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« COTTON FIBER RATING, INNOVATION CURRENT DEVELOPMENTS, PROSPECTS FOR COOPERATION OF FARMS AND CLUSTERS»

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COTTON FIBER RATING, INNOVATION CURRENT DEVELOPMENTS, PROSPECTS FOR COOPERATION OF FARMS AND CLUSTERS

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Abstract: The article shows the results of six varieties of cotton seed breeding varieties grown by supplying them with high yields with advanced agrotechnical methods, production of high-quality cotton fiber from cultivated raw cotton, introduction of new technologies, as well as the classification of the resulting cotton fiber based on the international universal ISO standard, as well as conducted scientific and practical research in determining the rating place of the fiber.

Key words: raw cotton, fiber, joint, farmer, fiber rating, quality, genie machine, pneumomechanical women, textiles, micronair, research, laboratory system HVI, selection type.

Class method -Today, cotton seeds of many breeding varieties are planted on the territory of the republic. For example, while varieties S 65-24 and Namangan-77 have been widely planted for more than 35 years, such breeding varieties as Andijan-35, Andijan-36, glossy-1, glossy-2, glossy-3, Namangan-34 are relatively new varieties. In addition, our breeders create a large number of breeding varieties, conduct scientific and practical research and conduct pilot work.

Experts of the spinning enterprises of the Kalava cotton textile cluster, as well as other spinning enterprises, pay more attention to such quality indicators as the length of cotton fibers (Len - high average length), microneedles (microfibre maturation and thinness, thickness), as well as the percentage of short fibers in fibers (SFI-short fiber index). This is a true and necessary condition, with special emphasis on the optimal state of the microneedle, which is 4.0, 4.1, 4.2, 4.3,.

Cotton farms, on the other hand, want to plant cotton varieties that are primarily fertile, resistant to diseases, have a short growing season and are low in water.Grief in this case is considered quite correct and understandable.

First of all, the production of cotton fibers began with the determination of quality indicators in the HVI laboratory system in accordance with the International Universal ISO Standard.

According to 10 quality indicators, based on a 10-point system, the rating position of the fibers of the grade 6-N selection was as follows:

Table 1.

Fiber rating position	Selection variety of fibers.	Total points awarded under the HVI system.
1.	Glossy-2	91
2.	C 65-24	74
3.	Namangan-77	70
4.	Andijan -35	64
5.	Namangan -34	57
6.	C 82-86	56

Selection varieties of cotton fibers recorded according to this table 1; Quality indicators were determined based on the international ISO standard such as Len-high average fiber length, UNF-longitudinal uniformity, SFI-short fiber index, Mic-microneedle, Elg-elongation at discontinuity, Str-specific elongation strength, Rd-beam return coefficient, Tb-fiber yellowing rate, Trask-impurity code, Cnt-amount of impurities, and Area-dirty mixing area.

From the table, it can be seen that the newly created glossy-2 selection grade was given 1st place in the reting relay due to the increased uniformity of the fiber in terms of high length and length due to the gene nakautized. Despite being a relatively old variety, it is seen that the S 65-24 and Namangan-77 varieties have not lost their former quality indicators. Despite being a relatively new Variety, the varieties Andijan-35, Namangan-34 and S 82-86 ranked fourth, fifth and sixth, respectively.

Scientific and practical research is also being carried out in the direction of setting ranking positions on other selection varieties being planted in the Republic.

It is known that in the separation of fibers and seeds from cotton, that is, in the Jinning of cotton, saw gin machines are used for medium-fiber cotton, and roller gin machines for thin-fiber cotton.

In existing saw gin machines, Jinned cotton fibers were found to be quality indicators in the USA HVI laboratory system according to the 6 different selection varieties shown in Table 1. In order to study the extent to which mechanical damage is caused to the natural quality of fiber and seeds in the process of cotton ginning, according to the 6 different selection varieties of cotton listed in the table above, fibers from the seed were separated by hand without mechanical damage, that is, fibers from the seed. The separated fibers were tested in the HVI laboratory system. The saw was compared with the quality of the fibers from the Gin machine.

