

عنوان مقاله:

Equilibrium and kinetic study on chromium (VI) removal from simulated waste water using gooseberry seeds as a novel biosorbent

محل انتشار:

فصلنامه جهانی علوم و مدیریت محیط زیست، دوره 1، شماره 3 (سال: 1394)

تعداد صفحات اصل مقاله: 12

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خلاصه مقاله:

Gooseberry seed (*Phyllanthus acidus*) was used as an adsorbent to determine its feasibility for the removal of chromium (VI). Various parameters such as pH, temperature, contact time, initial metal concentration and adsorbent dosage were investigated to determine the biosorption performance. Equilibrium was attained within 60 minutes and maximum removal of 96% was achieved under the optimum conditions at pH 2. The adsorption phenomenon demonstrated here was monolayer represented by Langmuir isotherm with R^2 value of 0.992 and the Langmuir constants k and q_0 was found to be 0.0061 (L/mg) and 19.23 (mg/g). The adsorption system obeyed Pseudo second order kinetics with R^2 value of 0.999. The results of the present study indicated that gooseberry seed powder can be employed as adsorbent for the effective removal of hexavalent chromium economically.

کلمات کلیدی:

Biosorption, Cr(VI), Equilibrium, Gooseberry seed, Isotherm, Kinetics, Removal

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