Uptake of Heavy Metals by Selected Plant Species

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As a result of increasing anthropogenic activities, the heavy metal pollution of soil, water, and atmosphere represents a growing environmental problem affecting food quality and human health. Hence, heavy metals should be eliminated from the environment. Several conventional physico-chemical methods are being used to remove heavy metals from the aqueous effluents. But these methods have some disadvantages such as high cost, requirement of expensive equipments, etc. Hence, phytoremediation has been discussed as a cost effective biological remediation technique. During this research work, the heavy metal uptake in two selected plant species i.e. *Fimbristylis falcate* and *Fimbristylis ovate* was investigated. Both *F. falcate* and *F. ovate* plants were allowed to grow in serpentine soil for two weeks and thereafter, the uptake of Ni and Cr from the soil by the plants was determined. The results showed that *F. falcate* plants can uptake both Ni and Cr where as *F. ovate* plants can uptake only Ni, from the serpentine soil in Ussangoda. Hence, from this research it can be concluded that *F. falcate* could be used to remove both Ni and Cr where as *F. ovate* could be used to remove only Ni, from the serpentine soil in Ussangoda. *Fimbristylis falcate* was screened to study the uptake of Ni. The plants were grown hydroponically in a series of Ni concentration where the range was 50 - 350 1.1M of Ni^{2+}. The results showed that the plant can uptake and survive at the range of 250 - 350 µM Ni concentration.

Key words: Heavy metals, Phytoremediation, Hyperaccumulation.