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STATISTICAL ANALYSIS OF LOCAL WOOL FIBER PRODUCTION, PROPERTIES AND USE IN TEXTILE INDUSTRY

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Abstract
In this article, the state and statistical analysis of local wool fibers grown in our country today, and their physical and mechanical properties are studied.

Keywords: statistical, analys, local, wool, fibers, country, physical, karakul, mechanical, republic, sheep, Jizzakh, Navoi, Bukhara, diameter, deviation, mic, variation.

Introduction

The growth of wool production in the world and its trade in the world market during the period of 2021-2026 by an average of 4.8% per year determines the increase in the volume of processing of this fiber in the textile industry [1]. 16% of the fabrics used for clothing in the world are wool.

As the target parameters for the development of cattle breeding in the republic for 2021-2025, the increase of wool production by 23086 tons in 2025 has been determined. The main part of the wool produced in our republic is coarse wool, which contains a large amount of non-fiber waste. In order to solve this problem, the development of effective technologies for the primary processing of wool fiber, in which the study and research of the possibilities of preserving the consumer properties of the finished fabric, and the production of yarn from washed wool fiber is an important strategic task.

Animal husbandry is the main source of wool production, including sheep, cattle, goat and camel breeding. According to the State Statistics Committee, as of January 1, 2022, there are 2,360,250 sheep and goats in the Republic. 35,259 tons of sheep's wool. According to state statistics for the years 2022-2025, the production of wool fiber in our country is expected to reach 42,000 tons [2]. Figure 1.

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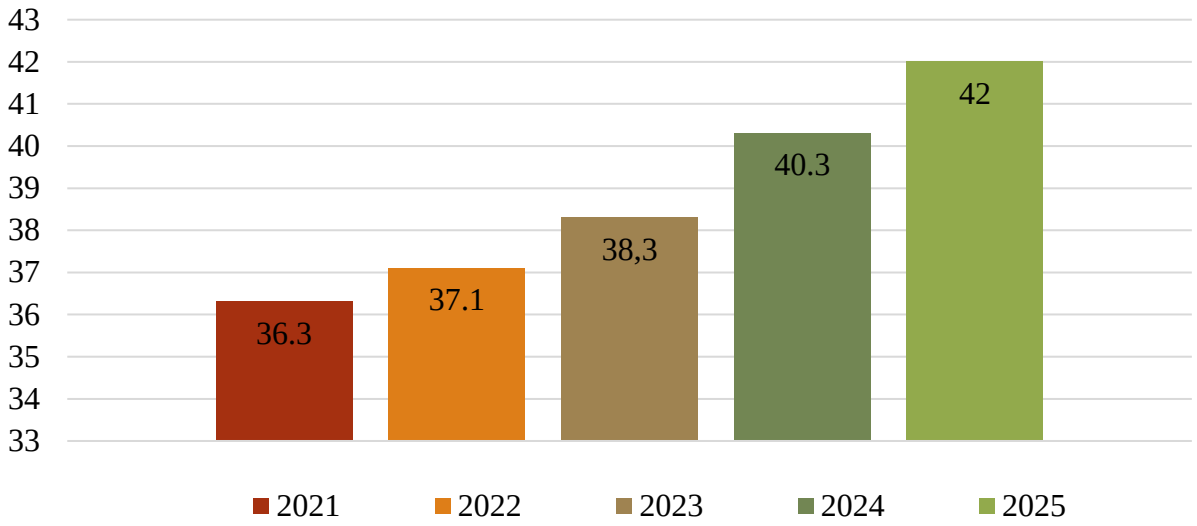
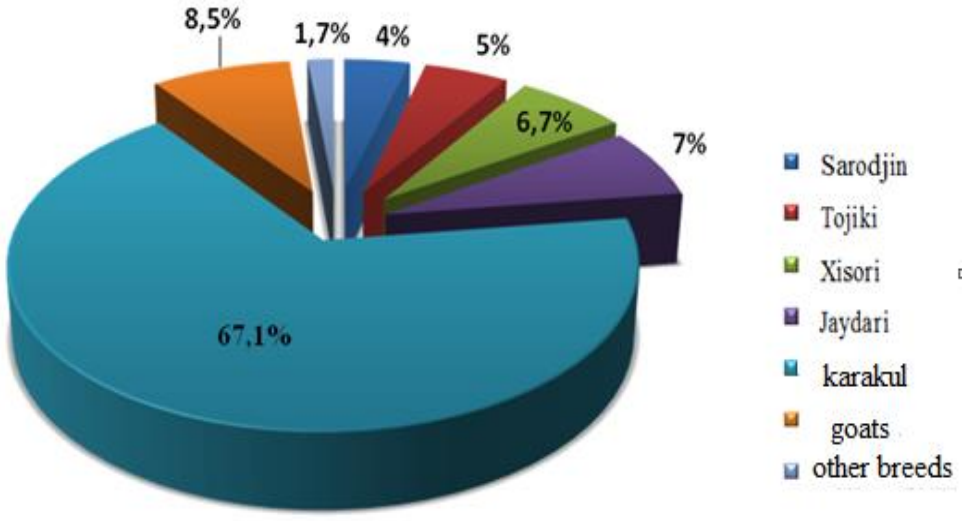