The comparison table showed that the cutting of fibers in the Len-high average length on a saw gin machine is on average 3-5 percent in terms of 6 homogeneous selection varieties under consideration. This pointer also has a corresponding negative effect on the percentage of SFI-short fibers in the fiber content.

In the Arrali jin machine, a condition not yet known to science has been discovered, that is, the Str-specific elongation force of fibers in the raw material chamber is decreasing by 2.0-2.4

Gs/Tex. It will be necessary to study the cause.

From 2016, work began on the creation of a fundamentally new “Pneumomechanical gin machine” at NamIET to separate fibers and seeds from cotton. A small experimental copy of the new gin was prepared and scientific and practical work was carried out, the fibers obtained were tested in the HVI system. (Selection variety glossy-2, I/1).

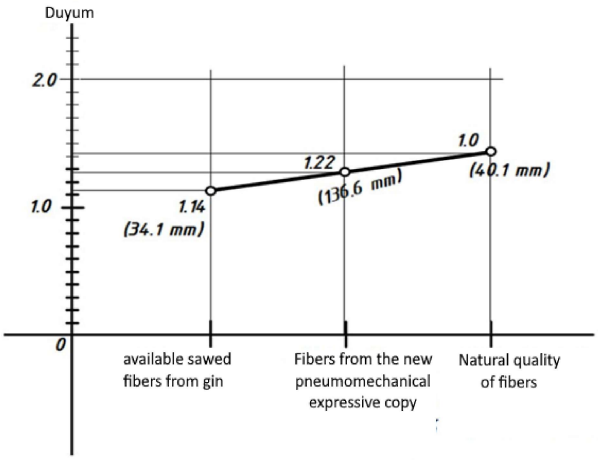
Table 2.

The results of the comparison were as follows:

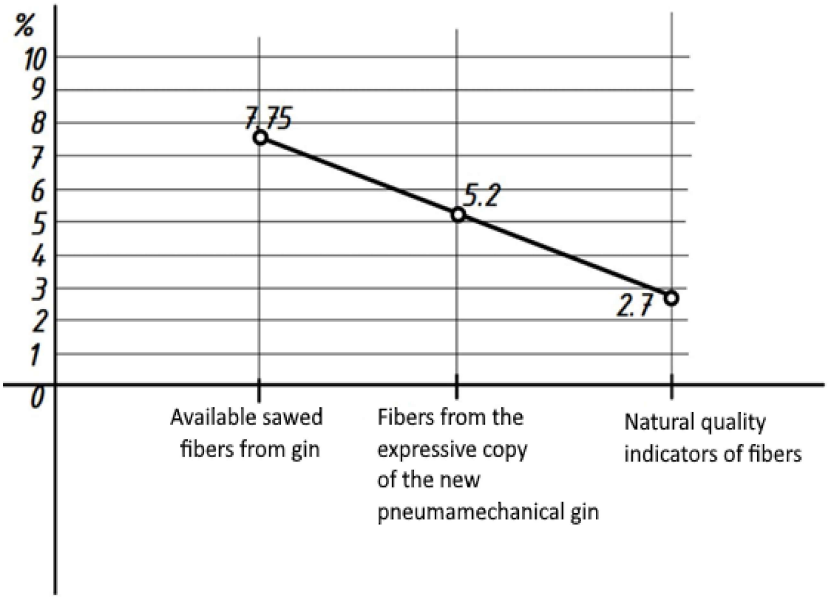
№	Fiber HVI is the name and designation of quality indicators in the laboratory system.	Quality indicators of fibers that come out of the sawed gin.	Fiber quality from the experimental machine of the new pneumomechanical gin	Fiber natural quality indicators
1	2	3	4	5
1.	Len -Upper Half Mean Length. dyuym.mm	1.14 28.9 mm (34.1 mm)	1.22 31.0 mm (36.6 mm)	1.34 34.0 mm (40.1 mm)
2.	Unf -Uniformity Index, %	84.51	84.80	85.10
3.	SFI- Short Fiber Index. Index of short fibers,%	7.75	5.2	2.7
4.	Mic.- Micronare.	4.6	4.1	4.2
5.	Elg. - Elongation, %	6.89	7.30	7.0
6.	Str -Strength Specific break strength, Gs/teks	33.20	34.30	35.60
7.	Rd- Reflectance. Beam return coefficient	77.03	79.80	82.60
8.	Tb -Yellowness.	8.86	6.80	8.10
9.	Trash -Trash Code.	3.9	4.0	4.0
10.	Cnt -Trash Count.	10	6	4
11.	Area- Trash Area. %	0.6	0.8	0.4

