

Aflatoxin in raw peanut kernels marketed in Malaysia.

ABSTRACT

The occurrence of aflatoxin in eighty-four samples of raw peanut kernels which are randomly collected from Malaysian supermarkets was examined. Analysis for aflatoxin was performed by solvent extraction and immunoaffinity clean-up followed by the determination using high performance liquid chromatography equipped with post-column photochemical reactor for enhanced detection and fluorescence detector. A detection limit of 0.01-0.09 ng/mL and a quantification limit of 0.04-0.30 ng/mL were obtained. The aflatoxin concentrations ranged from not detected to 97.28 ng/g in all samples investigated. About 78.57% of the samples were contaminated with aflatoxin, of which 10.71% exceeded the maximum tolerable limit of 15 ng/g set by the Codex. Average recoveries of the aflatoxin analysis were acceptable which were in the range of $74.85 \pm 8.83\%$ for AFG2 at the concentration of 0.15 ng/mL and $103.91 \pm 6.45\%$ for AFB2 at the concentration of 0.15 ng/mL. The average daily intake estimated for total aflatoxins was 10.69 ng/kg body weight. There was a significant difference ($P < 0.05$) in aflatoxin content between brands and locations.

Keyword: Aflatoxin; Peanut; Food safety; HPLC with fluorescence detection; Immunoaffinity clean-up.