

# WOOL PRODUCTIVITY AND QUALITY OF WOOL OF DROMEDARY CAMELS IN THE CONDITIONS OF THE REPUBLIC OF KARAKALPAKSTAN

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## ABSTRACT:

**In the article presents the results of a study of the wool productivity of dromedary camels in the conditions of the Republic of Karakalpakstan depending on animal constitutions in age dynamics. The quality of the wool coat was also studied and conclusions were drawn on the quality of the wool of camel – dromedaries.**

**KEYWORDS: camel, wool, productivity, age, shear, fleece, mane, fluff, transitional hair, spine, specific gravity, fineness, length of wool fibers.**

## INTRODUCTION:

None of the types of farm animals so successfully combines such qualities as high working capacity, meatiness, milk production, wooliness and adaptability to harsh conditions of deserts and semi-deserts, like a camel [1], therefore, to increase the production of cheap high-quality meat, milk and wool they are bred in many countries of the world.

Camel breeding is one of the main branches of livestock farming in the Republic of Karakalpakstan, it is important in the development of vast desert territories with a sharply continental climate, providing the local population with food (meat, milk), and industry - raw materials (wool, leather). The importance of camel breeding is especially enhanced due to the intensive industrial development of the vast expanses of the plateau Ustyurt (total area of 7.5 million hectares) precisely because of the

limited possibilities for breeding dairy and beef cattle in this territory [4].

Wool has high thermal conductivity and moisture insulation properties, is in great demand in the internal and international markets.

Studies [2], [5], [7], and others, established that, with proper maintenance and care, camels grow well in desert and semi-desert conditions, develop and produce high-quality products at their low cost.

A serious brake on the development of camel breeding is the neglect of breeding and breeding work in all farms of the Republic of Karakalpakstan.

Breeding work is one of the largest factors in the matter of mass improvement of the situation in camel breeding.

Science has proved that increasing the meat and wool productivity of camels by 25-30 percent depends on the breeding work in the field and the breed of camels [6].

In the Republic of Karakalpakstan, there is insufficient work to qualitatively improve the composition of camels. Therefore, it is necessary to carry out a set of zoo technical measures that would contribute not only to the numerical growth of camels - dromedary, but also to improve its breed qualities [4].

## THE AIM OF THIS WORK:

Is to develop optimal methods for the production of wool of dromedary camels,

contributing to an increase in their quality of wool of different ages.

#### **MATERIAL AND RESEARCH METHODS:**

Wool productivity is determined by individually taking into account the haircuts of camel-uterus. Wool samples were taken from three animals in each group using a 4 cm<sup>2</sup> restrictive fork. The natural length of pigtails, downy layer and fineness of individual types of fibers was determined according to the method of V.V. Kalinina. The experimental data were processed on a computer using the STRAZ program and the method of variation statistics described by N. A. Plokhinsky (1980).

#### **PLACE OF STUDY:**

The research was started in 2018 at the "Nurtilek Karauzyak" farm in the Karauzyak district of the Republic of Karakalpakstan. The stock of camel farms is represented mainly by single-humped camels and their hybrids.

Animal farms are characterized by their typicality, high adaptability to local natural and forage conditions, without any special exterior flaws.

The selection and formation of camels in groups was carried out according to the principle of analogues taking into account age (6-12 years), constitution (strong), live weight and body measurements (average for the population). The initial selection of animals was carried out from among the one-humped in March 2018 from the number of newly hardened uteruses. Selected camel-uterus with camels were marked with special paint and were formed experimental groups.

#### **THE OBJECT OF THE STUDY:**

Was purebred single-humped camels of different ages, and their hybrids with two-humped camels at different ages.

#### **CLIMATIC CHARACTERISTIC:**

According to the data of the "Buzuabai" weather stations, the pasture territory of the farm where the scientific work was carried out is located in the north-eastern part of Kyzyl Kum and is characterized by a sharply continental climate. The Karakalpak part of Kyzyl-Kum is located in the territories of two republics - Kazakhstan, and Uzbekistan. It is characterized by a specific climate. Summer is hot and dry, winters are not snowy with frosty and cold northeasterly winds. The coldest months are January, February. The average monthly temperature is -12.9 -15.0 ° C, and the hottest is July + 30 ° C. On the hottest days, the temperature can rise to + 47 ° C., and in winter drop to - 30 ° C. The average annual rainfall is 90-120 mm. The period with snow cover in the year is 25-30 days. The thickness of the snow cover varies from 8 to 12 cm, and in some years it can be thicker. The average relative humidity in the summer is 20%, in the spring of 30-40%, in the winter of 70-80%. The number of days in a year with a relative humidity of 50% or less is on average 120-150 days.

