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Survey of Heavy Metals Cd, Cu, Ni and Zn Accumulation in the Sediment and Different Tissues of *Avicennia marina* in Gulf of Gowater, Oman Sea

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Abstract

The sediment samples and *Avicennia marina* tissues including root, steam, leaf and flower were collected from Gulf of Gowater in summer 2010. After preparation of samples, the concentration of heavy metals was measured by using atomic absorption spectrophotometer. The accumulation pattern of heavy metals in the sediment was obtained Ni>Zn>Cu>Cd. This pattern for root, steam, Leaf and flower were determined Ni>Cu>Zn>Cd, Zn>Cu>Ni>Cd, Zn>Cu>Ni>Cd and Zn>Cu>Ni>Cd respectively. According to the BCF (Bioconcentration Factor) values, mangrove tissues can be used as a bioindicator for contamination of Cd. whereas root and steam can be used as bioindicators for contamination of copper in Gowater and root can be used for Ni monitoring in this area. Plant tissues are not useful tools as bioindicators to detect contamination of Zn in the area. High TF (Transition Factor) values for root indicate that the root has significant role for metal transferring from root to other the plant tissues. Different metal ratios between *A. marina* tissues and sediment can be related to the character of heavy metals to be essential or not for plant.

Keywords*: Heavy metals, Sediment, Mangrove, Gulf of Gowater.*