

Title Aflatoxins in stored maize and rice grains in Liaoning Province, China
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Abstract

Aflatoxin contamination and its relationship to storage length in stored maize and rice in Liaoning Province, northeastern China, was investigated. Aflatoxins in 110 samples collected from an area of 14.68 million km² covering storage length from 1 yr to over 10 yr were determined by high-performance liquid chromatography with fluorescence detection. The results showed that almost all samples collected contained aflatoxins. The average contents in maize, whole grain rice and brown rice were found to be 0.99, 3.87 and 0.88 µg kg⁻¹, respectively. Three-fourths of the total aflatoxins in whole grain rice (3.87 µg kg⁻¹) could be removed by dehusking to as low as 0.88 µg kg⁻¹ in brown rice. No significant aflatoxin increase was observed in whole grain rice and brown rice over a 10-yr storage period. In maize, the amount of aflatoxins was significantly higher in 2-yr than 1-yr sample. Aflatoxin G₁ was detected as the major type of aflatoxin in over 40% of all stored grain samples tested and over 92% of rice samples examined. The aflatoxin content in maize and rice is much lower than the regulated maximum amount allowed in foodstuffs in China and other countries. We concluded that these grains are safe for human and livestock consumption and for trading.