**Abstract**

Metasystox is one of the pesticides extensively used in agricultural practices throughout the world. *Channa striata* were exposed to sublethal concentrations (5 mg L-1) of metasystox for 15 d to assess the alterations in the level of blood glucose, lactate, sodium and potassium in blood plasma. Significant alterations in all the biochemical parameters were found to be dose dependent. Elevated levels of blood glucose and depressed lactate, sodium and potassium in blood further indicated lower metabolic rate after 15 d of exposure. Significant decline in triglycerides content was observed in fish exposed to both sublethal concentrations of metasystox. It was concluded that metasystox is poisonous and had a significant effect on the behaviour and biochemical system, which adversely affected the health of the fish. The authors suggested that increase in glucose (hyperglycaemia) which was dose and duration dependent in the sub lethal exposure to metasystox may be considered to be manifestation of stress induced by the toxicants and analysis of biochemical parameters in the fish blood may serve as us eful indices in environmental biomonitoring.