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An environmental burden analysis of synthetic dyes vs. natural dyes

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This research is mainly concerned with the investigation of the potential of using natural dyes in place of synthetic dyes. It is well known that synthetic dyes are causing major environmental pollution issues in Sri Lanka and abroad. Though much work has been done not much effort has been spent on finding alternatives to the synthetic dyes which is perhaps the best way of managing pollution. Although dyeing with natural dyes has not received due attention of the scientists as well as of the industrialists, recently the textile industry is being confronted more with enquiries on the theme of “dyeing with natural dyes”. Within the textile manufacturing chain, wet processing is clearly identified as having a potential adverse effect on the environment. The major problem threatening the textile industry today is environmental pollution, arising out of the wet processing of textiles.

The objective of this study is to demonstrate the limited trace elements present in natural dyes (i.e. to demonstrate near zero burdens on the environment) and the final effluent Chemical Oxygen Demand COD (to test the hypothesis that the effluent is less problematic and therefore easy to treat). Both hypotheses have been investigated for the selected, best dye yielding biomaterials. Characterisation of eco –friendliness of natural dyes reveal that no major harm is caused to the environment when compared with the synthetic dyes.

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