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Bioaccumulation of Lead, Zinc and Cadmium in *Avicennia marina* Mangrove Ecosystem near Narmada Estuary in Vamleshwar, West Coast of Gujarat, India

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Abstract: Bioaccumulation of heavy metals (Pb, Zn and Cd) in an important mangrove species, *Avicennia marina* (Forsk.) Vierh. in the Vamleshwar mangrove ecosystem, near Narmada estuary, West coast of Gujarat, India was carried out under field conditions from November 2008 to December 2009. The site was located on 21°30'11.55" N latitude and 72°43'53.68" E longitude. Due to their unique location, mangroves receive heavy metal pollution from upstream areas of Narmada estuary and the sea. However, little is known about the capacity of mangrove plants to take up and store heavy metals. Plant parts (Root, Stem and Leaf) and sediment were analyzed for finding the trace metal accumulation. The samples after digestion were analyzed by Inductive Coupled Plasma Analyser (ICPA; Perkin-Elmer ICP Optima 3300 RL, USA). The amount of metals were found in the order of Pb>Zn>Cd. It was observed that the total concentrations of Pb, Zn and Cd in the sediments were below the general critical soil concentrations. However, the total concentrations of Pb in both the roots and leaves of *Avicennia marina* exceeded the general normal upper range in plants. This study has therefore, shown the potential of *Avicennia marina* as a phytoremediation species for selected heavy metals in many mangrove ecosystems.

Keywords: *Heavy metal pollutions; Avicennia marina; mangrove sediments; Vamleshwar mangrove ecosystem.*

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