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TOLERANCE AND REMEDIATION OF LEAD POLLUTION IN SOIL BY *Eupatorium adenophorum*

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Abstract

This study aimed to test the remediation potential of *Eupatorium adenophorum* on lead-contaminated soil. A pot experiment was conducted to study the effects in the growth characteristics, chlorophyll content, and toxic accumulation of *E. adenophorum* under different concentrations of lead stress. Bioaccumulation factor (BCF) and translocation factor (TF) were used to determine the accumulation and transport capacity of lead in the *E. adenophorum*. Results showed that the biomass and chlorophyll content of *E. adenophorum* gradually decreased under increasing levels of lead pollution, heavy metal accumulation was higher in roots than in stems and leaves. When the soil lead stress concentration was 200 mg/kg, the BCF of roots, stems, and leaves was the highest, which was 2.3618. The TF for the different heavy metal pollutants' concentrations was less than 1. This study indicating that lead was primarily enriched through root stabilization of *E. adenophorum* and showed tolerance to lead. *E. adenophorum* can be used as a potential remediation plant in heavy metal lead-contaminated areas, providing a new direction and a new way to comprehensively utilize the ecological environment of *E. adenophorum* in the future.

Key words: bioaccumulation, *Eupatorium adenophorum*, heavy metal, lead-contaminated soil, phytoremediation

Received: October, 2022; Revised final: June, 2023; Accepted: June, 2023; Published in final edited form: June, 2023

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