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Analysis Of Tanda Yarn Fiber Quality Indicators In Cotton Yarn Hardened Fabric Production

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ABSTRACT

This article analyzes the indicators in determining the quality of cotton fiber in the production of cotton yarn. For the analysis and research, we used the characteristics of the fiber of the selection cotton varieties, which differ sharply in terms of indicators. The system calibration procedure is used to determine the fiber quality. Differences in fiber performance in equipment have been found to affect the quality of yarn in spinning mills. An analysis of the theory of factors influencing tissue virility is presented. It is shown that the differential equations of the yarn, in which the law of deformation of linear and nonholonomic bonds remains linear, are nonlinear.

KEYWORDS

Cotton yarn, Hardened fabric, cover, lining, selection, virginity.

INTRODUCTION

The quality of ready-made clothes and knitwear, that is, their appearance, shelf life, are inextricably linked with the properties of the yarn in the fabric used in their production.

Quality indicators of textile hardened fabrics are important. Nowadays, due to the abundance of competitive products, quality products occupy the market. Consumer textiles are definitely in terms of appearance, durability and low body cost.

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In the production of lightweight hardened fabrics, the use of fabric cutting on the surface of the fabric is shown. Although the density of the woven fabric with this weave is relatively low, the quality of the woven fabric meets the requirements for durability [1].

Changes in tissue shear report, density, and linear density of yarn as a result of analysis and research in determining the virginity of tissue produced using tissue properties indicators, the method of determining the virginity of the fabric is one of the most important properties of the garment industry, and examples from experiments show that virginity is one of the most important indicators [2].

The properties of Tanda and weft mock yarns, in turn, depend on the natural properties of the fibers, their length, the technological properties given during the spinning process [3-12].

Considering the yarns (tanda and weft yarns) and the above-mentioned and many other properties of the fabric (for example, resistance to sunlight and moisture, etc.), there are considerable difficulties in choosing avra and lining fabrics with mutually compatible properties [11 -12].

THE MAIN FINDINGS AND RESULTS

The resistance to twisting and bending of the threads (virginity) is small compared to the resistance to elongation, and therefore they can take complex geometric shapes under the influence of external forces. This is the main reason why research on yarn dynamics lags far behind, for example, the theory of rods. The differential equations of thread motion must satisfy both the initial and boundary conditions, as well as the holonomic and nogolonomic bonding conditions [2, 5, 6, 8, 9, 13, 15]. Holonomic and nogolonomic bonds lead to nonlinearity of differential equations of yarns with linear deformation laws [5-8, 13]. This, in turn, limits the possibilities of analytical solution of differential equations of yarn motion. Because of this, most studies consider yarns to be an environment that can only resist elongation.

One of the main characteristics of some natural fiber yarns is that they are spun from short fibers. The fact that the threads are spun from short fibers has a strong effect on the law of their deformation. One close study on this topic [10] was conducted in the study. Here, the elongation diagram of a composite material consisting of thin, short, and flexible wire fibers is based on the location of the wires in it and its deformation properties. To do this, the properties of the composite material and the wires pulled from it are compared, as well as the length of the wires together in the composite.

Currently, the quality of cotton fiber is determined by ginneries, spinning mills and laboratories for certification of cotton fiber in Uzbekistan. Currently, the quality of cotton fiber is determined by the HVI 900 SA and HVI 1000 systems of the Swiss company Uster Technologies AG. The equipment must be in a standard climate in the room before testing. Standard climatic conditions should be air temperature 21 ± 10 C, humidity 65 ± 5% [11].

After the modules of the HVI systems were calibrated in the prescribed manner, experimental tests were performed. Experimental samples of three varieties of Namangan-34, S-6524 and Andijan-35 cultivars grown in Namangan region were identified.

The experiment revealed the quality of three varieties of Namangan-34, S-6524 and Andijan-35 grown in Namangan region.

