

**ADSORPTION OF METHYLENE BLUE ONTO ALOE VERA (*Aloe  
barbadensis*) RHIND POWDER**

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## ABSTRACT

### ADSORPTION OF METHYLENE BLUE ONTO ALOE VERA (*Aloe barbadensis*) RHIND POWDER

The potential of aloe vera (AV) rhind powder in removing methylene blue (MB) from aqueous solution was investigated. The AV was characterized by using Fourier Transform Infrared (FTIR) absorption spectroscopy and Thermogravimetric analyzer (TGA). The zero point charge was 6.25. The effect of pH, sorbent dosage, initial concentration and contact time were investigated. The maximum uptake of MB was at pH 8 with 85 % removal. The adsorption equilibrium was established after 10 minutes. The adsorption of MB by AV increased with its initial concentration. Pseudo-first and Pseudo-second order kinetic models were applied. The result showed that pseudo-second order showed best fitted with high correlation ( $R^2 > 0.995$ ). It was found that the adsorption fitted well with Freundlich isotherm equation. The study suggested that AV could be an efficient sorbent for MB removal.

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