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Biography

S M Paul Khurana earned his PhD in 1969 from University of Gorakhpur, India. He was the Director of CPRI, Shimla; Vice-Chancellor of RD University, Jabalpur (MP, India); Director of Biotechnology department & Dean of Sci, Eng. & Tech Faculty, Amity Univ, Gurgaon. Currently he is Prof of Biotech/ Head USIC. He has over 215 research publications that have been cited almost 2150 times, and his publication H-index is 21. He has been Chief Editor for Indian Phytopathology J Indian Potato Assoc, Indian Virology and member of many National & Int'l Journals.

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BIOREMEDIATION OF METAL CONTAMINATED ENVIRONMENT: A REVIEW

Metal contaminants cause specific toxicity at higher concentration in environment, by altering the nucleic acids conformation, proteins and interference with oxidative phosphorylation. The soil sources of heavy metals are metal-rich mine tailings, electroplating, gas exhaust, energy and fuel production, weathering of minerals, erosion, volcanic activity, downwash from power lines, intensive agriculture use of pesticides, phosphate fertilizer discharge, biosolids (e.g., livestock manures, composts, and municipal sewage sludge), and sludge dumping. Managing these wastes due to urbanization/population explosion in developing countries is a challenge due to toxins released. Dumping industrial wastes affects all living creatures, losing biodiversity. Biotechnological approaches as disparaging bioaugmentation, land farming, bio pilling is used to degrade the heavy metals. Their toxic effect on kidneys, nervous system, may lead to the symptoms of mental disorder, weakness, headaches, abdominal cramps, diarrhea, anemia and in certain cases even permanent damage of the organelles. Streptomyces sp bioremediated heavy metals from waste water to a great extent, viz Mn^{+2} :79, Pb^{+2}:32, Fe^{+2}: 24, Cr^{+2}:22, Cu^{+2}:16, Cd^{+2} :12, Ni^{+2}: 12 and Zn^{+2}:11% respectively. Biotechnological interventions will be reviewed and discussed at length during the presentation.

Note: