History on origin of Textiles

* The term textile is a "~~Latin~~" word
* Textile originated from the word "Texere" it means "To weave"
* Textile refers to a flexible material composing of a Network of Natural & Artfical fibers known as yarns
* Textiles are formed by weaving, knitting, crocheting knotting and Pressing fibers together
* Textile materials like cotton, silk, wool & flax wer used in ancient Egypt, where as cotton used in India by 3000BCA
* The word cotton means "Qutun" derived by Arabic word
* ~~in~~5000 years ago
* Textile came into existent for Protection of body from cold in Northern countries like Europ, Syberia
* Textile History started from Hunting Hairy Animals
* In Textile History "Catal Hoyuk" is one of the oldest place of clothing material
* By several study on History of Textile scientest came to know that Ancient people started growing flex
* Egyption are the masters in making of textile & Fabrics by different verity of Plants like Reed, Papyrus, Palm along with Linen
* Linen is the oldest evidence ~~of~~ we have that humanbeings developed
* Linen is the ideal fibre for hoter clymat in-egypt to keep them cool

* In History of Textiles the origin of Silk is in "China

* [The chines empris was sitting under a mulbery tre and sypping a tea, suddenly the round ball fall into hot tea c after several moments the ball started unreelling long thin thrid like structure then they started to study about it & continued growing & roring of silk for further development & Then started to colouring & Dye in 13th century]

Introduction of Textile fibres

* Textile fibre is a material mainly made from Natu & Synthetic sources / man-made
* Thies materials are converted into the making of texti yarns & Fabrics, woven, knitted, Non-wovens and carpets

Fibre

Natural	man-made
1> Fibre includes plants, animals and geological process	1> synthetic fibers, Natural cell i> Regenerated ii> cellulos Acetate
2> Thes are Bio-degradable over some time	2> Thes required more time fo degradation
3> classfied accoding to there origin	3> classfied according to there Production & modification
4> Thes fibres are Eco-friendly in Nature	4> Thes fibres are undergon se Process which are not Eco-f

The textile fibres are mainly divided into 2 types

1> Natural fibres
2> man-made fibres

1> Natural fibres :-

These are fibres which are available in Nature and they are further classified into 3 types

i> Animal fibre
ii> Vegitable fibre
iii> mineral fibre

i> Animal fibre :-

* These are the fibre which are produced by the diffrent Species of Animals
* In which widly used fibres are
  a> Silk -> Silk worm, Spider.
  b> wool -> Sheep.
  c> Hair -> Goat, Horse, Rabbit etc---

ii> Vegitable fibre :-

These are the fibres produced @ grown by Plants/trees
These are further divided into 4 types

a> Seeds -> cotton
b> Bast -> Jute, Hemp, flex, Ramie etc
c> Leaf -> Sisal, Pineapple, Vanila etc
d> fruit -> coir

iii> mineral fibre :-

These are the fibres composed of a mineral substance
A general term for any Non-metallic inorganic fibres
ex:- Asbestos -> It occurs Naturally as fibres
-> used in fillers, Thermal Insulation, Fire proofing

2) Man-made fibres

These are fibres which are developed by Human as we can call them as synthetic fibres

These are classified as 3 types.

i) Natural Polymer
ii) Synthetic
iii) Non-polymer

i) Natural Polymer :-

* These are the Polymer which occur in Nature and can be extracted.
* They are often water-Based

These are further divided into 4 types

a) Protein -> vegitable
b) Regenerated cellulosic -> Rayon, Viscose, cuprammonium etc.
c) Cellulose extracts -> cellulose Accetate
d) miscellaneous -> Alignate. Rubber etc..

ii) Synthetic fibres :-

* These are the fibres mad by Humans through chemical synthesis as opposed to Natural fibres that are directly derived from living organisms
* These are formed by extruding a fiber forming substance

The Synthetic fibres are divided into 2 types

a) organic
b) Inorganic

i) Organic fibres :-

These are the fibres which are crystalline Polymers with their molecular chains aligned along the fibre axis for higher strength

The organic fibres are further classified into following

a) Polyurethane

b) Polyamides → Nylon 6, Nylon 66

c) Polyesters → Terylene

d) Polyvinyl derivatives → Halogen substituted polymers
Polyvinyl chloride
→ Polyacrylonitrile
Co-polymer
→ Polyalchols

e) Polymerised → Hydrocarbons

ii) Inorganic fibres :-

These are made from inorganic materials

These are classified into the following

a) Glass fibre

b) Amorphous fibre → Rock wool

c) Carbon fibre

d) Polycrystal fibre → Alumina fibre

e) monocrystal fibre → wollastonite &

f) Potassium titanate fibre -

Essential requirements of textile fibres :-

* The essential requirements of textile fibres to be span into yarn
* It should have minimum properties like flexibility, cohesiveness, sufficient strength
* It should have important properties like
  a) Elasticity
  b) Fineness
  c) uniformity
  d) Durability

