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STUDY OF WAYS TO DETERMINE POLLUTION AND DEFECTS AFFECTING COTTON FIELD QUALITY AND LENGTH

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Abstract:

This article examines the quality of cotton fiber in the HVI system at the Central Laboratory "Sifat" in Namangan, where samples of 1st grade cotton from the cotton variety "Bukhara-102" were taken, and the contamination and defects in the fiber were studied.

Purpose of the work. One of the main requirements for the current technological process of cotton processing is the delivery of high-quality yarn to the technology of spinning, while retaining the natural properties of raw materials.

Methods. Samples of new 1st grade cotton "Bukhara-102" were taken and weighed in the laboratory on the scales of raw, dirty, dead, unripe fibers.

Results. The article examines the techniques and technologies in the production process at ginneries. In order to produce high-quality fiber, it was studied that all mechanization tools work at high efficiency during the harvest.

Keywords: HVI system, pollution, defects, leaves.

INTRODUCTION

Today, ginneries in all regions of the country have clustered production of pre-processed technological processes of raw cotton.

Our cotton fully meets international standards in terms of color, fiber length, hardness and micronaire. This is one of the most important aspects of its purchasing power in the global market. Raw cotton growers are given the right to freely choose regionalized varieties. It should be noted that the cluster system introduced in our country at the initiative of the President has become one of the most important changes in the last three years. It is noteworthy that this new approach has quickly become the locomotive of rapid development of the agricultural sector. Today, ginneries in all regions of the country have clustered production of pre-processed technological processes of raw cotton. Our cotton fully meets international standards in terms of color, fiber length, hardness and micronaire. This is one of the most important aspects of its purchasing power in the global market. [1].

The main properties of cotton directly affect the quality of its products. If the cotton is completely unripe, the seeds are empty, immature, and the walls look like thin, long tubes. The whole of it is very thin and not very fine, it can not be made of quality yarn and it is not good. The cotton wool dries out after the blade is flushed, the edges of the flour have a ribbon-like shape that sticks together, and there is a curly-shaped hollow in it, the diameter of which is less than the diameter of the yellow flour. It is determined by the length of the cotton fiber, the flatness and thickness of the fiber, the maturity and elongation properties of the fiber and the moisture content of the cotton fiber. If the cotton is wet, it will stick to the machine parts when it is processed, and if it is very dry, the fibers will break and the waste will increase. [2].

Cotton is divided into varieties by color, appearance, and ripeness, and is traded on cotton exchanges based on these indicators. According to international standards, the quality of cotton weaving is measured on the basis of OzDst 604-2016 in the classifier and in the HVI system by measuring methods [3].

Research work has been carried out to study the quality of fibers in a modern HVI 900 SA system. For this purpose, research work was carried out to study the quality of cotton fiber from different parts of the mountain in the modern system HVI 900 SA. For him, cotton from different parts of the wedding is given in Table 1.

Table 1
Defects of cotton fiber and indicators of pollution

№	Indiactors of defects and pollutions of the fiber	Below Bunt	Middle bunt	The side of the bunt	The top of the bunt	The upper part of the bunt
1	Tresh (pollutions) %	0	0	0	0	0
2	Count (number of defects)	65	70	58	77	50
3	Area	4.0	5.0	4.4	4.5	3.0
4	Color.Grade	51-4	51-4	41-4	51-4	51-4
5	Rd (light reflection coefficient) %	65.3	67.0	69.6	65.8	66.2
6	+b (yellowing coefficient) %	7.9	7.8	8.7	8.5	8.3

The results of the research show that the area of the pile is 4.5, the number of defects is 77, the reflection coefficient is 65.8%, the yellowing coefficient is 8.5%, the area of the pile is 5.0, the number of defects 70, light reflection coefficient 67.0%, yellowing coefficient 7.8%, area under gravity 4.0, number of defects 65, light reflection coefficient 65.3%, yellowing coefficient 7.9% the area of the upper part of the pile is 3.0, the number of defects is 50, the reflection coefficient is 66.2%, the yellowing factor is 8.3% of color and class 51-4, the area of the lateral part of the pile is 4.4, the number of defects is 58 , the light reflection coefficient was 69.6%, the yellowing coefficient was 8.7%, and the grade was 41-4. It follows that in the process of ginning cotton, it was observed that the moisture content and defects of cotton fiber in the gin decreased at the top [4].

