

Title Ochratoxin A and *Aspergillus* section *Nigri* in peanut seeds at different months of storage in Córdoba, Argentina

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Abstract

Peanut is an important food commodity in Argentina. Last year Córdoba Province accounted for approximately 96% of the total Argentinian production. Few surveys of peanuts for the natural occurrence of ochratoxins and ochratoxin-producing fungi have been reported. The objectives of this study were to investigate the occurrence of *Aspergillus* section *Nigri* and ochratoxin A (OTA) in storage peanuts during a three-month-period. The capacity to produce OTA by *Aspergillus* section *Nigri* was also studied. A total of 100 samples were collected from May to July 2004. The frequency of contaminating fungi were determined by surface-disinfection the seeds and plating onto several agar types. Detection of OTA in seed samples was performed using an HPLC method. Strains belonging to *Aspergillus* section *Nigri* or *Flavi* were detected in all seeds samples. From the section *Nigri*, the species belonging to *A. niger* aggregate were isolated in 100% of the samples. The main ochratoxigenic specie, *A. carbonarius*, was present at low levels throughout the study period. OTA was found in 50% of the peanut samples, with mean levels ranging from 5.6 to 130 ng g⁻¹. The mean value of OTA obtained after the first month of storage (30 ng g⁻¹) was significantly higher from those obtained after the second (6.5 ng g⁻¹) and third (13 ng g⁻¹) month ($p < 0.0001$). One hundred and four (32%) of 322 strains of *Aspergillus* section *Nigri*, were OTA producers. The levels of toxin produced ranged from 2 to 24 ng ml⁻¹ of culture medium (mean level: 12.7 ng ml⁻¹). These results indicate that humans and animals being may be frequently exposed to OTA in Argentina through the ingestion of peanut seed and foods based on peanuts. The presence of this toxin in peanuts might be an appropriate focus for future studies to estimate exposure through normal consumption of this commodity. These data are important in formulating guidelines for quality control of peanuts in Argentina.