* The essential properties of textile fibres are divided into 2 types
  1) Primary properties of textile fibres
  2) Secondary properties of textile fibres

1) Primary properties of textile fibres

The Primary properties of textile fibres is as follows
a) High length to width Ratio
b) Tenacity
c) Flexibility
d) cohesiveness / Spinnability
e) uniformity

a) High length to width ratio:

* The length of fibre alone should be atleast 100 times the diameter (width) of the fibre
* Cross section of the fibre must be Quite Smaller than the length of fibre
* The fibre should be durable & stronger in order to twisted

b) Tenacity:-

* The maximum load that can be supported by fiber
* It is measured by grams per dinner [gms/Diner]

c) Flexibility:-

* Flexibility is the nothing but easy bending @ the fibre should be flexiable @ pliable in order to be made into yarns & there after into fabric

d) Cohesiveness @ Spinability:-

* Ablity to spinn the fibre is Spinoblity.
* Ablity of the fibre to stick together during spinning
* The cohesiveness in fibres may be due to the longitudinal contour @ the cross sectional shape that enable them to adhere together
* The surface @ Skin structure of the fibre may also influence cohesiveness

c) Uniformity

* The ratio of mean length to the upper half mea length
* Limited variation in length & dia b/w fibre to fibr

2) Secondary properties of textile fibres:

The Secondary properties of textile fibres is as follows

a) Physical Shape
b) Elestic recovery & Elongation
c) Resiliency
d) Flamability & other Thermal reactions
e) Density
f) Lustre
g) Colour
h) moisture regain

a) Physical Shape:-

The physical structer of the fibre should b good as per standards @ acceptiance level

b) Elestic recovery & Elongation:

* Elestic recovery means the fibre is having to regain it original shape & size after remova external load on a body

* Elongation :- the fibre has to be stretched @ Extended when the load acts on it

e) Resiliency :-

* It is a ability to return @ spring back to the original form @ position after being bent, compressed @ stressed
* It is used as measur of Elastic property.

f) Flamability & other Thermal reactions

* when the textile fibres are hated by an ignition source the polymer molecules start to break up [This process is called Pyralysis] into smaller molecules
* The Ablity of fibre to resist the heat

e) Density :-

* It is degree of compactness of a substance
* It is expressed in grams per cubic centimeter ($\frac{gm}{cm^3}$)

ex: $\frac{\text{weight of fibre}}{\text{Length of fibre}}$

f) Lustre :-

* It is the degree of light that is reflected from the surface of fibre
* Lustre = Shiner = Lustere = Reflection of Light

g) Colour :-

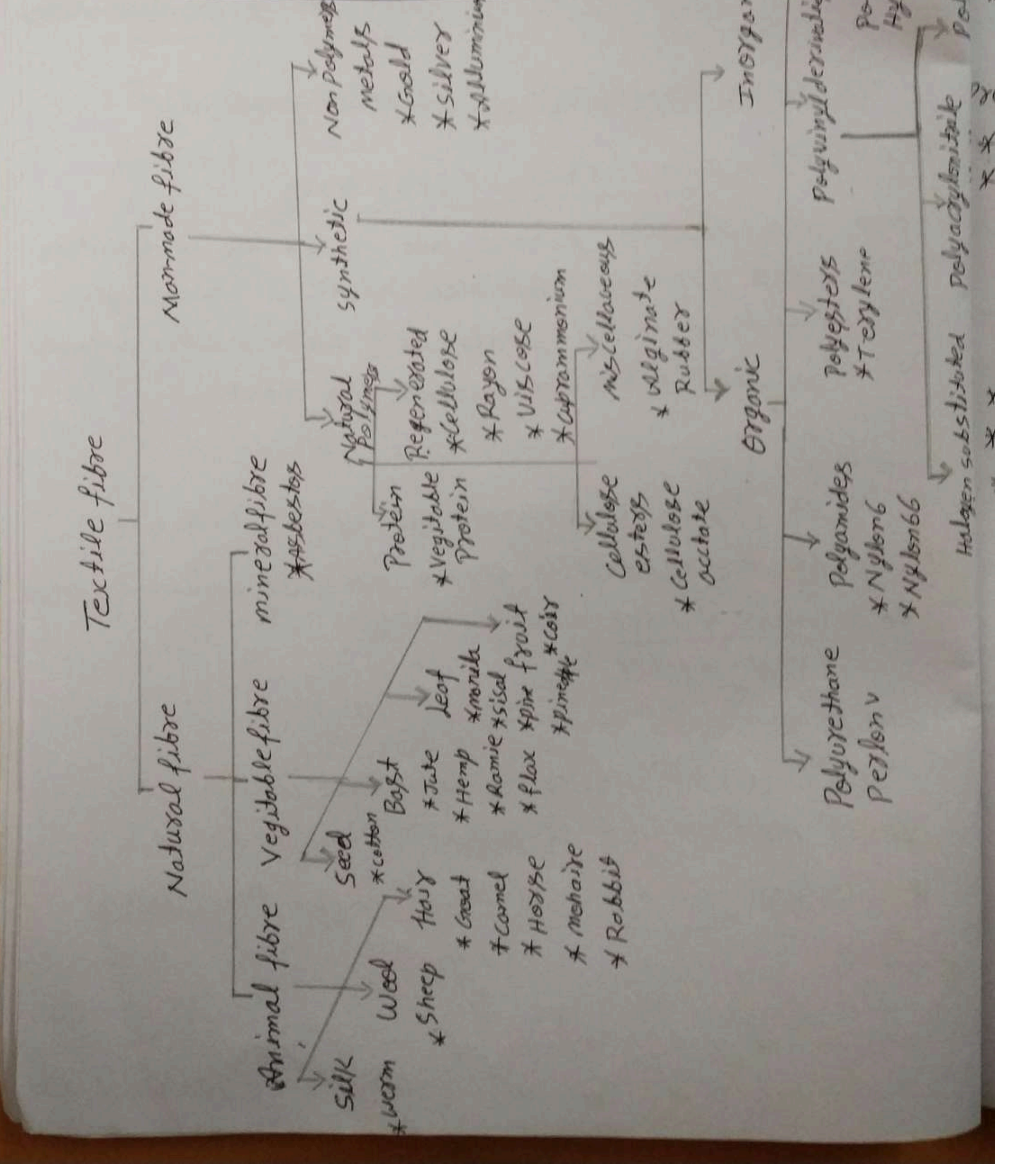
* It is a characterstic of visual Perception
* The colour of fibre indicate maturity of fibre
* The colour of fibre used to identify the Processed fibre

