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Analysis of more than 380 mycotoxins in 829 feed and raw material samples in 2016

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More than 45,000 feed samples including corn, wheat, barley, soy as well as finished feed were analyzed within the Biomin Mycotoxin Survey since 2004. The results presented here include data from samples sourced worldwide from January to September 2016. These samples were analyzed using Liquid Chromatography-Mass Spectrometry/Mass Spectrometry (LC-MS/MS, Spectrum 380®) screening for more than 380 mycotoxins and other secondary metabolites. For practical relevance, a cut-off level for all mycotoxins was established at >1 ppb (except aflatoxin at >0.5 ppb). The aim of this study was to obtain information on the occurrence and contamination level of multiple mycotoxins in feed and feed raw materials. A total of 829 samples were collected worldwide and screened for the presence of multiple mycotoxins and other secondary metabolites using Spectrum 380®. Up to 60 different mycotoxins and metabolites were found per sample. Only 4% of all analyzed samples contained less than 10 fungal metabolites. On average, 25 different metabolites were detected per sample. 93% of the analyzed samples tested positive for cyclo(L-Pro-L-Val) and cyclo(L-Pro-L-Tyr), 80% for aurofusarin and tryptophol and 76% for moniliformin. Beside these fungal metabolites, main mycotoxins such as zearalenone and fumonisin B1 occurred in 64% and 55% of the samples, respectively. The sensitivity of mycotoxin analysis increased by 200-fold in the last 10 years leading to the fact that more mycotoxins are found. Performing multi-mycotoxin analysis is leading to the need for more research to evaluate the practical impact of most of these new mycotoxins on animal and human.

Biography

Simone Schaumberger studied at Veterinary University of Vienna and completed her Diploma studies in 2007. She worked at BIOMIN Research Center, where she was responsible for the Endotoxin project. Within this research project, she completed her PhD in the field of Swine Medicine (endotoxin binding) at Veterinary University of Vienna. Besides the research tasks, main focus of her work was on “Feeding/experimental trials in swine and poultry”.

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