


**USING EXTRACTS ORIGINATED FROM THE STEM OF  
VENIVEL (*Coscinium fenestratum*) AS DYE MATERIAL ON  
COTTON FABRICS.**



**BY**

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## ABSTRACT

Modern textile industry emits a significant quantity of waste as unfixed colorants, which mostly are synthetic dyes, represent a substantial health risk and alter the natural ecological balance. As a result, consumer interest in using natural dyes on fabrics has become popular. Hence current research work investigated Venivel stem extract as a fabric dye. Active ingredient found in Venivel, Berberine is a biological interesting quaternary ammonium alkaloid that carries the potential to show anti-bacterial activity once been fixed on to cotton as a dye.

The appropriate water-based extraction method was applied to obtain organic material from Venivel stem. Thereafter, effect of utilizing oxidizing agents on cotton on dye fixation was investigated. Also, anti – bacterial efficacy of the dye and dye fixed fabric were evaluated.

Oxidizing agents of  $H_2O_2$ ,  $NaOCl$  and  $KMnO_4$  were used during experiments. Oxidation of cotton by different oxidizing agents produced yellowish brown color shades when dyeing was completed using Venivel extract. As an example, brighter, more vivid yellow color shade was produced with  $H_2O_2$  oxidized cotton. Moreover, the examined venivel stem extract dye solution and dyed cotton fabric demonstrated antibacterial activity against the identified microorganisms.

Keywords: *Coscinium fenestratum*, Berberine, Oxidizers, Dyeing, Antibacterial efficacy

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