



Investigation of acute crude oil exposure on basic physiological function of Persian Sturgeon (*Acipenser persicus*)

Ahmadi Livani M.^{1*}; Khoshbavar Rostami H.¹; Yelghi S.¹

1-Inland Water Aquatic Stocks Center, Gorgan, Iran

*Corresponding author's email: Ahmadi777@yahoo.com

Abstract

Studying of hematological parameters are suitable biomarkers for evaluating the potential risk of chemicals. In the present study, sublethal toxic effects of crude oil on the biochemical and hematological parameters of Persian Sturgeon (*Acipenser persicus*) were studied. 300 juvenile Persian Sturgeon (120±10g) was supplied by Rajaei fish farm in Mazandaran Province, Iran. Juveniles of Persian Sturgeon exposed to the crude oil concentrations, including 0, 0.218, 0.327 and 0.436 ppm (equals to control group and 2, 3 and 4 times more than Caspian Sea water respectively). Hematological and biochemical parameters were measured once a week for 9 weeks post exposure to the toxicant. WBC, RBC, PCV and Hb decreased and MCV and MCH were significantly higher in fish exposed to crude oil concentrations compared to control group and during the experiment times ($P < 0.05$). Results of the leukocyte types showed that, after treatments neutrophils increased, while lymphocytes decreased during the experiments ($P < 0.05$). Monocytes showed no significant differences ($P > 0.05$). Biochemical parameters showed an increase in serum glucose ($p < 0.05$) and other parameters including TP, ALT, ALP and LDH decreased in treatment groups and during the experiments significantly ($p < 0.05$). Crude oil had a disruptive action on erythropoietic cells and according to our results, the first and second lines of defense active against the cellular damages. Crude oil also inhibits all enzymatic activities.

Keywords: Acute exposure, Biochemical parameters, Crude oil, Hematology, Persian Sturgeon.