The vegetation of the pasture is drought tolerant, salt-tolerant, grass in the southern part, mainly consists of ephemera, ephemeroids, wormwood, hodgepodge and cereal vegetation. In the northern part, the most common are hodgepodge, bean vegetation, saxaul, and others. Their productivity largely depends on the amount of precipitation and can range from 1.2 to 10.0 c / ha. In the pasture territory, water sources are uneven, water is mainly slightly saline 3-5 g / l. The best pastures are located in areas adjacent to the Aral Sea and here the yield reaches up to 10 c / ha. The total area of the plateau is divided into ten massifs, which are characterized by the peculiarity of soils, vegetation by the presence of water sources, and with this in mind they are seasonally used in animal husbandry.

**THE RESULTS OF THE STUDY:**

Productivity is natural and breeding. Therefore, all zoo technical work with camels is reduced to obtaining from them the greatest possible and best quality, meat and wool. Each of these types of products is a complex sign, physiologically determined by the vital activity of the whole organism, its organs and tissues.

Wool is an important part of camel productivity. It is a derivative of the skin.

Camel hair is heterogeneous, in morphological terms, consists of fibers of fluff, transitional hair and spine. The content and specific gravity of these fibers in the coat of the skin is determined by the overgrowth of animals and the economic value of camel hair.

Camel hair has a high heat-insulating and waterproof ability. The morphological structure of the coat of camels is subject to high variability. It depends on the species, breed, and gender, and age, physiological condition of the animals, season and region of the animal. Each individual animal of one herd according to the morphological composition of the coat and growth can be very different from other animals.

The animals were trimmed manually, the thongs were established by individually weighing the wool from the neck and chest area on a spring scale with an accuracy of 10 g. To study its quality indicators, wool was taken from three animals of each group from the runic part.

Table-1. Indicators of wool cutting

Types of camels	Head	Wool productivity			
		cut		Including	
		Kg	%	fleece	mane
Single humped					
5-10 years	5	3,9±0,14	100,0	0,84±0,05	3,06±0,15
11-15 years	5	4,4±0,21	112,8	0,89±0,05	3,51±0,21
16-20 years	5	4,9±0,23	125,6	0,91±0,05	3,91±0,23

Double hump hybrids					
5-10 years	5	5,2±0,22	100,0	0,88±0,04	4,32±0,22
11-15 years	5	5,9±0,31	113,4	0,96±0,06	4,94±0,25
16-20 years	5	6,2±0,34	119,2	1,08±0,08	5,52±0,31

An analysis of the data in the table shows that 16-20-year-old camels (single-humped, hybrids) had the largest amount of wool. If we take 5-10-year-old camels as one hundred percent, then 11-15 years of age tonsure amounted to 112.8%, and 16-20 years of age had. To this, respectively hybrids 113.4 and 119.2 percent.

It should be noted that the bulk of the wool was wool from the neck and underbody, that is, the so-called mane.

It should be noted that the bulk of the wool was wool from the neck and underparts, that is, the so-called mane, while the conditions of detention affected the mass of this particular part of the cloak. That is, the difference noted in the camel hair characteristics under different conditions of keeping was formed due to this particular part of the cloak.

Table-2. Fluff quality indicators of down camel hair

Animal constitution	Fluff		
	Specific weight, %	Thinness, mk	Length, sm
Tender	86,5	14,0	4,0
Strong	87,4	15,0	6,0
Coarse	87,2	15,0	6,0

An analysis of the data given in Table-2 shows that the conditions of the type of constitution of the camel-uterus are mainly influenced by the quantitative indicators of wool-length, and such indicators as the

quantitative ratio of individual fiber types, fiber fineness remain practically unchanged.

Table-3. Quality indicators of transitional hair of camel hair

Animal constitution	Transitional hair		
	Specific weight, %	Thinness, mk	Length,sm
Tender	8,5	38,0	10,5
Strong	8,3	39,0	12,6
Coarse	8,6	39,0	12,8

An analysis of Table 3-4 shows that the length of the fluff in the strong constitution of animals was one and a half times longer than in the gentle type of constitution. The difference in the length of the transitional hair between the strong constitution and the gentle constitution was 20.6 and 21.9 percent, respectively the length of the core fibers, this difference was 16.6 percent in favor of a strong type of constitution.

Table-4. Spine wool camel quality indicators

Animal constitution	Spine		
	Specific weight, %	Thinness, mk	Length,sm
Нежная	5,0	56,0	12,0
Крепкая	4,3	58,0	14,0
Грубая	4,2	56,0	14,0

Thus, the analysis of the results of studies on the wool productivity of camel-uterus of various constitutional types shows that the improvement of their feeding conditions positively affects their wool productivity, while the increase in wool cuts is due to lengthening of the wool fibers, which accordingly leads to an increase in their cuts.

## CONCLUSIONS:

The results of our studies and observations on the study of wool productivity and quality of woolly-humped camels with grazing in the Kyzyl-Kum region of Karakalpakstan allow the following conclusions:

1. The largest amount of wool was obtained from the constitutional type of camel-uterus, 16-20 years of age,  $6.2 \pm 0.34$  kg and they exceeded 1.3 kg of single-humped animals of 5-10 years of age.
2. The quality of the wool of a camel-uterus is directly dependent on the constitution of animals, since in a strong and gross type of constitution, single-humped camel-queens exceeded a tender constitution with their peers.

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