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Bio Concentration Factor of Aquatic Plants and Heavy Metals as Exchangeable and Residual in Sediment at Marshes, Southern Iraq

Maha K. Al-Mishrey, Rehab S.K. Al-Atbee[1], Salah M. Saleh[1] and Abbas A. Hantoush[1]

Department of Biology, College of Science, University of Basrah, Baseah, Iraq
[1]Marine Science Centre, University of Basrah, Iraq
E-mail: htalsaad@yahoo.com

***Abstract*:** Concentration and accumulation of six heavy metals (Cd, Cr, Pb, Cu, Zn and Ni) were measured in the sediment as (exchangeable and residual phase) and in two species of merged aquatic plants (*Typha domingensis* and *Phragmits australis*) during summer 2019 to spring 2020 at Al-Hammar marsh. Geoaccumulation index (I-geo) and Bio-concentration factor (BCF) were calculated as indicators of heavy metals pollution in sediment and aquatic plant, respectively. Higher concentration of metals were observed in residual phase more than their concentration in exchangeable phase, while the mean contents of metals were in decreasing order Ni > Cr > Zn > Cu > Pb > Cd. According to I-geo index, the sediment of Al-Hammar marsh can categorized as strongly polluted with Cd, while considered as unpolluted to moderately with Cr and Cu, but unpolluted with Pb and Zn. The BCF show different capacity of both studied plants to accumulate heavy metals from the surrounding media and are useful for management of pollutants.

Keywords: BCF, Sediment, Heavy metals, Southern marshes, Iraq