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Assessment of metal pollutants and physico-chemical parameters of river water at Sarvamangla Nagar (Korba), Chhattisgarh and identification of potential bacteria for bio-remediating heavy metals

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One of the greatest concerns for the water consumers is quality of water as it was contaminated by various industrial effluents like heavy metals and pathogenic microorganisms. Pollution due to heavy metals pollution, pose severe threat to the biodiversity as they are non-degradable and persist for longer time in food chain thus effecting health of human. Korba, "The power hub" of Chhattisgarh, ranks 5th in the 'critically polluted areas' in India. The present study of Hasdeo river water at Sarvmangla Nagar (Korba) shows that the high concentration of heavy metals (greater than the permissible limit as per WHO guidelines) pollutant in the sediment of river water was observed. Level of Fe found to be highest (0.75 mg/l), followed by Pb (0.65 mg/l), Zn (0.25mg/l), Cd (0.21 mg/l), Cu (0.12 mg/l) and Mn (0.03 mg/l). Pb and Cd were causing serious health problem to the population who use the water for their daily needs. Analysis of physico-chemical properties of water samples Like BOD (5.7), COD (8.2), DO (12.7), pH (7.8) and temperature (22.7) were correlates the level of metal pollution of river water. Our study also focuses on isolation and identification of different bacterial species resistant to heavy metal present in the river Hasdeo which were identified as *Coliforms, Pseudomonas Sps, Enterbacter Sps.* and *Bacillus Sps.* We have also focus on enhancement of bio-remediation properties of these bacteria for more efficient removal of heavy metal by bio-flocculation and genetic modification.

Biography

Rajshree Singh, pursuing PhD from Dr. C V Raman University, Bilaspur, Chhattisgarh, 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, Korba, Chhattisgarh. She has also having teaching experience of almost 5 years. She has published one paper and one review article accepted to be published in book chapter.

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