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Heavy metal pollution of River Hasdeo of Chhattisgarh at different places in Korba district & implication of micro-organisms as a tool for bioremediation

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River Hasdeo is one among the 21 rivers of Chhattisgarh which is considered as life line of many districts like Bilaspur, Korba, Champa-Janjgir. After being declared as independent state, rapid industrialization took place in Chhattisgarh, also modern agricultural practices and various human activities adds significant amount of heavy metal into the river water ecosystems. Prolonged exposure and accumulation at concentration more than threshold value of such heavy metals can have deleterious health effects on human life and aquatic biota. The present study was an attempt to estimate the concentration of various heavy metal pollutants in 10 different location of Korba (Jogiya dera, Jhora Ghat, Donga Ghat, Navagaon, Ayodhya Puri, Dandhpara, Kalmi dugu, Pump House, Sarvmangla nagar and Urga). The metal concentration recorded was Cd (0.02 to 0.39 mg/l), Cu (0.04 to 0.46 mg/l), Pb (0.01 to 0.05 mg/l), Fe (0.55 to 1.5 mg/l), Zn (0.15mg/l to 0.5mg/l) and the use of microbes present in the river water system as a tool for bioremediation of this pollutant. Also the sequence analysis of the most effective microorganisms were done, so that, with the help of genetic engineering we can obtain most effective heavy metal removing bacteria as a cost effective tools for safe removal of metal contaminant from various other water resources. The micro-organisms that were found to be most effective for heavy metal remediation were *Pseudomonas* sps. for heavy metals like, Ca, Zn, Cd, Pb and *Bacillus* sps. for Cd, Fe and Cu.

Biography

Rajshree Singh is pursuing PhD from CV Raman University, Bilaspur, India on topic entitled "Isolation and identification of bacteria intended for heavy metals remediation from industrial effluents". She is working as Assistant Professor in Microbiology department, Shri Agrasen Girls College, Chhattisgarh. She is also having 5 years of teaching experience. She has published one paper from her MPhil degree. She also has one review article accepted to be published in book chapter.

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