

4th International Conference on **Biodiversity**

June 15-17, 2015 Las Vegas, USA

Toxicity of heavy metals and effect of their concentrations on biological productivity and diversity in freshwater ecosystem

J I R Udotong¹, O U Eka¹, E U Essien² and O U M John¹

¹University of Uyo, Nigeria

²University of Calabar, Nigeria

Toxicity of copper (Cu), iron (Fe) and lead (Pb) to tilapia fish was conducted using the simple arithmetic graphic method. In each experiment, a control (distilled water) and graded concentrations of the test metals were used. Observations for fish mortality and subsequent removal of dead fishes were made hourly for 4 days. Percent mortality was calculated for each of the heavy metals and 96-hr LC50 for Cu, Fe and Pb for tilapia fish were determined to be 0.44 mg/l, 0.96 mg/l and 2.85 mg/l, respectively. Of interest was the result obtained on biological productivity in the Aquaria containing 2.85mg/l of Pb within seven (7) days from the start of the experiment. Biological productivity and thus high diversity were observed in the case of Cu and Fe when the period was lengthened to fourteen (14) days. As against scientific believe that Pb is highly toxic to humans, this study showed that Pb pollution in a freshwater ecosystem encourages high rate of biological productivity and thus high diversity; thus confirming that heavy metals have differing effects on biological productivity and diversity in the ecosystem. Lead (Pb), whose response is dictated by the dose which may depend on mobility and bioavailability, was therefore identified by this work as a trigger factor to eutrophication.

Biography

J I R Udotong received her Ph.D in Biochemical Toxicology from University of Calabar, Nigeria in 2004. She has participated in various professional training in Europe and Nigeria. Her Research interest includes indoor air pollution, environmental monitoring, health risk assessment, environmental and hospital waste management and uptake of pollutants from contaminated soils and water. She has attended academic conferences in India, Parma, Fano, United States and has also visited Rome and Israel. She currently lectures in the Department of Biochemistry, Faculty of Basic Medical Sciences, College of Clinical Sciences, University of Uyo, Nigeria. She is a member of Nigerian Institute of Food Science and Technology (NIFST) and Nutrition Society of Nigeria (NSN).

justina.udotong@usictld.com

Notes: