

## Biosorption of copper ions from aqueous solutions using the desert tree *Acacia raddiana*

M.F. Talhi<sup>a\*</sup>, A. Cheriti<sup>a</sup>, N. Belboukhari<sup>a,b</sup>, L. Agha<sup>a</sup>, C. Roussel<sup>b</sup>

<sup>a</sup>Phytochemistry & Organic Synthesis Laboratory, University of Bechar, 08000, Bechar, Algeria

<sup>b</sup>Laboratoire de Stéréochimie Dynamique et Chiralité, CNRS UMR 6180, Université Paul Cézanne Aix – Marseille III, France  
email: mossabir@yahoo.fr

Received 8 November 2009; Accepted 22 March 2010

---

### ABSTRACT

Biosorption of heavy metals from aqueous solutions is a relatively new technology for the treatment of industrial wastewater, which utilize naturally occurring biomass derived from waste materials. Desert tree *Acacia raddiana* bark was evaluated as a new biosorbent for removal of copper ions from aqueous solution. Effect of operating conditions, like initial metal concentration, pH and temperature, on copper biosorption were investigated. The process of biosorption has nearly reached equilibrium in 04 h and the maximum copper cations biosorption capacity of *Acacia raddiana* bark obtained was 82.63 mg/g at pH 5 and temperature around 25–30°C. The relation between the chemical composition of the bark part of this desert tree and the percent of adsorption for copper ion was examined.

*Keywords:* Heavy metal; Sorption; Wastewater; *Acacia raddiana*; Sahara

---

\* Corresponding author.