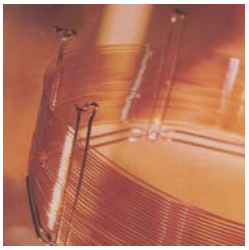
BOOK OF ABSTRACTS

4th International Symposium on

RECENT ADVANCES IN FOOD ANALYSIS

November 4–6, 2009
Prague, Czech Republic



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International Association of Environmental Analytical Chemistry

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OCHRATOXIN A CONTENT IN URINE SAMPLES FROM BRAGANÇA AND ALENTEJO: A COMPARATIVE ANALYSIS (WINTER 2007)

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Ochratoxin A (OTA) is a mycotoxin which possesses a variety of toxic effects, including enzyme inhibition, immunosuppression, teratogenicity, nephrotoxicity, and carcinogenicity. It is produced by fungi for which foodstuffs such as beans, cereals, fruits, and seeds constitute an ideal growing media. It has proven itself at least partly resistant to food processing methods, meaning it is also present in derived products and thus finds its way into the human organism. Recent studies have suggested that, though OTA can be found in both plasma and urine – through which it is eliminated, though with great difficulty – the latter provides a better indication of OTA ingestion. Its collection procedure is also less invasive, and developments in analytical methodology allow an equally precise analysis.

In an effort to assess the Portuguese regional differences of exposure to this mycotoxin of the populations of Bragança and Alentejo, samples of urine from inhabitants of Bragança – eleven men and nineteen women – and Alentejo – eighteen men and twenty-two women – were tested for OTA through extraction with IACs and quantification by LC-FD.

Both regions featured similar contamination frequencies (96.7% for Bragança and 97.5% for Alentejo), with all negative samples being female. Mean values were also similar (0.022 ng/mL for Bragança *vs*. 0.021 ng/mL for Alentejo), as were maximum values (0.069 for Bragança, 0.064 ng/mL for Alentejo). In both regions, the highest contamination value was found in a female sample.

In Alentejo, mean value was found to be higher in males (0.025 *vs*. 0.018 ng/mL in females), while in Bragança the reverse was true, though the difference between genders was small (0.020 ng/mL for males, 0.023 ng/mL for females).

Females in both regions presented similar values for incidence, and mean and maximum contamination levels, while men from Alentejo featured a much higher maximum level (0.044 ng/mL *vs.* 0.027 ng/mL for men from Bragança).

Keywords: Ochratoxin A, urine, regional, Portugal

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