

Effects of Sub Lethal Concentrations of Pesticide Malathion on Hematology Parameters of Rainbow Trout (*Oncorhynchus mykiss*)

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Abstract

Malathion is a pesticide that is commonly used in agriculture in Iran and its entrance to the aquatic ecosystems resulting in numerous physiological effects on the fishes. In order to investigate the effect of malathion poison on hematological parameters of rainbow trout, 3 sub lethal concentrations (0.025, 0.05, 0.075 mg/l) and a control (each with three replications) were selected and blood tests were performed on the fifth and ninth days. The exposed fish to sub-lethal concentrations of pesticide malathion resulted in a significant reduction ($P<0.05$) in the red blood cells (RBC), hemoglobin (HB) and hematocrit compared to the control group. In contrast, a significant increase ($P<0.05$) in the number of white blood cells (WBC) were observed in the experimental treatments. Mean corpuscular volume (MCV) and mean cell hemoglobin (MCH) in response to this pesticide has increased during the test. The differential white blood cell counts also showed that eosinophils and neutrophils, lymphocytes, unlike the treatments had a significant reduction ($P<0.05$). The results showed that the blood parameters of rainbow trout might be useful as sensitive biomarkers to pesticide contamination of the environment.

Keywords: *Pollution, Aquatics, Hematology, Agricultural pesticides, Organophosphates.*
