

## PRODUCTION AND OCCURRENCE – P57

**Behaviour of mycotoxins during food processing**

C. Schwake-Anduschus<sup>1</sup>, E. Scieurba<sup>1</sup>, K. Muenzing<sup>1</sup>, R. Maul<sup>2</sup> and M.G. Lindhauer<sup>1</sup>

<sup>1</sup> Department of Safety and Quality of Cereals, Federal Research Institute of Nutrition and Food, Max Rubner-Institut, Schuetzenberg 12, 32756 Detmold, Germany, <sup>2</sup> Division of Food Analysis, Federal Institute for Materials Research and Testing, BAM, Richard-Willstätter-Straße 11, 12489 Berlin, Germany  
E-mail: christine.schwake-anduschus@mri.bund.de

The mycotoxins Deoxynivalenol (DON) and Zearalenone (ZON) are the most frequently occurring mycotoxins in German wheat produced by *Fusarium spp.* in the field. Also T-2/HT-2 toxins have been detected frequently in oats as well as Ergot Alkaloids (EA) in rye.

Among others the European Union established maximum tolerable levels for some of these mycotoxins depending on the cereal production status to ensure consumer protection. However, risk assessment, natural occurrence, and hazard identification is still ongoing for these mycotoxins and in particular for their masked forms.

The aim of the presentation is to look at distribution profiles and the characteristics of the DON, ZON, T-2/HT-2, and EA content at different stages of the food production chain and particular processing steps in order to identify possible approaches to minimise the mycotoxin content in the final cereal based products.

Cleaning and sorting the grain material has an important influence on mycotoxin content. For DON e.g. up to 75 % decontamination rate seems to be possible with these steps in one batch. The remaining DON and ZON contents are located in different parts of the kernels. Whereas ZON content is elevated in the outer parts of the kernels, DON content is more evenly distributed within the whole kernel. Therefore, milling the grain and mixing together the different milling fractions has the potential to manage the mycotoxin content in the final flour to a certain extent.

T-2/HT-2 toxins are preferably located in the husk of the oat kernel and processing influences their content in different ways: cooking oat meal does not affect the mycotoxin content, whereas T-2/HT-2 concentrations were reduced after baking (Schwake-Anduschus et al. 2010).

The presentation will discuss influences of the baking process on DON, ZON, T-2/HT-2, and EA contents and the question to which extent masked mycotoxins occur and may contribute to the overall human mycotoxin exposure.

**References**

Schwake-Anduschus C., Langenkämper G., Unbehend G., Dietrich R., Märtilbauer E. and Münzing K., 2010. Occurrence of *Fusarium* T-2 and HT-2 toxins in oats from cultivar studies in Germany and degradation of the toxins during grain cleaning treatment and food processing. *Food Additives and Contaminants Part A*, 27, 1253 - 1260.