

CHANGES OF COTTON'S NATURAL PROPERTIES IN THE PROCESS OF STORAGE AND STORAGE

A`zamjon Dusmatov

Master's Degree Student

Engineering Technology Namangan Institute of Engineering Technology

Sherzod Tokhtaev

Master's Degree Student

Engineering Technology Namangan Institute of Engineering Technology

Shaxboz Isaev

PhD student

Namangan Institute of Engineering Technology

Olimjon Sarimsaqov

Head of the Department of TTDIT, Namangan Institute of Engineering Technology, Professor

ABSTRACT: This study describes the problems caused by the distribution of the density of changes in the natural properties of cotton during ginning and storage in ginneries and their prevention.

KEYWORDS: cotton, fiber, seed, bale, density, bale, storage, injury, harvest,

INTRODUCTION

One of the problems in the cotton industry is the density of ginned cotton. The effect of the values on the technological properties of fiber spinning has not been studied.

In studying this situation, of course, it is important to know the effect of the spinning tape and the yarn on the technological properties of the fiber obtained from this cotton bundle. To date, this issue has not been studied in depth by technologists.

Figure 1 shows the distribution of the density of the layers according to the height of the baled cotton in the open and closed area. In both cases, the density of the layers varies from 60-80 kg / m³ to 225-350 kg / m³. In order to study the change in the mass content of defects and impurities in the fiber with changes in density values in these layers, changes in the degree of mechanical damage to cotton seeds, changes in the length of the staple mass of fiber and changes in the amount of short fibers. Experiments were carried out on S-6524 selection cotton harvested by hand picking of V grade. The results obtained from the experiments are presented in the form of histograms in Figures 2, 3, 4 and 5, and in almost all of these histograms, the above-mentioned technological indicators show signs of shift, albeit partially, to a negative state. shows.

In addition, Table 1 shows a significant negative change in these indicators as a result of a decrease in the shelf life of cotton by more than 2 months (for variety B). From this it can be concluded that it is impossible to store IV-V grade cotton in a pile for more than 2 months.

As mentioned above, experiments were conducted on the equipment of the laboratory HVI-900 in order to study the changes in the technological properties of fiber spinning. The results show that as the density of the layer increases, so does its length, as well as the linear and quadratic irregularities of the yarn. This is especially true when the density of the layer exceeds 200 kg / m³. Therefore, the density of the ginned cotton should not exceed 200 kg / m³, taking into account the technological parameters of spinning.

