



Phytoremediation of Radioactive Materials

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ABSTRACT: Since time immemorial, man has always found a way to exploit nature in the name of development. Industrial growth, scientific experiments, and destruction of habitats are the leading causes of degradation of land and deterioration of soil quality. Waste in the form of radioactive matter, industrial effluents, domestic refuse etc, is constantly being discharged into the soil and water, thus jeopardizing the ecosystem. This project studies and explores the potential of a novel techniques phytoremediation to address the issues of waste management, especially radioactive waste. These techniques make use of green plants and mushrooms respectively to clean up and treat radioactive contaminated sites. Radioactive metals such as uranium, thorium, radium and plutonium are extremely dangerous and exposure to them can pose serious health risks. They can cause malignant forms of cancers, birth defects, mutations and other diseases. Plants have remarkable features- both anatomical and morphological- that help them absorb contaminants into their systems. Use of plants to clean a radioactive site is a cheaper, environmentally friendlier and a more effective way as compared to the existing techniques which are tedious and expensive. The efficiency to phytoremediate a contaminated site depends on many critical factors, such as biochemistry of plant, environment, nature of plants used, the area of contaminated site, and many other mechanisms which are yet to be fully understood. This review evaluates some of the research that has been done on phytoremediation of radioactive metals, explains the general mechanisms of how plants and mushrooms accumulate radionuclides in their system and discusses the advantages and disadvantages of the technique. © 2014 iGlobal Research and Publishing Foundation. All rights reserved.

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