



## SELECTION OF SINGLE-HUMPED CAMELS BY UDDER STRUCTURE

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Article history:		Abstract:
<b>Received</b>	January 11 <sup>th</sup> 2021	This article examines the udder structure of 9-year-old camels with a single-breasted dromedary and their effect on milk yield in animals with a cup-shaped and round udder structure. At the same time, there is a difference in milk yield from the age of 3 to 21 years of age.
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### 1. INTRODUCTION:

Camel breeding is one of the main branches of animal husbandry in the Republic of Karakalpakstan, which plays an important role in the development of vast desert areas with a sharp continental climate, providing the local population with food (meat, milk), industrial raw materials (wool, leather).

At present, there are more than 4.9 thousand dromedary camels in the Republic of Karakalpakstan, with an average milk yield of 6.0-6.5 liters.

The camel industry is of great importance in the national economy, especially with a total area of 7.5 million hectares. It occupies a significant place in the cultivation of milk and meat in the Ustyurt Plateau, which occupies 1 hectare.

According to many scientists [1; 2], camels in desert and semi-desert conditions have the potential to produce high quality products at low cost with proper care, supplementary feeding, and storage technologies.

Camels are resistant to hot climates and long-term drought, and camel breeding is one of the most important and useful industries for desert herders. This is due to the fact that camels are a native animal that is resistant to the harsh continental climate and is one of the main sectors of livestock in providing the population with food (meat, dairy) and industry with wool. [3].

The creation of high-yielding camel herds and pedigree lines in the northern red-sand regions of the Republic of Karakalpakstan is a topical issue today.

Therefore, the need to develop new methods of increasing productivity in the camel sector is an urgent need of today. The growing demand for livestock products in a market economy, especially in the field of camel breeding, requires the use of breeding practices, standard feeding, effective environmentally friendly technologies for production, methods aimed at increasing the number of camels.

In this regard, effective results in increasing their milk yield can be achieved, first of all, by studying the morphology of their udder.

### 2. RESEARCH RELEVANCE.

Today, in all categories of farms of the Republic of Karakalpakstan, the volume of products from single-breasted camels, including low milk production growth, remains low, milking issues and their impact on the growth of young animals have not been studied.

Therefore, the use of the biological potential of camels is important in increasing milk productivity, generational development. Therefore, in order to increase the milk yield of camels, selection work on the structure of the udder determines the relevance of scientific work.

### 3. THE PURPOSE OF THE RESEARCH

The main purpose of the research is to study the structure of the udder of single-breasted camels in the conditions of the Ustyurt plateau of the Republic of Karakalpakstan and to apply its potential in breeding to increase milk yield.

#### 4.EXPECTED RESULTS.

The practical data obtained from the results of the study allow to study the structure of the udder of one-breasted camels and to carry out effective selection and breeding work, taking into account its potential to increase milk productivity.

Ustyurt industrial centers provide the population with natural medicinal dairy products.

#### 5.RESEARCH PLACE AND METHODOLOGY.

The research was conducted in 2018-2020 on camel farms in Kungrad districts of the Republic of Karakalpakstan.

Selection and formation of camels in groups was carried out in accordance with the principle of analogs, taking into account the age, constitution.

The adaptability of farm animals to local, natural and feeding conditions without specific external defects was taken into account.

The milk yield of camels was recorded monthly (at the end of the month) by measuring milk yield, and the total milk yield for monthly milk yield and lactation was determined arithmetically.

Camel udder measurements were made in ruler and tape measurements.

The one-humped camels obtained for the experiment were mainly 9-year-olds and were bred in animals close to each other in terms of live weight and physiological condition.

The criteria for evaluating the camel's udder were based on the following indicators.

##### Criteria for evaluating camels udder

Indicators	Rating, in points	
	7.0-4.0 range	to 4.0
The shape of the udder round	Bowl-shaped	Round
Size, shape and location of pacifiers	Medium thickness (5-2 cm), conical, wide (20-22 cm) directed downwards.	Short (less than 2 cm), long (more than 6 cm), thick (base 6 cm), pear-shaped, close, directed to the sides.
Development	Smooth	Uneven
Milk yield Light	Fast(1-0.8 kg / min)	Medium, incomplete (0.79 and less kg / min)

#### 6.BIOLOGICAL PROPERTIES.

Due to its biological properties, camels can make effective use of plants that are bad or not consumed at all by other species of animals. It is characterized by high flexibility for living and reproduction in desert areas.