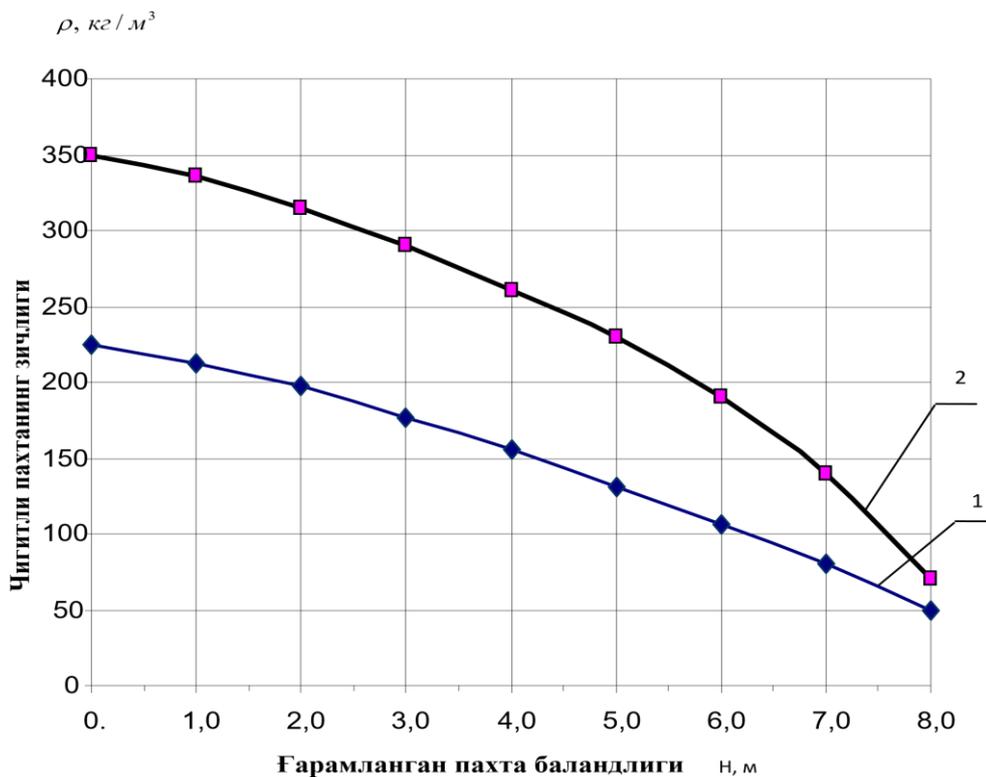


Figure 1. Distribution of cotton density during bagging

1- Distribution of cotton density when packing in a closed warehouse;

2- Distribution of cotton density in the open field

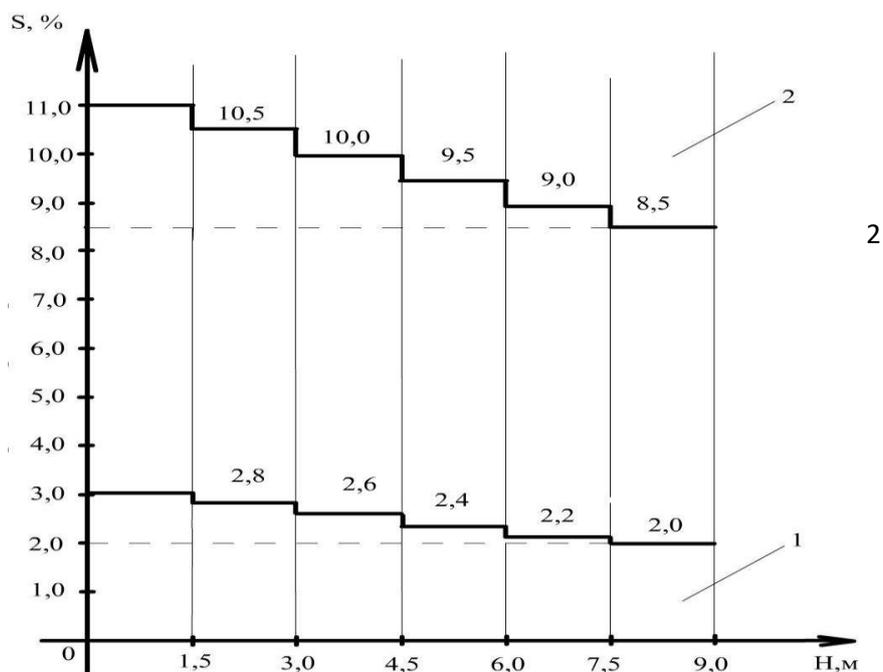


Figure 2. Defects in the fiber content and changes in the mass of impurities in the stacked cotton layers.

