RESEARCH PAPER

Green finishing of cotton fabric using natural herbal agents

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Abstract : This paper is focused on the development of the sustainable textile finish based on the neem leaf extract. Neem leaf extract was applied on cotton cloth by exhau st method. Application was done in two conce ntrations (3g/l and 5g/l) on grey as well asbio scoured cotton cloth. Using a scanning electron microscope [(JEOL-JSAL 6360) (SEM)] device, the surface morphological characteristics of finished and unfinished cotton cloth were examined. Using the AATCC-100 test method, the finish's antibacterial activity was quant itatively evaluated. To evaluate the impact of washing neem-finished fabric, a sample was put through 5, 10, and 15 cycles of washing in accordance with ISO: 6330-1984E and the bacterial load of the treated sample was then retested. From the results it was observed that neem treated bio scoured cotton cloth (96.66%) showed excellent results than neem treated grey (72%) cotton cloth. Bacterial decrease increased along with the extract concentration. Even after 15 washing cycles, the effectiveness of finished samples against bacterial growth was determined to be 90%. Since neem extract has antibacterial properties, it can be used as a suitable and sustainable herbal alternative to hazardous chemicals now used in traditional antimicrobial finishes.

Key Words : Neem, Cotton, Enzymatic scouring, Antimicrobial, Sustainable

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