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The use of algae in the process of heavy metal ions removal from wastewater

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ABSTRACT

This work presents the results of a study to compare the efficiency of Ni(II) and Zn(II) ions removal from wastewater and from the model solution using a live algal culture in laboratory and a mixed algal population obtained from a water reservoir. The scope of this study included initiating the metal biosorption process with the use of pure and mixed culture through the administration of metal ions to the model solution and entering the population to wastewater containing the metals. The process was controlled by assessing the rate of metal biosorption in comparison with control samples after the following exposure times: 1, 5, 10, 20, 40, 60 and 120 min. The presented results of this study confirm the effectiveness of chlorophyta in the process of zinc and nickel biosorption. Algal cultures used in the experiments displayed high affinity to the removal of Zn ions (90%) and lower for Ni (25%–46%).

Keywords: Algae; Heavy metals; Zinc; Nickel; Sorption; *Raphidocelis subcapitata*

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