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REMOVAL OF BASIC BLUE 26 DYE FROM AQUEOUS SOLUTION BY ADSORPTION USING ORGANIC ADSORBENTS

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ABSTRACT

The objective of this study was to assess the suitability and efficiency of Gigantia Leaves (GL), Curcuma Longa Leaves (CLL), Morienga Oleifera (MO) and Citrus Sinensis (CS) for the removal of C.I. Basic Blue 26 from aqueous solutions. The effect of different variables in the batch method as a function of solution pH, equilibrium time, optimum dose of adsorbent, adsorption isotherms, kinetic studies, desorption studies and interruption studies.. The corresponding results showed that excellent colour removal of Basic Blue 26 can be achieved with adsorbents at optimum pH of 7. The maximum colour of Gigantia Leaves, Curcuma Longa Leaves, Morienga Oleifera and Citrus Sinensis was 94.66%, 92.55%, 87.77% and 82.44% respectively. The isothermal equilibrium sorption data was well fitted into the Freundlich Isotherm. Kinetic studies which implies that chemisorption is the rate limiting step. Desorption studies, it states that physisorption plays a significant role in the colour removal of dyes. Pore diffusion seems to be the rate controlling in the sorption process as indicated by interruption studies.

KEYWORDS: Adsorption, C.I. Basic Blue 26, Curcuma Longa Leaves, Citrus Sinensis, Gigantia Leaves, Moringa Oleifera