

Dyeing of Wool and Silk with Soxhlet Water Extracted Natural Dye from Dacryodes macrophylla Fruits and Study of Antimicrobial Properties of Extract

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Abstract : Dacryodes macrophylla is a species of the Burseraceae family that is widespread in Cameroon, Equatorial Guinea, and Gabon. The only part of D. macrophylla known to use is the pulp contained in the fruit. This very juicy pulp is consumed directly and used in making juices. During consumption, these fruit leaves a dark blackish colour on fingers and garment. This observation means that D. macrophylla fruits must be a good source of natural dye with probably good fastness properties on textile materials. But D. macrophylla has not yet been investigated with reference as a potential source of natural dye to our best knowledge. Natural dye has been extracted using water as solvent by soxhlet extraction method. The extracted color was characterized by spectroscopic studies like UV/Visible and further tested for antimicrobial activity against gram-negative (*Vibrio cholerae*, *Escherichia coli*, *Salmonella enterica* serotype Typhi, *Shigella flexneri*) and gram-positive (*Listeria monocytogenes*, *Staphylococcus aureus*) bacteria. It was observed that the water extract of D. macrophylla showed antimicrobial activities against *S. enterica*. The results of fastness properties of the dyed fabrics were fair to good. Taken together, these results indicate that D. macrophylla can be used as natural dye not only in textile but also in other domains like food coloring.

Keywords : antimicrobial activity, natural dye, silk, wash fastness, wool

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