

## Influence of grain moisture on Ochratoxin A content in stored wheat

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Cereal storage from one harvest season to the other has been of concern from the earliest times. This problem has grown with increasing populations and developing commerce. Suboptimal storage conditions can cause e.g. a fungal infection of the cereals and as a result, loss of an entire stock.

Some moulds are not only source of economic loss of crop yields, but also cause a serious threat to human health and animal welfare, due to the production of associated mycotoxins. Due to that, quality control of storage practice, raw materials and final food products is exceedingly important.

The poster describes the outline of an experimental storage of wheat previously inoculated with *Penicillium verrucosum*. The storage trial was performed as described in details by Abramson et al [1].

Six 24 kg lots of wheat were inoculated and adjusted to moisture of 14 %, 19 % and 24 %. The lots were split into two portions and transferred into perforated plastic bags, which were stored in silos. During the trial the temperature was recorded every 4 hours and the CO<sub>2</sub> concentration was measured monthly. Each month samples were taken and analysed for Ochratoxin A (OTA) content, fungal growth and moisture.

After milling of the samples (< 1 mm) OTA was extracted from a 20 g aliquot by shaking with acetonitrile/water (60 + 40; v/v). The extract was filtered and then cleaned-up with immunoaffinity columns. The final determination was performed by HPLC with fluorescence detection. LOD of the method used is 0.09 µg/kg. The combined measurement uncertainty is 6.6 % (k = 2).

During the study, the impact of moisture on the OTA content in the stored material has been demonstrated. Considerable concentration of OTA (> 0.3 mg/kg) was found in samples containing 24 % of water. The quaint thing is that OTA was not detected in samples containing 19 % water even after 6 month of storage.

### Reference

- [1] D. Abramson, W. Richter, J. Rintelen, R.N. Sinha and M. Schuster (1992): *Arch. Environ. Contam. Toxicol.*, **23**, 259 – 265.