



Value Addition to Crop by-products by use as textile dye CIRCOT's Technology



Natural Dyes

Natural dyes are the dyes obtained from natural sources mostly plant parts such as roots, bark, stem, flowers etc. and these were only used for dyeing of textiles since ancient civilization till the end of 19th century. Later, synthetic dyes derived from petroleum products almost completely replaced the natural dyes due to their ease of application, easy availability in a variety of shades and good fastness properties. Knowledge of procedure for extraction and application of natural dyes to get fast shades was lost due to lack of usage and no proper documentation. Recent awareness about the environmental pollution caused by the production and application of synthetic dyes has once again revived global interest in natural dyes as an eco friendly option and research is being carried out on various aspects of extraction, characterization and application of natural dyes.

Advantages of Natural Dyes

- Minimum Environmental Pollution
- Dyed fabric is eco-friendly
- Good demand and price realization especially in Export market
- Earthy soothing tones
- Different colours from the same dye by changing the mordant
- Health advantages due to medicinal value of plant material used for dyeing
- Suited for small scale and cottage level use hence ideal for use in villages by traditional craft persons and dyers

CIRCOT's Technology

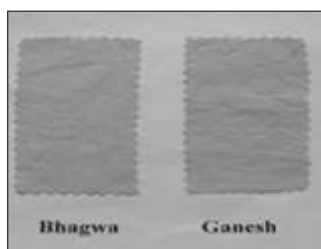
❖ Pomegranate rind (yellow and black colour, as mordant in manjith dyeing)



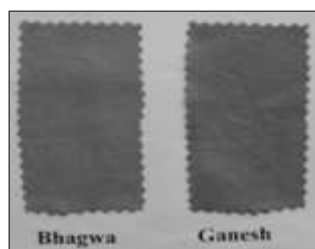
Pomegranate fruits



Pomegranate rinds



Cotton dyed yellow with rinds



Rind used as mordant in manjith dyeing

❖ **Tender Coconut outer husk** (red, brown and black colour)



Tender coconut husks

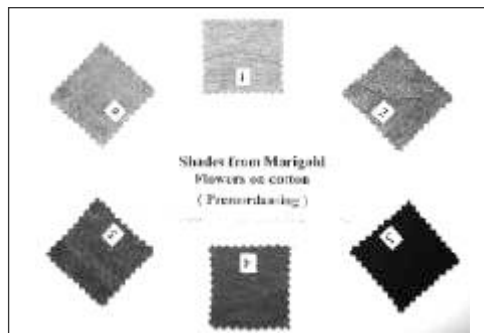


Shades on cotton with coconut husks

❖ **Marigold flowers** (Yellow, Olive and black colour)

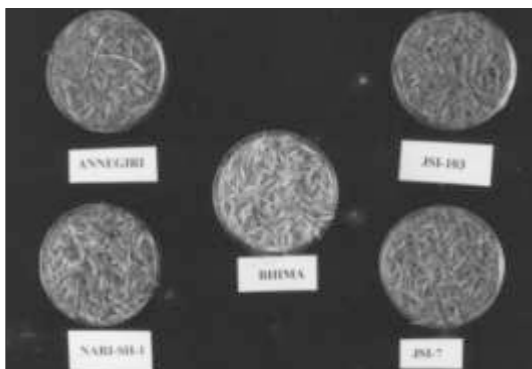


Marigold flowers

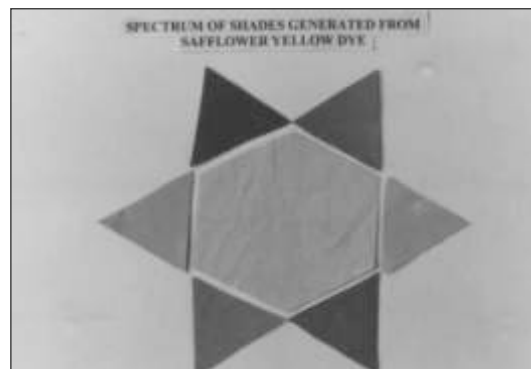


Shades obtained with marigold flowers

❖ **Safflower petals** (Yellow, grey, black and red colour)



Safflower florets of different varieties



Shades obtained with safflower florets

CIRCOT has made attempts to utilize materials locally available in villages as crop products or by-products for dyeing of cotton fabrics. Developed improved application techniques have resulted in darker shades and improved fastness properties.

Dyeing Cost: Rs. 40- 70 per Kg of cotton material depending upon dye and shade used

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