



Heavy metal pollution of aquatic systems in oil producing communities of delta state, Nigeria

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ABSTRACT

Objective: This study was designed to determine the heavy metal pollution status of some rivers and creeks within oil producing communities in Delta state of Nigeria.

Methodology and Results: Water and fish samples were collected from six Rivers in Delta state viz: Egbokodo River in Warri, River Ethiope in Sapele, Urie River in Igbide Isoko, Asaba-Ase creek, Aragba River in Abraka, and Uzere Creek. Water fresh, and ready to eat fish samples were analyzed for heavy metals (lead, cadmium, manganese, copper, iron and nickel) levels. Most heavy metals were marginally below the residual level recommended by the World health organisation (WHO) and Federal Environmental Protection Agency (FEPA). Iron cadmium and Nickel were detected in all samples irrespective of the site of collection. Nickel exceeded the WHO standard limit (0.6) in fresh fish samples from Aragba (0.89) and Asaba-Ase (0.7), while fresh fish sample from Ethiope river had marginally higher Manganese concentrations (0.57) than recommended by WHO (0.5)

Conclusion and application of results: Fish from each of these rivers were marginally safe in their concentration of the studied metals. Caution and constant monitoring to prevent increased concentration and to the aquatic fauna and resultant toxicity to human consumers through the trophic web is important. Further investigation and routine monitoring will enable optimal recommendations and policies for surface water and fauna monitoring of the Niger Delta region in Nigeria.

Keywords: Heavy metals; Pollution; fish; Delta state; Nigeria.