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Studies on the assessment of pesticide induced stress and apoptosis in fresh water teleost *Channa punctatus*

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The application of chemical pesticides to agricultural land very often contaminate aquatic habitat which in turn causes detrimental effects to the aquatic biota particularly to the economically important non-target organisms like fish. The aim of the present study was to explore the impact of pesticides (triazophos, deltamethrin and their combination) on oxidative stress level in fish, *Channa punctatus*. The fishes were procured from local animal supplier of Allahabad, India and acclimatized in laboratory condition. The fishes were exposed to different concentrations of pesticides for 96 hours. The LC₅₀ (Lethal Concentration) value for triazophos, deltamethrin and their combination were found to be 0.069 mg/l, 7.17 µg/l and 0.032 mg/l respectively. For the sub-lethal study, fishes were exposed to 5% and 10% of LC₅₀ of pesticides for 96 hours. During the exposure period, the behavioral changes (i.e. opercular movement, surfacing) were observed. Immediately after exposure, the animals were sacrificed and blood and the key organs (brain, liver, kidney, gills and muscles) were collected for biochemical/stress enzymes assay and for apoptotic studies. In the blood parameters, TLC and DLC showed significant change in counts as compared to control with increased rate of apoptosis. In the stress related enzyme activity such as SOD, CAT, GST and levels of GSH and LPO (Lipid Peroxidation) significant changes were recorded with increase in concentration of pesticides. From our study conclude that, the dose dependent exposure of pesticides may impose detrimental threat to the fish population.

Biography

Shikha Singh is currently working as a Doctoral Fellow at University of Allahabad, India. She has completed her Masters of Science with cytogenetic specialization from University of Allahabad, India. She has presented ten oral posters in different international/national conferences organized in India. She has been awarded with Best Oral Presentation award for her work in Indian Science Congress Association. She also assists as resource person in various academic courses.

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