World Academy of Science, Engineering and Technology
International Journal of Environmental and Ecological Engineering
Vol:9, No:09, 2015

Enhanced Phytoremediation Using Endophytic Microbes

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Abstract : The use of a plant in the detoxification of several toxin is been known to be enhanced by various microbial endophytes which have been reported to be contained in plants growing in any contaminated soil. Plants in their natural state are mostly colonized by endophytes which in the process forms symbiotic associations with the host plants. These benefits that the endophytes offer to the plants include amongst others to: Enhance plants growth through the production of various phytohormones; increase in the resistance of environmental stresses; produce important bioactive metabolites; help in the fixing of nitrogen in the plants organelles; help in the metal translocation and accumulation in plants; assist in the production of enzymes involves the degradation of organic contaminants. Therefore recognizing these natural processes of the microbes will enable the understanding of the effective mechanism for enhanced phytoremediation. The aim of this study was to survey the progressiveness in the study involving endophyte-assisted phytoremediation of contaminants; highlighting various pollutants, the plants used, the endophytes studied as well as the type of interaction between the plants and the microbes so as to proffer a better future prospect for the technology.

Keywords : phytoremediation, endophytes, microbes, pollution, environmental management, plants
Conference Title : ICESE 2015 : International Conference on Environmental Sciences and Engineering
Conference Location : Los Angeles, United States
Conference Dates : September 28-29, 2015