



**INVESTIGATION OF HIGH VOLUME
BID MATERIALS AS POTENTIAL COLOURANTS
AND FINISH CHEMICALS FOR FIBROUS
SUBSTRATES**

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Abstract

The modern consumer (1990 onwards) is aware of the toxic chemical residues on textiles/garments (resulting from dyes and chemicals used) which can have carcinogenic/ dermatological and allergic effects on the wearer, especially because textiles are in contact with human skin for 24 hours of the day. The second aspect deals with the 'pollution' (air/water) at each of all stages in production of textiles. The third concern is about the 'ecological' problems during disposal (of garbage / on incineration).

The aim of this research is to show feasibility of producing high quality natural dyes from plants, creating new opportunities for both farmers and the fabric / garment industry in line with the current consumer trends towards eco-friendly natural products. The direct national benefit is shown. Environmental and economical factors too need to be considered to make this viable in the long run.

Investigation of the traditional dyeing techniques and dye producing plants with special reference to Sri Lanka, and development of natural dyes and investigation of their suitability as textile dyes were the two major objectives of this research study.

Research investigations based on the comprehensive analysis of 10 best dye yielding plants which have been chosen from 47 dye yielding plants in Sri Lanka are presented. The available raw material spectrum had been reviewed. The ten (10) selected species are Kothala Himbutu (*Salacia reticulata*), Weniwal *tCosciniium fenestratum*), Rambutan (*Nephelium lappaceum*), Mangus *tGarcinia mangostana*), Big onion skin (*Allium cepa*) , Marigold (*Tegetus erecta*), Tea (*Camellia sinensis*), Jak (*Artocarpus heterophyllus*), Walmadata (*Rubia cordifolia*) and Turmeric (*Curcuma domestica*). Some of the above plant extracts have not been used before in textile dyeing.



Environmental performance was another aspect of the research. Results from effluent characteristics of best dyeing solutions reveal significant reduction in pollution potential. The concept of ready to use dye concentrates is also presented.