

## Byproducts of bioremediation

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Nature cure by biodiversity and bioremediation is a sustainable solution for environmental decontamination. As of May 2012, about 17000 articles have been published on various aspects of bioremediation starting with only 11 in 1989. Environmental decontamination and byproducts are achieved simultaneously by the employed biodiversity. Plants are assisted by soil microbes and mediate wide array pollutants and are able to decontaminate the toxic substances, thus contribute significantly to pollution abatement.

Phytoremediation is the use of plants to accumulate, remove or render harmless toxic compounds contaminating the environment. Plants absorb/adsorb/exclude, translocation, store or detoxify inorganic and organic contaminants. Thereby they contribute significantly to the fate of these contaminants from the biosphere. Thus, contaminants (inorganic and organic) can enter the food chain when bioavailability, which would cause unwanted effects. Many think that phytoremediation is a temporary solution and often scientists and regulators have expressed apprehensions about phytoremediation. The frequently asked questions are a) How does phytoremediation it works? b) How to select plants fostering remediation? c) Will phytoremediation work on every contaminated/polluted site? d) How to dispose of the plants contaminated in this decontamination process? e) How to manage the risk based phytoremediation?

The above questions will be answered by choosing the following “model plants”

1. *Hibiscus cannabinus* (Kenaf) - Malvaceae 2. *Brassica juncea* (Indian mustard) - Brassicaceae 3. *Helianthus annuus* (Sunflower) - Asteraceae 4. *Recinis communis* (Castor) - Euphorbiaceae 5. *Vetiveria zizanioides* (KhusKhus grass) - Poaceae 6. *Prosopis juliflora* (Velvet Mesquite) - Caesalpinaceae and 7. Several ornamentals plants.

## Biography

M. N. V. Prasad obtained Ph.D. degree (1979) in botany from the University of Lucknow Published 139 articles in peer reviewed journals and 84 book chapters and conference proceedings in the broad area of environmental botany and heavy metal stress in plants. He is the author, co-author, editor, or co-editor for twelve books (John Wiley and Sons Inc. New York; CRC Press, Boca Raton; Springer-Verlag Heidelberg; Narosa Publishing House, New Delhi; Kluwer Academic Publishers, Dordrecht; Marcel Dekker, New York, Fizmatlit Publishers. Moscow, Ministry of Environment and Forests, Govt. of India). He is the recipient of Pitamber Pant National Environment Fellowship of 2007 awarded by the Ministry of Environment and Forests, Government of India, Visiting Professor/Guest researcher in many Universities in different parts of the world viz., Australia, Belgium, Canada, Finland, Kazakhstan, Poland, Portugal and Sweden.

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