

Utilization Of Peanut Hull for The Adsorption of Malachite Green Oxalate Dye from Aqueous Solution

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ABSTRACT

Currently, waste water or industrial waste water is considered one of the main ecological problem. Water pollution effects not only human but animal and plants too. Food, textile, leather industries, burning fuel and acid rain create toxic effect. The textile dyeing and finishing industry has created a huge pollution problem as they are the most chemically intensive industries on earth. More than 3600 individual textile dyes are being manufactured by the textile Industry today. This industry is using more than 8000 chemicals in various processes of textile manufacture including dyeing and printing.

Objectives:

- To overcome the water pollution due to industrial waste water. It is the main ecological problem.
- Utilization of low cost agriculture waste material.

Methodology:

To overcome hazardous effect of toxic dyes and chemicals, many methods like oxidation, coagulation, irradiation and reverse osmosis etc are applied. In the present study, adsorption method is used for the removal of malachite green oxalate (MGO) dye by using low cost agriculture waste such as Raw Peanut hull (RPH) and acid modified peanut hull (AMPH) as adsorbents.

Conclusion:

In this study adsorption factors such as amount of adsorbent, concentration of dye, contact time, pH and temperature are studied. Comparative study has been studied between two dye-adsorbents systems such as raw and acidified peanut hull adsorbents. For the examination of these factors, spectrophotometer is used.

Results:

RPH-dye system obeys Langmuir adsorption isotherm as compared to AMPH-dye system which obeys freundlich adsorption isotherm. AMPH give 97 % removal of MGO dye as compare to RPH.

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