

# Exterior Indicators and Body Conformation Indices of Jongeldi-Type Black Karakul Lambs in Different Age Groups

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**Annotation:** The article presents the results of a study of the body condition indices of black Karakul lambs of the Dzhangeldinsky breeding type.

**Keywords:** Karakul sheep, body conformation indices, factory type.

**Introduction.** Karakul sheep breeding is considered one of the most important branches of animal husbandry. The natural habitat of Karakul sheep consists of desert regions characterized by harsh and extreme environmental conditions. Despite these severe conditions, Karakul sheep demonstrate high productivity, providing valuable astrakhan pelts, meat, wool, and milk.

The main product of Karakul sheep is astrakhan pelts of various colors, shades, curl types, and assortments. The quality of these pelts determines the breeding value of the sheep. Additionally, the evaluation of lambs' exterior characteristics and body conformation indices plays an important role in assessing their breeding potential.

It is well known that the body structure, exterior indicators, changes in live weight, growth, and development parameters of farm animals are interrelated traits. The growth and development of livestock follow specific biological patterns. The body conformation and exterior features of

farm animals hold significant value; in particular, the exterior indicators of Karakul sheep help determine their breed type, constitutional category, as well as assess their growth and development.

The development of body conformation indices in Karakul lambs is influenced by several hereditary and paratyptic factors. These include genetic characteristics of the sheep, as well as pasture-feed conditions, ecological zones, and climatic factors.

It should be emphasized that body conformation indices serve as indicators of animals' productivity, vitality, and resilience—meaning their resistance to various external environmental factors. High values of these indices enhance productivity and overall adaptability.

According to many researchers, animals differ in their body conformation indices depending on their production direction. This phenomenon is also observed in various curl types, constitution types, and genotypes of Karakul sheep bred in different regions.

### Research Objective

The purpose of this study is to examine the exterior characteristics and body conformation indices of Jongeldi-type black Karakul lambs.

### Research Object and Methods

The research was conducted on offspring obtained from Jongeldi-type black Karakul sheep bred at “Jongeldi Karakul Breeding” LLC, Peshku district, Bukhara region. Exterior measurements were recorded using standard zootechnical methods, as well as the guidelines provided in “Instructions for Conducting Breeding Work and Evaluating (Bonitation) Karakul Lambs” (S.Yu. Yusupov et al., 2021). Visual assessment, millimeter rulers, and live-weight scales were used to determine the genotypic state of the animals. The collected data were statistically processed using variational-statistical methods (N.A. Ploxinskiy, 1969).

### Literature Review

According to the research of A.G. Khojaboyev and R.U. Turganbayev, the withers height of Karakul lambs reaches 17.3 cm at 4–4.5 months of age; the growth from 4–4.5 to 12 months reaches 10.5 cm, while from 12 to 18 months it slows to 0.7 cm.

K.M. Musayev reports that the most intense growth of exterior indicators occurs from birth to 4–4.5 months of age, followed by a slowdown from 4–4.5 months to 12 months. The same tendency is observed in other exterior parameters, indicating the importance of using these measurements to evaluate the growth dynamics of Karakul lambs by age group.

According to A.X. Khatamov (2019), body conformation indices reflect the developmental process of animals. For example, leg length and bone thickness indices tend to decrease with age, while stretchiness and massiveness indices increase. Chest depth relative to leg circumference may decline, whereas body slant length and chest girth increase faster than withers height.

### Research Results

From this perspective, studying exterior indicators is highly relevant. In the course of the study, the exterior characteristics of gray Karakul lambs of different color variations were examined at birth and at 4–4.5 months of age. The obtained results are summarized in Table 1.

**Table 1. Exterior characteristics of black Karakul lambs**

Groups	n	Body dimensions, cm			
		At birth		At 4.5 months	
		X±Sx	Cv	X±Sx	Cv
Body length	30	28,4±0,09	1,90	50,6±0,15	1,68
Chest	30	38,9±0,12	1,72	70,9±0,18	1,46

circumference					
Chest width	30	15,1±0,07	2,58	21,0±0,13	3,52
Chest depth	30	11,3±0,09	4,60	21,6±0,11	2,96
Leg circumference	30	5,18±0,08	9,26	5,49±0,06	6,37
Height at withers	30	35,2±0,12	1,87	55,5±0,07	0,70

The obtained data indicate that the exterior indicators of the lambs undergo certain changes under the influence of paratypic factors such as feeding and management conditions. However, no significant differences were observed among the color variations within the same age groups. The results of the conducted research show that growth and development parameters play an essential role in the animal organism, and in particular, exterior measurements provide an opportunity to evaluate the constitutional type of the animals.

It is well known that the body conformation indices of livestock differ to some extent across various age periods. From this perspective, the body conformation indices and their age-related changes in the progeny obtained from black Karakul sheep were examined. The data are presented in Table 2.

**Table 2. Changes in body composition indices in lambs**

Body composition indices	Age indicators			
	At birth	In 21 days	4-4.5 months old	6 months old
Long-leggedness	67,9	50,9	61,1	56,1
Elongation	80,7	108,5	91,2	88,9
Bustness	133,6	85,9	97,2	80,9
Density	136,9	122,6	140,1	154,2
Massiveness	110,5	133,0	127,7	137,2
Bones	14,3	14,7	9,89	11,2

Overall, the progeny demonstrated strong adaptation for efficient movement in desert environments, which is evident from their high long-leggedness index. In this regard, the index was found to be 67.9% at birth, 50.9% at 21 days of age, 61.1% at 4–4.5 months, and 56.1% at 6 months of age.

## Conclusion

Based on the results of the conducted research, it can be concluded that the rams and ewes of the Jongeldi factory type black Karakul sheep possess a robust genotype, which strongly confirms their ability to transmit desirable traits to their offspring. These findings demonstrate the stable genetic potential of the Jongeldi type and its significance for improving the breed's productivity and adaptive qualities.

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