1-II industrial grade hand-picked cotton 2-V industrial grade hand-picked cotton

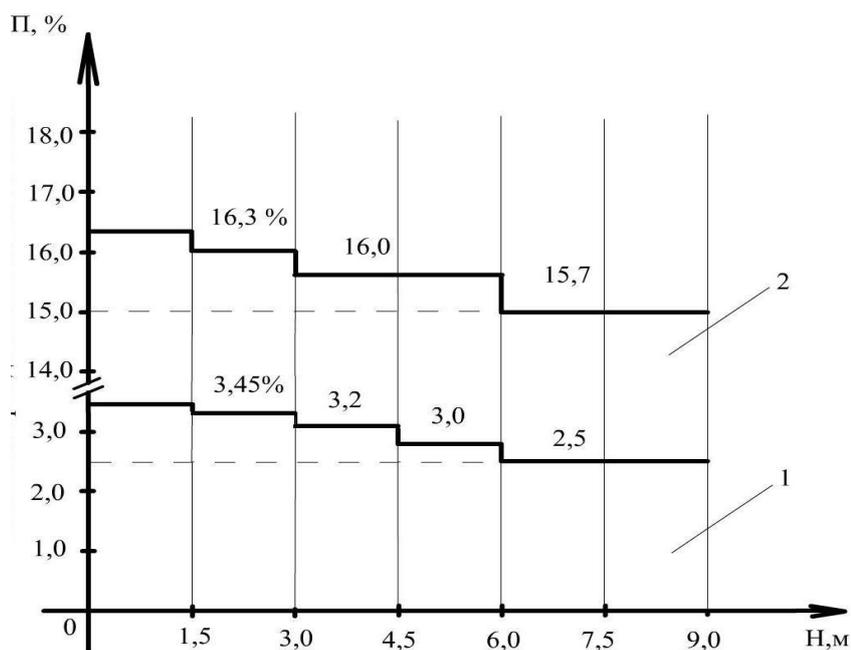


Figure 3. Degree of seed damage on stacked cotton layers

1-II industrial grade hand-picked cotton 2-V industrial grade hand-picked cotton

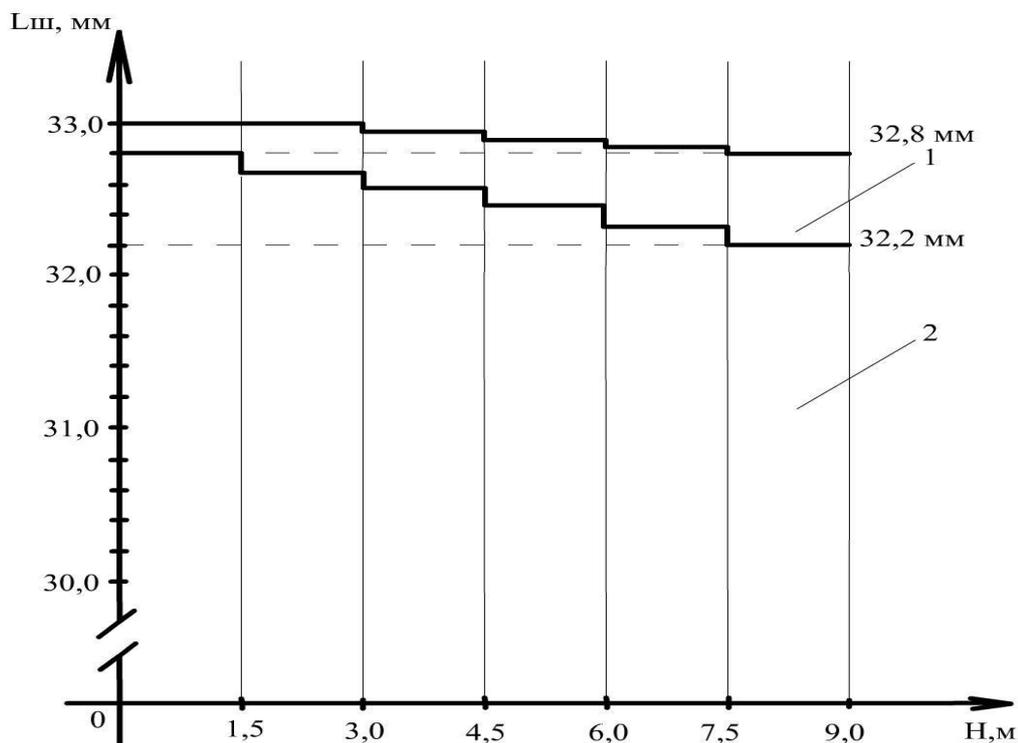


Figure 4. The change in the mass length of the fiber over the stacked cotton layers

1-II industrial grade hand-picked cotton 2-V industrial grade hand-picked cotton

1. Table

The results of technological indicators of cotton .

