

# Growth and Development of Young Karakul Sheep of Different Ethological Types

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**Abstract.** The article provides information on the growth and development indicators of different ethological types of black sheep, that is, the dynamics of live weight and the dynamics of exterior dimensions at different ages.

**Key words:** karakalpak sur, karakul sheep, ethological type, live weight, youth periods, live weight dynamics, exterior.

**Introduction.** Growth and development Knowledge of the growth and development characteristics of farm animals, particularly sheep, is important in increasing their productivity. Many researchers have pointed out that other environmental factors have a significant impact on their appearance.

Live weight is one of the important indicators determining the health, productivity, and constitutional strength of sheep. This indicator varies in sheep in one way or another, depending on the seasons and their physiological state. As much as possible, maintaining the high state of this indicator, i.e. the fatness of sheep, ensures health, high productivity, constitutional strength, vitality, good growth and development of the offspring.

Growth and development characteristics of sheep allow to estimate their future productivity characteristics, and growth and development characteristics are influenced by many factors.

A. Khatamov (2021) determined the nutritional productivity of desert pastures for the productivity of animals of different ethological types in different climatic conditions [8].

Ethological indicators of sheep affect their live weight, meat productivity, slaughter indicators and chemical composition [6, 9, 10].

Ethological productivity of karakul sheep Karakalpak Sur and methods of feeding them on pastures have been developed. As a result, it was observed that sheep productivity increased [5].

Sheep productivity and their relationship with ethological characteristics were studied in the research of N.A. Bobokulov, A.Kh. Khatamov (2016) [3].

The effective use of sheep productive potential and the use of probiotics in improving the quality of offspring are highly effective. That the use of complementary foods, probiotics in the feeding of sheep has a positive effect on the milk productivity of the sheeps, and at the same time they provides an improvement in the growth indicators of their offspring [11, 12, 13]

It is also important to create new factory types of Karakul sheep, their legal protection, use of breeding resources and practical use (Akhmadaliev L. and other., 2021) [1, 7].

From this point of view, special attention is paid to keeping animals at a sufficient level of fatness throughout their life. Based on the mentioned points, researches were conducted to study the characteristics of growth and development of Karakul sheep Karakalpak Sur and their offspring.

**The aim of the research work.** Studying the dynamics of live weight and exterior parameters of Karakul sheep Karakalpak Sur of different ethological types according to their age.

**Research methods.** The researches were carried out in Navoi Region "Istiqlal Karakul Breeding" LLC in the generations of Karakul sheep Karakalpak Sur of different colors and different ethological types.

The live weight of sheep of different ages (at birth, 4.5 months old, 12 months old, 18 months old) and its dynamics were determined using electronic scales.

Generally accepted methods were used to classify experimental sheep into ethological types [2].

Biometric processing of the obtained results was carried out (N.A.Ploxinsky, 1969) [4].

**Research results.** Table 1 shows the results of the live weight study of sheep breeds of different ethological types.

Based on the data of Table 1, the live weight index of the offspring of sheep of the first ethological type ( $4.52 \pm 0.08$  kg) and the offspring of sheep of the second ( $4.24 \pm 0.08$  kg) and third ( $4.01 \pm 0.07$  kg) types are alive. It can be observed that 0.28 and 0.51 kilograms have a superior indicator proportionally from the weight indicators.

The live weight of the organism increases depending on its breed according to age periods. If this increase occurs proportionally according to the age periods, the ground is created for obtaining more and better products from the sheep in the future, that is, when they become adults.

In this context, studying the dynamics of live weight is important in improving their productivity.

Research conducted in the direction of determining these characteristics of experimental animals in new ecological conditions shows that the dynamics of growth of live weight in lambs taking into account the ethological types of sheep, certain differences between them allowed to determine. It was observed that offspring of sheep of the first ethological type have high indicators in all age periods, their live weight is  $28.34 \pm 0.34$  kilograms at 4-4.5 months,  $30.8 \pm 0.37$  kilograms at 12 months, and 37 at 18 months. It was observed that it is  $9 \pm 0.45$  kilograms. The progressive dynamics of live weight growth was also observed in the other two types of sheep generations, but the results of the obtained dynamics were found to be statistically lower at the level of confidence criteria ( $P < 0.05$ ; 0.001) compared to the first type generations.

It should be noted that the exterior is one of the main indicators of the constitution of sheep. This indicator makes it possible to evaluate the level of

**Table 1**  
**Live weight dynamics of lambs obtained from sheep of different ethological types**

Ethological type	n	Progeny live weight, kg							
		At birth		4-4,5 monthly		12 monthly		18 monthly	
		$\bar{X} \pm S\bar{X}$	$C_v$	$\bar{X} \pm S\bar{X}$	$C_v$	$\bar{X} \pm S\bar{X}$	$C_v$	$\bar{X} \pm S\bar{X}$	$C_v$
<b>I type</b>	30	$4,52 \pm 0,08$	9,69	$28,34 \pm 0,34$	6,57	$30,8 \pm 0,37$	6,58	$37,9 \pm 0,45$	6,50
<b>II type</b>	30	$4,24 \pm 0,08^x$	10,33	$26,53 \pm 0,33^x$	6,81	$29,4 \pm 0,38^x$	7,08	$37,1 \pm 0,39$	5,75
<b>III type</b>	30	$4,01 \pm 0,07^x$	9,56	$24,81 \pm 0,31^x$	6,84	$28,8 \pm 0,38^x$	7,23	$36,6 \pm 0,42^x$	6,29

X-  $P < 0,05$ ; X)- $P < 0,001$

growth and meat productivity of animals within one constitution type. From this point of view, it is important to study the dynamics of external characteristics and their growth in different age periods.

