

I Concept of origin & their importance with reference to various uses (16)

(6) Fibre yielding plant - General description with reference to Cotton (Botanical name, family, part used, morphology & uses).

### Introduction:-

one of the most essential matter for life is clothing, it is solved by the fibres available from fibre yielding plant. we also used to prepare fibres from animal origin, such as wool & silk. The fibre yielding plants are also used in the preparation of rope & cord. with the advancement of civilization. Many fibre yielding plants become known to the human race. Today, the fibre yielding plants are just next to food yielding plants as regard to their importance & utility.

There are more than thousand of fibre yielding plants distributed all over the world. Some of them are also found in our country & at the same time in our state. Fibres are obtained from the fibre cells which are different from vessels, tracheids, parenchyma etc of xylem elements. As the growth of plant occurs, Sclerenchymatous tissue develops which provides more support. These are mostly fibres are 1-250 mm long, thick walled with very small cavity. They are found in bundles or in scattered condition. They are not only found

(2)

is wood but may be found in Pericycle, phloem & even in cortex. The cell wall of fibres is made up of pure cellulose. Sometimes certain percentage of hemicellulose, lignins & other substances may be found in the cell wall of fibre. H

The chief elements such as Carbon, hydrogen & oxygen are arranged in unknown but ~~unique~~ unique fashion to form cellulose.

The fibre yielding plants are classified in to different types -

### 1. Textile fibres -

The textile fibres are concerned with manufacture of fibres, nettings & cordage. The chief textile fibres are included into three classes such as: -

- (A) Surface fibre -
- (B) Soft fibre
- (C) Hard fibre,

2. Surface fibres - These types of fibres are produced on the surface of stems, leaves, roots etc. The surface fibres include the ~~so called~~ cotton, so, called.

COTTON - Vernacular name - Kapas.

Cotton is one of the old fibrous plant. The fine fibrous hairs are occurs on the Seed (seed coat) are largely



(2) (17)

These have are collected and constitute the raw material of the industry. It is the world's greatest industrial crop. It is also thought to be cheapest among the fibre yielding plants. It is used in India since 1800 B.C.

### Systematic position —

Kingdom — Plantae.  
 Division — Angiosperms  
 Class — Dicotyledons  
 Order — Malvales  
 Family — Malvaceae

African in origin → Botanical name → Gossypium hirsutum ✓  
 Old world cotton  
Gossypium hirsutum (New world cotton)  
 It is perhaps Asian or African in origin → Gossypium arboreum ~~Asia~~ ~~Africa~~  
 South Mexico is origin.  
 It is native of South America → Gossypium barbadense New world cotton

### Morphology —

The cotton plant is an annual or Perennial shrub or small tree of about 2-6 feet in height. The leaves are stipulate & palmately lobed. The flowers are born singly. Fruits are called bolls. Each boll contains 2 or 3 in fact, they are capsules with 3-5 locules. Each locule contains about 9 seeds. The seeds are surrounded by white or cream coloured hairs which are commonly known as cotton.

The cotton plant grows in the area where annual rain fall is from 30" to 100"

(4)

The temperature is between  $21-46^{\circ}\text{C}$ . It grows in various soil, climate & the soil

### Cotton Industry in India

Based on geographical distribution & chromosome number, the genus is divided into 4 main groups -

( $n=13$ ) - cultivated, old world cotton

( $n=26$ ) - cultivated, new world cotton

( $n=13$ ) - wild cotton, old world cotton

( $n=26$ ) - wild cotton, new world cotton of Polynesia

2-10  
2-8  
3-15

### Cotton India in India

The country has 6901 thousand hectares under cotton, producing 5,347 thousand bales (1 bale = 170 Kg) in 1976-77. This resulted in the production of 98.1 crore Kg of cotton.

The cotton is cultivated mostly in Southern parts of the country. About 70% of the produce comes from Maharashtra, Gujarat, Madhya Pradesh, Karnataka & Tamil Nadu. In Northern India, Punjab, Haryana, Uttar Pradesh & Rajasthan are the main cotton growing states.

Indian textiles were once known the world over, for these were hand woven & thus the articles of artistry & craft. 1st Cotton factory

was opened in Bombay by Nanabhai Dabur.

421 cotton mills in 1947. At the end of 1976 - 703 mills



(5)

18

## Uses

- i/ Cotton is used in the manufacture of Fabrics.
- ii/ The Fabrics are used in cloth, tyre fabrics, Various forms of threads, Cordages, twine etc.
- iii/ Mercerised Cotton is made by treating fibres with Caustic Soda which imparts high lustre & Silk appearance.
- iv/ Unspan & raw cotton finds its use in mattresses, upholsteries for stuffing purposes.
- v/ Absorbent Cotton is produced by thoroughly cleaning the oily covering of fibres, thus constituting Cellulose. It forms basic raw material of Plastic, rayon & explosive industry.
- vi/ Stalks & ~~of cotton~~ contains fibres are used in paper making.
- vii/ A crude drug is extracted from roots.
- viii/ The hulls are used for stock feed, as fertilizer for lining of wells, Sources of xylose - a sugar, kernels give cotton seed oil.
- ix/ Oil cake is used as fertilizer, stock feed, flour & as a dyestuff.

Hull  
↓  
oil  
covering