Babool Stem: A Prominent Raw Material for Extracting Natural Dye

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Abstract:

The present study based on experimental method to obtain natural dye from Babool stem peel and its application on selected fabrics such as cotton, silk and wool, georgette. Babool stem peel with different selected mordent was dyed on selected fabric. Dichromate, Alum, Copper sulphate, and Iron sulphate are selected as mordent for dyed. Colour fastness with washing and light effect was tested on all selected fabrics. The result found that wool fabric has highest washing fastness than other selected fabrics, and all the fabric have high washing fastness.

Keywords: Babool stem, Textile dye, Colour fastness

Introduction:

Nature - manifests itself in a wide spectrum of rainbow colours. Man fascinated by her glory, strove towards harmonizing with her completely. He internalized colour by responding to its vibrations emotionally and externally he drew from her vast store- house, to initially paint himself and then to dye the apparel he wore. Thus, started the alchemy of colour, and India was a fore-runner in the art of natural dyeing- an art perfected during the era of the great Epics. The colours used were natural colours derived from plants, insects and minerals. **(Kapila, 1999)**

Natural dyes are those dyes which is available in natural in the form of plants bark, root, flowers, leaves, fruit cover, etc. or from insects and produce colour on cotton, wool, silk etc. without any chemical processing of the dyes. **(Jain,1992)**

Present study aimed: **"To extract dye from Babool bark and discover its colour fastness on selected fabric".**

Methodology:

An experimental method of study completed in following different phases:

Phase-1: Preparation of the fabric

- Pretreatment of the fabric
- Application of various mordants

Phase-2: Extraction of dye:

- Taken dried Babool tree bark powder.
- Non – corrosive stainless-steel vessel was used for dye bath to extraction of dye.
- 100 gm/l dye bath solution was prepared and boiled it for 30 minutes.
- After extraction of dye, solution was filtered to remove extra components and clear dye liquid used for dye.

Phase-3: Dye application on fabric:

Investigator selected cotton, silk, georgette and wool fabric and dichromate, alum, copper sulphate and ir-

on sulphate for mordent.

- Mordent treated and non-treated fabrics were soaked in water for 15 minutes.
- Temperature of dyeing solution was maintained to 60"-80" C for 30 minutes and stirred every 5 minutes.
- After dyeing, samples rinsed with tap water, squeezed and dried in shaded area.

Phase-4: Colour fastness was tested of dyed fabric:

- Investigator studied colour fastness through washing and light effect in scientific way. Both tests were performed in ATIRA (Ahmedabad Textile Research Association, Ahmedabad.).
- Dyes fabric samples were treated to soap solution of different concentration and exposed to varying light intensities.

Result and discussion:

