



Research Paper

STANDARDIZATION OF PROCESS PARAMETERS FOR IMPROVING THE BULKINESS OF SILK FABRICS BY CHEMICAL TREATMENT USING BOX AND BEHNKEN EXPERIMENTAL METHODOLOGY

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ABSTRACT

This study was taken up with an aim to introduce bulkiness in the raw silk fabrics through chemical treatment. A suitable chemical that can impart swelling to silk fabric was used to obtain bulkiness in the bivoltine raw silk fabrics. In the Box-Behnken method of experimental design used here, 15 different combinations were formed to standardize the process variables viz., temperature, duration and concentration of chemical treatment. The bulky raw silk fabric thus produced was characterized for various physical, mechanical and comfort properties using standard testing procedures. The results indicate that the crease recovery and bending length were significantly influenced by the temperature and duration of the treatment and concentration of chemical. The study indicates that the bivoltine raw silk fabric can be imparted bulkiness through chemical treatment.

Key words: Bending length, bivoltine raw silk fabric, chemical treatment, crease recovery angle, crimp, silk swelling.