h) <u>moisture regain:</u>

* The percentage of water present in a textile m

* It is calculated as a percentage on the oven dry weigh

<u>Classification of Textile Fibres:</u>



Cultivation:-

* Cotton is best grown in soils with an excellent water holding capacity
* Aeration & good drainage are equally important as the crop cannot withstand excessive moisture & water logging
* The major soil types suitable for cotton cultivation are alluvial, clays & Red sandy loam

Preparatory process for cultivation of cotton is as follows

* The cultivating land should be plowed properly
* Selection of seed verity which is suitable for growing land
* Seed → ex: verity. Jaydar. ganga, kavery, BT etc
* Fertilizer → DAP. Potash. farm wast, Bio-fertilizer. Poltry fertilizer
* Pesticide → Selected carefully which donot effect for the growth of the cotton plant
* ~~plow~~ sowing distance → 1.5 - 2 mts
* Season → April-August [Depending on Geographical condition]
* Flowering season → June
* No. of seeds — 8 covered by fibre [14000 fibres per seed]
* Timing of Busting → Ball opens after 25 days of flowering
* weight of cotton Ball - 170 - 180gms
* Length of cotton Ball - 10mm to 65mm
* Diameter 11^{um} - 22 um (micron)
* No of cotton balls per plant → 15 to 20
* Colour → white to light tan
* Yield → 170kg/Acre in India, 720kg/Acre world wide
* Cultivation follows → Time planting
  → addition of soil
  → addition of fertilizer
  → weed control
  → Insects controlling
  → Irrigation
  → Defoliation

Cotton fibres:-

* It is a Seed fibre.
* It is a Natural fibre
* It is oldest fibre
* It is cheepest fibre
* Higest Percentage of fibre used in Textiles
* It is the king of Textile fibre
* It is widly used in blending

Origin:-

* The origin of cotton is 6000BC
* The first evidence of cotton use was found in India Pakistan dates from about 6000BC
* Scientes Belived the cotton was first cultivated in the in Delta
* The species used in ancient south Asia were gossy herboceum arboretum which originated in India &

History of cotton:-

* In the indus river valley in Pakistan cotton was bein grown. Spun & oven into cloths at 3000 years BC At about the same time Native egypts Nile Valley we making & wearing cotton clothing
* Arab merchants brought cotton cloth to europ about 800
* when columbus discovred America in 1492 he found Land cotton growing in the Bahama Island
* By 1500 cotton was known generally throughout the
* In 1556 - cotton seeds are planted in Florida
* Cotton was first Spun by machinery in 1730 Ingland

Insects like → cotton weevil, ball worm, pink boll worm
lygus, alphids

Insecticides → DDT, Benzene hexachloride, Aldrin, Endrin, toxophene

Diseases → * Seedling diseases
* Root diseases
* Leaf & stem diseases
* Boll rotes diseases

Cotton :- Cellulose = 88 to 96%
Fat & wax = 0.3 to 1%
Pectic substance = 0.7 to 1.2%
mineral matterials = 0.7 to 1.6%
Protein matterials = 1.1 to 1.9%

cotton = 66% seed, 33% fibre and remaining % of trash

Grading of cotton :-

* Grading of cotton varies from quality, where quality varies from place to place, Plant to plant & geographical condition
* It is dun by expert graders by matching with samples

