EXTRACTION OF NATURAL DYES FROM LEAVES OF COFFEA ARABICA AND ITS APPLICATION IN COTTON FABRICS

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This study explores the extraction of natural dyes from the leaves of *Coffea arabica* trees (coffee leaves) to investigate their application on cotton fabrics. The objective is to evaluate the viability of using these natural dyes as a sustainable alternative to synthetic dyes in the textile industry. Three different mordanting techniques and different mordents were employed to dye treated and untreated cotton fabrics. The results indicate that the pre-mordanting technique yielded the best dye adhesion to the cotton fabrics. Moreover, the cotton samples treated with tannic acid displayed improved washing and perspiration-fastness properties compared to the untreated fabrics. Colour coordinate values were measured using a data colour spectrometer, and a preliminary comparison was conducted to assess the dye's anticipated colours and colour intensities. Overall, this study sheds light on the potential of natural dyes derived from *Coffea arabica* leaves as a sustainable substitute for synthetic dyes in the textile industry. The findings contribute to advancing eco-friendly practices and promoting environmentally conscious choices in textile manufacturing.

Keywords: Natural Dye, Coffea Arabica, Coffee Leaves, Mordants, Cotton Fabrics, Tannic Acid