Determination of Heavy Metals Concentrations in the Mangroves (*Avicennia marina*) and Sediments of Imam Khomeini Port

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Received Date: June 05, 2012 **Corresponding Author* *Accepted Date: October 21, 2012*

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Abstract

Heavy metals have caused many environmental problems in aquatic ecosystems. These elements enter into the environment by natural factors, industrial activities, agriculture and urban sewages and can accumulate in aquatic organisms through the food chain. Mangroves as a food chain ring are able to adsorb heavy metals and can indicate elements concentrations in the ecosystem. In this study, to determine the concentration of heavy metals (Cu, Pb, Ni, Cd) in sediments and mangroves in Imam Khomeini Port and to investigate the mobility of these metals based on enrichment factor, nine stations were selected and samples collected from mangrove's leaves, roots, and sediments. The samples were digested in concentrated acid and metal concentrations were determined using atomic absorption. Results showed that metal concentrations in the roots of plants were more than in the leaves and there was a significant correlation between concentrations of metals in the sediment and plant roots. Therefore, mangrove roots can be a good biomonitor for polluted sediments with heavy metals. The average of enrichment coefficients in leaves and roots of mangroves for all metals was less than 1, that shows accumulation and availability are medium in this plant.

Keywords: *Heavy Metal, Sediment, Avicennia marina, Imam Khomeini Port.*