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Bioremediationof toxic metal ions-A Review

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ABSTRACT

The awareness of toxicological and ecological effects of toxic metals has attracted serious attention for decontaminating industrial waste waters prior to discharge into water bodies of sewage ponds, streams and rivers. Unlike organic pollutants metal ions are indestructible and have cumulative effect on ecosystem. Conventional methods of metal removal from industrial effluents are: chemical, precipitation, oxidation and reduction, membrane filtration technology, electrochemical precipitation, evaporation recovery and ion exchange resins. However these strategies suffer from various limitations. Though ion exchangers are efficient in removing toxic metal ions, they do not distinguish between essential ions (Ca^{2+}, Mg^{2+}, Na^{+}, K^{+}), which are present in excess over toxic metal ions. Bioremediation, the technology of using of living organisms or their principles in isolation for decontaminating toxic chemicals from the environment. Both the principles of biosorption and accumulation in microbes have been exploited for removing toxic metal ions from polluted effluents.

Keywords: Biosorption, Bioaccumulation, fungi, biosorbent**,** toxic metals.
