

# **Cadmium Tolerance and Phytoremediation Strategies of Selected Tropical plants Cultivated on Industrial Dump Site under the Influences of Two Mycobionts**

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## **Abstract**

This research was carried out on a waste disposal site of a paint industry in Ijebu- Ijesha, Osun State, Nigeria in an attempt to assess the cadmium toxicity tolerance and bioremediation strategies of selected tropical plants cultivated under the influence of two mycobionts. On the waste disposal site, two plots (Plot A and B) having size of about 9 m by 12 m each were prepared with a control plot (Plot C) which is a non-polluted site. The experimental design on the first plots (Plot A) was 4x2x3 in which viable seeds of the four selected weeds were grown and inoculated with two mycobionts (*Glomus intraradices* and *Glomus mosseae*) respectively in a randomized complete block design with three replicates. However, on the second (Plot B) and control plots, only the seeds of the weeds were grown without mycorrhizal treatment using the same experimental design of 4x3 respectively. After Twelve weeks of planting, each plant was harvested, separated into root and shoot tissues and analysed for Cd concentrations using Atomic Absorption Spectrophotometry (AAS). Data collected were subjected to descriptive and inferential statistics. The highest (18.51 mg/kg) concentrations of Cd were reported in *Amaranthus spinosus* with root and shoot bioconcentration factors; and transfer factors greater than 1.00. Out of the four plants, 75% act as cadmium phytostabilizers in the absence of inocula and were good candidates for the biomanagement of hazardous sites while all the plant displayed the characteristics of a cadmium phytoextractor under mycorrhizal inoculation with *Amaranthus spinosus* having the highest mobility indices of cadmium under the influence of *Glomus intraradices*. The study concluded that the four weeds are good Cd phytoextractors in the remediation and biomanagement of marginal lands under augmentation.

Key words: *Glomus intraradices*, *Amaranthus spinosus*, Cadmium, Mobility indices