

EFFECT OF *PSEUDOMONASE PUTIDA* ON LEAD CONCENTRATIONS IN SHOOTS AND ROOTS OF *ZEA MAIZE* L. PLANT CULTIVATED

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INTRODUCTION: Lead is a highly toxic metal that causes a variety of environmental Problems. Special attentions have been paid on the plant growth-promoting bacteria among the rhizosphere microorganisms involved in plant interactions with the soil environment [1]. plant growth-promoting bacteria significantly improve plant growth in the presence of heavy metals such as nickel, lead and zinc by reducing the level of ethylene and the elongation of roots and better plant establishment In the early stages of plant growth [2]. The principal aim of this study was to investigate the effect of two species of Pseudomonas bacteria (with and without ACC-deaminase enzyme) on lead concentrations in shoots and roots of Zeamaize L. plant cultivated to increase efficiency remediation of soil.

MATERIAL AND METHOD: soil was contaminated in three levels of lead (500,1000,1500 mg pb/kg soil) then seeds of maiz inoculation with two strains Pseudomonaseputida (11) and Pseudomonasefluorescens (153) with and without ACC-deaminase enzyme was performed and then these seeds were planted in Pb spiked soils pot experiment was carried out in split plot factorial based on complete randomized block design in three replications. At the end of the growing season, plants were harvested and the amount of lead in the roots and shoots were measured. Results were analyzed using SPSS software.

RESULTS AND DISCUSSION: According to the results, Pseudomonase Putid bacteria with ACC-deaminase enzyme significantly increases lead concentration in roots compared to control. On the other hand, in these effects do not cause significant differences on lead concentration in shoot. The results showed the increasing of lead concentration in the soil led to increase lead uptake by maize, significantly ; which is more evident in the roots, And presence bacteria with ACC-deaminase enzyme had the effect on uptake of this element.

Keywords: PseudomonasePutida, ACC-deaminase enzyme, Zea maize, lead.



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