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STUDY ON BIOSORPTION OF COPPER FROM DILUTE SOLUTIONS USINGS. *Pombe*

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Abstract:

Heavy metal pollution has become one of the most serious environmental problems today. The treatment of heavy metals is of special concern due to their recalcitrance and persistence in the environment. Recently, Biosorption of heavy metals has been receiving a great deal of attention for both scientific novelty and application potential. Biosorption is defined as a property of dead or living biomass, particularly of microbial origin, to retain and concentrate metallic elements from dilute solutions. There are numerous reports in the literature documenting the capacity of pure cultures of bacteria, algae and fungi which remove heavy metal ions from solution. The mixed microbial cultures have been proposed as reasonable approach for removing heavy metals than pure cultures. The fortuitous removal of heavy metal ions by the mixed cultures used in the activated sludge process which is designed to remove BOD but not heavy metal ions have been found to be significant but extremely variable. This study focused on copper removal since it is difficult to bioremediate copper by existing technology in comparison with other heavy metal ions. There is an enzymatic interaction existing between copper and yeast biomass. Yeast is used in a various industrial fermentation processes. Such industrial fermentation processes can serve as an economical and constant supply source of biomass for biosorption and bioaccumulation of metal ions because the biomass could be available in large quantities from established fermentation process. The effect of contact time on copper removal was studied at regular time interval of 12 hours. The saturation was reached at 96 hours. The maximum uptake of copper was 93% and was noted at 96 hours of contact time.