

Co-contamination of Nigerian Cocoa and Cocoa-Based Powder Beverages Destined for Human Consumption by Mycotoxins

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ABSTRACT A total of sixty-four (64) samples consisting of cocoa (processed and non-processed) and cocoa based powder beverages were collected from fields, stores and markets in different areas in south-western Nigeria and screened for the five major mycotoxins- aflatoxins (AFs), ochratoxin A (OTA), zearalenone (ZEA), deoxynivalenol (DON) and fumonisins (FBs). Mycotoxins analyses were done after extraction by high performance liquid chromatography (HPLC), which showed contamination of the food commodities by major mycotoxins (AFs, OTA, DON, ZEA and FBs) at different incidences and concentration ranges. Results from HPLC analysis showed concentration of AFs, OTA, fumonisin B₁ (FB₁), fumonisin B₂ (FB₂), ZEA and DON up to 16.01µg/kg, 884.8µg/kg, 440µg/kg, 20.2µg/kg, 2364.7µg/kg and 8.5µg/kg respectively in the different food samples analysed. The contamination and co-contamination of these food commodities by some of these mycotoxins at concentrations above the different set regulatory limits by the EU and other countries is of concern with attendant health risks, particularly for Nigerians who consume these contaminated cocoa and cocoa products as part of their diets.