



The concentration of Cadmium (Cd) in the water of Tigris River and organs of *Carrasobarbus luteus* and *Cyprinus carpio*

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Abstract

Cadmium, heavy metal is a highly harmful environmental pollutant. It can cause many health problems that affect people around the world. This study intended to determine the concentration of cadmium in the water of Tigris River in Baghdad city, as well as in the fish living inside this river. Three stations from Tigris River in Baghdad city choose as study areas. From all stations, totally, 75 and 82 fish specimens were collected for

Hamri Carrasobarbus luteus and common carp *Cyprinus carpio* respectively. Atomic absorption spectrometry used for measuring the quantities of Cadmium in water and fish samples. The results of this study showed no significant differences ($p>0.05$) in the concentration of dissolved Cd between examined water in all stations. No significant differences ($P>0.05$) also observed in the Cd concentration in the *C. luteus* gills, muscles, liver and kidney, between different length groups for each station, or between all stations during the period of the study. However, the length group 1-10cm at station 2 showed increasing differences ($P\leq 0.05$) in compare with the same length group at station 1. Moreover, no significant differences ($P>0.05$) seen in Cd concentration in gills for *C. carpio* between different length groups for each station, or between all stations during the period of the study. Also, the station 2 recorded highest values of Cd in muscles and liver in compare with the stations 1 and 3 in different length group. Besides, the highest values of Cd in kidney reported in station 2 in compare with the other stations in different length groups. Further, in all length groups, significant increasing ($P\leq 0.05$) recognized in station 2 in compare with station 1. In conclusion, the result of the present study approved the presence of Cd in the water of Tigris River and fish living inside it. In addition, the mean concentration of cadmium in water was more than in fish organs. The results also reported that Cd concentration was higher than the allowable WHO concentration. The authors recommend more future studies in different areas of Iraq to determine the real situation of Cd concentration in water and aquatic species in both main Iraqi rivers the Tigris and the Euphrates.

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