The Grading of cotton is determined by 3 factors

1) Colour
2) Trash content
3) Ginning quality
4) Length
5) Fineness

1) Colour :-

* The colour of cotton lose its brightness when expose to wether and micro-organisum

[Colour is a pigment which is used for visual Identification]

* Colour grade Presents →
  - → white
  - → light spotted → LSP
  - → Tinged → TG
  - → yellow stain → YSP
  - → spotted → SP
  - → light grey → LGY
  - → grey → GY

2) Trash content :

* The cotton is graded by measuring the amo[unt] of Trash Impurities Present in it
* Trash Like, Leaf stems balls, Bark/Brake seed[s], grass, sand, oil & Dust, Dirt, Birds excreat etc
* Lower the trash → Higher the Spinning Val[ue]

3) Ginning Quality :

* The Process of seperating the fibres from seed called Ginning
* It is the way of measuring its specific im[pact] on fibre quality
* Higher the ginning quality leads to lower the nep formation
* neps formed by entangled knots of fibre the neps visible as dots [Nepty cotton]
* If larger clumps/bush of fibres contribute to appearance [nappy cotton]
* Grading indication to determine quality of ginned to trash content

> Length :-

* The cotton fibre is graded by the length measurment of the fibre
* Higher the length of fibre leads to more acceptance level
* It is measure by microscopes by classification with screens
* The staple length is reported as average length of the longer half of the fibres @ upper half mean length

[Process :- clamping fibre → combing → Brushing to make fibre straight & parallel]

5> Fineness :-

* It is expressed in weight per unit length
* It is expressed in terms of average linear density

$$\text{Finess} = \frac{\text{length in mm}}{\text{weight in gms}}$$

* It is denoted as the cross section dimension of the fibres

Grading of cotton in various countries like India, Egypt. US

India		Egypt		US
> Extra superfine	→	Extra	→	Strict Good middling
> superfine	→	Full Good	→	Good middling
> Fine	→	Good	→	Strict middling
> Fully good	→	Fully Good fair	→	middling
> Good	→	Good fair	→	strict low middling
> Fully good fair	→	Fully fair	→	Low middling

BT- cotton

Introduction

* Cotton is one of the major fibre cro
of global significance.
* Cultivated in tropical & subtropical region
* more than 80 countries.
* 33 million hectares
* Annual Production of 19-20 million tones
bales.
* India, china. USA, Pakistan. Uzbekistan A
Brazil, Greece, Argentina & Egypt.
* contribute nearly 85% of global Produ
* India produce around 9.0 milion hecto
* cotton is major crop in major state
Maharastra, Gujarat, M P, Punjab, Haryan
Rajasthan, AP, Karnataka, TN.
* Around 60 million people engaged
cotton production marketing and Pr
* Textile Industry (cotton): Provides Em

GEAC: Genetic Engineering Approval Committee

Government of India clearing the release of BT-cotton for commercial cultivation during 2002-2003

- Productivity is yearly 88 kg/lint/Ha
- * Intervention Productivity / 300 kg Lint/Ha
- * New Technology :- Hybridation & molecules
- * India is 3-5 times Lower then major cotton Producing countries

Reasons :-

- * 70% cotton Production ~~dogaries~~ on monsoon
- * Diverse Ecological and soil conditions.
- * Constant threat from Pests & diseases
- Biotic stress factors. Ball worms.

B-T-cotton is considered as a welcome technological step

BT-cotton Development Reasons:

* In India. 162 species of pests att
on cotton Aphids. Jassids. thrips & whitef
* Ball worms - Highly damaging
  1) Pink Ball worm
  2) Spotted Ball worm
  3) American Ball worm
* In India Rs 33.8 billion values Pesticides
are used in Agriculture. In that 16. billio
worth on cotton. But according to recen
study 10% reduction in last 7 years.

Highly skewed Pattern of Pesticide use

CROP	Area % in India	Pesticide used in India %		current pest used in work
		1995	2001	
Rice	24	17.0	22.8	13.0
cotton	05	54.0	44.5	10.2
Fruits Vegitables	13	8.1	13.0	24.2
oil Seeds	10	2.2	03.5	NA*

Although a wide variety of products are used to minimize the pest damage including ball worms. there are currently new serious problems such as resistance to pesticides resurgence of secondary pests. environmental contamination due to indiscriminate use & unspecific spurious product dumping in the market.

* To combat these problems. integrated pest managment with (I.P.M) greater emphasis on biological control has been recomanded in the absence of sound host resistance to ball worm. BT-cotton has already proved useful in countries where it has been introduced earlier In Indian context also. it is expected to give a wider base to all other protection strate in cotton

What is BT-cotton?

