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Original Article

THE IMPACT OF TOXIC HEAVY METALS ON THE HEMATOLOGICAL PARAMETERS IN COMMON CARP (CYPRIINUS CARPIO L.)

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Abstract:

The aim of the present investigation was to determine the effect of heavy metal pollutants such as cadmium, chromium, nickel and lead in aquatic system on common carp (*Cyprinus carpio* L.) by using a set of biochemical parameters. The experimental group of fish was exposed to a sublethal concentration of 5 mg/L of combined (Cd+Pb+Cr+Ni) metal solution containing 1.25 mg/L of each metal ion (1/10th of LC 50/48 h) for a period of 32 days. The results indicated that the values of the hemoglobin were in the range of 55.30±1.20 g/L to 74.55±1.33 g/L (p<0.001) and the packed cell volume was in the range of 26.72±0.26% to 30.68±0.43% (p<0.01). Concentrations of red blood cells, blood glucose and total cholesterol were significantly elevated. The level of serum iron and copper was increased. The results showed the decreased activity of vitamin C during chronic exposure to toxic heavy metals, which indicates the presence of reactive oxygen species-induced peroxidation. The study suggested that the presence of toxic heavy metals in aquatic environment has strong influence on the hematological parameters in the fresh water fish common carp (*Cyprinus carpio* L.).

Keywords:

Heavy metals . hematology . blood glucose . common carp . *Cyprinus carpio* L.

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