Survey of aflatoxins in retail samples of whole and ground black and white peppercorns

ABSTRACT

A total of 126 local and imported samples of commercial white and black pepper in Malaysia were analysed for aflatoxins B1, B2, G1 and G2 (AFB1, AFB2, AFG1, AFG2) content using high-performance liquid chromatography (HPLC) with a fluorescence detector (FD). An acetonitrile–methanol–water (17 : 29 : 54; v/v) mixture was used as a mobile phase and clean-up was using an immunoaffinity column (IAC). Seventy out of 126 (55.5%) samples were contaminated with total aflatoxins, although only low levels of aflatoxins were found ranging from 0.1 to 4.9 ng g−1. Aflatoxin B1 showed the highest incidence of contamination and was found in all contaminated samples. There was a significant difference between type of samples and different brands ($p < 0.05$). The results showed black peppers were more contaminated than white peppers.

Keyword: High-performance liquid chromatography (HPLC); Aflatoxins; Plants