

## POLLUTIONAL IMPACT OF SOME SELECTIVE AGRICULTURAL PESTICIDES ON FISH *CYPRINUS CARPIO*

ASHIS KUMAR PANIGRAHI<sup>1</sup>, NEELANJANA CHOUDHURY<sup>2</sup> & JAYANTA TARAFDAR<sup>3</sup>

<sup>1,2</sup>Fisheries and Aquaculture Ext. Laboratory, Department of Zoology, University of Kalyani,  
Kalyani, West Bengal, India

<sup>3</sup>Department of Plant Pathology, Directorate of Research, Bidhan Chandra Krishi Viswavidyalaya,  
Kalyani, West Bengal, India

### ABSTRACT

Aquatic toxicity risks of agricultural pesticides to non-target organisms specially fishes are pivotal. The use of pesticides for an effective control of plant diseases has become crucial in the last decades in the agriculture system since it is estimated that pest infections cause yield reductions of almost 20% of crops worldwide. In the last decades, the use of pesticides in agriculture for disease control has become crucial. As known, fungicides, pesticides and other chemicals can enter to water bodies through rain water, food, irrigation water or rivers in many cases and may be hazardous for living systems. These chemicals influence metabolism at very low concentrations by altering enzyme activities and disrupting physiological balances.

Moreover, they are known to interfere with a number of processes as they have neurotoxic, hematotoxic, genotoxic, hepatic and renal effects on vertebrates. In our present study, behavioral changes and responses of the fish *Cyprinus carpio* to the Monocrotophos, agricultural effluent was observed. Fish were exposed to the agricultural effluent for 96 hrs. Effluent was added to the aquarium with different dilutions. Control fish showed normal behaviour and swimming in contrast the effluent exposed fish showed abnormal swimming, loss of equilibrium, fading of colour, coughing and opercular movements. There were rapid opercular movements followed by excited swimming and coughing in *Cyprinus carpio* because of improper ventilation or inconvenience in breathing. Quick expansion and contraction of opercular cavities serves the cleaning of debris accumulated on the gills. In *Cyprinus carpio*, the rate of movement of operculum found increased with the increase in concentration of effluent.

**KEYWORDS:** Monocrotophos, *Cyprinus carpio*, Toxicity, Dissolved Oxygen, Behavioral Changes, Mortality