Investigation of leaves and saw dust of jak tree as potential colouring agent for textile substrates

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This focus of this research was the use of waste materials to produce a low cost natural dye. Jak trees are widely available throughout Sri Lanka. Timber trade is mainly situated in the Moratuwa area. Hence large quantities of sawdust are easily obtained. Ripe Jak leaves falling throughout the year were also an added advantage to conduct this project. As both natural materials are available in large quantities in Sri Lanka as well as in other countries, use of these can reduce the cost of materials. This kind of research can be developed to enter into the natural dye market, which is expanding. Saw dust is said to be termite proof and fairly resistant to fungi and bacteria, which gives additional advantage for dye preparation. There has been increasing interest in natural dyes all over the world especially in Europe, because of ecological, environmental and health problems related to the use of synthetic dyes. There is a need, therefore, to identify colour bearing natural substances for the future. The objective of this study was to develop a dye from leaves and saw dust of Jak tree (*Artocarpus Heterophyllus*) and to find the optimum condition for dyeing fabrics. An attempt was also made to minimise chemical usage, which makes this product low toxic. Dye extraction, dyeing and fastness testing were carried out to produce the dye.

The study concludes that the fabrics, which were dyed with the dye, produced from Jak leaves and saw dust have slightly low fastness for washing and light but it has considerably better rubbing fastness for both dry and wet. Further experiments need to be carried out using after treatments in order to improve the colour fastness to washing and light. Hence the fabrics dyed with above two dyes can be used for applications where, washing is not much needed and where frequent rubbing occurs.

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