

# COTTON FIBRE

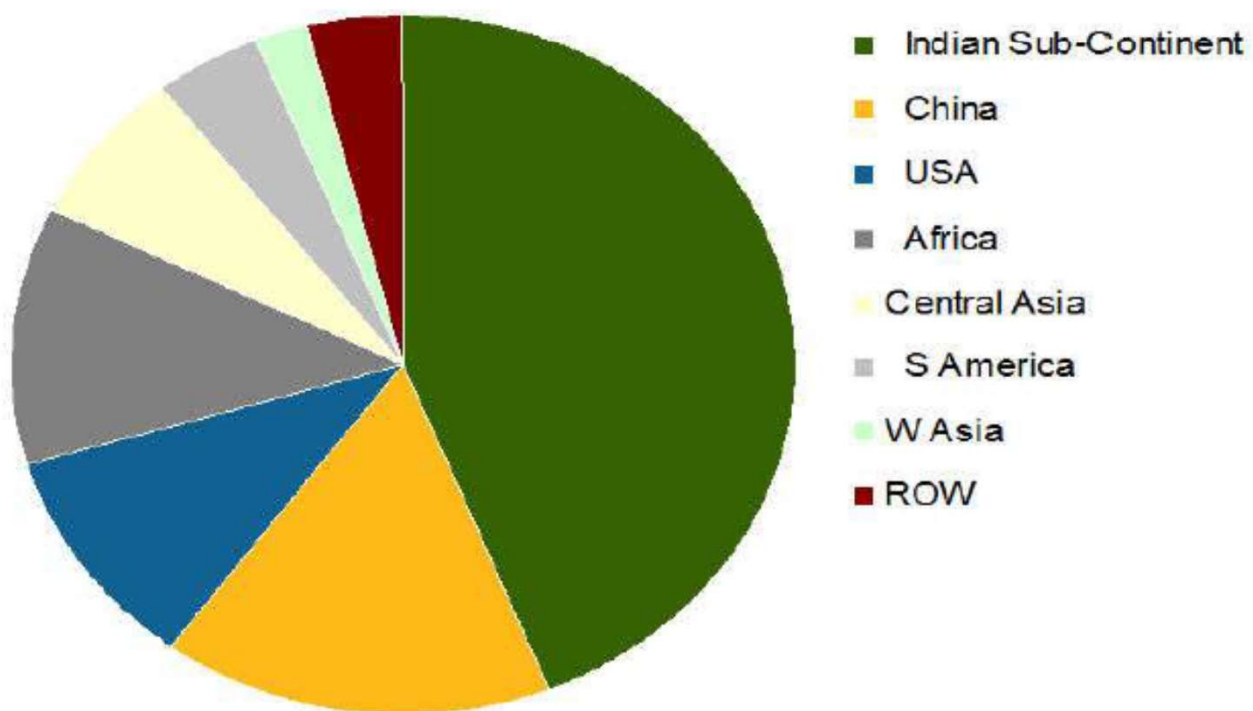


# What is Cotton ?

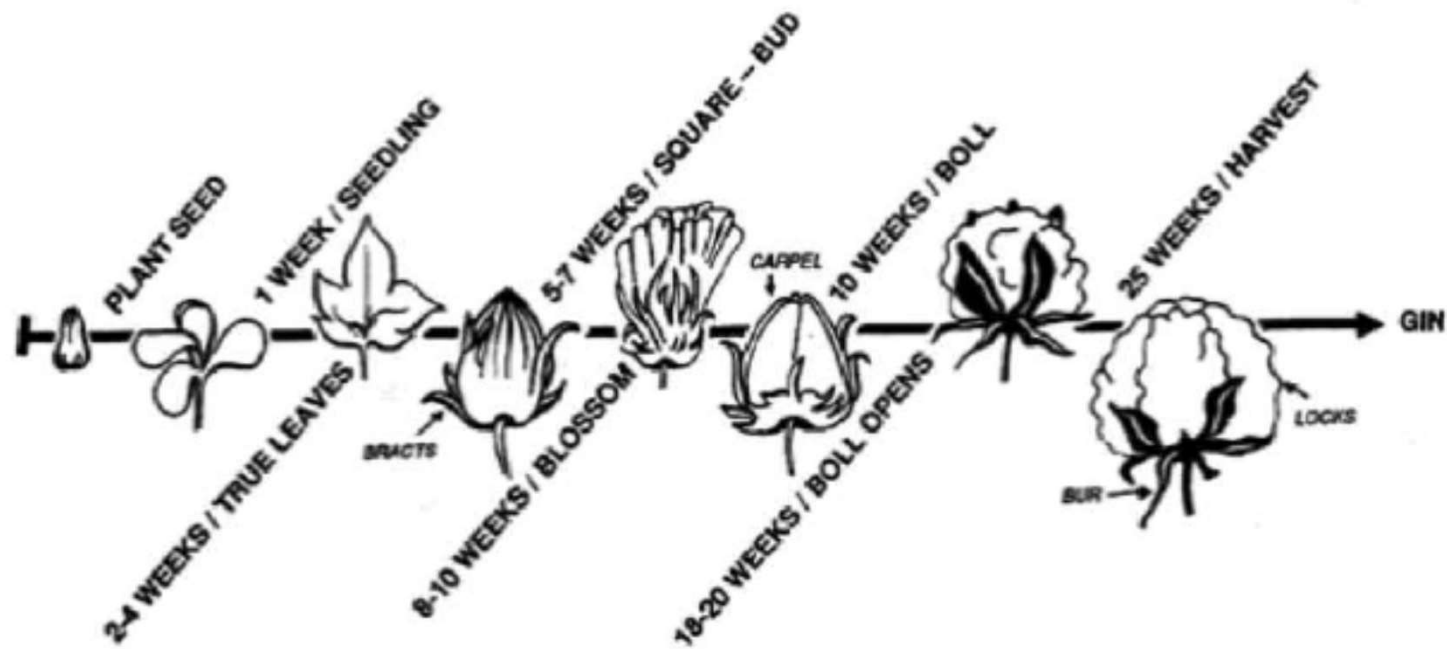
**Cotton** is a soft, fluffy staple fiber that grows in a boll, or protective case, around the seeds of cotton plants of the genus *Gossypium* in the family of *Malvaceae*. The fiber is almost pure cellulose. Under natural conditions, the cotton bolls will tend to increase the dispersal of the seeds.



