

ABSTRACT

"In the present work "Bioremediation of heavy metals by saw dust of different local wood species from a mixed wood metal solution, containing Chromium, Lead and Nickel" has been studied by using saw dust of two different wood species *Dalbergia sissoo* and *Cedrus deodara*. The effect of various pH values, temperature, concentration of the biomasses and time of exposures have been studied in mixed metal solutions containing 50 ppm of each of Cr, Ni and Lead and compared with their biosorption from single metal solutions. $K_2Cr_2O_7$, was used for Cr ions, $NiCl_2$ was used for Ni ions and $Pb(CH_3COO)_2$ was used for Pb ions.

The biosorption was carried out on temperature – controlled shaker. The metal ions remaining after biosorption were estimated on an atomic absorption Spectrometer.

The Cr^{++} were maximally absorbed at pH 3 and 25°C in 70 min by *Dalbergia* and at pH 3 and 25°C in 10 minutes by *Cedrus*. The Ni^{++} were maximally absorbed at pH 7 and 25°C in 15 minutes by *Dalbergia* and at pH 7 and 25°C in 15 minutes by *Cedrus*. The Pb^{++} were maximally absorbed at pH 3 and 25°C in 8 minutes by *Dalbergia* and at pH 4 and 25°C in 10 minutes by *Cedrus*.

The biosorption of these metals from mixed metal solution occurred with the preference order of $Pb > Ni > Cr$. The biosorption of Pb was the quickest followed by Ni and then Cr.

The biosorption from single metal solutions of these metals was slightly but non-significantly higher than from mixed metal solution.

It has been suggested that these metals don't compete with each other for their absorption and probably each of these has a different binding site.