The study of landfills Leachate effects on physiological traits and levels of Antioxides in two species of *Amaranthus retroflexuose*, *Closeia argenta* and the ability of them in phytoremediation

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**ABSTRACT**

Leachate emissions from landfill sites are of concern, primarily due to their toxic impact when released unchecked into the environment, and the potential for landfill sites to generate leachate for many hundreds of years following closure. Consequently, economically and environmentally sustainable disposal options are a priority in waste management. One potential option is the use of soil-plant based remediation schemes. In many cases, using either trees or grassland, phytoremediation of leachate has been successful. Phytoremediation is an effective, economical and biocompatible method for remediation of contaminated soils. In this study, *Amaranthus retroflexuose*, *Closeia argenta* were used for cleanup of soil. The aim of this research is Finding the best and most affordable way to clean up the soil. Therefore the reaction of these two plant was studied in a factorial experiment based on completely randomized design with four replication. After stabilization of plants were irrigated 5 weeks with landfill leachate in the amount of 0, 50, 100, 150, 200 ml. Then was measured height of plant, number of Leaves, leaf area, shoots and root dry weight, shoot and root fresh weight and calculated the percentage of cd and Ni uptake by plant. In the end, the change of Antioxidant includes prooxidase and Catalase was measured in the shoots and roots. The results shown that there are no significant difference between morphological traits in two condition(Normal and Stress) except in plant height and interned length. But the level of antioxidants and heavy metal uptake had significant difference.

**Keywords**: landfills leachate, phytoremediation, cd, Ni