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Application of response surface optimization on biosorption of Congo red dye onto *Spathodea campanulata* leaves

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ABSTRACT

The present work aims to remove Congo red (CR) dye from their aqueous solution using *Spathodea campanulata* leaves powder as low-cost biosorbent in a batch study. The effect of parameters in a batch study was contact time, solution pH, initial CR dye concentration, biosorbent dosage, the average particle size of the biosorbent and temperature. The main objective of the response surface methodology is to determine the optimum operational variables of the process. It is also used to evaluate the relative significance of process variables even in the presence of complex interactions. The maximum removal efficiency was predicted to be 88.2% for Congo red on to *Spathodea campanulata* leaves.

Keywords: Congo red; *Spathodea campanulata*; RSM; Central composite design; Biosorption

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