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Research Paper

Mesta/organic cotton blended yarns for diversified end uses

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ABSTRACT : Mesta is commonly grown in every farmer's field either as a subsidiary vegetable crop or as a hedge crop or on bunds as wind breakers. Mesta fibre extraction is a routine process practiced in every farm family in Karnataka. Hence, the present study was designed to explore the possibility of spinning pure and blended mesta yarns with different proportions. Results found that mesta fibres have added strength to the cotton yarn simultaneously decreased the elongation and increase in the ratio of mesta fibre for blending reduces the cost of production of cotton yarn.

KEY WORDS : Mesta fibre, *Hibiscus sabdariffa*, Organic cotton, Dharwad Hirsutum Hybrid-11 (DHH-11), Jute batching oil (JBO), Blending, Physical characteristics

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India being a tropical country is blessed with plenty of renewable resources obtained from the plant kingdom. In view of recent global environmental issues and inadequate raw fibre resources, scientists worldwide have begun to show interest in exploiting the full potential of natural fibre and their diverse uses. Synthetic fibres, meanwhile, face ecological and environmental problems in the production stage as well as in their disposability. Therefore, natural fibres and fabrics are gradually gaining importance as consumers are perpetually looking for biodegradable and eco-friendly textiles to preserve their natural environment, flora and fauna. The primary advantage of these natural fibres is that they are less energy consuming locally available and indeed are available in a wide variety.

Apart from cotton, India has a large variety of other cellulosic fibres obtained from different parts of the plant *viz.,* leaf, stem, husk and kernel (seed) etc. Bast fibres are usually stiffer and longer than the fibrils. Generally, on an oven-dry basis, the bast part accounts for about 1/3 of the stem mass and the woody core part for the remainder (Nezamoleslami *et al.,* 1997). Similarly, 'mesta' is the bast fibre obtained from commercially cultivated species such as *Hibiscus cannabinus* Kenaf and *Hibiscus sabdariffa* Roselle, which belong to the family Malvaceae. *H.sabdariffa* is a tall, appears cream to light yellow flower, having a scarlet to magenta throat and green or slightly reddish stem depending on the variety. These species are mainly grown for its fibre purpose. The fibre was discovered in Africa where the fibre was obtained from plants growing in a wild state that were used for twines, bags and matting (Jyothirmai and Jacob, 1997). In India, mesta stands next in importance to jute and it is called as *Patwa* (Hindi), *Lal-mista*, *Chukar* (Bengali), *Lal-ambadi* (Marathi), *Yerra gogu* (Telgu), *Puichchai* (Malayalam) and *Chukiar* (Assam) (Mahadevan *et al.,* 2009).

Hence, mesta species, *Hibiscus sabdariffa* variety AS73, CP 560 grown in the Institute of Organic Farming, University of Agricultural Sciences, Dharwad, Karnataka was selected for the present study to explore better prospects for utilization of mesta fibre for multiple applications.

RESEARCH METHODS

Selection of fibre:

Organic cotton DHH-11 (Dharwad Hirsutum Hybrid-11), variety having 28 mm length, fineness 3.8 µ and strength 26.28 µg/inch was procured for blending with mesta fibre having 102.66-(1inch) length,fineness 3.008 tex and strength 131 gf/tex.