VISVESVARAYA TECHNOLOGICAL UNIVERSITY

BELGAUM – 590014.

A PROJECT WORK ON

"ECO-FRIENDLY ANTI-MICROBIAL FINISH FROM ALOE VERA AND NEEM PLANT FOR SILK FINISHING."

(SPONSORED BY K.S.C.S.T)

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PROJECT GUIDE

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ABSTRACT

Antimicrobial textiles are a large research focus in the textile industry. There is an apparent need for creating eco-friendly antimicrobial textiles.

To address the issue, aloe vera gel and neem oil were applied individually and in combination form in different concentrations by exhaustion method on light weight, plain woven silk fabric. The treated materials were assessed for their antimicrobial activity based on agar diffusion test (Quantitative Assessment of Antibacterial finishes on textiles measures the degree of antibacterial activity AATCC-100-1998) for evaluating antimicrobial effectiveness. The durability of the finish to washing is analyzed by testing all finished samples on the 'Laboratory Laundrometer' tester. To compare the effect of the finish on the silk fabric, untreated samples were also tested.

Results showed that neem has shown better antimicrobial activity than aloe vera when applied alone, and its antimicrobial activity has been increased by the addition of aloe vera. This antimicrobial finishing was withstanding fully on silk substrates up to 5 washing cycles.

There is a slight increase in the weight of the fabric after finishing. Both mechanical properties (i.e. tensile and tearing strength) and crease recovery angle of finished fabric have shown a slight decrease in its value after the finishing treatment. Fabric stiffness parameters (i.e. bending length and flexural rigidity) were found to have increased as a result of treatment.