

Biosorption of Heavy Metals from Aqueous Solutions by Plant Biomass

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Abstract : Environment pollution through various wastes (particularly by heavy metals) is a major environmental problem due to industrialization and the development of various human activities. Considerable attention has been focused, in recent years, upon the field of biosorption which represents a biotechnological innovation as well as an excellent tool for removal of metal ions from aqueous effluents. So the purpose of this study is to valorize by-product which are orange peels and an extract of these peels (pectin; a heteropolysaccharide) in treatment of water containing heavy metals. All biosorption experiments were carried out at room temperature, an indicated pH, a precise amount of biosorbent and under continuous stirring. Biosorption kinetic was determined by evaluating the residual concentration of the metal ion at different time intervals using UV spectroscopy. The results obtained show that the orange peels and pectin are interesting biosorbents with maximum biosorption capacity of up to 140 mg/g.

Keywords : orange peels, pectin, heavy metals, biosorption

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