusarium* toxins on infectious diseases is less well known, extrapolation from animal models suggests possible exacerbation, for instance, colibacillosis and salmonellosis in humans, as well.

Biography

Gunther Antonissen completed his Master's Degree in Veterinary Medicine at Ghent University in Belgium in 2011. He completed his PhD in Veterinary Sciences at Ghent University in 2015, studying "The predisposing effect of mycotoxins deoxynivalenol and fumonisins on necrotic enteritis in broiler chickens". Currently, he is a Post-doctoral Researcher in Department of Pharmacology, Toxicology and Biochemistry, and Department of Bacteriology, Pathology and Avian Diseases at Ghent University, investigating "The impact of mycotoxins and phytogenic on the intestinal physiology and micro-biota". He is a frequent speaker at animal and poultry scientific conferences and technical meetings.

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