

COTTON [Fibres]

Botanical Name : Gossypium hirsutum

Common name : Cotton, kapas

Family : Malvaceae

Part use : Seed & fibre

Introduction : Cotton very important fibre producing plant belongs to Malvaceae family.

- ⇒ Approximately 20 species are identified, only few species are economically cultivated in the world.
- ⇒ Importance of cotton found in mesopotamia and Indus valley civilization.

Origin : cotton may have been domesticated 5,000 BC in eastern Sudan near the middle Nile basin region.

- ⇒ The earliest traces of cotton were found in Indus valley civilization.
- ⇒ All over the world found evidence use & cultivation of cotton found in various civilization.
- ⇒ China is major cotton producing country.
- ⇒ In North India Punjab, Haryana, Rajasthan, U.P.,
In central India, Gujarat, Maharashtra, MP & in south India, Karnataka, Tamil Nadu cultivated in three specific zones of India.

Botanical Character:

- ^{Habit} ⇒ Cotton plant are usually annual ^{or biennial} shrubs of 1-2 m tall.
- ⇒ Root - simple, well developed tap root system.
 - ⇒ Stem - Erect, stem cylindrical, branched, differentiate into node, internode.
 - ⇒ Leaves: Leaves are broad, small palmately, 3-lobed. Stipulate arrange in spiral manner.
 - ⇒ Flowers - flowers are large, showy with 5 pale yellow colour petals.
 - ⇒ Solitary, axillary inflorescence.
 - ⇒ Fruits - The cotton fruits are capsule commonly known as (doda or poll) 3-5 locules and each locule contain several seeds.
 - ⇒ Seed - Seeds are egg shaped, brown or greyish, covered in long, white or creamy coloured fibre [Lint]

Chemical Composition:

Cotton fibre composite primarily composed of cellulose and contain minor amount of other substance.

Cellulose - Main component = 87% - 96%

Protein = 12%

Pectin = 0.9%

Sugar = 0.3%

Wax = 0.4%

Inorganic substance = Mineral ash, Ca, K, P, Mg.
water

Cultivation:

- ⇒ Cotton crop cultivated as biennial crop in tropical & temperate climatic conditions.
- ⇒ For best yield and quality of cotton improve in dry, warm, $21-31^{\circ}\text{C}$ with high level of moisture. medium rainfall or better irrigation are essential.
- ⇒ In north India loam soil and red soil, in central India black soil & in south India laterite are best for cotton cultivation. well drained soil.
- ⇒ For soil improvement farm yard manure or compost manure are best with rich amount of N, P, K & Ca.
- ⇒ Cotton propagate by seed in nursery or directly in field in field 2-3 times well ploughed and prepared soil by adding fertilizers or ingredients.
- ⇒ It is Kharif crop. seeds are sown between April → June.
- ⇒ For disease control seeds are treated with Agromycin, biofungicides & dried in the sun.
- ⇒ Seeds are sown 4-5 cm deep with spacing of 75-90 cm in row.
- ⇒ The germination of the seeds in 6-7 days.
- ⇒ 1st irrigation with ^{1st leaf of} seed germination and after depend on climate and plant needs.
- ⇒ Cotton are harvested after that the flower balls are removed. typically during dry weather the flower balls turn red purple colour to greyish brown.

- ⇒ About 3-4 time flower balls picking by cotton crop from the season.
- ⇒ collection of balls or duds by hand picking and by processing cotton fibres remove from seeds.

Disease:

- ⇒ Many fungal nematode either and insect pest are infected and cause damage.
- ⇒ (Cotton yield & value)

Bacterial blight is Xanthomonas citri sp. malvacearum.
Angular leaf curl, leaf spot of cotton. - Cercospora
gossypina

Krishna, Mahalaxmi, Bharti, Varalaxmi

* Uses [Economic Importance & Significance] :

- ⇒ Cotton is economically significant as a major global fibre and cash crop supporting millions of farmer textile industry and economy and cultural importance also.
- ⇒ Global Importance: Cotton is basically used fabric to manufacture all type of clothing so cotton is most vital cultivated and food crop.

Economic importance: Cotton as a cash crop its production generates work and income for million of farmer and worker in related sectors like textile industry.

livelihood support: Cotton fibre and related sector like textile production like processing etc. provide direct & indirect employment it major contribute to G.T.P.

cultural significance: Cotton has a known history and is central to traditional and cultural practised in many part of the world including India.

Industrial Use: Cotton is very widely used in textile industry cotton fabric used to manufacturing all type of clothe.

Cotton fibre use in medical field in the food and cosmetic industry, crushed & heated cotton seed are used as fodder for the milk producing cattles.

Small letters or fuser are used in cushion in making ware, photographic film etc.