Influence of Separating Fibrous Seed Mass to Fractions to Quality

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Abstract. ***This article describes the fourth type of medium-fiber Hampor, currently widely used in the Surkhandarya region, the lengnth is about 160-170 mg, 171-180 mg, 181-190 mg, 191-200 mg, 201-205 mg, 206-210 mg was divided into fractions by mass of fibers, the LKM equipment was cleaned of fine and dirty particles in the laboratory of the ginnery, DL-10 was isolated from the fiber on the ginning equipment, and the physical and mechanical properties of the seeds, and 20.0 texts were made from the cotton fiber at the "Sherli" small-scale spinning device at the "Pakhtasanoat Research Center" AC.***

Physical and mechanical properties of the yarn, i.e. quadratic inequality of linear density, quadratic inequality by the number of twists, quadratic inequality in strength, durability, comparative shear strength, elongation at break, elongation in discontinuity was identified with the help of modern equipment and the spinning plant was able to split fibers into fractions for the production of high quality yarn, optimal versions were proposed.

Keywords: fiberglass mass, fraction, ginning, thinness, stiffness, misalignment, variation coefficient

I. INTRODUCTION

The quality of yarn production depends largely on the quality of raw materials. This is because the quality of the fiber can be negatively affected by the process of harvesting cotton from the field to its processing, that is, storage, drying, cleaning of fine and dirt, flare-up, stripping, and pressing [1-3].

Depending to the higher, the quality of raw materials used in the spinning mills, the better the selection of the type and sequences of technological processes will be in demand.

Length and linear density of cotton fiber are important in spinning. For example, the longer the fiber, the thinner and durable yarn can be produced.

The longest fibers are made of thinner and lower quality yarn of thinner and normal stiffness, smooth, short and rough fibers. The longer the fiber, the thinner it is usually.

Therefore, every millimeter of cotton fiber is of great importance. For example, if the length of the cotton fiber decreases by 0.5 mm during the operation of the fiber, the enterprise will suffer significant losses [4-7].

Fiber maturity is one of the most important fiber properties, which affects other fiber properties, such as the strength and length of a single fiber [4-7].

Fiber thickness is also one of the main properties of spinning mills. For example, the thinner is the fibers, the more cross-section of the strands of the same thickness. As a result, it can be made of thin and thin strands. Besides this, in order to ensure the proper organization of the technological processes in the spinning mill, the process flow rates in each thick yarn are shorter, ie the product is as low as possible, and the cost is low; use modern high-speed machines and manufacture products at the spinning mill; complete automation of technological processes used in spinning; spinning machines need to increase the size of the threaded tubes and to select the right type of a mixture of removable fibers [8-12].

The linear density of the fibers, the yarn used in the spinning mills, the metric number is widely varied. When the natural fibers are formed from nature, the thickness of the chemical fibers is planned for their use. The linear density of textile threads is confirmed by special standards.

For example, the thickness of the fibers is important in the process of spinning. The nature of the threads to be removed depends on the thickness of the fiber. Thin fibers are made of thin, flat and durable threads. Thin yarn is made of fine, light fabrics, knitwear.

The thinner is the fibers, the more cross-section of the yarn of the same thickness. As a result, in the structure of the yarn the contact surface of the fibers increases and the strength of the friction increases, the strength of the yarn is small, which is significantly higher for thin threads [9].

The quadratic inequality of the strands in the density of the strands can be improved by the fact that the fibers are fractured, well removed from impurities, and evenly parallel to the fiber [10].

In addition, spinning plants need to have a certain amount of fiber in the cross-section of yarn in the process of producing high quality and demanding yarns. The linear density of the fiber is crucial for obtaining the minimum linear density strands [3].

II. METHODOLOGY

Therefore, spinning enterprises have been doing research work to get quality products. For this purpose yarns of different fibers of fibers have been obtained, and their quality characteristics are determined by the use of modern equipment. The results of the research are presented in Table 1.

Revised Manuscript Received on April 15, 2020.

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Fibers divided to fractions by weight of cotton seeds impact on quality

Table 1

o/n	Indicators	Fractionation of fractional masses on fractions, mg					
		160-170	171-180	181-190	191-200	201-205	206-210
1.	Linear Density of Thread, tex	18,10	18,70	18,70	18,30	18,40	18,10
2.	Quadratic inequality in line density,%	4,2	2,4	4,0	3,2	3,8	3,5
3.	The number of twisting threads, br / m	638	704	646	688	692	687
4.	Quadratic inequality in the number of twists,%	9,8	7,9	9,2	9,1	9,0	8,8

Based on the results of the test, Figure 1 shows the variation in the effect of the fiber cotton mass on the linear density of the strands and the quadratic inequality in the number of twists.

Figure 1. Influence of strands on linear density and quadratic unevenness of yarns in fractions by fibers mass

1- quadratic inequality by linear density; 2- quadratic inequality by the number of twists.

III. RESULTS AND DISCUSSION

Comparing the results of the tests with the fiber yarns weighing 160-170 mg, the quadratic inhomogeneity of the yarn obtained at 171-180 mg fibers is 42.9%, the number of twists is 19.4%, and the fiber is 0.4. quadratic unevenness in yarn density of 181-190 mg, weighed by 4.8%, number of twists by 6.1%, quadratic inequality of linear density of 191-200 mg of fiber seeds on 23.8% quadratic inequality by the number of twists by 7.1%, the linear density of the yarn obtained by 201-205 mg fiber fiber by 9.6%, the square inequality by the number of twists by 8.1%, the fiber seeds mass by 206-210 mg, the quadratic inequality of the yarn obtained on the line density decreased by 16.7%, and the square inequality by the number of twists decreased by 10.2%.

