

Abstract

Drugs in the environment one of the most important and contemplative and up-to-date issues in the world studies of their negative effects on aquatic organism and the environment have recently received research. In this study, we investigated the effect of oxazepam on oxidative stress and activity of common carp hepatic enzymes (*Cyprinus carpio*) using biomarkers. A total of 120 common carp fish with mean weight of $12.42 \pm 1/31$ were randomly divided into four groups (control, 0/5, 2 and 5 mg.l⁻¹ oxazepam) and three replicates per group. After 28 days of experiment, the activity of antioxidant enzymes CAT SOD, MDA, GPX, as well as liver enzymes AST, LDH, ALT, ALP were measured. There was a significant difference in the activity of SOD, MDA, GPX, and CAT in all groups in comparison with control ($p \geq 0.05$). Activity levels of AST, ALP, LDH, ALT enzymes Significant differences were observed in different groups. Also, in terms of blood factors, this drug increased immune response in common carp by increasing white blood cell count and decreasing red blood cell count. The results showed that oxazepam had the greatest effect on stress control and central nerves of fish. Tissue damage caused by this drug at high concentrations, In liver tissue, nerve tissue, and gills less intense was observed in intestinal tissue.

Key words: Oxazepam, Oxidative stress, Sub lethal concentration, *Cyprinus carpio*



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**The Thesis Submitted for the Degree of Master of Science
(In the field of Fisheries)**

**Effect of oxazepam on the oxidative stress and liver
activity enzymes of common carp (*Cyprinus carpio*) using
biological indices**

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September 2019