NR> Vol.1 No.2, December 2010

OPEN ACCESS

Use of Bio-Resources for Remediation of Soil Pollution

PDF (Size:745KB) PP. 110-125 DOI: 10.4236/nr.2010.12012

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ABSTRACT

In recent years, economic boom in fast developing countries has been witnessed with spectacular progress in industri- alization and concurrent progress in modern agriculture. Such development is however not without any socio-political and environmental side effects. A major concern has been the environmental pollution. If the current unabated disposal of various forms of wastes to agricultural lands is continued, the inherent capacity of soil to support agricultural pro- duction and sustain other ecosystem services will be in peril. Heavy metals with soil residence times of thousands of years present numerous health hazards to higher organisms. They are also known to decrease plant growth, ground cover and have a negative impact on soil biodiversity. Inorganic and organic contaminants typically found in urban areas are heavy metals and petroleum derived products. The presence of both types of contaminants on the same site presents technical and economic challenges for decontamination strategies. In this article we have reviewed the devel- opments to ameliorate the contaminated soils, with special emphasis on biological approaches, which have shown po- tential to low-cost remediation of soil pollution. Also the limitations of such approaches and direction of further re- search have been highlighted.

KEYWORDS

Soil pollution, Bioremediation, Phytoremediation, Metals, Organic Pollutants, Rhizosphere

Cite this paper

S. Pal, A. Patra, S. Reza, W. Wildi and J. Pote, "Use of Bio-Resources for Remediation of Soil Pollution," *Natural Resources*, Vol. 1 No. 2, 2010, pp. 110-125. doi: 10.4236/nr.2010.12012.

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