

# Qualitative and quantitative detection of Mykotoxine in cereals

E. Hartungen, A. Jordan, L. Märk, T. D. Märk

Ionicon Analytik Ges.m.b.H. Technikerstrasse 21a, 6020 Innsbruck, Austria

## Abstract

The goal of the study is to develop a method to qualitatively and quantitatively detect Deoxynivalenol, Aflatoxine, Zearaleon, Ochratoxine A and Toxin T2 in cereals using a Proton Transfer Reaction Mass Spectrometer (PTR-MS) as a tool for fast quality control.

The first part of the study comprises the investigation of seven maize samples and one rye sample of different qualities (in terms of containing different amount of toxins). Six samples with Deoxynivalenol only, one with Deoxynivalenol, Zearaleon and Ochratoxine A and one containing all five toxins were used to check the ability to measure the Mycotoxine markers and to verify the correlation with HPLC measurements. For the measurements 6g of each sample were prepared in a 20 ml vial and heated up to a temperature of 80°C. After equilibration zero air was used to flush the vial with a flow of 60 ml/min. In between each sample zero air was used to monitor the background of the instrument.

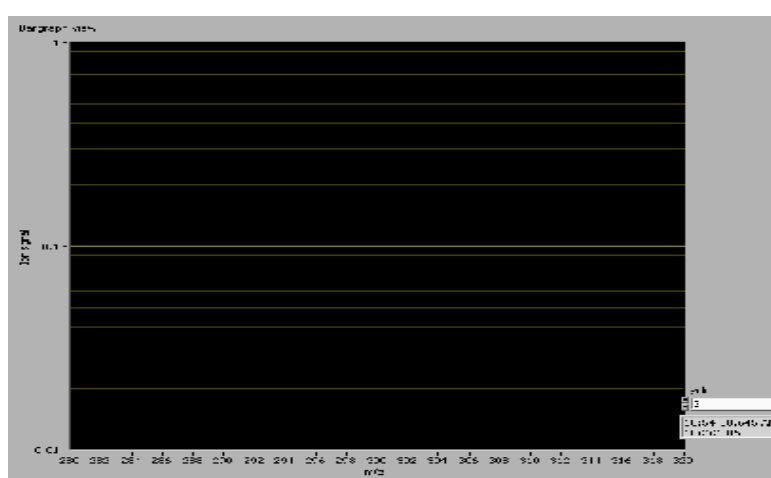
## Results

First results show that it is possible to detect Deoxynivalenol in cereals at pptv levels. Other Mycotoxine markers could not be detected due to the extremely low concentrations and/or possible breakups. Results correlate with the previous HPLC measurements. Quantitative measurements and classification of the samples in “good” or “bad” needs a detailed study of all pure compounds and measurements of “good” and “bad” samples with known contamination of Mycotoxines.

Nummer	Produkt	DON (HCLP) [ppb]	DON (PTR-MS) [ppt]
063008(1)	Mais-Schrot	707	21
063011(2)	Mais	2530	29
063012(3)	Mais	713	35
063013(4)	Roggen	58	11
063018(5)	Mais	1088	45
063021(6)	Mais	1495	66
063206(7)	Mais	200	26
063207(8)	Mais	200	23



Background m/z 280-320



Sample 3 m/z 280-320

m297,298 (Deoxynivalenol)