It is known that depending on the age periods, the external characteristics of the animal change significantly. In the embryonic period, tubular bones grow rapidly in them, and in the postembryonic period, the growth rate of flat bones increases sharply. Because of this, animals have long legs and short bodies at birth. As they grow older, their bodies grow faster and the length of their legs decreases compared to the body.

Taking into account the mentioned, research works were carried out in the direction of studying the external dimensions of the offspring obtained from the experimental sheep and their age dynamics, which are described in Table 2 below.

In the studies of this direction, it was noted that sheep of the first ethological type predominate in the formation of external dimensions in generations. Their offspring are 0.6 cm ( $R < 0.05$ ) from the offspring of the second type in terms of height, 1.0 cm from the offspring of the third type, 0.8 and 1.5 cm in the oblique length of the body, and 0.3 and 0 in the depth of the chest. .5 cm, 0.2 and 0.3 cm in chest width, 0.5 and 0.8

cm in chest circumference, and 0.1 and 0.2 cm in leg circumference were found to have superior indicators. a homogeneous trend was observed. The observed trend was found to be statistically reliable ( $R < 0.05$  and  $R < 0.001$ ).

The data obtained on the dynamics of external dimensions of Karakul sheep Karakalpak Sur of different ethological types in different age periods show that in all age periods animals of the first ethological type have higher indicators, and animals of the I ethological type compared to the animals of the II and III ethological types, respectively, at 4-4.5 months of age 0.6 and 1.1 cm according to the height of the chest, 0.3 and 0.8 cm according to the oblique length of the body, 0.3 and 0.8 cm according to the depth of the chest, 0.3 and 0.5 cm according to the width of the chest, chest 0.5 and 0.9 cm in circumference, 0.2 and 0.2 cm in calf circumference.

**Table 2**  
**Exterior dimensions dynamics of lambs obtained from sheep of different ethological types**

Ethologica I type of sheep	Lambs obtained , head	Age period s	Exterior dimensions, sm ( $\bar{X} \pm S\bar{x}$ )					
			height at the withers	oblique body length	chest depth	chest width	Chest girth	pastern girth
I type	30	At birth	35,9±0,16	30,7±0,14	14,4±0,08	9,4±0,07	39,7±0,11	5,7±0,07
		4-4,5 month	55,4±0,21	55,9±0,19	23,2±0,13	13,3±0,11	67,6±0,21	7,0±0,04
		12 month	64,2±0,22	63,4±0,21	28,4±0,09	15,7±0,06	77,2±0,19	7,6±0,04
		18 month	65,7±0,19	66,2±0,22	29,8±0,10	17,0±0,07	83,9±0,23	7,89±0,05
II type	30	At birth	35,3±0,17 <sup>x</sup>	29,9±0,15 <sup>x</sup>	14,1±0,06 <sup>x</sup>	9,2±0,05	39,2±0,10 <sup>x</sup>	5,6±0,06
		4-4,5 month	54,8±0,20	55,6±0,21	22,9±0,13	13,0±0,11	67,1±0,17	6,8±0,04
		12 month	63,9±0,21	62,9±0,20	28,2±0,11	15,4±0,06	76,8±0,21	7,5±0,05
		18 month	65,1±0,18	65,9±0,21	29,3±0,12	16,8±0,08	83,3±0,20	7,7±0,03
III type	30	At birth	34,9±0,14 <sup>x</sup>	29,2±0,13 <sup>x</sup>	13,9±0,07 <sup>x</sup>	9,1±0,06 <sup>x</sup>	38,9±0,09 <sup>x</sup>	5,5±0,06 <sup>x</sup>
		4-4,5 month	54,3±0,18	55,1±0,18	22,4±0,12	12,8±0,10	66,7±0,18	6,8±0,04
		12 month	63,7±0,20	62,6±0,21	27,9±0,09	15,3±0,07	76,3±0,21	7,4±0,05
		18 month	66,7±0,18	65,5±0,23	28,9±0,11	16,5±0,07	82,9±0,19	7,6±0,04

**X-P<0,05; X)-P<0,001**

We can observe a similar trend in other age groups. The mentioned results show that it affects the formation of external characteristics in lambs, and it is appropriate to take this situation into consideration during the selection process.

In terms of external size, it can be noted that the superiority of the offspring of the first type sheep at the time of birth of the lambs is noted, that this superiority gradually decreases in the later age periods. Generations of sheep of the second and third type begin to grow faster. It was found that this intensity is 1.0 and 8.0 percent in favor of the offspring of the second and third groups in terms of height, 1.0 percent in oblique body length, 2.0 percent in chest width, and 1.0 percent in chest circumference.

**Conclusions.** 1. High birth weight of lambs of the first ethological type, active reaction of first type sheep to feed consumption and this reaction has a positive effect on the live weight of their offspring. As a result, the offspring of this ethological type have a high live weight at all ages the active reaction of their mothers to food was the reason for having these indicators.

2. The ethological type of sheep has a significant influence on the development of their exterior indicators, and these indicators were higher in sheep of the first ethological type.

3. Live weight and exterior indicators are important indicators in determining the productivity of animals, and productivity can be increased by using them in selection processes.

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