Fiber defects and contamination indicators

1-жадвал

№	Fiber defects and contamination indicators	After the stone handle	After the separator	Drying drum	After UXK 1 unit	After UXK 2 aggregate	Access to the gining machine	The saturated part
1	Tresh (polution) %	0	0	0	0	0	1	3
2	Count (count of defects)	89	51	49	42	36	30	22
3	Area	4.8	3.7	3.4	2.4	2.3	1.0	0.3
4	Color.Grade	52-2	51-3	51-4	42-2	41-4	41-4	31-4
5	Rd (light reflection coefficient) %	64.6	68.0	67.1	69.0	71.3	71.2	75.3
6	+b (yellowing coefficient) %	8.5	7.8	7.8	9.1	8.0	8.5	8.5

According to the results of the research, the area index after the stone holder was 4.8, the number of defects was 89, the light reflectance coefficient was 64.6%, the yellowing coefficient was 8.5%, the color and class were 52-2, the field index after the separator. 3.7, the number of defects is 51, the light reflection coefficient is 68.0%, the yellowing coefficient is 7.8%, the color and class 51-3 is 3.4 after the drying drum, the number of defects is 49, the light reflection coefficient 61.7%, yellowing coefficient 7.8%, color and class 51-4 after UXK 1 unit area index 2.4,

number of defects 42, light reflection coefficient 69.0%, yellowing coefficient 9.1%, color and class 42-2 after UXK 2 aggregate, the field index was 2.3, the number of defects was 36, the light reflection coefficient was 71.3%, the yellowing coefficient was 8.0%, the color and class 41 -4, the entrance area to the gin machine is 1.0, the number of defects is 30, the reflection coefficient is 71.2%, the yellowing coefficient is 8.5%, the pollution is 1%, color and class 41-4 saturated part area index 0.3, number of defects 22, light reflection coefficient 75.3%, yellowing coefficient 8.5%, impurity 3%, color and class 31-4 formed. It follows that on the parts of the cotton fiber, especially on the gin machine and the gritted layers, the defect index decreases compared to the part after the stone holder. [4].

As can be seen from Table 2, it was found that the number of fiber defects decreased under the influence of compressive forces during the cotton ginning process.It is now widely used to predict the reduction of cotton fiber defects as a result of the introduction of HVI systems. Properties such as fiber length, toughness, uniformity in length, micronaire, color, elongation at break, degree of impurity are taken into account in the index of SSP (Sount Strent Product) [4].

Weeds and impurities in cotton are defects of this fiber. If we take a sample of cotton, if we take a sample, we see that in addition to the normally matured fibers, there are mixed and defective fibers. Such defects are biological and mechanical, which occur in the growth and development of cotton, in the initial processing of cotton in cotton mills, and sometimes in the spinning mills for the production of various yarns from cotton. When such defects are many, the value of cotton decreases, waste in the production process increases, the output of yarn decreases, and its quality decreases, and more is broken in the spinning and weaving processes, resulting in lower machine productivity.

Contaminants can enter crushed leaves, bowls, cotton twigs, and so on. these are stuck to the fibers and are much harder to lose.

A mixture of long fibers, crushed husks, and unripe, non-fluffy seeds that are formed during the cleaning of fibrous dead cotton.

If the cotton plant is sick and damaged, there are also defects in the fibers, which in turn has a negative impact on the quality of the product, which is created in the ginnery and spinning mills.

Crushed seeds are formed during the initial processing of cotton. They can crumble again and turn into fibers that stick together. Such a defect is the most harmful defect for spinning mills and can also occur in spinning yarn.

Many of these shortcomings are mainly generated during the initial processing of cotton, so improving the performance of ginneries is of great importance in fiber supply.

In addition to the main products, a large amount of fibrous waste is obtained during the processing of cotton in ginneries. They are used as raw materials in the textile, chemical industries and other sectors of the economy after appropriate processing [5].

In order to determine the quality of cotton fiber in the HVI system in the laboratory of the Namangan Center "Sifat" samples were taken from Bukhara-102 grade 1 grade cotton. The purer the fiber, the more accurate and smooth the fiber quality will be. Unfortunately, the fiber content is very high in fine impurities and this has a negative impact on the quality index.

PURPOSE.

One of the main requirements for the technological process of cotton processing today is to increase the quality of fiber while maintaining the natural properties of this valuable raw material.

METHODS.

When manually detecting defects and contaminants of seed cotton fiber, a sample weighing 50 g of 0.1 grade Bukhara 102 cotton of cotton variety obtained from the UXK 1 gin was analyzed in the laboratory. During the inspection, large contaminants, debris, carcasses, seeds, and a shiny piece of uncooked fiber were removed by hand..

The separated contaminants and defects were then weighed on a separate analyzer balance and the weight of the initial sample was determined as a percentage relative to 50 g. Seed cotton weighed 50.02 g, seeds 30.80 g or 281 pieces, and dirt 1.03 g

RESULTS.

Due to the proposed changes, the deterioration of the quality of cotton during its transfer to processing machines will be prevented. As a result, the raw material is not damaged, there are no defects in the fiber content. Due to the improvement of quality, the company will be able to get great economic benefits**.**

A number of changes have been made to the separator design to further separate the fine contaminants in the cotton. In the working chamber of the separator, it is made in the form of a cone in order to increase the useful surface area of the circular mesh surface. (5)

DISCUSSION.

The article examines the techniques and technologies in the production process at ginneries. In order to produce quality fiber, their advantages and disadvantages were considered and conclusions were drawn.

CONCLUSION.

Defects and contaminants are reduced when cotton is harvested in the field. The improvement of fiber quality is mainly due to the technological processes in the enterprise. This requires the removal of weeds from the machines installed in the cotton processing process. Technological processes in enterprises will be able to obtain high quality fiber only if they meet modern requirements.

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