P: ISSN NO.: 2321-290X
E: ISSN NO.: 2349-980X
RNI : UPBIL/2013/55327
Shrinkhla Ek Shodhparak Vaicharik Patrika
Vol-III * Issue-IX* May -2016

Acute Alterations of Herbicide Pursuit on Histochemistry of Protein in Liver of Oreochromis Mossambicus Fingerlings

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

Abstract

The histochemical reaction of bromophenol blue test for protein in the liver of Oreochromis mossambicus fingerlings under control and treated conditions gave different response. Rich amount of protein content were seen in liver of controlled fingerlings where as due to acute exposure of three different sublethal concentration (63.7 ppm, 85.0 ppm., 127.5 ppm.) of pursuit for 96 hrs. liver tissue shows weak positive to negative reaction with protein contents.

Keywords: Histochemical, Alterations, Liver, Pursuit Fingerlings, Protein, Acute-effect.

Introduction

Pesticide which have been classified in various ways, amongst which herbicides are a class which specifically target to destroy weeds. These herbicides are widely used in the field of agriculture for control of annual weeds to get maximum yield of crops. Hence Pesticide toxicity is a serious problem for any water body which may cause degradation of water quality and effecting the organic life of that Aquatic organisms are susceptible to pollution by pesticide.

The test herbicide "Pursuit" falls in the category of carbamate extensively used for the control of weeds in soyabean and groundnut crops. In aquatic toxicology fish has been widely used as a biological indicator of the degree of pollution and acclaimed as test species to test the potency of toxicants. It can be more specifically measured on fingerlings of fishes rather then adult ones as they are immature adult forms in its outward appearance, having undevelop reproductive organs and delicate organ system. Hence they are more sensitive towards any environmental changes. Considering the recent trends in the field of fishery the present work has been carried out on acute alterations of herbicide pursuit on histochemistry of protein in liver of Oreochromis mossambicus fingerlings.

Aim of the Study

The indiscriminate use of pesticides has posed grave environmental problems as a result of contamination of various water bodies, thereby adversely affecting the aquatic fauna.

Material & Method

Fingerlings of Oreochromis mossambicus were collected from local fish farm and kept in the glass aquaria for acclimatization for 15 days. After obtaining the LC_{50} value fingerlings were exposed to 63.0 ppm., 85.0 ppm., 127.5 ppm. concentration of herbicide pursuit for 96 hrs. controls were maintained separately for same duration. After specific duration (96 hours) fishes were dissected out and liver was removed and washed with saline water. For staining general protein in the tissue mercuric bromophenol blue test was followed.

Result & Discussion

In the liver of untreated fingerlings nuclei of the hepatic and pancreatic cells were strongly positive with bromophenol blue test cytoplasm and its reserve material was found in strong positive condition. Blood cells and interhepatic spaces were shown positive for the bromophenol blue stain (fig. 1). When the fingerlings were exposed with the 63.7 ppm. prsuit for 96 hrs. no remarkable changes were observed. Only cytoplasm and outer capsular layer of liver cells were moderate positive to this test (fig. 2). With the 85.0 ppm. pursuit intoxication moderate positive reaction was noticed in blood capillaries, hepatic cell cytoplasm as well as blood cells show positive reaction towards this test. (fig. 3). After 127.5 ppm. pursuit toxicity nuclei of the hepatic cells and blood cells were weak positive to this test. Boundaries of the liver cells