REMARKING : VOL-1 * ISSUE-6*November-2014

ISSN No. : 2394-0344

Acute and Chronic Effect of Pursuit on Protein Contents in Liver and Kidney of Fingerlings of Tilapia-Mossambica

Abstract

Pesticides are continuously reaching water bodies from crop-fields either by rain drainage or by direct processes. On reaching water bodies these pesticides have fatal-effect on fishes, fingerlings, fries and eggs, causing damages to their organs and affecting their metabolism and survivalness. Present observation is an attempt to evaluate the toxicity inspect of herbicide Pursuit on protein content of liver and kidney of Tilapia mossambica fish fingerlings exposed to acute and chronic sub-lethal concentration of pursuit exhibited significant depletion in the level of protein in liver and kidney.

Keywords: Herbicide, Tilapia, Protein metabolism, Liver, Kidney, Toxicity, Fingerlings,

Kamlesh Ahirwar
Assistant Professor,
Deptt.of Zoology,
Govt.J.H.P.G.College,
Betul, M.P.

Romsha Singh
Professor,
Deptt.of Zoology,
Govt. M.L.B. Girls College,
Bhopal M.P.

Introduction

Pollution means the presence of any foreign substances in water that degrades the quality to constitute a hazard or impair its usefulness. Any changes in water component adversely affect the entire ecosystem resulting many organisms to death or extinction. The pollution of aquatic environment by pesticides adversely affects the survival of aquatic organisms including commercially important fish species (Johnson, 1973)

As fish is considered the most important and vital-link in the food chain of the ecosystem and the inland fisheries are important sources of protein in a nation's dite. So a through understanding of pesticidal effects on fishes would be really vital for fish conservation and fisheries development (Awasthi, 1998).

Pesticides which have been classified in various ways amongest which herbicides are a class which specifically target to destroy weeds is a very familiar economical poison used in agricultural fields for the control of annual weeds to get maximum yield of crops in agriculture. Liver & Kidney are the organs which are involved in the metabolic and excretory mechanisms of the body. During this process they themselves get damaged by pollution in water.In the view of above facts the present work was undertaken which attempts to evaluate the impact of pursuit on the liver and kidney biochemical profile of the T.mossambica fingerlings.

Material & Method

Live fingerlings of T.mossambica (average length 5-7 cm.) were collected and acclimatized in the aquaria for 15 days. The LC50-value of species were determined. To observed the acute (96 hrs) toxic effect of pursuit three different sublethal concentrations (63.7ppm, 85.00ppm, 127.5 ppm) of their LC50 were selected and to observed chronic toxicity (15 & 30 days) of these toxicant one sub-lethal value is considered. Quantitative estimation of total Protein were measured by the method of Lowry, et.al.

Result & Discussion

The effect of Pursuit on biochemical parameters of protein estimation was studied to understand their mode of action. The variation of protein contents is taken as good indicator for the extent of damages due to pesticide pollution of aquatic environment in general and pursuit in particular.In the present observation the total protein of experimental fingerlings are significantly decreased according to dose and duration of exposure when compared with control fingerlings. Toxicity of pursuit on biochemical constituents of liver for 96 hrs, 15 and 30 days are present in Table no. 1. The decrement of protein is due to the increased utilization of protein during stress condition.The result of pursuit toxicity on protein constituents of kidney for acute and chronic exposure are presented in Table no. 2.