

Research Paper :

Value addition of eri silk with annatto – a natural colourant

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ABSTRACT

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Eri silk, also known as poor man's with natural beige colour ranks next to tassar silk in commercial importance. The beautiful eri fabric can be an excellent material for shirtings, suitings, dress materials, bed spreads and other furnishings. Colouring of eri silk with annatto dye enhance the fabric as well as its aesthetic value and marketability. Various dyeing conditions were optimized with different mordants for dyeing eri silk with annatto and a little decrease was observed in breaking strength and other physical properties of dyed eri silk. But the colours obtained from annatto were very much colourfast, irrespective of mordants.

Key words : Erisilk, Colour, Dress materials, Annatto

Eri silk also known as endi or erandi, ranks next to tassar silk in commercial importance. It is the product of domesticated silk worm, *Philosomia ricini* that feeds mainly on castor leaves. The beautiful eri fabric which is known for its durability is a regular winter wrapper for Assamese people. This lack luster hand spun silk though subdued in shine has the usual suppleness of other silks. Cottonist in texture, eri has the warmth of wool. The eri cloth can be an excellent material for shirtings, suitings, neck tie, bed spreads, curtains and other furnishings. It is felt that product diversification of eri yarn might enhance the marketability of eri silk. Proper attention in some of the properties of eri silk like colour, gloss, feel etc. can be improved so as to utilized this "poor man's silk" for making attractive products.

The revival of the use of natural dyes world-wide is primarily due to the increasing environmental consciousness to-day. Colouring of eri silk with natural dye enhance the fabric as well as its aesthetic values. This silk has potential and wide scope for improvement in its properties, so that eri silk can be utilized for making diversified products, which can play a significant role in improvement of the rural economy as well as its demand in the market. Considering the importance of eri silk and also the eco-friendly dyeing, the present work was undertaken with the following objectives : to optimize the dyeing conditions of selected dye for dyeing eri silk and to evaluate the colour fastness and physical properties of dyed eri silk.

METHODOLOGY

For conducting the study the following materials and methods were selected and used.

Eri silk yarns were used for the study and it was

purchased from local source.

Table 1 : Natural dyes used for dyeing eri silk yarn

Local name	English name	Scientific name	Parts used
Phuku guti or Hat-ranga	Annatto	<i>Bixa orellana</i>	Seeds

The annatto seeds are coated by a yellowish orange substance, which is the dye. It is one of the very few bright natural dyes available for textiles especially for silk and cotton. Annatto yields an orange dye based on the carotenoid structure. The proportion of the dye varies between 10-12% on the weight of the seed. Annatto dyes behave as an acid dye on protein fibres at an acidic pH. The chief colouring matter is Bixin. The seeds and surrounding pulp of annatto is rich in tannin and contains a mixture of eight colourants of carotenoid group of which the two main carotenoids are Bixin and Cis-Bixin containing vitamin A (Devi *et al.*, 2002; Gulrajani, 2001 and Teli *et al.*, 2001).

Chemicals used:

The chemicals used in the research work are given in Table 2.

Mordants used :

As regards the selection of mordants, the eco-friendly mordants namely Aluminium sulphate (alum), copper sulphate and ferrous sulphate were selected for the present work. As mordants helps to link between dye stuff and fibre which allows the dye with no affinity for the fibre to be fixed.