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Erythrocyte abnormalities in freshwater fish, *Labeo rohita* exposed to pollutants in lakes of Bangalore, India

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Hematological study is important in toxicological research because hematological alteration is a good method for rapid evaluation of the chronic toxicities of a compound. Blood parameters are useful for the measurement of physiological disturbances in stressed fish and thus provide information about the level of damage in the fish. Genotoxic effect in erythrocytes of blood from fish, *Labeo rohita* reared for commercial purpose, was sampled from control site, Vengaiah Lake (A) and Yellamallappa Lake (B) during winter, summer and rainy seasons for a period of 24 months. The data of physicochemical parameters of water revealed high level of chemical oxygen demand, biological oxygen demand, turbidity, alkalinity and of trace metal content such as aluminium, cadmium, copper etc. and other pollutants in lake B (during all seasons) when compared to lake A, control site. Erythrocytic abnormalities including nuclear abnormalities (blebbed, notched, eight shaped) and cytoplasmic variations (ruptured and vacuolated cytoplasm) were frequent in blood samples of fish from Lake B during winter. These results might be due to the discharge of treated/untreated industrial effluents from the Pharma industry present on the banks of Lake B and the agricultural runoff, idol immersion during festival season and discharge of domestic sewage and solid waste through various sources into the water body. The present study showed that high levels of chemical parameters and pollutants in both the lakes did not induce micronuclei but induced variation in frequency of nuclear and cytoplasmic abnormalities from summer to winter and rainy to be considered indicators of genotoxic damage.

Biography:

Bela Zutshi has completed her PhD from Bangalore University, India. She is the Head of Department of Zoology, Bangalore University. She has served as a Member of State Level Environmental Assessment Committee, Government of Karnataka, India (2011-13). She has published more than 25 papers in reputed journals and written a book on status of lakes in Bangalore. She has handled two major research projects from UGC on fish toxicology and a minor project on biodiversity of blackbuck. She is Life Member of academic scientific bodies such as Asian Fisheries Society; Indian Science Congress; NEA; NESA and Aquatic Biodiversity Conservation Society, India.

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