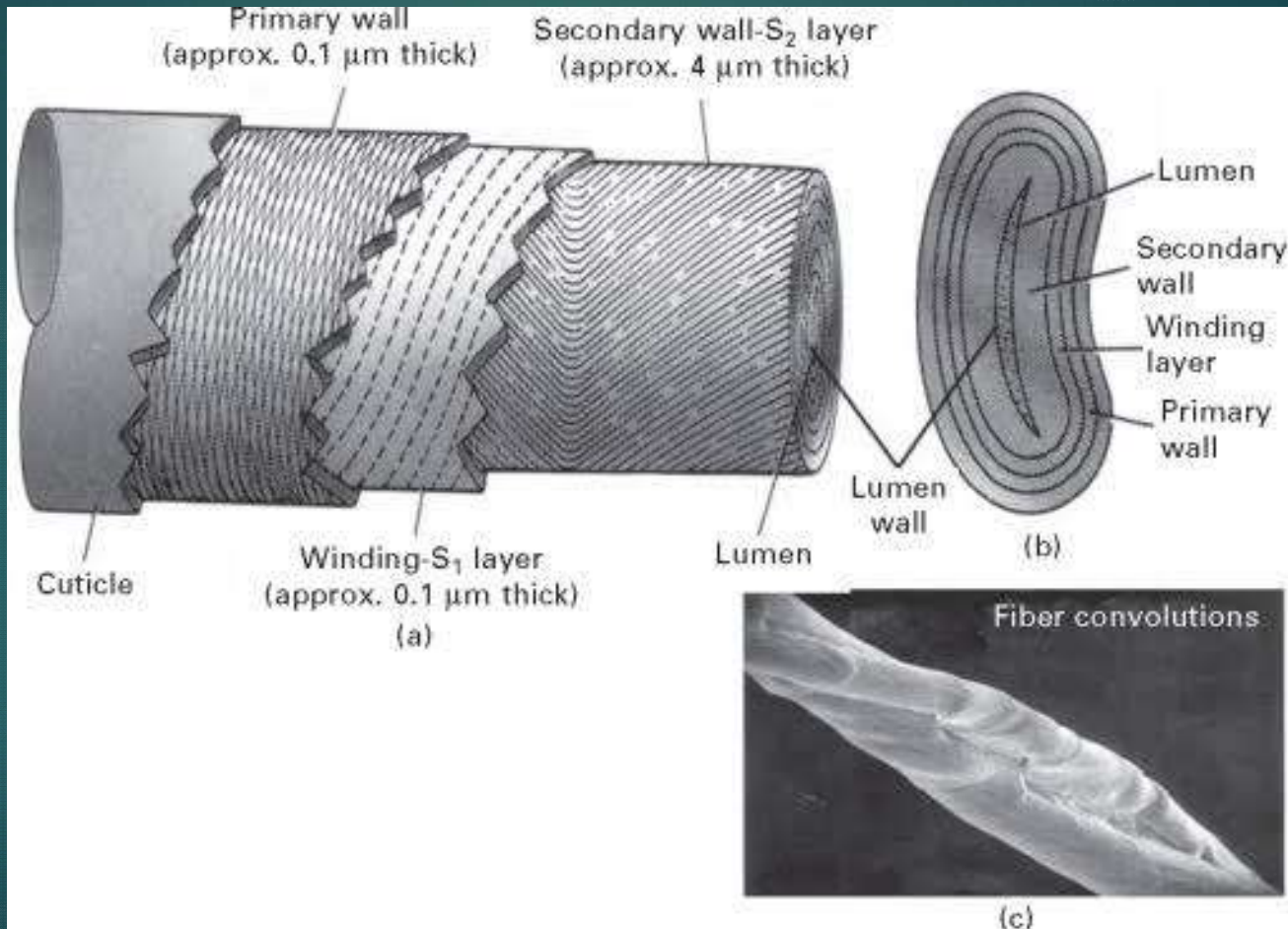
# Growing area



# Life Cycle of Cotton Fibre



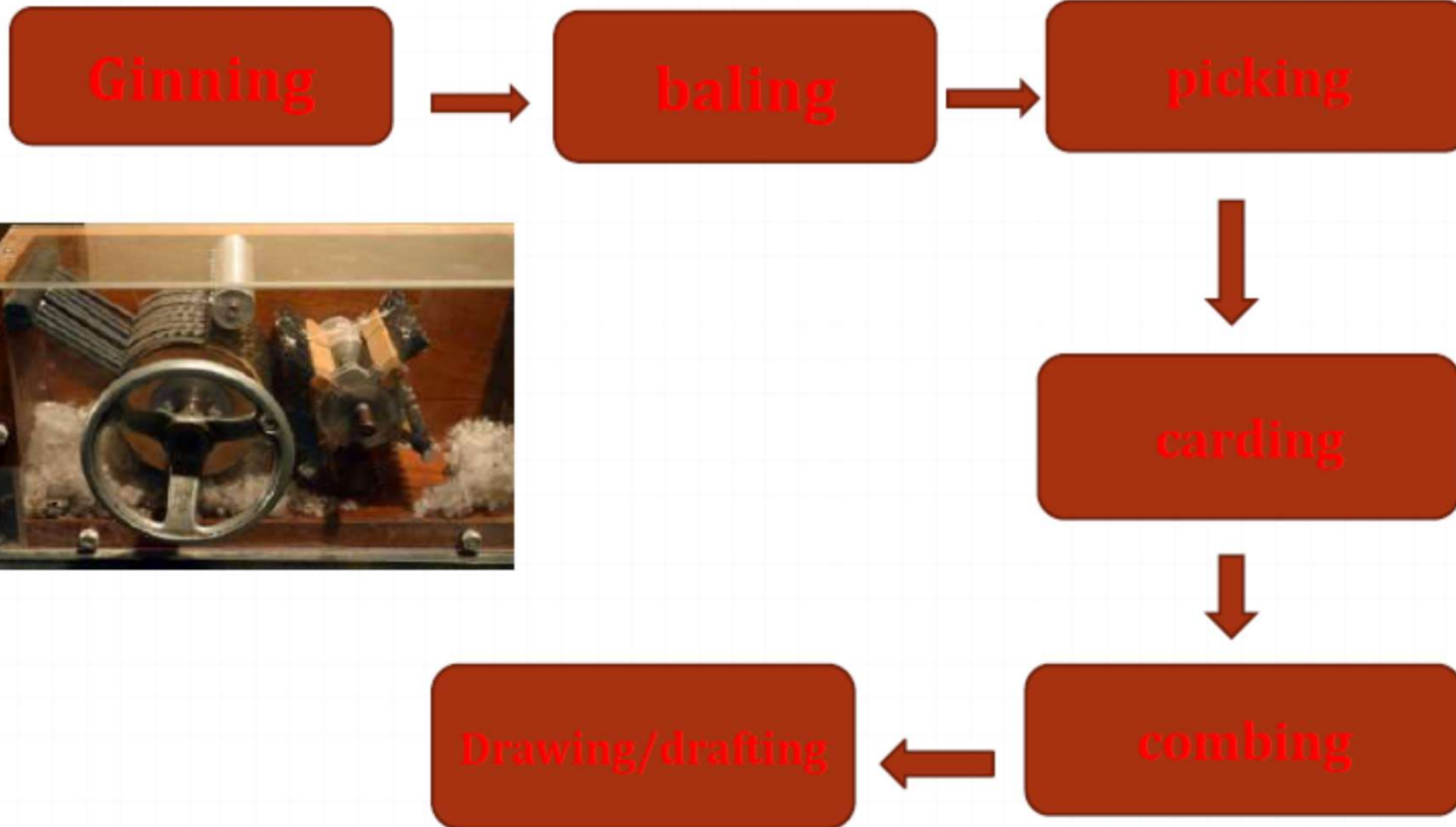
# Physical Structure of Cotton Fibre



# Chemical Composition of Cotton

- ❖ Cellulose – 91.00%
- ❖ Water – 7.85%
- ❖ Protoplasm , pectins – 0.40%
- ❖ Waxes , Fatty Substance – 0.40%
- ❖ Mineral salts – 0.20%

# Processing of Cotton Fibre



# CHARATERISTICS OF COTTON FIBRE

- ▣ Cotton, as a natural cellulosic fiber, has a lot of characteristics, such as;
- ▣ Comfortable Soft hand
- ▣ Good absorbency
- ▣ Color retention
- ▣ Prints well
- ▣ Machine-washable
- ▣ Dry-cleanable
- ▣ Good strength
- ▣ Drapes well
- ▣ Easy to handle and sew



# Physical & Chemical properties of Cotton fibre

## PHYSICAL PROPERTIES:

1. Color
2. Tensile strength
