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Assessment of nutritive quality and ochratoxin content in commercially available corn and wheat products

Majid Majeed
Cakes & Bakes, Lahore

Foods and feeds are naturally contaminated with mycotoxins, commonly formed by the molds belonging to genera *Penicillium*, *Aspergillus* and *Fusarium*. These mycotoxins have toxic potential which effect human and animal health. Extensively studied mycotoxins are aflatoxin, ochratoxin A, fusarium and patulin. Ochratoxin A is naturally occurring most common mycotoxin which is produced by *Aspergillus carbonarius*, *penicillium verrucosum* and *Aspergillus ochraceus*. The objective of this study was to investigate the ochratoxin A, tocopherol and mineral concentration in different commercial available corn and wheat products. The extraction solvent (acetonitrile and water 84:16 v/v) and MycoSep-229 column was used for the clean-up purpose of ochratoxin A. The analysis of ochratoxin A and tocopherol was done by using HPLC. Proximate composition and mineral profile of commercial corn and wheat samples have been investigated through this work. Proximate and mineral profile showed the significant difference. Highest amount of iron and calcium was detected in wheat flour and corn flakes samples. Bread and air popped popcorn showed the highest amount of zinc and magnesium content. The collected commercial samples of corn and wheat products of Faisalabad, Pakistan exhibited the high level of ochratoxin A contamination. In wheat samples highest amount of ochratoxin A is detected in wheat flour (25.90 ng/g) and bread (4.66 ng/g) has lowest level of contamination. While in corn samples corn flour (11.12ng/g) showed the highest level of contamination. The level of ochratoxin A contamination was higher than the recommended limits of EU. Tocopherol analysis was also done by the HPLC and found that Alpha tocopherol showed higher concentration than gamma and sigma tocopherol.

Biography

Majid Majeed completed his MSc (Hons) Food Technology with 3.93/4.00. In his MSc (Hons) his research topic was "Assessment of nutritive quality and ochratoxin A content in commercially available corn and wheat products". His research topic was well appreciated by Vice chancellor of University of agriculture of Faisalabad in 2013 because he is the first person in Pakistan who did the work on Ochratoxin A in commercially available products.