

## **Levels of aflatoxins in spices produced and/or marketed in Zanzibar and Dar es salaam**

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Aflatoxins are components of the naturally occurring mycotoxins that are found in soil, food and animals. Human beings are exposed to aflatoxin contamination from various sources including foods such as milk, cereals, grains, tea, rice, maize and spices. The aim of this study was to investigate the levels of aflatoxins in spices produced and/or marketed in Zanzibar and Dar es Salaam, Tanzania. A total of 72 samples of spices (25 cinnamon, 16 ginger, 20 cloves and 11 mixed spices) collected from farms (in Zanzibar), markets and stores of Dar es Salaam and Zanzibar, were analyzed for aflatoxins B1, B2, G1, G2 and total aflatoxins (TAF) using HPLC-FLD. A mixture of Acetonitrile:methanol:water (70:20:10 v/v) was used as a mobile phase and Immunoaffinity columns were used for cleaning of sample extracts. A total of 24 (33 %) samples out of 72 of the analyzed samples were found to be contaminated with aflatoxin B1 but did not exceed the maximum tolerable levels set by European Countries / South Africa of 5 ngg-1. Furthermore, it was observed that 53 (73.6 %) samples out of 72 were contaminated with TAF but only 2 samples exceeded the maximum permissible limits of 10 ngg-1 set by European Countries/South Africa. Statistically there was no significant difference between TAF contamination levels of spices samples collected from Zanzibar and those collected from Dar es Salaam. Although in most of the sampling sites the mean levels of all types of aflatoxins contamination were found to be low, a close monitoring should be made.