Coffee Husks as Biosorbents for Heavy Metals

L.S. OLIVEIRA, M.O. REIS, A.S. FRANCA, S.D. ROCHA

Núcleo de Pesquisa e Desenvolvimento em Café, DEQ/UFMG, R. Espirito Santo, 6º andar, 30160-030, Belo Horizonte, MG, Brazil. E-mail: leandro@deq.ufmg.br

SUMMARY

The objective of this work was to propose an alternative use for coffee husks. In this study, dry coffee husks were successfully used as biosorbents for the removal of copper from aqueous solutions. After chemical treatment, the organic leaching from the husks was reduced to acceptable levels and the biosorption capacity was maintained. Parameters such as the adsorption equilibrium time and the effect of adsorbate initial concentration on the removal of copper from solution were studied. The maximum adsorption capacity of copper was found to be in the order of 12 mg/g at pH 4.0, for an initial concentration of 50 mg/L at room temperature. The experimental data demonstrated coffee husks to be a suitable candidate for use as biosorbent in the removal of heavy metals of industrial wastewaters.