3. Elongation at break
4. Elastic recovery
5. Specific gravity

## CHEMICAL PROPERTIES

1. EFFECT OF ACIDS
2. EFFECTS OF ALKALIES
3. EFFECT OF ORGANIC SOLVENT
4. EFFECTS OF INSECTS

## Fibre Fineness/Micronaire Value

IT IS THE MEASURE OF FIBRE WEIGHT IN MICROGRAM PER INCHES OR MILLITEX.

Very fine	:	Below 3.0
Fine	:	3.0 to 3.9
Average	:	4.0 to 4.9
Coverage	:	5.0 to 5.9
Very coverage	:	6.0 and above

# Bundle Strength

- IT IS THE RATIO OF THE BREAKING STRENGTH OF A BUNDLE OF FIBERS TO ITS WEIGHT.

Description	Medium staple	Extra-long staple
Very low	70-76	93-96
Low	77-83	97-100
Average	84-90	101-104
High	91-97	105-108
Very high	98-104	109-112

# Staple Length Grade

**GRADE:** FROM 1-9. GRADE BASED- COLOUR, LEAF AND PREPARATION.

COLOUR TEST INVOLVES TWO MEASUREMENTS, REFLECTANCE AND YELLOWNESS OBTAINED ON NICKER SON – HUNTER COTTO COLORIMETER.

Description	Staple length
Short	< 21
Medium	21-25
Medium – long	26-28
Long	29-34
Extra Long	35-40

## Desire Properties for Yarn Manufacturing

<b>Fibre properties</b>	<b>Desired levels</b>
Micronaire value	3.5-4.2
%mature fibre	80 more
Bundle strength	25-28 g/tex or higher
Elongation at break	7%
Non-lint (trash) content	>2%

## End Uses and By Products

- VARIOUS FORMS OF THREADS
- WOVEN, KNITTED FABRIC AND CLOTH \
- IS USED IN HOSPITALS
- COTTON IS USED EXTENSIVELY FOR STUFFING
- TYRE FABRIC AS REINFORCEMENT MATERIAL
- LINTERS USED RAYON INDUSTRY

### **COTTON SEED IS RICH IN VITAMIN B COMPLEX AND PROTEINS.**

- COTTON OIL IS USED IN COCKING.
- THE OIL CAKE IS AN FERTILIZER AND CATTLE FEED.