

## **Investigation of adsorption properties of *Alstonia scholaris*, *Pagiantha dichotoma* and *Strychnos nux vomica* barks for some selected amino acids and dyes.**

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Saw dust of various tree barks are used as low cost biosorbents. Further, the outer bark of certain tree species is used in treatment of various diseases and snake bites in indigenous medicine. The objective of this study is to investigate the adsorption of amino acids; L-arginine, glycine, L-phenylalanine, and dyes; picric acid, methyl orange, and rhodamine B on saw dust of *Alstonia scholaris* (Rukattana), *Pagiantha dichotoma* (Divi Kaduru), and *Strychnos nux vomica* (Goda Kaduru) under different experimental conditions. The adsorption of selected adsorbates on saw dust of selected tree species was checked by varying pH (4-11), temperature (20-60 °C), contact time (0.5-3.5 h), initial adsorbate concentration (5-30 ppm) and adsorbent dose (0.5-3.0 g). Results of the adsorption studies revealed that the optimal pH, temperature, contact time, initial adsorbate concentration and adsorbent dose for amino acid adsorption were pH ~7, 30 °C, 3 h, 10 ppm, and 1.5 g, respectively, whereas that of dyes were found as pH ~10, 40 °C, 1 h, 10 ppm, and 1.0 g, respectively. Among the three saw dust varieties, *Pagiantha dichotoma* showed the highest adsorption for glycine and L-arginine. *Alstonia scholaris* was the best adsorbent for acidic dyes while both *Pagiantha dichotoma* and *Strychnos nux vomica* were better adsorbents for the basic dye.

**Keywords:** biosorbent, saw dust, *Alstonia scholaris*, *Pagiantha dichotoma* and *Strychnos nux vomica*

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