* The BT is the short form of ubiquitous soil bacterioum Bacillus thueringiensis
* This bacterioum is gram positive and spore forming that forms parasporal crystals during stationary phase of its growth

* The synthesized crystalline protein called Endotoxins are highly toxic to certain insects. They kill the insects by acting the Epithilium tissues of midgut of caterp

* A genotype or individual which is develo by the techniques of genetic Engineering is referred to as Transgenic. "In other w genetically engineered organisms are calle transgenic. A transgenic may be a plan animal or a microbe BT cotton refers transgenic cotton which contains En - in protein inducing gene from so bacterium Bacillus thuringeinsis

* The first transgenic cotton plant deve in 1987 in USA by monsonto, Delta & pine companies.

Transgenic cotton of 2 types

1) Ball guard

2) Round up ready cotton

Important steps in Developing BT-cotton

1) Identification of Effective gene or genes
2) Gene Transfer Technology
3) Regeneration ability from protoplasts, Callus & Tissues
4) Gene Expression of the product at desired level
5) Proper integration of genes.

Direct Benefits of BT-cotton

1) Reduced Pesticide use
2) Improved crop monagment Effectiveness
3) Reduced production costs.
4) Improved yield & Profitability
5) opportunity to grow cotton in areas of pest infestation

Indirect Benefits of BT-cotton

1) Improved populations of beneficial insects of wildlife in cotton field
2) Reduced pesticides runoff air pollution & waste from the use insectisides.
3) Reduction in labour cost & Time.
4) Reduction in fosil fuel use & Improved soil Quality

Advantages are summarised

* The BT- cotton has inbuilt genetic resistance to ball worms and is very effective in controlling the yield losses caused by ballworms to a considerable extent
* Reduces the cost of cultivation
* Increased yield improves margin profit of the farmers
* Provides the opportunity to grow cotton in areas of severe ball worm incidence
* Eco-friendly cultivation
* Reduces Environmental pollution and risk of health hazards

Risks and Potential Impacts of BT cotton

* A detailed understanding of the biology of cotton including the uses of the products derived from cotton
* Bio-chemical characterisation of the introduced Proteins, Estimation of the levels of protein

the important plant products

Feeding studies with cotton seed & cotton seed meal were conducted with rats & other animals to determine any adverse health & behavioural effects

Review and testing of cotton products used in medical and personal Hygiene products and food.

Effects of BT-cotton on the health of Animals Poultry, Human and Environment

The feeding of BT-cotton seed to animal has not been reported to have any adverse Effect Seed of BT-cotton and its cake do not have any adverse effect on digestion of animals BT-cotton seed oil have no adverse effect on Human health

The possibilities of cross pollination of BT-cotton to other species of Gossypium are Nil

It can also not outcross with tetraploid wild species such as G. Tomentosum which are found either in cultivated areas & Extremely isolated species gordons maintained at research Institute

Coir fibres:

The coir fibre is also called as coconut fibre.

It is Natural fibre extracted from the outer husk of coconut and used in Products.

* It is the fibre material found b/w the hard, internal shell and outer coat of a coconut
* It is widly grown in India, Sri Lanka, and many other irrigated countries & Tropical regions
* coir fibre falls under the fruit fibre categorie.
* The scientific name of the coconut palm is Cocos Nucifera.
* The coir fibre measures upto 30 - 35 cm length
* The Diameter of the coir fibre is 12 - 25 microns
* The harvest occurs once in 45 days after 3-5 years of Plantation
* coir fibre colour is Golden colour & Hence got the Name as Golden fibre.
* The colour may vary with white, Brown & muddy colour
* It is a cellulose fiber
*

Characteristics:

* Coir fibre is resistant to damage by salt water.
* Coir fibre is strongest fibre.
* Coir fibre is water resistant
*

Physical Properties of coir fibre

1) Tenacity → 10g/tex
2) Breaking Elongation → 30%
3) Moisture Regain at (65% RH) → 10.5%
4) Swelling in H_2O → 5% in diameter.
5) Length → 6 to 8 inches
6) Density → 1.4 g/cc
7) Diameter → 12-25 micron.

Chemical properties of coir fibre

1) water solubles → 5.25%
2) Hemi cellulose → 0.25%
3) cellulose → 43.44%
4) Lignin → 45.84%
5) Ash → 2.22%
6) Pectin and Related compounds → 3.30%

Extraction of coir fiber

* Crushing the husk in a breaker opens the fibres. By using pounding drums the coarse long fibres are separated from the short woody parts and the pith.

→ The stronger fibres are washed, cleaned, dried hackled and combed. The quality of the fibre is greately affected by these procedures.

Retting process of coir

* Husk retting is carried out by immersing coconut husk in tapes.
* Rivers and ponds for period ranging from 6 months to 1 year.
* During retting materials of the husk which bind fibres together are degraded and fibres are loosened.
* Extraction is simple and yeild fibre with polished surface properties.