Single-humped dromedary camels are smaller than double-humped Bactrians in body size, ie around 2.3–3.4 m in length, 1.8 to 2.1 m in height, and 400 to 700 kg in live weight. kg. The average life expectancy is 40-50 years.



**Figure-1.** The period of determining the udder of one-humped camels

#### 7.RESEARCH RESULTS.

Today, in the Republic of Karakalpakstan, the study of the structure of the udder in order to increase the milk yield of single-breasted dromedary camels and the production of medicinal milk requires a certain degree of importance.

The research work carried out on the selection of the structure of the udder and the creation of a herd of dairy camels in the future, the provision of medicinal camel milk is to some extent positively reflected.

The results of the study of udder structure are given in the following tables.

Table 1  
**Length of camel's udder, cm (9 years old).**

Types of constitution	Camel head Number of udder	Udder length, cm.	
		Bowl-shaped(n-53)	Round (n-28)
		X ± Sx	
Coarse	13	7,8±0,6	6,1±0,5
Strong	17	6,4±0,4	5,4±0,4
Fine	9	5,9±0,3	4,6±0,3
Average	39	6,7±0,5	5,4±0,4

The analysis of the table data shows that the length of the udder of camels is directly related to the udder structure in different types of constitutions of animals. In our experiments, the structure of the udder was studied into cup-shaped and round structures.

In constitutional animals with a rough type of camel's udder, the length of the udder was considered to be 100%, while in the stable and thin types it was 82.1% and 75.6%, respectively.

This was 88.5% and 75.4%, respectively, in animals with a round udder structure. In summary, the length of the udder nipples predominated in animals with a cup-shaped udder structure in the constitutional section of the animal.

The dimensions of the udder spacing in dromedary single-humped camels with different udder structures are given in Table 2 below.

Table 2  
**Location of camel udder suckers, cm. (9 years old)**

The placement of the camel's hand	Types of constitutions			
	Rough (n-13)	Strong (n-17)	Thin (n-9)	Average(n-39)
	X±Sx			
<b>Bowled-shape:</b>				
The distance between the front and rear slides, cm	6,1±0,21	5,9±0,19	5,3±0,16	5,8±0,21
The distance between the front nipples, cm	10,3±0,33	10,1±0,31	9,7±0,27	10,1±0,31
Rear slide spacing, cm	8,2±0,29	7,8±0,23	7,1±0,21	7,7±0,28
<b>Round:</b>	X±Sx			
The distance between the front and rear slides, cm	5,8±0,17	5,3±0,15	5,0±0,12	5,4±0,15
The distance between the front and rear slides, cm	9,8±0,26	9,4±0,21	9,1±0,19	9,4±0,22
The distance between the front and rear slides, cm	7,9±0,22	7,3±0,14	6,7±0,11	7,3±0,18

An analysis of the data in Table 2 shows that in animals with a cup-shaped udder structure, the anterior and posterior udder spacing, anterior udder spacing, and posterior udder spacing were superior to animals with a round udder structure in all constitution types. In the section of the constitution it can be seen that in animals belonging to the rough type it is slightly higher than in the strong and thin type.

In animals with a cup-shaped udder, the distance between the anterior and posterior nipples is -5.2% in the coarse type, 1.7% in the solid type, and 1.7% in the thin type. It was noted to be 7.8% lower.

In summary, in the field of camel milking, it is expedient to select and leave for breeding animals with pelvic udder structure, and in breeding for breeding of male animals it is expedient to leave for breeding animals born from udder camel udder.

Table 3  
**Hand size of camels, cm2, (9 years old)**

The placement of the camel's hand	Types of constitutions			
	Rough (n-13)	Strong (n-17)	Thin (n-9)	Average (n-39)
<b>Bowled-shape:</b>	X±Sx			
Circle of hand, cm	46,3±0,23	44,5±0,21	43,6±0,17	44,8±0,21
Length of hand, cm	22,5±0,23	21,1±0,21	20,1±0,20	21,2±0,22
Hand size, cm2	1041,7±0,83	938,9±0,76	876,4±0,61	952,3±0,72
<b>Round:</b>	X±Sx			

Circle of hand, cm	44,1±0,23	43,5±0,19	41,6±0,21	43,1±0,24
Length of hand, cm	20,4±0,19	20,1±0,17	19,3±0,13	19,9±0,16
Hand size, cm <sup>2</sup>	899,6±0,77	874,3±0,64	802,9±0,51	858,9±0,68

Analysis of the data in the table shows that the size of the udder in all animals of the constitutional type was higher than in the udder of the cup-shaped structure. It was found that in large, stable animals it is less than -13.4, and in thin animals it is -75.9 cm<sup>2</sup>. In conclusion, in animals with a cup-shaped udder structure, the udder is larger than in animals with a round udder structure, with an average of 93.4 cm<sup>2</sup>.

