

HUILLCAHUA RAMIREZ, MARIBEL. 2010. Biosorción del Cr (III) y Pb (II) mediante alga marina cochayuyo pre tratado (*Chondracanthus chamissoi*) en residuos líquidos

ABSTRACT

This work presents the results of studies realized to determine the adsorption capacity of ions Cr (III) and Pb (II) by pre-treated Cochayuyo (*Chondracanthus Chamissoi*) in liquid residues.

Biosorption kinetics were performed in batch process, where it was observed that the best uptake of Cr (III) and Pb (II) occurred with the treated biomass with CaCl₂, in sporophytic phase and with a size of particle T2 (greater to 75 µm) and T1 (smaller to 75 µm) respectively for each metal.

It was possible to optimize the uptake of Cr (III) and Pb (II) by the Cochayuyo (*Chondracanthus Chamissoi*) at pH 6, with a mass of 0.01 g of biosorbent, environmental conditions, in a time of 130 minutes. The uptake of Pb (II) was favored at low initial concentrations of metal, while the removal of Cr (III) was favored at high initial concentrations of metal.

The experimental data of the uptake of Cr (III) adjusted better to Freundlich isotherm and the uptake for Pb (II) to the model of Freundlich and Langmuir, reaching a maximum adsorption capacity of 357,14 mg·g⁻¹ for Pb (II) and 833,33 mg·g⁻¹ and Cr (III).

From the results, the cochayuyo (*Chondracanthus Chamissoi*) biosorbent studied is a potential for application in the removal of Cr (III) and Pb (II) in wastewater with an adsorption capacity of 411, 28 mg·g⁻¹ y 263,67 mg·g⁻¹ respectively.