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Assessment of Some Heavy Metals (Manganese, Copper, Nickel and Zinc) in Muscle and Liver of the African Catfish (Clarias gariepinus) in Ilushi River, Nigeria

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Abstract : This study determined the level of manganese, zinc, copper, and nickel in the liver and muscle of the African Catfish, Clarias gariepinus from Ilushi River, Edo State, Nigeria with a view to determining the extent of contamination. Heavy metal determination of digested fish samples was done using the atomic absorption spectrophotometric method. The results show that the muscles and livers were contaminated to varying levels with the presence of some non-metallic elements. The heavy metal load revealed that zinc had the highest mean concentration of 0.217±0.008µg/g in liver and 0.130±0.006µg/g in muscle, while copper recorded the least concentration in liver 0.063±0.004µg/g and 0.027±0.003µg/gin muscle. The distribution of the heavy metals in the muscles and livers of Clarias gariepinus showed significant variations and the results also revealed that the concentration of heavy metals (Zn, Cu,Ni and Mn) found in the liver was higher than those found in the muscle. This indicates that the liver is a better accumulator of heavy metal in Clarias gariepinus than the muscles. On comparison with WHO/FAO/FEPA/USFDA standards, the study shows that the concentrations of heavy metals in liver and muscle were within permissible limits safe for human consumption.

Keywords : clarias gariepinus, heavy metals, liver, muscle
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