It can be seen that the quadratic inequality in the linear density of the threads and the number of twists is higher than that of the other fibers when the fiber mass is 160-170 mg, 181-190 mg and 201-205 mg.

It is difficult to analyze the unevenness of spinning products. There are many types of inequalities for spinning products: the formation of the first spinning phase and the subsequent spacing and the addition of new types of inequalities.

Yarn inadequacies include a number of components and the effects of various stages of spinning in the spinning production. Different types of inequalities are interconnected.

It is important to test and control the inadequacy of spinning products and to identify the causes and timing of the discrepancies.

The longer the yarn is twitred up in spinning machines, the greater will be the discontinuity of the yarn.

The longer the yarn is wrapped up in spinning machines, the greater the discontinuity of the yarn. As a result of the yarns breakage, the employment of the workers will increase as well as the decrease in the productivity of the machines.

In addition, the length, durability and linear density of the fiber are crucial for the production of high quality yarn at the spinning factories.

The quality of the fibers can be made from high quality yarn. For this purpose, it is necessary to choose the right raw materials, as well as to store the cotton seeds at the ginneries, to dry them, to clean, to separate the fiber, to create optimal conditions for the cleaning of the fiber.

Besides this, the mechanical properties of the yarn, divided into fractions by fiber mass were determined by modern equipment.

The results of the research are presented in Figure 2-4.

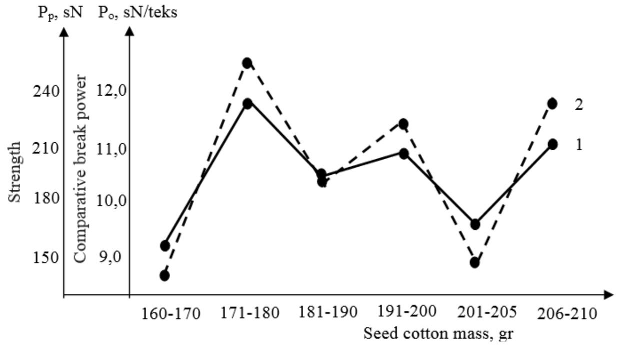

Figure 2. Effect of yarn stiffness and relative tensile strength on fractional mass fractionation.

1- strength; 2- comparative break power.

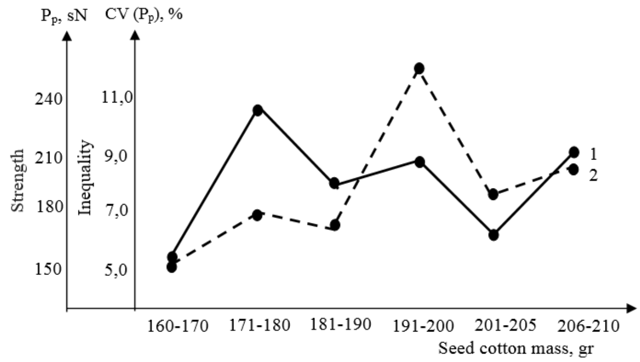

Figure 3. Effect of quadratic unevenness on the strength and durability of threads in fractions by fiber mass.

1- strength; 2-quadratic inequality on strength.

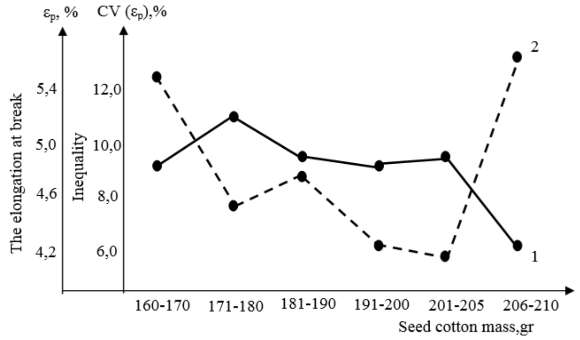

Figure 4. The quadratic inequality in elongation and elongation of the yarn when dividing them into fractions by the mass of fibrous seeds.

1- elongation interrupt; 2- elongation on the breakage.

Comparing the results of the test with the values of yarn from 160-170 mg of fiber seeds, the yarn obtained at 171-180 mg of fiber seeds has a robustness of 34.9%, a relative dislocation strength of 32.7%, and a quadratic inequality of 26; by 1%, elongation at 11.6%, the quadratic inequality on the extension decreased by 40.3%,strength of yarn obtained at 181-190 mg fibrous mass increased by 19.7%, tensile strength by 17.0%, quadratic inequality by 17.8%, elongation at 0.2%, quadratic inequality on elongation,strength of yarn obtained with fiber mass 191-200 mg decreased by 27.4%, relative tensile strength by 26.6%, quadratic inequality by 56.6%, elongation at 7.0%. increased quadratic inequality by 52.0%. strength of yarn obtained by weight of cotton seeds 201-205 mg increased by 2,3%, relative tensile strength by 1,1%, quadratic inequality on strength by 29,1%, elongation at discontinuity by 1.7%, quadratic inequality on elongation, strength of yarn obtained by fiber mass 206-210 mg increased by 27.8%, relative tensile strength increased by 27.8%, quadratic unevenness by 31.1%, elongation at 9.4%. and the quadratic inequality of elongation increased by 13.1%.

IV. CONCLUSION

1.Defined that the quadratic inequality in the linear density of the strands and the number of twists is higher than that of the other fibers when the fiber mass is 160-170 mg, 181-190 mg and 201-205 mg.

2.Defined that the threads were robust with a high mass of 171-180 mg, 191-200mg and 206-210mg of fiberglass, compared to other samples.

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