STUDY ON BIOREMEDIATION OF HEAVY METAL-CONTAMINATED SOILS USING THE BACTERIA-PLANTS SYNERGY

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Abstract

It is well known that different plant species can be associated with microbial communities with unique characteristics. Various groups of viable microorganisms from soils can improve the plant growth mechanism, having the role of hiperaccumulators and mitigate the toxic effects of heavy metals on plants. Moreover, the bioavailability and retention of metals can be changed and improved as a result of microbial activity in soil. In order to survive and grow in soils contaminated by heavy metals, certain species of plants develop a synergistic mechanism with the rizo-associated bacteria, which can immobilize, mobilize or transform metals, making them inactive, thus allowing plants to tolerate them in the absorption process. This paper proposes a management strategy for the microbial populations in the rizosphere, by the application of microbial inoculations, consisting in a consortium of plant growth and promoting the rhizo-and nitrogen-fixing bacteria to act as allies of plants and biofertilizers, which could provide beneficial systems for ecosystem restoration.

Key words: *bioremediation, heavy metals, contaminated soil*