

Procedure : In order to remove the wax, oil, resin and coloring matter from the fibre, fibres were scoured by standard method with a solution of sodium hydroxide (1%), sodium carbonate (4%) and wetting agent (0.5%) at 750 C for 3 hour.

Recipe for Bleaching :

Hydrogen peroxide	=	1%
Sodium silicate	=	1%
Soap oil	=	0.5%
Turkey red oil	=	0.5%
MLR	=	1:20
Boiling tie	=	1 hour

Procedure : Bleaching of scoured cotton rose fibre was done in a vessel. The samples were boiled with hydrogen peroxide (1 %), sodium silicate (1%), soap oil (0.5%) and turkey red oil (0.5%) for two hour.



a. Raw fibre b. Scoured fiber c. Bleached fibre

Chemical Composition of cotton rose fiber :

Every fiber consists of some chemical elements. Knowing the chemical composition of fibres helps a researcher to infer the suitability of the wet processing agents and the behaviour of the fibre to various treatments. Studies on chemical composition of cotton rose fibres were carried out and details are given below.

Chemical composition of cotton rose fiber

Sl. no.	Chemical component	Water retting	Urea retting
1	Cellulose	57.45 ± 6.4	52.10 ± 4.1
2	Hemicellulose	24.67 ± 5.17	21.23 ± 4.25
3	Ash content	11.03	17.87
4	Starch	3.09 ± 1.41	2.97 ± 2.12
5	Lignin	13.76 ± 0.73	16.28 ± 4.4

Physical properties of cotton rose fiber :

The fiber length, fineness and breaking strength of extracted cotton rose fiber was analyzed using single yarn strength tester, the details of which are as follows.

Sl. no.	Properties	Unit
1	Fiber length (cm)	Avg: 73.1
2	Fineness (tex)	6.12
3	Bundle strength (gf/tex)	15.306

Under utilized fibre from plant source



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Introduction :

The Cotton rose (*Hibiscus mutabilis*) is an ornamental plant bears beautiful flowers which is locally known as Tholopadma. It belongs to the family Malvaceae. It is a large shrub or small multi-stemmed tree growing 2-5 m tall that loses some or all of its leaves during winter. Its younger stems, leaf stalks and flower buds are covered in a mixture of star shaped hairs and short woolly hairs. *Hibiscus mutabilis* has the largest flowers among all the perennials, blooming starts in mid summer and goes on till late winter. The flowers are double and the plant itself behaves like a perennial in warmer climates and more like a shrub in cooler areas. It is cultivated as a garden ornamental in Australia and is becoming increasingly common as a weed of riparian vegetation, wetlands and disturbed sites. It is used as an ornamental plant and has medical value for different diseases.

Uses of Cotton rose :

(i) As herbal medicine :

The roots and leaves of cotton rose has medicinal value for different disease. The leaves contain anodyne, antidotal, demulcent, expectorant and refrigerant. Combined with the flowers, they are applied to burns, cutaneous infections and other skin problems.

(ii) In industry

As fibre: Fibres can be obtained from bark of cotton rose which can be used in the textile field as

Paper industry :

Cotton rose fibres can be used in paper industry for paper making.



a. Cotton Rose



b. Bark of Cotton rose



a. Bundles of barks



b. Water retting



c. Drying of fibre



d. Dried fibre

Scientific classification :

Scientific name	: <i>Hibiscus mutabilis</i> L.
Kingdom	: Tracheobionta
Division	: Magnoliophyta
Class	: Magnoliopsida
Order	: Malvales
Genus	: <i>Hibiscus</i> L.

Extraction of fibre:

Extraction of fibre from cotton rose barks were carried out by water retting method. In order to obtain the fibre, initially, the stems were cut to a predetermined length and barks were removed from the stem. The bundles of barks were tied with ropes, weighed and immersed in water completely. After 15 days, bundles were taken out and removed the fibres from the barks. Fibres were washed properly in running water to remove the dirt that adhered to the fibre and air dried.

Water retting process

Wet processing treatments:

In order to meet the consumer demand for quality and variety, the textiles fibres usually undergo a variety of wet processing treatments. It is a pretreatment process which offer good fabric finishes. Preparatory finishes intend to produce a clean and impurity free surface that further responsible for a uniform and unhindered dyeing and other finishing process. Scouring, degumming, bleaching etc. are a few preparatory processes carried out for natural fibres.

Recipe for Scouring :

Sodium Hydroxide	=	1%
Sodium carbonate	=	4%
Soap oil	=	0.5%
Temperature	=	75°C
Time	=	3 hour
MLR	=	1:30