

## Evaluation of colour fastness and colour strength properties of naturally dyed banana carpet yarns

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■ **ABSTRACT** : One can get colouring matter from almost all vegetable matter. However, only a few of these sources yield colourants which can be extracted and work out to be commercially viable. Colour fastness property of these dyed yarns need to be tested, and it refers to the resistance of the colour of textiles to different agencies such as washing, sunlight and rubbing. Annatto seeds, flame of forest flowers and dhawadi flowers were used for dyeing banana carpet yarns and after treatment was done with pomegranate fruit skin and later studied for colour fastness and colour strength properties. The colour fastness of naturally dyed banana yarns was noticed to be from fair to excellent. Among the four colours dyed on banana yarns, maximum colour difference was noticed in abraded maroon sample and minimum in abraded dark yellow sample. The colour strength after rubbing came down in all the naturally dyed banana yarns.

■ **KEY WORDS** : Banana yarns, Colour fastness, Colour strength, Colour difference, Natural dyes

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The growing concerns for the degrading environmental conditions have led to the development of eco-friendly and biodegradable fibres in the ever expanding horizon of textile fibres. Banana fibres and natural dyes being eco-friendly do not pose the toxicity and waste disposal problems that are associated with some of the synthetic and mineral fibres and synthetic dyes. Natural dyeing really stands for the pride and glory of the craft of India as it has been in Indian culture since long time. Because of the beauty of its results, those who used them claimed that no chemical dye has that luster, the under glow of rich colour that delicious aromatic smell and the soft light and shadow that gives so much pleasure to the eyes (Mukharjee, 2005).

Colour fastness property of these dyed yarns need to be tested, and it refers to the resistance of the colour of textiles to different agencies such as washing, sunlight and rubbing to which the yarn or fabric is exposed during manufacture and subsequent use. It is important because it directly affects the serviceability of fabrics (Lyle, 1997). The most common serviceable conditions for which a carpet is generally exposed are sunlight, washing and crocking. Hence, these tests were

selected for evaluation of colour fastness of dyed carpet yarns.

The carpets are put up mostly indoors and do not undergo washing frequently, but they are subjected to lot of abrasion and wear when people walk on carpets. Hence, the carpet yarns were studied for colour strength properties before and after rubbing. Even though colour shades on yarns are obtained by dyeing in different sources, the consumers identify the colours and fastness only and do not mind the sources. Moreover, most of the colours were obtained by using two to three sources, therefore in discussion the names of the colours are used instead of sources.

### ■ RESEARCH METHODS

#### Optimization of pre mordanting of carpet yarns with alum :

The alum solutions were prepared from 1-10 per cent. The volume of water required for the treatment was estimated as per the material to liquor ratio of 1:20. The wetted yarn was entered slowly into the bath and the required temperature of about 40° C-50° C was maintained and worked for one hour. Later, the yarn was thoroughly squeezed and dried in shade. The alum solutions were optimized for each dye depending