- **Colour fastness of Babool stem bark on selected fabric**

Illustration No.:1 (A) washing fastness of Babool stem bark on selected fabric

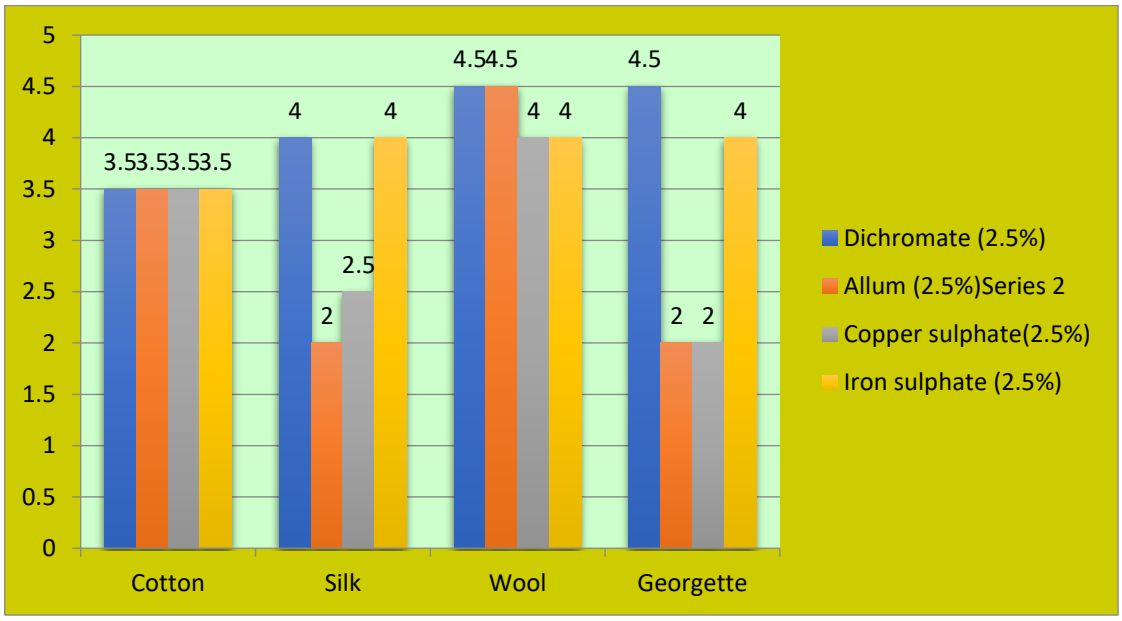
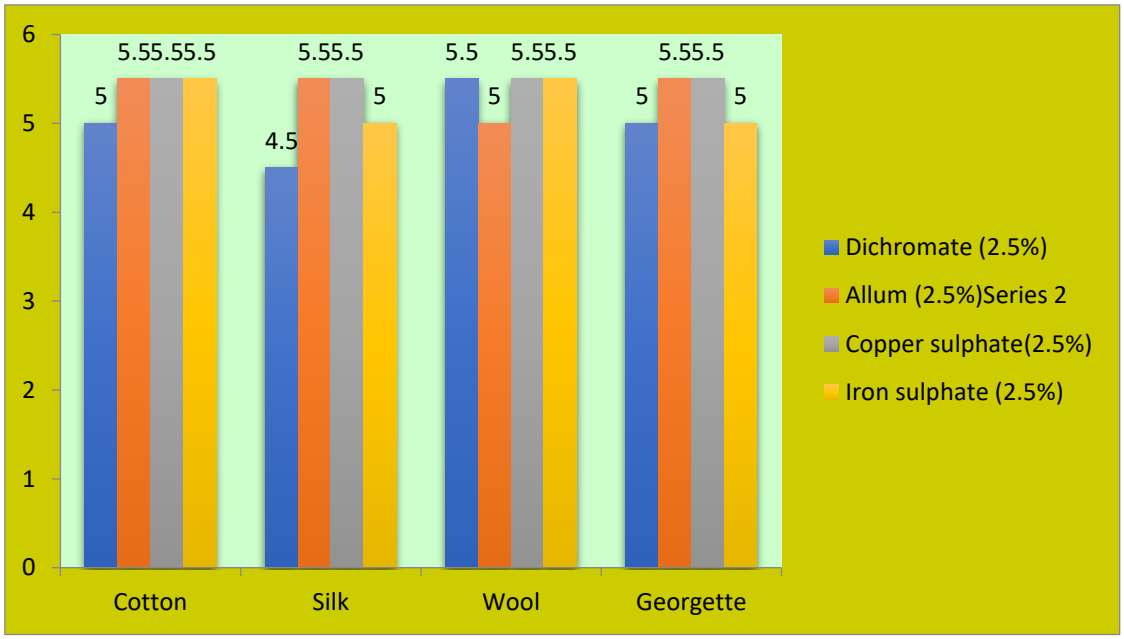


Illustration No.: 1 (B) light fastness of Babool stem bark on selected fabric



Indication of gray scale Rating	Indication of pilling Rating
5 = Excellence	5 = No pilling
4 = Good	4 = Slight pilling
3 = Fair	3 = Moderate pilling
2 = Poor	2 = Severe pilling
1 = Very poor	1=Very Severe pilling

Illustration No. 1 (A) and **(B)** depicted that colour fastness on the fabric dyed with respect to bark of babool stem. The textile laboratory gave rating scale to selected dyed fabrics for washing and light fastness. The result revealed that washing fastness in cotton fabric was fair to good with all mordant and the light fastness (pilling rating) was found excellent. Silk and georgette showed poor washing fastness with alum and copper sulphate but good washing fastness with dichromate and iron sulphate. The wool fabrics showed maximum washing fastness among all other fabrics. The light fastness was found excellent (5 and above 5) in all the fabrics treated with various mordant used.

Conclusion:

A study concluded that washing colour fastness in wool with dichromate, copper sulphate and iron sulphate is very good but washing fastness in cotton is poorest. The wool fabric showed maximum washing fastness among all other fabrics. Light fastness was found excellent to good in all the selected fabrics with dichromate, alum, copper sulphate and iron sulphate.

References:

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