

ABSTRACT

Dyeing is an area of human creativity whereby the first judgements by the naked eye can tell the success or failure of a procedure rapidly. Dyeing with natural colourants however is a far more complicated matter. First, these dyes are made up of groups of molecules that are often numerous, many of which still remain unidentified. Secondly, the colour molecules often have a weak chemical affinity with the textile fibres and need to be fixed with the help of a variety of other substances called "mordants" that react with the colourants and the fibres. One aspect of this research implied a thorough study of traditional dyeing methods to help understand the rationale behind the dyeing practices and the other aspect was to explore avenues for increased applicability of natural dyes. The main goal of the study was to develop a large colour palette in order to improve the applicability potential of the dye. Madder, Marigold, Henna, Ratanjot, Catechu and Flame of forest were the six dyes selected for the study and three dye mixtures of two dyes were derived. The three variables for the study were variation of pH during dye application, use of natural mordants Tea and Pomegranate rind and composite dyeing. A total of 180 shades were produced. Use of metal mordants in concentrations stated in the study helped to confirm to the eco parameters laid by laws regulating permissible amounts of heavy metals on the substrate as residual copper on the surface of the fabric was < 50ppm and chromium exceeded only in a very small percentage. The dye extracts had good optical density and they had a linear relationship with the k/s values obtained from spectrophotometric analysis and possessed average to good fastness to agencies of wear. The dye extracts had good optical density and k/s values obtained from the reflectance spectrophotometer analysis barring a few exceptions like Flame of Forest and Ratanjot when dyed at acidic and alkaline pH. The dyes possessed average to good fastness to light, laundry and crocking except the Flame of Forest dye which had fair to poor fastness to light. Marigold dye had poor rubfastness on Eri silk fabric and overall average fastness was also average.

The exhibited minor fibre products received a good response from the visitors. A positive correlation was observed between need and gap in availability of the products and between need and perceived value of the products. It was also concluded from the analysis that there is dearth in variety of products offered in the category of home décor products fashioned out of minor fibres.