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RESEARCH ARTICLE

Effects of sublethal concentration of Dimecron on Glutamic Oxalacetic Transaminase (GOT) and Glutamic Pyruvic Transaminase (GPT) activity in Hepatopancreas and Muscles of fresh water crab, *Barytelphusa guerini*

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ABSTRACT

Changes were observed in Glutamic Oxalacetic Transaminase (GOT) and Glutamic Pyruvic Transaminase (GPT) activities in hepatopancreas and muscles of fresh water crab, *Barytelphusa guerini*, when subjected to sublethal concentrations (0.6X10⁻²; 1.2X10⁻²; 1.8X10⁻²) of Dimecron and over a time period of exposure. GOT and GPT activities have been described with increase in sublethal concentration of Dimecron at the end of each exposure period and discussed to the different sublethal concentrations of Dimecron insecticide.

Key words : Sublethal concentration, Dimecron, Glutamic oxalacetic transaminase, Glutamic pyruvic transaminase, Barytelphusa guerini

The rapidly increasing use of insecticides in agriculture L poses serious hazards to aquatic animals. The main pesticides used are different including organochlorine, organophosphorus and carbamate etc. These pesticides poses a critical stress on the non-target stress on the nontarget aquatic biota like fishes, mollusca and crabs etc. which are economically important as food. The excess use of pesticides has been found to cause toxic effects to aquatic animals which would create a physiological imbalance. More recently, changes in enzyme concentrations are being employed in the evaluation of toxicological response within the past few years. Toxicologists have developed interest in studying the response of individual enzyme or groups of enzymes to toxic insolute. The organochloride (OC) compounds readily pass through cell membranes and alter the activities of several key enzymes. Gruzdev (1983) studied the changes in the aminotransferase activities and total free aminoacid level of melanoides tuberculatus during the larval trematode infection. Dikshith et al. (1980) and Deshmukh (1982) observed effect of Ccl., BHC, DDT and sevin, respectively in liver GPT and GOT activity. The effect of insecticides on fish was extensively studied by Brungs et al., (1977), Khalaf Allah (1999), Chandra

Kamble, S.M., Bhagwan, H.K. and Chinte, D.N. (2010). Effect of sublethal concentration of Dimecron on Glutamic Oxalacetic Transaminase (GOT) and Glutamic Pyruvic Transaminase (GPT) activity in Hepatopancreas and Muscles of fresh water crab, *Barytelphusa guerini*. *Asian J. Animal Sci.*, **5**(2): 199-201 (2004) and Sharma and Singh (2006). Kamble *et al.* (2009) studied the effect of sublethal concentrations of sevin (carbryl) on GOT and GPT activity in hepatopancreas and muscles of freshwater mussel, *Lumellidens marginalis* (Lamarck). Therefore, in the present investigation has been recorded the effect of sublethal concentrations of Dimecron on GOT and GPT activities in freshwater edible crab, *Barytelphusa guerini*.

MATERIALS AND METHODS

The freshwater edible crabs; *Barytelphusa guerini* were collected from river and were acclimated to the laboratory conditions for 15 days and were fed with muscles or meat during the period of acclimation and water was replaced daily. The crabs were stored for 24 hrs before exposure to avoid nutritional effects. The crabs of approximately same size and weight were exposed to the sublethal concentrations of the 96 hrs LC_{50} (0.6X10⁻²; 1.2X10⁻² and 1.8X10⁻²) of the insecticide, Dimecron for varying time periods such as 24, 48, 72 and 96 hrs. After each exposure period, GOT and GPT activities in hepatopancreas and muscle were estimated by the method of Reitmann and Frankal (1957).

RESULTS AND DISCUSSION

The GOT and GPT activities in hepatopancreas and muscles of freshwater edible crab, *Barytelphusa guerini* decreased with increase in Dimecron sublethal