Applications

* Floor mats & Door mats
* Brushes, mattresses
* Rope.
* Fishing Nets.
* animal bedding
* construction materials
* oil & fluid absorption
* Cordge, Packaging

Banana fibre

* It is also known as musa fibre.
* It is one of the world's strongest fibre
* The fibre is extracted from the stem of the banana tree where it is very durable
*

Growth and Production

* It is relatively slow cultivation process with abaca stalks taking b/w 18-24 months. to grow from the first shoots
* when it reaches maturity the hight will reach around 12-200 feet
* Once the tree has grown. every few months harvesting goes on
* Growing widly in Asia, Latin, America, & Africa But India is the ~~highest~~ Top country to grow production of Banna Next to china.

Physical properties of Banana fibre

* Tenacity -> 29.98 g/denier
* Lignin -> 15.00% [Complex organic Polymer] Important for cell walls
* Tensile strength -> 529-914
* Fineness -> 17.15 [Average fineness -> 2400 Nm]
* moistur regain -> 13%

* Elongation → 6.54
* Total cellulose → 81.80%
* Residual Gum → 41.90%
* Density → 750 – 950
* Failure strain → 1-3

Apperiance.

- The apperiance of banna fiber is similar to that of Bamboo fibre and Ramé fibre.
- The fineness & spinnability is better than the two
- The chemical composition of banana fiber is cellulose Hemicellulose and legnin
- It is highly stronger
  It has smaller elongation
- It has shiny apperance depending upon the extraction and spinning process
- It is light weight
- It has strong moisture absorption quality.
  It absorbs as well as releases moisture very fast
- It is bio-degradable and has no Negative effect on environment and thus can be categorized as Eco-friendly fiber
- It can be spun through almost all the methods of spinning including Ring spinning, open End spinning. bast fiber spinning, & semi-worsted spinning among others

End uses of Banana fibre

* These are majorly uses of banana pseudo-stem fiber are in making specialized & high quality sanitary products.

ex: Baby pamers, textiles, and papers, Bank notes, Tissues, Ropes, marin ropes, Fabrics, Garments, Handcrafts, tea bags, water purifiers.

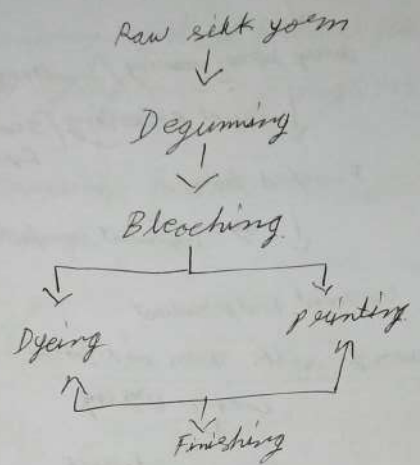
Flow chart for the conversion of cotton to yarn & fabric

Raw cotton / Plucked cotton (or) (kapas)
↓
Ginning
↓
Grading
↓

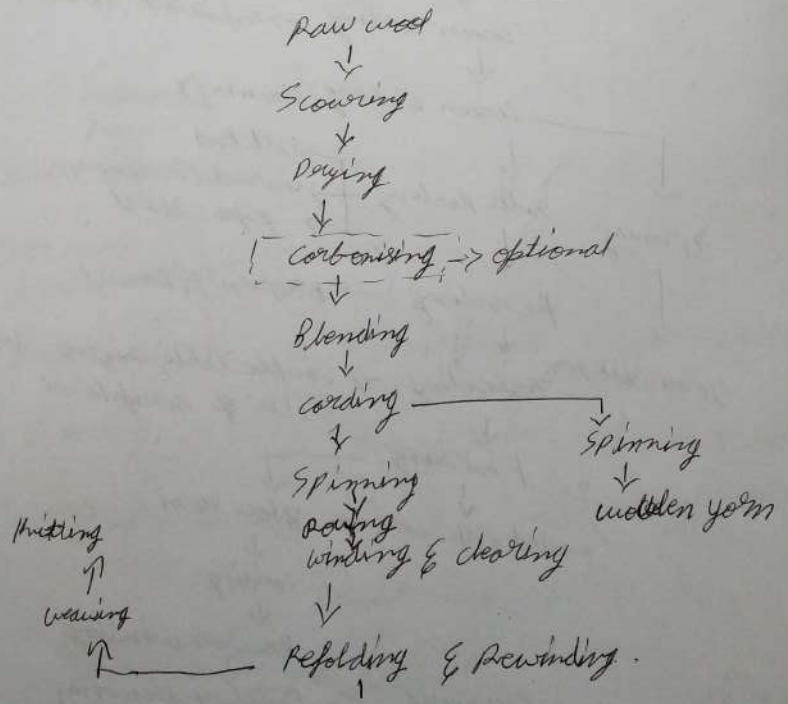
Input		Process		Output
Bale	→	Blow Room	→	Blow room lap
Blowroom Lap	→	Carding	→	Carded sliver
Carded sliver	→	Drawing	→	Drawframe sliver
2 (or) more Draw frame sliver	→	Combing / Doubling	→	Doubled sliver → optional
Doubled sliver	→	Speed frame	→	Roving
Roving	→	Ring frame	→	Ring cops
Ring cops	→	winding	→	yarn Package (or) cheese

↓
Conditioning
↓
Packing.

