

## Phytoremediation: An Emerging Tool to Combat Environmental Pollution

Kirti Pandey

EPCO Institute of Environmental Studies, Bhopal, Madhya Pradesh

### ABSTRACT

Phytoremediation, Phyton (in Greek) = Plants and Remediare (in latin) = to remedy or cure. Phytoremediation is the process which uses green plants efficiently for removal of contaminants from soil and waste water. This technology is based on In-situ remediation which utilises the abilities of plants to accumulate and absorb pollutants like heavy metals and other organic pollutants in their root system. Phytoremediation is captivating and cost-effective strategy for bioremediation of Pollution. Necessity condition for effective phytoremediation process is Extensive root growth, while mechanism response for the process is hyperaccumulation or bioaccumulation, rhizodegradation and phytostablization. But the prolific growth root of plants is limited by high Ethylene production in response to stress produced by contaminants in the environment. Thus, to regulate or limit the biosynthesis of ethylene can be the potential target for extensive root growth. Through genetic engineering of bacteria or by making transgenic plants, we can introduce a gene expressing an enzyme which can regulate the ethylene level by metabolising its precursor molecules. For example, Bacterial ACC (1-aminocyclopropane-1-carboxylate) deaminase gene is introduced in plants can regulate their ethylene production level and ultimately come up with extensive root growth.

**Keywords:** Bioaccumulation, Biosynthesis, Contaminants, Phytoremediation, Transgenic.