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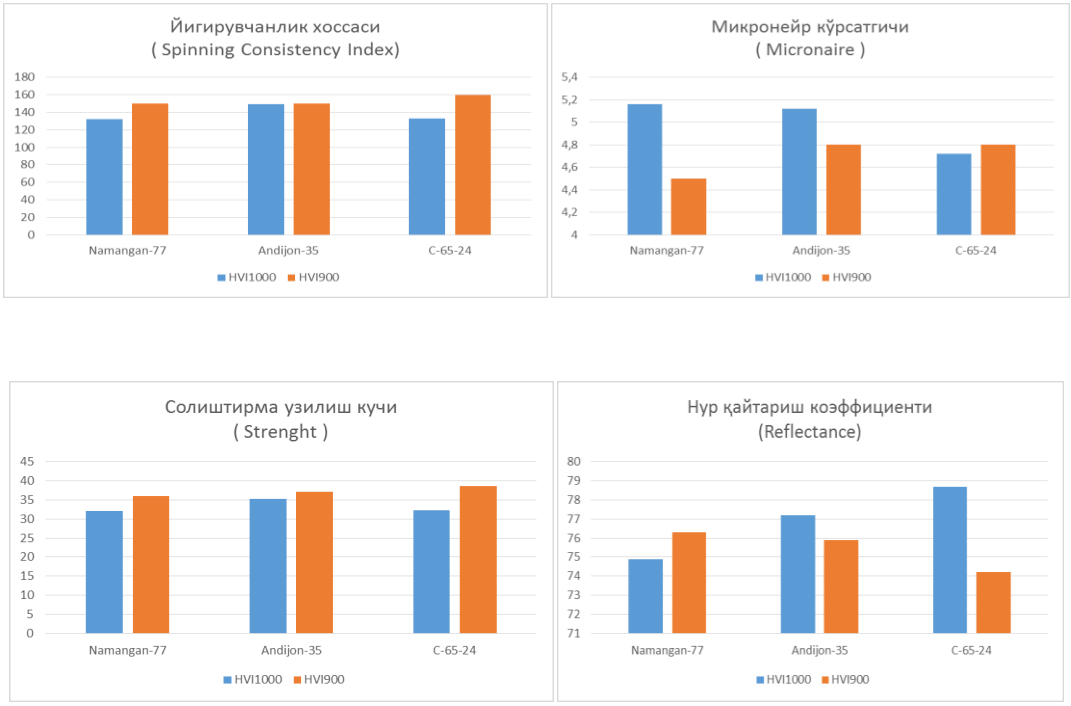

Figure 1. Twisting properties of fibers, micronaire, specific breaking strength and light reflectance coefficient indicators.

The spinning characteristics of the fibers in the graphs presented in Figure 1, microneir, tensile strength and light reflectance, are in accordance with the standard requirements. The micronair performance of the Namangan 77 and Andijan 35 fiber samples in Figure 2 is relatively different from the standard requirement, but it is also possible to produce 20 Tex yarns from this fiber. But these differences can hurt the economy of the spinning mill in the fiber procurement process.

CONCLUSION

As you can see from the graph above, some of the fiber quality metrics defined in the HVI-900 and HVI-1000 systems differ from each other. The difference in these parameters and the effect on the quality of the yarn in the spinning mill can be explained as follows:

Comparing the SCI in the two systems, the Namangan-77 selection variety differs by 18, the Andijan-35 selection variety by 1 and the S-65-24 selection variety by 27. This figure definitely creates a hesitation problem in the spinning mill as it determines the spinning ability of the fiber in spinning and has a negative impact on the quality of the yarn.

- Comparison of Namangan-77 selection variety by 2.5, Andijan-35 selection variety by 0.3 and S-65-24 selection variety by 0.1 compared to "Mic" has a negative impact on the quality of yarn at the spinning mill, and also recognizes cotton fiber. is also considered to have a negative impact on price valuation.
- In comparison with the "Str" indicator, the difference between Namangan-77 selection variety 4.1, Andijan-35 selection variety 2.2 and S-65-24 selection variety 6.5 is due to the breaking strength of the yarn in spinning and the increase or decrease in the number of breaks in the production of semi-finished products negatively affects the share of output.

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- The fact that the indicator "Rd" differs by 2 among all selection varieties when comparing the two systems, and the indicator "+ b" differs by an average of 1 from all selection varieties, creates problems in the formation of fiber mixtures in spinning. Difference in the above figures affects the total cost of total cotton fiber. These fibers are woven from a yarn obtained from a tanda yarn from a pile fabric. Their qualitative indicators are analyzed.

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