REVIEW ARTICLE

PHYTOREMEDIATION OF HEAVY METALS CONTAMINATED SOILS

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Abstract: Soils may be contaminated by the accumulation of heavy metals and metalloids through the emissions from rapidly expanding industrial areas, mine tailings, disposal of high metal wastes, leaded gasoline and paints, application of fertilizers, animal manures, sewage sludge, pesticides, wastewater irrigation etc. Excessive accumulation of heavy metals can have deleterious effects on soil fertility and productivity, disrupts ecosystem functioning and can lead to serious health risks to animals and human beings. Many methods of preventing or removing these pollutants from soils are identified, however, most of these conventional remedial processes are expensive and adversely affect the soil fertility and productivity. Therefore, phytoremediation which uses higher plants to reduce contaminant levels in soil is an eco-friendly and cost effective technology. The objective of this review is to discuss the different mechanisms of phytoremediation, their potentials, limitations, and techniques to enhance the phytoremediation efficiency.

Keywords: Phytoextraction, Hyperaccumulator, Ecofriendly, Cost effective, Chelates, Microbes

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