

# Processing Methodology of Cotton and Fabrication of clothes in Textile Engineering

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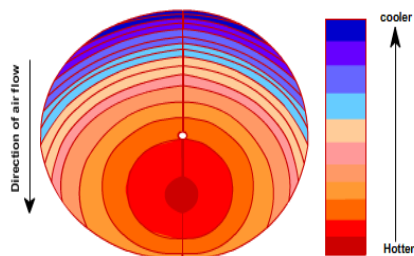
## ABSTRACT

In the textile manufacturing the conversion is based on three types fabric, textile and yarn. And at last it will be fabricated into clothes and other artifacts. Since cotton is a natural fibre it plays a vital role in the textile manufacturing. Using that we can form different sorts of material with different kinds. This paper deals with the processing of cotton and how it undergone with the various manufacturing process. Which yeild the outcome as good artifact. Also this paper discuss about the processing of other vegetable fibers.

**Key points :** carding, ginning, cotton, spinning.

## INTRODUCTION

This paper mainly focused on the textile engineering and it various processes. The process of cotton will undergoes six stages they are cultivating and harvesting, preparatory process, spinning, weaving and knitting, finishing and marketing. In the cultivating and harversting process cotton ginning is the major process in this it will separate the seeds and it removes the trash from the cotton fibre. The cotton is then compressed into bales which are about 1.5 m tall and weigh almost 220 kg. The temperature along with the spinning path and the spinning term will be depending upon the mass throughput and crystallization. And the heat capacity is depending upon the relative humidity of the air.



**FIG1: TEMPERATURE DISTRIBUTION WITH SPINNING FILAMENT CROSS SECTION.**

In this diagram the temperature distribution is not uniform in the cross section of filaments. And the temperature is very lower at the face of the filament which faces the cooling air that incoming to the filament.

## EXISTING SYSTEM

In the existing system the processing of cotton were done manually any splitting the cotton form the seeds and modified the ginned cotton into the fabric cloths is a tedious task. Even though they use the modern machines the process will be very unsophisticated to working environment therefore the industry planned to make a big change in the cotton industry.

## PROPOSED SYSTEM

In the proposed method the cotton processing may be done with the new implementation of machineries and can produce more effective scenario and it will be used for the various purpose in this news world. The processing of cotton in the textile industry is changed from period to period.

The cotton gin will separates the fiber form seeds and turned as a ginned cotton which is also known as lint. And the lint will be compressed into bales. According to the status only 33% of cottons were used as lint. The longer staple cotton is of 2½ in to 1¼ in is known as an Egyptian. The medium staple is of 1¼ in to ¾ in is known as an American upland. The short staple which is less than ¾ in is known as Indian.

S.No.	Group	Classification
1	Short Staple	20.0 mm & below
2	Medium Staple	20.5 mm to 24.5 mm
3	Medium Long Staple	25.0 mm to 27.0 mm
4	Long Staple	27.5 mm to 32.0 mm
5	Extra Long Staple	32.5 mm & above

**TABLE 1: DETAIL ABOUT COTTON BALE CARDING PROCESS**

The lints are converted into large bales and take into the textile industry. The bales are picked cleaned and then put into the carding machine. Carding is the main process of spinning because it contributes the yarn quality. The movement of the fiber which acts toward the tip of the tooth which is coupled with the centrifugal actions demands on the front angle to hold the fiber in the place during the process of carding.



**FIG2: CARDING MACHINE**



**FIG 3: COTTON YARN MANUFACTURING**

**GINNING PROCESS**

In this process the cotton is first gone through the air drier to the moisture the processing of cotton in the ginning machine improves the fibre quality of cotton. The cotton lint is removed by the saw teeth by rotating brushes and the pure cotton is moved to the warehouse for storage purpose.



**FIG 4: GINNING MACHINE**



**FIG 5 GINNING MACHINE**

**Weight main unit: 53kg (116.6lbs) Dimension:**

<b>Length</b>	<b>Depth</b>	<b>Height</b>
700mm	600 mm	1295 mm.
28 Inch	24 Inch	52 Inch

**MULE SPINNING**

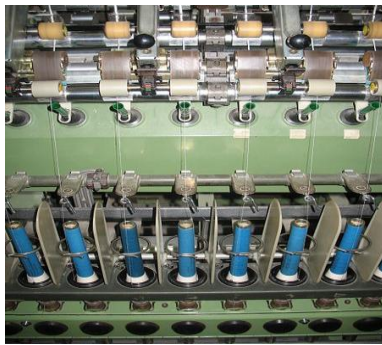
In this process it will convert the fibre into yarn using some intermittent process. The yarn sheet will be processed under the process which gives the outcomes of fabric cottons.



**FIG 6: MULE SPINNING MACHINE**

**RING SPINNING:**

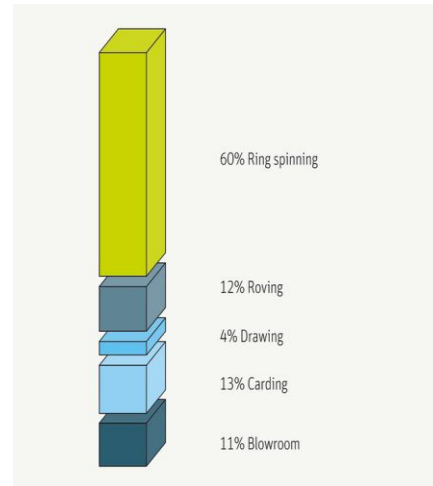
In this ring spinning process the yarn is affected by a fibre to steam which gives the outcome as fine clothes by preceding the some winding process.



**FIG 7 RING SPINNING**



**FIG 8 RING SPINNING**



**FIG 9 GRAPH FOR COTTON PROCESSING**

**CONCLUSION**

This paper focus about all the aspects of cotton process in the field of textile engineering. It encompasses everything and provided exact opinion about the textiles and various form of cotton fabrics. Also it gives the solution to get fine clothes in finished state.

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