

VISVESVARAYA TECHNOLOGICAL UNIVERSITY
BELGAUM - 590 014, KARNATAKA



PROJECT WORK ON

**“RENDERING COTTON AND POLYESTER /COTTON BLENDED FABRICS
ANTIMICROBIAL PROPERTY USING TULSI LEAF EXTRACT”**
(Sponsored by K.S.C.S.T, Bangalore)

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BACHELOR OF TECHNOLOGY

IN

TEXTILE TECHNOLOGY

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ABSTRACT

Textiles being more vulnerable to microbial attack would cause many cross infections and allergic reactions. Antimicrobial finishes on the fabric can minimize the transfer of microorganisms on to the wearer by creating a physical barrier. Protective surgical apparels play an important role in reducing diseases and their transmission. The various medicinal plants found in nature exhibit excellent antimicrobial properties. This project involves the plant extracts of Black Tulsi and Green Tulsi which were screened for their antimicrobial activity. Methyl alcohol was used as solvent for extraction. The herbal extracts were applied on cotton and polyester/cotton fabrics and the antimicrobial activity of the finished fabrics was assessed against bacteria normally exist in hospitals like Gram positive *Staphylococcus aureus* (ATCC 6538) and Gram negative, *Escherichia coli* (ATCC11230). The antimicrobial efficacy of treated materials has been evaluated by quantitative method in terms of bacterial reduction (*AATCC-147-1998*) ("*quick method*").

The fabrics were treated with herbal extract with different concentration of 5%, 8%, and 10% using exhaust method. Antimicrobial tests proved that both the black & green tulsi extracts applied on cotton and polyester/cotton fabrics found to be highly effective and inhibit the growth of bacteria successfully. The wash fastness tests confirmed that the finish applied on these fabrics is sufficiently durable and can withstand repeated washes. From the test results it is observed that after finishing the strength of cotton fabric is increased, whereas crease recovery and elongation is reduced. After the finish the strength of polyester/cotton fabric is slightly reduced and crease recovery and elongation properties increased. Tulsi leaf extracts can be used as anti-microbial agents with lower risk for health and environmental effects and hence are eco-friendly.