

Investigation of Factors Influencing the Properties of Spun Siro Strip

RUZIBAEV NURIDDIN NURALI O'G'LI, ISAKULOV VOXID TOLAGANVICH

Tashkent Institute of Textile and Light Industry (Uzbekistan)
Tashkent Institute of Textile and Light Industry (Uzbekistan)

ABSTRACT: This article examines the physical and mechanical properties of 20-text Siro yarn spun from cotton, viscose and cotton, polyester fibers. The results from the experiment were processed and compared with Uster Statistic indicators.

KEY WORDS: Cotton, Viscose, Polyester, Spinning, Siro, Yarn, Snow,

I. INTRODUCTION

The experience of spinning mills has shown that the chemical. Since the basic properties of the fiber are similar to the basic properties of cotton fiber, it is more economical to obtain yarn in a simple (snow) spinning system, as the costs are much lower than in other systems. Therefore, the machines and spinning plans used in the snow system are fully utilized.

However, due to the fact that some of the properties are slightly different from the properties of cotton fiber, these properties are taken into account in the selection and organization of the technological process. Fabrics made from synthetic fibers mixed with pure and cotton fibers are beautiful, durable, affordable and inexpensive. The importance of fabricated fibers and cotton yarns as raw materials in the textile industry is growing and their share in the national economy is growing. [1, 2, 3].

II. ANALYSIS OF EXISTING FILTERING MATERIALS AND RESEARCH RESULTS

Experimental yarn samples were produced at the foreign enterprise "OSBORN TEXTILE" before the spinning process Siro yarn was produced on the basis of re-equipment of Zinser-350 spinning machines in the training and production laboratory of the department of "Spinning Technology".

Table 1

Spinning plan of a foreign company OSBORN TEXTILE

№	Name and brand of machines	Product linear density, tex, ktex	Number of additions, d	Number of stretches, E	The amount of cooking	The speed of the extracting working body		Theoretical productivity Kg / hour
					K Here/m	V m/min	n min ⁻¹	
1	Shaving machine DK 803	5.350				150		48.3
2	Piltation 0 SH 802 / DC	5.350	6	6		550		177.2
3	Combining the piles E 86	71.200	24	1.53		110		368
4	Re-scraping E 80	5.350	8	104			450	62
5	Piltation 1 RSB-D50	5.100	6	6.27		550		177.2
6	Getting ZINSER SPEED	903 923	1	5.65 5.52	70 65		1200	52.3

Table 2

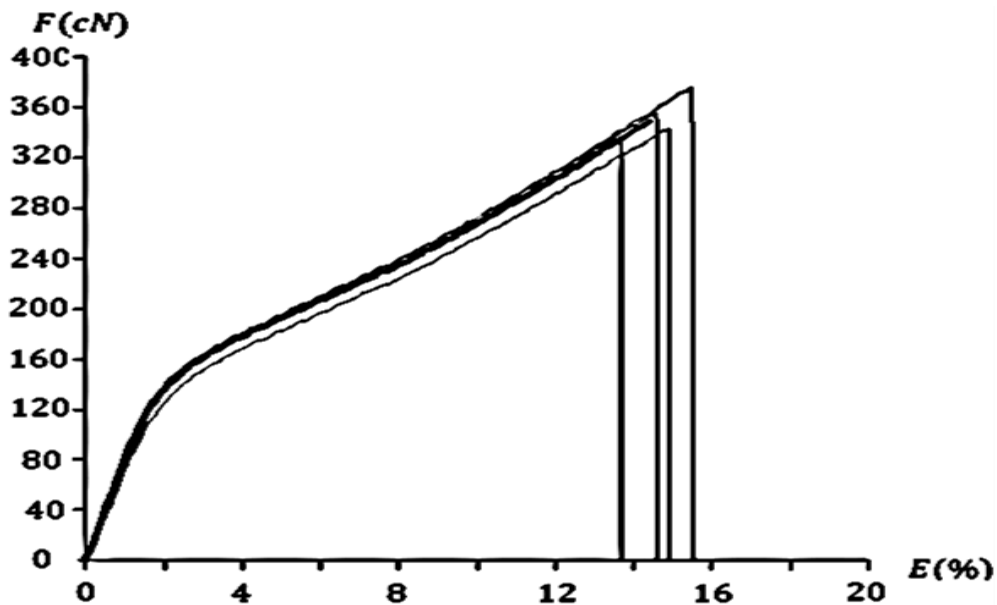
№	Name and brand of machines	Product linear density, tex, ktex	Number of additions, d	Number of stretches, E	The amount of cooking	The speed of the extracting working body		Theoretical productivity Kg / hour
					K Here/m	V m/min	n min ⁻¹	
1	Spinning Zinser 350	20	1	60	974			0.021
		20	1	50	934		11.6	

Yarn samples were taken on a Zinser-350 ring-spinning machine in the training laboratory of the Department of "Spinning Technology" TTESI. To do this, the machine was redesigned accordingly and the twist of 20 tex yarn from 70/30 cotton / viscose fiber, twist $k = 927$ b / m and twist of 20 tex yarn from 60/40% cotton / polyester mixture was $k = 832$ b / m. Samples were taken.

