ABSTRACT

Adsorption of Cr(VI) using Salacca zalacca seed adsorbents have been investigated in batch and column method. Barked seeds were prepared into powder, then continued washing with aqua DM and methanol, and sieving with a variation of particle size of 125, 180, 250 and 425 μm. Some parameter variations such as the effect of contact time, concentration of a solution of Cr(VI), particle size, flow rate in the adsorption process has been studied to obtain optimum conditions for adsorption. The results indicated that the adsorbent can adsorb seed powder bark ion Cr(VI). Adsorption isotherms at equilibrium were more in accordance with the Langmuir isotherm patterns than isotherm patterns of Freundlich and Brunner-Emment-Teller. Metal ion concentration in all treatments was determined by UV-Vis spectrophotometer. The optimum conditions of ion adsorption of Cr(VI) obtained at a contact time of 60 min with 180 μm particle size, metal ion concentration of 100 mg/L. The optimum ion absorption capacity of Cr(VI) by barked seed powder was 0.59 mg/g.

Keywords: Chromium; Seeds bark; Adsorption; Isotherms of adsorption; adsorption kinetics.