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Abstract

Biosorption Behavior Of Non Living *Aspergillus sp* Biomass In lead Removal

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Abstract: Alternative pollutants removal and/or recovery methods are being considered which are based on sequestering properties of certain natural materials of biological origin. Biosorption can be an efficient low-cost process to remove toxic heavy metals because it covers a large surface area, uses an effective ion exchange and has selective adsorption of heavy metal ions. Biological materials have emerged as an economic and eco-friendly option. Biological treatment, based on living or non-living microorganisms or plants, offers some advantages, such as low operating cost and high efficiency. Fungi have a high percentage of cell wall material that shows excellent metal-binding properties and exhibit marked tolerance towards metals and other factors such as low pH. This study was undertaken to determine the lead biosorption potential of nonliving *Aspergillus sp.* biomass, under different conditions. There were no differences at two temperatures (28 ° C and 35 ° C), reaching 15% of lead removal at both conditions. Similar results were found at 100 and 150 rpm with 22% of lead removal. The highest removal was observed at pH 4.0 with 75%. However, 50% of lead was removed from an initial concentration of 10 mg/L and the maximum amount of biomass used was 0.4g. By other hand, at this biomass concentration the removal was not changed when the contact time increased. Finally, the Langmuir isotherm model, showed a correlation coefficient ($R^2 = 0.955$), q_{max} value of 10.38 mg g⁻¹ and K of 4.72 mg L⁻¹

Keywords: *Biosorption, fungi, Aspergillus sp., lead*

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