



Bioremoval of Cr (VI) Ions, from Cr-ore Waste Effluents of Sukhinda, Ostopal Mines by Mildew Fungi

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Abstract: The paper presents biological removing of Cr(VI) ions from aqueous solution by applying autochthonic fungi seedling of *Trichoderma viride* and *Rhizopus oryzae* originated from chromium-ore waste effluents. The growth of organism and removing of chromium (VI) was performed in aqueous solution of various chromium (VI) contents and at optimal value of pH. The optimum pH of *Trichoderma viride* and *Rhizopus oryzae* growth was 4.5 and 7. The maximum Cr reduction efficiency of 95.116% and 91.29%, biomass growth was achieved at temperature 30°C and 37°C, with an initial Cr⁶⁺ concentration of 500 and 400 ppm and incubation period of 72 hours. Since removal of chromium(VI) from aqueous solution may occur because of reduction, bio-sorption or bioaccumulation processes, to determine which one occurred, the Cr(III) contents were determined in samples of the medium as well in ooze after mycelium irrigating and in mycelium. However, Cr removal via uptake by the two fungal biomass was observed to be the range of 0.5-1.78% only, for all the concentration applied, which is insignificant when compared with the initial Cr concentration in the culture medium.

Keywords: *Hexavalent chromium, Rhizopus Oryzae, Trichoderma viride, bioaccumulation,*

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