

EFFECT OF REACTIVE AND VAT DYES ON THE DYEABILITY OF GRAY COTTON KHADI FABRIC USING UNDER TENSION MERCERIZATION TREATMENT

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ABSTRACT

The present study was aimed to assess the effect dyeability of gray cotton khadi fabric based on mercerization treatment. This treatment originated by two methods i.e. slack mercerization and mercerization under tension. The fabric samples were treated at the set temperature i.e. 40°C with varying concentrations i.e. 5%, 15% and 25% for different time periods such as 10 min, 20min, and 30min. The pretreated mercerized cotton khadi fabric samples were dyed with 3% concentration of dye using reactive dye and Vat dye. Dyeing was performed in case of all samples i.e. control, slack mercerized and under tension mercerized fabric samples. Different parameters of mercerization treatment such as the concentration of sodium hydroxide palates and time duration of the treatment were taken on the bases of past studies. The percent dye exhaustion of dyed samples was evaluated by comparing slack mercerized and under tension mercerized khadi samples using single beam UV-Vis Spectrophotometer. Both dyes gave the best results with under tension mercerization as compared to the slack mercerization at all the level of treatment in increasing order. Vat dye gave very good results at 3% concentration of dye and 25% concentration of alkali for 30min using under tension mercerization treatment.

Keywords: Cotton Khadi Fabric, Mercerization under Tension, Percent Dye Exhaustion & Slack Mercerization

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