Batch study for herbicide bentazon adsorption onto branches of pomegranates trees activated carbon

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Received 13 September 2012; Accepted 22 January 2013

ABSTRACT

The adsorption of herbicide bentazon from aqueous solution onto branches of pomegranates trees activated carbon (BPTAC) was investigated through batch study. The effects of both initial concentration and pH of the bentazon over the range of 25–250 mg/L and 2–12, respectively, on the adsorption of the prepared BPTAC were studied in batch experiments. Equilibrium data were fitted to the Langmuir, the Freundlich and the Temkin isotherm models. The results obtained from application of these models show that the best fits were achieved with the Langmuir model and a maximum monolayer adsorption capacity of 80 mg/g was obtained at 30˚C. The regeneration efficiency of spent activated carbon was studied and it was found to be 92–96%. The results indicated that BPTAC has good capability as adsorbent for the removal of bentazon from aqueous solutions.

Keywords: Branches of pomegranate trees activated carbon; Bentazon; Adsorption