

Natural occurrence of ochratoxin A contamination in commercial black and white pepper products.

ABSTRACT

The concentration of ochratoxin A (OTA) in 120 commercial pepper (84 pre-packed and 36 bulk samples), which consist of local and imported white and black pepper in powder and seed form in Malaysia were determined. The objective of the study was to investigate and compare OTA concentration in black pepper and white pepper being commercialized in Malaysia. Determination method was based on HPLC with fluorescence detection coupled with immunoaffinity column clean-up step. Mobile phase consisted of acetonitrile-water-acetic acid (49.5:49.5:1.0, v/v/v), and flow rate was 1 ml/min. The LOD was 0.02 ng/g, and the average recovery values of OTA ranged from 79.5 to 92.0% in black pepper and 81.2-90.3% in white pepper. A total of 57 samples (47.5%) were contaminated with OTA ranging from 0.15 to 13.58 ng/g. The results showed that there was a significant difference between type of pepper and brands. OTA concentration in black pepper was significantly higher than white pepper ($p < 0.05$). The highest concentration of ochratoxin, 13.58 ng/g, was detected in a sample of black pepper seed followed by 12.64 ng/g in a sample of black pepper powder, both were bulk samples purchased from open market.

Keyword: Pepper; Ochtratoxin; Occurence.