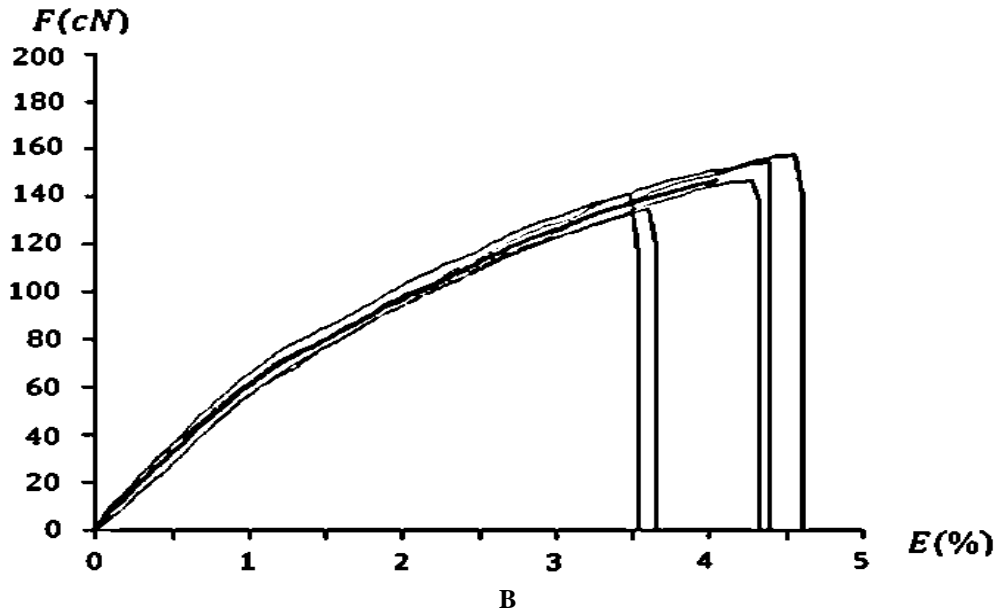
III. EXPERIMENTAL RESULTS

Therefore, in Surkhandarya region, Scientific research was conducted to determine the cleaning efficiency of a Preliminary experimental yarn samples were taken in the study of the spinning of cotton and chemical fibers. In other words, the quality of cotton / viscose and cotton / polyester blend yarns was compared with the Uster Statistic-2013 standard.

In this case, the yarn obtained by loop spinning was tested in the laboratory "CENTEX.UZ" on the test equipment Statimat-C and obtained the following.



A



**Elongation graphs of yarn samples
A-cotton / viscose mixed siro strip; B-cotton / polyester blended siro strip.**

IV. CONCLUSION AND FUTURE WORK

Quality indicators of cotton / viscose, cotton / polyester blended yarn

Indicator name	Cotton / viscose		Cotton / polyester	
	Average -X-	Coefficient of variation -CV-	Average -X-	Coefficient of variation -CV-
Elongation	14.57 %	9.69	4.13 %	11.65
Breaking force	351.55 cN	5.93	148.75 cN	6.20
Specific breaking strength	17.58 cN/tex	5.93	9.92 cN/tex	6.20

According to the experiment, the specific tensile strength of 70/30 cotton / viscose and 60/40% cotton / polyester blend yarn exceeded the given Uster Statistic-2013 standard and was found to affect the quality of the yarn.



ISSN: 2350-0328

International Journal of Advanced Research in Science, Engineering and Technology

Vol. 7, Issue 9 , September 2020

REFERENCES

1. Research into New Uses of Natural Fibres FAO Consultation on Fibres, Poznan, Poland, INF, 2001.
2. Tyagi GK, Bhowmick Manik, Bhattacharyya S., Kumar R., Effect of spinning conditions on mechanical and performance characteristics of cotton ring- and compact-spun yarns / IJFTR Vol.35 (1) [March 2010], 21-30 .
3. Roziboyev N.N., Isakulov V.T., Yarashov S.N., Roziboyev R.N. Republican online scientific-practical conference "Physical and mechanical properties of natural and chemical fiber yarns" "Further development of the textile and clothing industry and innovative approaches to training." Namangan - 2020.
4. Sh.A.Korabaev, B.M.Mardonov, S.L.Matismailov, Sh.F.Makhkamova, N.N.Rozibaev "Determination of the law of movement of a thread in the cooking intensifier". NamMTI ITJ 2019.
5. Isakulov V.T., Burnashev R.Z., "Technology of new types of yarn production" GKNT - 2001, Tashkent - 2001.