

ABSTRACT

Lead as a toxic heavy metal has been receiving much attention for its widespread distribution and potential risk to the environment. Even low quantity of lead ions was very much toxic. Biosorption is an emerging technology for the removal of heavy metals from industrial wastewater. The present study involved the biosorption of Pb (II) present in the industrial wastewater by live *Aspergillus niger* biomass. The average lead ions concentration in industrial effluent was found 3.51gm/l and reducing this value below the standards of EPA was aimed. The effects of pH, temperature and biomass concentration have been investigated in this study. The optimum biosorption conditions have been found of initial pH 5.0, temperature 30 °C and biomass concentration of 0.1gm/l. The maximum metal removal at these parameters was 81 %, 92 % and 96 % respectively. The equilibrium data were analyzed using Freundlich and Langmuir adsorption models. It was seen that equilibrium data fitted very well to the Freundlich adsorption model at different concentrations of biomass. So, this study demonstrated that live biomass of *Aspergillus niger* is a potential biosorbent for the removal of lead ions from industrial effluent.