It will be possible to conduct a very in-depth analysis in accordance with Table 2. For example, the state of changes in Len fibers of a higher average length indicates a much more serious condition. Taking into account the fact that the existing saw gin production machine causes serious mechanical damage to the fibers, the creation of another new, innovative gin production machine becomes extremely relevant.

Len-the change in the diagram of the high average length of the fibers:



SFI- Short fiber index (%)



It is known that the percentage of short fibers in fibers is understood to be those that are shorter than 0.5 inches (12.7 mm) in length. Such fibers do not reach in the combing machine, that is, these short fibers do not reach the spinning machine.

The fact that the existing saw machine cuts the fibers in the machine and exceeds the percentage of short fibers remains a problematic situation. The natural quality of the fibers has also been proven in studies in which short fibers account for about 2.4-2.7% in holti. This condition was taken into account in the production of high-quality fibers.

In low-grade fibers, that is, grade IV-V fibers, short fibers account for 14-20%.

In low-grade, i.e., IV-V grade fibers, short fibers are 14-20%.

Innovative projects on achieving high quality and high productivity are also being prepared in cooperation with cotton farms and textile clusters. That is, in order to increase the cotton dressing to 70-75 centners, it will be necessary, first of all, to organize poultry farming on farms, to prepare it for humus by rotting manure, and to land in early spring. It will be necessary that the cotton drip irrigation system is also carried out by farms in cooperation with clusters. It is also ensured that the benefits from poultry and eggs cover much more costs, as well as the creation of new jobs.

Significant work is also being carried out by scientists from the Namangan Institute of Engineering and Technology in order to significantly improve the quality of lint obtained during lintering. The main goal is to separate and improve the quality of down in accordance with the standard requirements of Type A (Grade I, Grade II, higher, medium, dirty grade) and Type B (Grade I, Grade II, higher, medium, dirty grade).

First of all, in this direction, a device is being tested on a 5 hp linter machine to improve the quality of down by cleaning pollen on vibrating mesh surfaces. The next task was to create a vacuum cleaner and a type separation machine.

The first scientific and practical studies on a sharp improvement in the quality of down began to give their positive result. That is, moles from the dirty class are transferred to a higher class. In turn, type II switches to fluffy I-NAV. The price of torque, which is determined on the stock exchange, respectively, also rises sharply. Types A and B remain in place. Due to this, the length of the fluff does not depend on the efficiency of cleaning.

One of the real scientific and technical achievements of recent years at the Institute was the creation of a large industrial copy of the “device for extracting pure spinning fibers from industrial cotton

waste", which received high results. That is, in industry, it was possible to obtain an additional 5-5.5% of cotton fiber. Currently, measures are being taken to commercialize innovative devices worldwide and in tabular format.

Conclusion. 1) first of all, it is an urgent issue to determine their natural quality indicators on the selection varieties of cotton in the US HVI laboratory system and determine the position of reting.

2) the creation of the innovative device "creation of a Pneumomechanical gin machine" in relation to the Jinning of cotton in a new way is a huge scientific and technical achievement, which is receiving high results.

3) the project of obtaining 70-75 centners of cotton in cooperation with farms and cotton textile clusters is extremely relevant.

4) the successful start of innovative scientific and practical work in the direction of a sharp increase in the quality of fluff (lint) is also becoming relevant and significant.

5) the creation of an industrial copy of a pure, spinable fiber extraction device from industrial cotton waste is important to the economy, and its rapid commercialization will be extremely important.

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