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EFFECT OF ARBUSCULAR MYCORRHIZAL FUNGI ON GROWTH PARAMETERS OF VETIVER GRASS IN A CD-CONTAMINATED SOIL

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INTRODUCTION: Mycorrhizal fungi are one of the major components of the rhizosphere forming symbiotic associations with most plant species. They could provide a direct link between soil and plant roots by having extensive extraradical hyphal networks that can absorb and translocate nutrients to the roots and consequently may improve plant nutrition particularly in stress environment [1,2]. Phytoextraction abilities of vetiver grass (*Chrysopogon zizanioides* L.), a fast growing and high biomass producing plant species may be affected by the presence of arbuscular mycorrhizal (AM) fungi.The objective of this study was to evaluate the impact of root colonization by the AM fungus, *Glomus mosseae* on root and shoot biomass of vetiver grass in a soil contaminated with Cadmium (Cd).

MATERIAL AND METHOD: A factorial experiment consisting two levels of Cd contamination and two levels of mycorrhizal inoculation was conducted in greenhouse. Vetiver plants (*Chrysopogon zizanioides* L.) were grown in plastic pots containing soil contaminated with 10 mg Cd per kg of dry soil and compared with control treatment. Pots were also inoculated with *Glomus mosseae* mycorrhizal fungus before planting to be compared with those remained un-inoculated. Pots in 3 replicates for each treatment were arranged according to a completely randomized design. Growth parameters including shoot lengths and root and shoot fresh and dry weights were measured at the end of growing season. Results were analyzed using SAS software.

RESULTS AND DISCUSSION: Cd contamination significantly decreased shoot fresh weight but not dry weight. In contrast, the presence of *G. mosseae* significantly increased both root and shoot fresh weight and shoot dry weight of plants compared to those grown without AM fungi. No interaction between Cd contamination and mycorrhizal status was also observed. These results are in agreement with the previous studies reporting increase in plant biomass due to the presence of AM fungi [3]. Symbiotic relationship with mycorrhiza could help vetiver plants retrieve better under Cd contaminated soil.

Keywords::Arbuscular mycorrhizal fungus,*Glomus mosseae*,
Vetiver grass, Cadmium

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