The use of new opportunities in the production of dairy products from camels is a topical issue. Therefore, it is necessary to open new opportunities to increase productivity in the camel sector and increase milk productivity as much as possible.

Growing milk from camels creates the basis for their full use as a reserve in providing the population with medicinal milk. At the same time, the need for dietary camel milk is met to a certain extent

The dependence of camel milk yield on udder structure is shown in Table 4 below.

Table 4

**Dependence of camel milk yield on udder structure, 1 day / liter (9-year-old).**

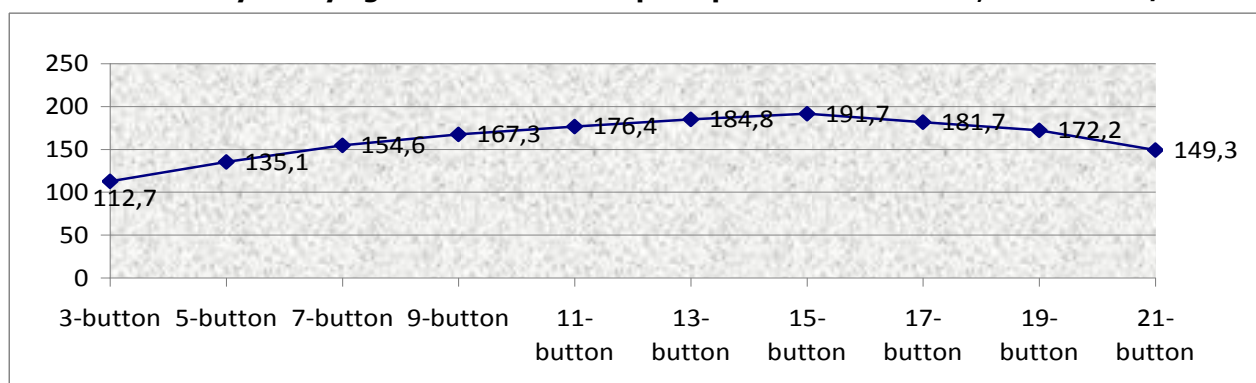
Types of constitutions	Number of camels' head	The structure of the udder	
		Bowled-shape	Round
		X±Sx	
Rough	13	5,81±0,3	5,12±0,2
Strong	17	5,43±0,2	5,04±0,2
Thin	9	4,95±0,2	4,36±0,1
Average	39	5,47±0,2	4,82±0,2

It was noted that the udder structure of one-humped camels is directly related to their milk yield, and in all constitutional types of animals the udder structure is higher in animals than in the udder structure. In other words, a round udder is 0.65 liters per day more than a structured animal.

In the example of camels with a udder structure, the difference in milk productivity by age can be seen in the following diagram 1.

1-diagram

**Differences in milk yield by age in camels with cup-shaped udder structure, at 1 month / liter**



From the data of Diagram-1, it can be concluded that in single-humped camels with a cup-shaped udder structure, an increase in milk productivity was observed in the period from 3 to 15 years of age, and a decrease in milk yield from 19 years of age. The milk yield of the experimental camels was highest at the age of 15 years.

In our opinion, in order to increase milk productivity in the Republic, it is necessary to carry out complex selection work aimed not only at increasing the number of dromedary camels, but also at improving the quality of the herd.

## 8.CONCLUSION.

The results of research and observations on the udder structure and milk yield of 9-year-old camels in the northern regions of the Republic of Karakalpakstan allow us to draw the following conclusions:

1. It has been observed that the milk yield of one-humped camels increases with age from the age of 7 to the age of 9. This figure varies by type of constitution. Increasing the number of camels in the herd at the age of 7 births and above 9 - birth age ensures the intensity of milk production.

2. In order to increase the milk yield of one-humped camels, it is advisable to use animals with a bowl-shaped udder structure and use them in selection work.

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