Achievable indicators of local wool production in Uzbekistan in 2020-2025 (thousand tons). Figure 1

As the target parameters of livestock development in the republic for 2021-2025, it is determined that wool production will increase from 6,019,000 tons to 9,234,000 tons in 2025, and carpet production will increase from 301,000 m2 to 462,000 m2. The share of sheep and goats bred in Uzbekistan by breed (%) is presented in (Fig. 2).



Share of sheep and goats raised in Uzbekistan by breed (%) (Figure 2)

The Karakul sheep breed is considered the basis of the sheep breeding of the Republic of Uzbekistan, and it occupies a special place in the livestock sector. The main pastures where Karakul sheep are grazed in our country are the Kyzylkum, Karshi and Ustyurt

deserts, as well as some foothills. In general, Karakul sheep are raised in all regions of Uzbekistan, except Tashkent and the Fergana Valley.

The Khisar sheep breed is mainly bred in the countries of Uzbekistan, Tajikistan, and Kazakhstan. This breed is the largest of the meat-fatty sheep. The color of the wool is orange, black and brown coarse wool. Karakul and Hisori sheep breeds bred in Uzbekistan have black, sable, brown, brown, mottled and white wool. The wool consists of a combination of oily wool mixed with tweed, twill, intermediate wool fibers and dead wool. Coarse-wool sheep are sheared twice a year - in spring and autumn. In the spring, there is more wool, less curl, longer fibers, better quality than autumn wool. The wool of the sheep is sheared once or twice a year, depending on the direction of production. For example, sheep with soft and semi-soft wool are sheared once, and sheep with coarse and semi-coarse wool are sheared twice. 1.0 - 2.5 kg per year. wool is sheared, the yield of pure wool is 60-80% [3].

Physico-mechanical properties of wool fibers grown in our republic were studied by dividing our region into five regions [4]. In order to compare the physical properties of wool from sheep raised in Jizzakh, Karakalpakstan, Navoi, Bukhara and Vadi regions of our republic, and wool fibers from Merino sheep grown in Australia, the results of laboratory testing are summarized in Table 1.

We can see from Table 1 that the physical properties of wool fibers grown in the Navoi region of our republic are close to the properties of wool fibers obtained from Australian merino sheep. The results of the analysis of the physical properties of wool fibers show that the physical properties of wool fibers obtained from sheep of the same breed grown in different regions are different. The reason for this is that the climatic conditions of each region and the composition of the feed fed to sheep are different.

Physical properties of wool fibers Table 1

detached areas	Average fiber diameter (AFD) Micron	Standard deviation (SD)	Coefficient of Variation (CV%)	Percentage of fibers less than 30 microns in diameter (CF%)	Staple length (SL) mm
Jizzax	27,9mic	9,8	35,1	66,8	135
Vodiy	33,9mic	14,2	41,9	51,5	90
Navoiy	26,7mic	5,8	21,7	80,9	85
Qoraqalpog‘iston	37mic	14,6	39,4	39,6	165
Buxoro	38,6mic	15,5	40,1	39,8	80
Avstraliya (Merinos)	23mic	4,3	18,7	97,1	80

In conclusion, based on the above information, it was found that it is possible to obtain yarn of average linear density from sheep's wool grown in the Navoi region of our Republic for knitting knitted and woven fabrics in the textile industry.

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