

Impact of Environmental Pollution on Oxidative Stress Indices in African Cat Fish (*Clarias gariepinus*) from Araromi River in Ondo State, Nigeria

Authors : Arojojoye Oluwatosin Adetola, Nwaechefu Olajumoke Olufunlayo, Ademola Adetokunbo Oyagbemi, Jeremiah Moyinoluwalogo Afolabi, Asaolu Racheal Oluwabukola

Abstract : The effects of man's activities on the environment include depletion of natural resources alongside pollution of water bodies. Petroleum exploration in the Niger Delta region of Nigeria has compromised the aquatic environment with grave consequences on the entire ecosystem. In this study, we assessed the environmental safety of Araromi River, located in an oil-producing area in Ondo State, in the Niger Delta region of Nigeria by determining the levels of heavy metals (copper, cadmium, chromium, nickel, lead) and some biomarkers of oxidative stress (malondialdehyde, glutathione-S-transferase, glutathione peroxidase, catalase, superoxide dismutase, myeloperoxidase and reduced glutathione) in *Clarias gariepinus* (350-400g) from the river using standard methods. *Clarias gariepinus* from a clean fish farm in the same geographical location as the reference site (Ilesanmi fishery) was used as a control. Water samples from both sites were also analysed for some physicochemical parameters, heavy metals, and bacterial contamination. Our findings show a significant increase in malondialdehyde level (index of lipid peroxidation) as well as alterations in antioxidant status in the organs of *Clarias gariepinus* from Araromi River compared with control. A significant increase in bacterial contaminants, heavy metal pollutants, and particulate matter deposits were also observed in the water sample from Araromi River compared with control. In conclusion, high levels of indicators of environmental pollution observed in the water sample from Araromi River coupled with induction of oxidative stress in *Clarias gariepinus* from the river show that Araromi River is polluted; therefore, consumption of fishes and other aquatic organisms from the river may be unsafe for the people in that community.

Keywords : Araromi River, *Clarias gariepinus*, environmental pollution, heavy metals, oxidative stress

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