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EVALUATION OF ADSORPTIVE REMOVAL OF MALACHITE GREEN FROM AQUEOUS SOLUTIONS USING *HEVEA BRASILIENSIS*

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Abstract

Removal of malachite green oxalate from aqueous solutions by adsorption on *Hevea Brasiliensis* (a type of rubber wood) sawdust was studied experimentally. The aim of this study is to evaluate the bio-adsorbent as a green alternative for the removal of malachite green oxalate. Furthermore, to examine the factors that influence the adsorption of malachite green oxalate such as adsorbent particle size (54 to 750 μm in average), initial pH (3 to 9) and temperature (30 to 80 ˚C). Results showed that smaller particle size, higher pH and higher temperature are favorable for this adsorptive removal. Investigation of different equilibrium isotherms showed that the adsorption of malachite green oxalate on rubber wood sawdust takes place as the Langmuir adsorption. Comparison of the present result with other bio-adsorbents showed a compatitive adsorption capacity for the removal of malachite green.

Keywords: Adsorption; malachite green; hevea brasiliensis; bio-adsorbent; wastewater; Langmuir model; Freundlich model.