

## ASSESSMENT OF HEAVY METALS AND POLYCYCLIC AROMATIC HYDROCARBON CONCENTRATION IN SOME STOCKFISH SPECIES SOLD IN FIVE MAJOR MARKETS OF ABA SOUTH, ABIA STATE, NIGERIA

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### ABSTRACT

The concentration of ten heavy metals (Cd, Cu, Fe, Ni, Pb, Cr, As, Hg, Zn and Mg), and poly aromatic hydrocarbons (PAHs) were determined in two species of imported stockfish samples namely: *Gardus morhua* (Cod) and *Molva molva* (Ling) retailed in five major markets located at Aba South Local Government Area, Abia state, Nigeria. The chemical analysis was carried out with the aid of ASTM Gas Chromatography (GC) for PAHs and Atomic Absorption Spectrometer (AAS) for heavy metal. Prior to the AAS analysis, appropriate weights of the dried pulverized fish samples were digested with perchloric acid, nitric acid and sulphuric acid in the ratio [1:2:2]. The accuracy and precision of the determination in the study were evaluated using APHA, AWWA, WEF and ACCU standard. The result of the analyses showed that the accumulation of PAHs in Cod and Ling stockfish were present in very small or minute values ranging from 0.001-0.030 $\mu$ g/kg or are below detection limit (BDL). On the other hand, the result from the analysis of heavy metal showed that Ni, As, Hg, Pb, Cd and Cr were below detection limit (0.001mg/kg), whereas Fe, Cu, Zn and Mn were present in high amount with the concentration levels of the element ranging from 62.35-89.74mg/kg, 0.96-1.88mg/kg, 14.22-26.47mg/kg and 2.18-5.14mg/kg respectively. Finally, results of the potential health risk assessment showed that the total health hazard index of all the toxicants indicated no risk status from the consumption of the stockfish species studied.