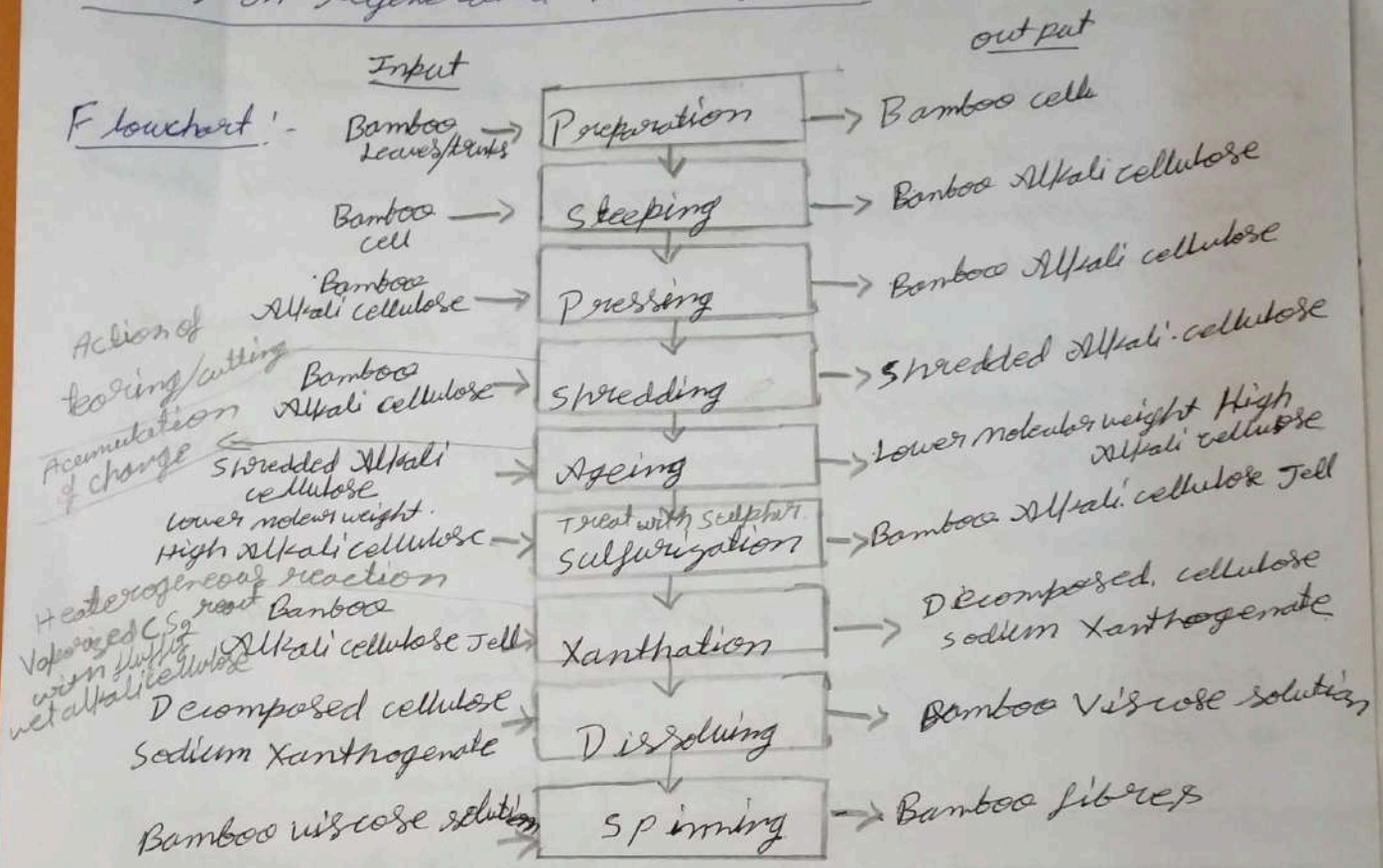
Conversion of silk yarn to Fabric



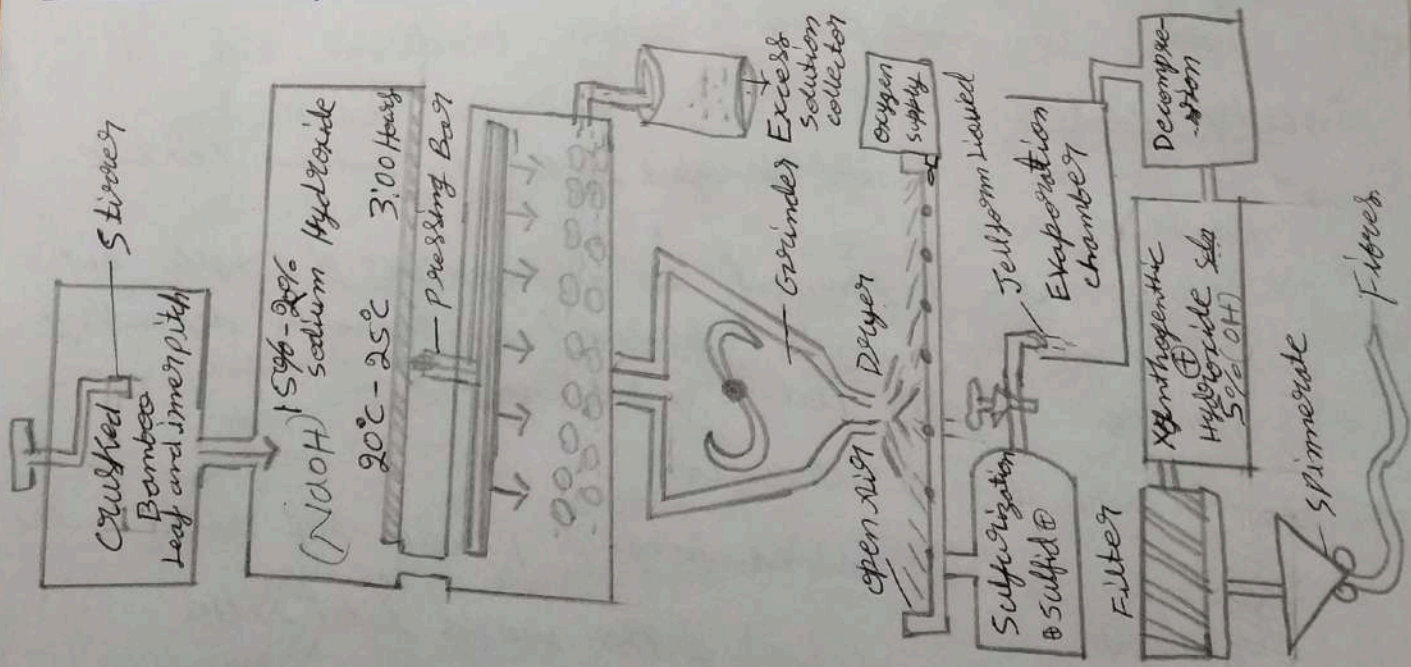
Conversion of wool fiber into yarn & fabric



Studies on regenerated Bamboo fibres.



Manufacturing Process of regenerated Bamboo fibres:-



Conversion of silk yarn to Fabric

India's Position in Natural and Manufactured fibres in Global Scenario :-

* The Textile Industry in India traditionally after agriculture, it is the only industry that has generated huge Employment for both skilled and unskilled labour in Textiles.

* The Textile industry continues to be the second largest Employment generating sector in India.

* It offers direct employment to over 35 million in the country.

* The total Textile exports in 2010 – 11.04%
  1> India is 1st global "Jute" production - 63%
  2> India is 2nd global "Silk" production - 100%
  3> India is 2nd global "cotton" production - 100%

* India is 2nd largest fibre producer in world major fibres like cotton, and other fibres like silk, Jute wool & man made Fibre

1> Cotton sectors :-

* It is the 2nd most developed sector in Indian Textile Industries

* It provides Employment to a huge No of People but its productions and Employment is seasonal depending upon the seasonal Nature of the production.

2> The Sericulture & silk sector:

* India is the second largest producer of silk in the world.
* India produces 18% of the world total silk.
* Silks like mulbery, Eri, Tasar, & muga are the main types of silk produced in the country. It is a labour Intensive Sector.

