

Potential of *P. stratiotes* and *E. crassipes* in removing Pb as single or mixed metals from simulated wastewater

Abstract

The efficiency of aquatic macrophytes serve as phytoremediation has become acceptance technique due to its cost effectiveness, non-intrusive and safe alternative to conventional clean up wastewater. Under present investigation, two indigenous aquatic plants *P. stratiotes* and *E. crassipes* were used to compare the removal of single metal Pb and mixed metals (Pb+Zn+Ni+Cd+Cr) from simulated wastewater. Both species were cultivated in simulated UMS Lake water by adding 0.5 mg/L concentration of Pb as single metal and 0.5 mg/L of mixed metals Pb, Zn, Ni, Cd and Cr in CVIF reactor for 15 days experimental period. The removal efficiency of single metal Pb has shown sharp decrease in the first and 2 nd day of the experiment with 94 %. On the contrary, mixed metals showed lag phase at day 6 of cultivation and continued to have gradual pattern until day 15. The final results showed that single metal Pb has been removed almost 100% from the simulated wastewater as compared to the mixed metals which is only 72%. The enrichment factor (EF), translocation factor (TF) and distribution of single and mixed Pb in plant tissues (roots, leaves and stalks) of *P. stratiotes* and *E. crassipes* were also discussed in this paper.