Fiber and seed performance	II-grade cotton			V- -type Cotton		
	Shelf life,months			Shelf life,months		
	2,5	3,0	3,5	1,0	1,5	2,0
Mass of defective and dirty compounds in the fiber – S, %	2,24	2,5	2,8	10,2	10,5	12,5
Degree of damage to cotton seeds – P, %	2,5	2,65	2,8	16,2	21,2	28,0
Amount of short fibers - K, %	8,4	8,8	9,3	13,2	15,1	18,3
Staple mass length of fiber – L _{sh} , mm	33,0	33,0	32,8	32,8	32,4	32,2

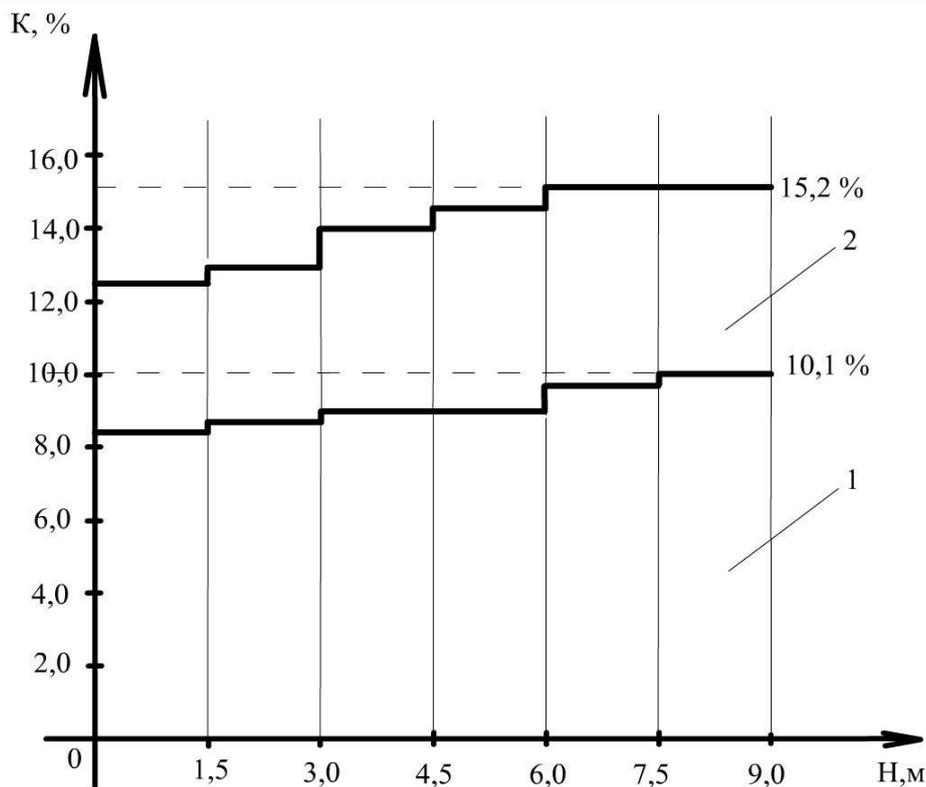


Figure 5. Changes in the amount of short fiber in the layers of cotton wool.

This means that when forming a bale of cotton in the open field, its height should be 5-6 meters instead of 8-9 meters, and grades III-V should be baled at a height of 2.5-3 meters instead of 4-5 meters, thus increasing the density. It should not be put. In a closed warehouse, the cotton is

poured at one point and shaped into a cone so that the densities in the substrate do not exceed 200 kg / m³, and the cotton is evenly distributed and distributed during the initial transfer, so that its density does not exceed 200 kg / m³.

CONCLUSION

Therefore, based on the main purpose of any scientific work in this area, it is necessary not to allow the density of the cotton layer to exceed 200 kg / m³ indoors or outdoors. This approach leads to the preservation of the natural properties of raw cotton. As a result, it is possible to ensure the quality of raw cotton during processing.

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Results of technological indicators of cotton