

Comparative study on Cadmium removal industrial wastewaters using some species of bacillus, staphylococcus, pseudomonas

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Introduction & Objective: Heavy metals, including cadmium, are the most common pollutants found in high concentrations at industrial wastewater, causing damage to aquatic environments and treating the health of living organisms, especially humans. Conventional methods for eliminating these metals due to high costs, require a thorough development of new, cheap and economical methods. Microorganisms play an important role in the absorption of heavy metals of pollutant wastes, and in recent years, the use of biological absorption as a common method for removing heavy metals wastewater has been a lot of attention. **materials and methods:** In this study, cadmium ions were absorbed by *Bacillus*, *Staphylococcus*, and *Pseudomonas* species under laboratory conditions. For this purpose, culture media containing different sources of carbon and nitrogen and different levels of cadmium salts were designed and removal of metal ions aqueous solutions was assayed by microorganisms and analysis of samples was performed to determine the removal rate of metal by Atomic Absorption Tool. **Results:** Based on the data of this study, *Bacillus cereus*, *Staphylococcus aureus* and *Pseudomonas aeruginosa* were 70.51%, 61.59% and 65.66%, respectively, of cadmium removal. Also, removal of cadmium in the presence of a source of nitrogen was more than the environment lacking it. **Conclusion:** Based on this study, all three genera of *Bacillus*, *Staphylococcus* and *Pseudomonas* are suitable candidates for the adsorption of heavy metals industrial effluents.

Keywords : *Staphylococcus*, *Bacillus*, Industrial wastewater, Microbial removal, *Pseudomonas*, Cadmium

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