

Plant Products

Fibers

Cotton

Synonyms:

- Absorbent cotton
- Purified cotton



Biological Source:

- Derived from the seed hairs of:
 - *Gossypium hirsutum*
 - *Gossypium arboreum*
 - *Gossypium barbadense*
 - *Gossypium herbaceum*

Family:

- Malvaceae

Geographical Source:

- Cultivated in India, USA, China, Egypt, Brazil, Pakistan

Chemical Nature & Constituents:

- Cellulose (90-94%)
- Waxes, pectin, fats, proteins, minerals

Identification Tests:

Iodine-Zinc Chloride Test:

- Turns blue-violet indicating the presence of cellulose.

Burning Test:

- Burns with a smell of burning paper and leaves no bead.

Uses:

- Surgical dressings, bandages, and filtration media
- Pharmaceutical applications as a filter and excipient
- Textile industry for clothing and fabrics

Jute

Synonyms:

- Hessian fiber
- Gunny fiber



Biological Source:

- Obtained from the bast fibers of:
 - *Corchorus capsularis*
 - *Corchorus olitorius*

Family:

- Malvaceae

Geographical Source:

- Grown in India, Bangladesh, China, Nepal, Thailand, Brazil

Chemical Nature & Constituents:

- Cellulose (60-70%)
- Lignin (12-14%)
- Hemicellulose, pectin

Identification Tests:

Solubility Test:

- Insoluble in water and most organic solvents.

Burning Test:

- Burns quickly with the smell of burning paper.

Uses:

- Gunny bags, ropes, carpets, and eco-friendly packaging
- Biodegradable sutures and bandages in medicinal applications

Hemp

Synonyms:

- Industrial hemp
- True hemp



Biological Source:

- Obtained from *Cannabis sativa* (bast fibers of the plant)

Family:

- Cannabaceae

Geographical Source:

- Cultivated in China, Canada, Russia, France, USA, India

Chemical Nature & Constituents:

- Cellulose (70-77%)
- Lignin (4-10%)
- Trace amounts of cannabinoids

Identification Tests:

Solubility Test:

- Insoluble in water and alcohol.

Microscopic Test:

- Presence of thick-walled fibers with a central lumen.

Uses:



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