

## **Screening of aquatic plants for potential phytoremediation of heavy metal contaminated water**

### **ABSTRACT**

Bioremediation is a new green economic approach in providing solutions for cleaning up contaminated sites. Phytoremediation uses plants as a tool for remediation purposes. The usage of plant species offers higher potential solution to remediate heavy metal contaminated sites. This study aimed on screening potential plant species for phytoremediation of heavy metal contaminated water. The potential of three aquatic macrophytes species (*Eichornia crassipes*, *Pistia stratiotes* and *Ipomoea aquatica*) for chromium and nickel phytoremediations was tested. The plants were exposed for 10 days under hydroponic conditions in heavy metal contaminated water. *E. crassipes* showed the highest chromium and nickel concentrations in its biomass, 1.60 and 2.40 g/L respectively. Meanwhile, *P. stratiotes* had chromium and nickel concentrations detected at 0.89 and 0.081 g/L, respectively; chromium and nickel concentrations of *I. aquatica* detected were, 0.49 and 0.08 g/L, respectively. The ability of these plants to accumulate heavy metals and survived throughout the experiment demonstrates the potential of these plants to remediate metal-enriched water. Among the three tested aquatic plants, *E. crassipes* was proven to be the most suitable plant species that can phytoremediate heavy metal contaminated water followed by *P. stratiotes* and *I. aquatica*.

**Keyword:** Phytoremediation; Aquatic plants; Heavy metals