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Mycobiota, Total Aflatoxin Levels and Quality Assessment of Smoked Dried Juvenile Fish (*Clarias gariepinus* (Lori Amala)) from some Major Markets in Ibadan Metropolis, Oyo State, Nigeria

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Abstract

The contamination of food due to the occurrence of mycotoxigenic fungi is a public health concern. Therefore, fungi contamination and total aflatoxin levels of smoked dried juvenile fish samples *Clarias gariepinus* (Lori amala) were investigated. A total of 20 samples of smoked dried juvenile fish were purchased from some major markets in Ibadan. The total fungi count ranged from 1.0×10^3 – 12.0×10^3 CFU g^{-1}. A total of 32 fungal strains isolated from the samples include: *Aspergillus niger*, *Aspergillus flavus*, *Penicillium* sp., *Rhizophus* sp., *Alternaria* sp., *Aspergillus ochraceus*. *Aspergillus niger* had the highest frequency of occurrence (38 %) while *Aspergillus ochraceus* (3 %) had the lowest. All the samples were contaminated with aflatoxin. The total aflatoxin content ranged from 0.237 ppb to 1.995 ppb. The levels of aflatoxin contamination were within the maximum limit permitted. Out of the 11 Aspergillus strains obtained from the samples, 5 were aflatoxigenic while 6 were non-aflatoxigenic. 85 % of the mycobiota were xerophilic in nature and 94 % were halophilic in nature. The percentage moisture content, crude protein, crude fat and ash content in the samples ranged from 12.99 – 17.82 %, 68.72 – 77.62 %, 0.49 – 6.00 %, 6.97 – 12.24 %. The P, K, Ca, Mg, Fe, Cu, and Zn of the smoked dried juvenile fish samples ranged from 388.2 – 509.6, 1113.8–1517.0, 928.7 – 1518.8, 129.0 – 241.8, 13.37 – 61.25, 0.193 – 0.805, 5.228 – 7.690 mg/100 g. Pb and Cd were not detected in the samples. The levels of aflatoxin contamination in this study were within the maximum limit permitted of 20ppb. Therefore, proper attention is needed for adequate preservation before sales and consumption.

Keywords: *Aspergillus niger*, crude protein, dried juvenile fish, mycotoxigenic fungi, total aflatoxin

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