

## **LEVELS OF HEAVY METALS (CADMIUM, COPPER AND ZINC)**

### **IN THE TISSUES OF FOUR FISH SPECIES OF THE EUPHRATES RIVER; THI QAR, IRAQ**

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#### **ABSTRACT**

Concentration of three heavy metals ( cadmium , copper and zinc ) in the gills, skin, scales, liver, bones and muscles of four fish species ( Himri, carp, tilapia and khishni ) collected from the Euphrates River in the area between the town of Batha and the city of Nasiriyah were investigated. Samples were collected in July 2015. The study revealed that the concentrations of heavy metals change with different tissue and with species of fish. The lowest level of cadmium was shown by Hamri (38.88 mg / kg dry weight) , and the highest ( 107.4 mg / kg dry weight) was recorded in the liver followed by scales . Carp and tilapia did not differ significantly among themselves and showed significant differences ( $p < 0.05$ ) from Khishni. The lowest level of copper was measured in the muscle tissue (21.93 mg / kg dry weight) and highest in the liver ( 2088.07 mg / kg dry weight) . Hamri showed more accumulation of copper. The highest rates of zinc was in the gills ( 279.79 mg / kg dry weight) and the lowest accumulation was in the muscles. The study indicate that all concentrations of heavy metals in the tissues of fish was high as classified by FAO. The effect of cadmium on the different fish species differ significantly ( $P < 0.05$ ). Transactions in the texture of the skin and bone tissue did not differ from each other, but significantly rose ( $p < 0.05$ ) compared with the treatments of scales and muscle tissue.

**KEYWORDS:** Cadmium, Copper and Zinc