

## The concentration of Lead and Nickel in the sediment and root and leaves of *Rhizophora mucronata* in Khore Azini international wetland, Iran

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### Abstract

The Ciric and Khore Azini international wetland is the only unique habitat of *Rhizophora mucronata* in Iran. Due to the limited access and difficulty of sampling, a study has not been done about the amount of heavy metal contamination in the plant community in this region. For this purpose, in 2016, 27 sediments, leaves and roots were sampled from 9 stations with three replications at each station by boats. After extraction, lead and nickel concentrations were measured by atomic absorption. The mean ( $\pm$ SD) lead and nickel concentrations in sediment were  $13.06 \pm 2.62$  and  $63.82 \pm 6.99$ , in the leaves  $4.24 \pm 2.22$  and  $2.96 \pm 0.57$  and in the root  $9.12 \pm 2.52$  and  $8.57 \pm 4.29$  mg/kg dry weight, respectively. The mean lead and nickel concentrations in leaves and roots also, the mean nickel concentration in the sediments is higher than the standard threshold. According to the muller index, lead and nickel concentrations are in the non-contaminated class and based on the pollution coefficient, have a moderate contamination coefficient. The lead and nickel contamination attributed to the fishing boat and vessels, oil discharging, gas and petrochemical industries on the coastline. Due to the mean nickel concentrations in sediments, leaves and roots in this region and due to the economic and ecological importance of mangrove habitats and their vulnerability, it is necessary that the heavy metals pollution in this area to be controlled and monitored.

**Keywords:** Geochemical index, Heavy metal pollution, Khore Azini international wetland, *Rhizophora mucronata*.