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Accumulation and Translocation of Heavy Metals in *Coriandrum sativum*

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ABSTRACT

Contamination of toxic trace metals represents one of the most pressing threats to water and soil resources as well as human health. Phytoremediation can be potentially used to remediate metal-contaminated sites. In this study the potential of medicinal plant *Coriandrum sativum* was examined to determine if this plant show sufficient tolerance and accumulation to be used for phytoremediation of the polluted soil. Plant and the associated soil sample were collected and analyzed for total metal concentrations. The distribution of toxic metals such as Mn, Fe, Cu, Ni, and Zn in roots, and leaves of the plant was determined by acid digestion and inductively coupled plasma mass spectrometry. From the result obtained it is evident that the roots absorb high concentrations of metals Mn, Fe, Cu, and Zn from the soil. The mean concentration of Mn, Fe, Ni, Cu and Zn in the rhizospheric soil are found to 44652, 4922, 63027, 83, 94, and 104 mg kg⁻¹. The order of decreasing concentration of all the metals found in the rhizospheric soil is: Fe>Al>Mn>Zn>Cu>Ni. The concentration of metals such as Al, Mn, Ni, and Cu are always present in a higher amount in the plant leaf than root. The biological absorption coefficient (BAC) and translocation factor (TF) for the phytoremediation are also discussed.

Keywords: *Coriandrum sativum*, Toxic metal uptake, Phytoremediation, Bioaccumulation factor, Translocation factor.