Woolen Sector:-

* India is the 7th largest producer of wool in the world
* India produces 1.8% of worlds total wool
* Indian wool are of different verity from finer to coarser finer wool like Merino wool coarser like Deccan wool

4) Jute Sector:-

* The Jute @ the golden fibre. in India is mainly produced in the Eastern states of India like Assam & west Bengal.
* India is the largest Jute producer in the world

5) Man Made Fibres:-

* The MMF sector has a share of 62% of the India's total production & provides employment to about 4.8 million people.
* This includes manufacturing of cloths using fibre @ filament synthetic yarns.
* It is produced in the large power loom factories
* They account for the largest sector of the textile production in India and 2nd largest polyester & viscose producer in the world but india ranked 6th in Exporting MMF

6) Handloom Sector:-

* It is well developed and is mainly dependent on the SHGs (Seem/Seaug Handloom Groups) for their funds
* market share is 13% of the total cloth produced in India

* Indian Textile industry is 60% cotton based
  Strong domestic demand & revival of Economic projects by 2009 led huge growth of Indian Textile Industry in December 2010 - 150% cotton price is risen by floods in pakistan & China.
* India projects high production of Textile (325 lakh bales for 2010-11) So the increase in India's share globle Textile trading of 7% in 5 years.
* Rising price are the major concern of the Domestic producers of the country.