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The Characteristics of the Intergeneral Variability of Exterior Indicators in Karakalpak Sur Karakul Sheep

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Annotation: The article discusses the results of scientific research aimed at studying changes in the exterior characteristics of lambs of the Sur breed depending on the selection of parents belonging to different ethological types. The observations made make it possible to identify features of the dynamics of animal development, as well as to assess the influence of genetic factors on their exterior characteristics. The data obtained are of practical importance for breeding work, making it possible to optimize methods for selecting sires in order to increase productivity and improve the exterior qualities of the offspring.

Keywords: Karakul sheep, lambs, coloring, exterior dimensions, dynamics, age periods, variability, ethological type.

Introduction. The Republic of Karakalpakstan, considered the northernmost karakul breeding area of Uzbekistan, is characterized by sharp continental natural-climatic and pasture-feeding conditions. Under the influence of these factors, a unique population of sheep was formed in the region. It should be noted that in the difficult conditions of the region, increasing the productivity of Karakul sheep, particularly the traditional Karakalpak Sur sheep is one of the pressing issues.

When determining the productivity of Karakalpak sur sheep, alongside their live weight, it is important to study their exterior indicators and factors influencing their age dynamics. In this direction, R.U. Turganbayev (2012) and A.A. Urimbetov (2020) studied the dynamics of growth and development indicators in Karakalpak sur lambs in the conditions of southern Karakalpakstan, while A.Kh. Khatamov (2021) studied the dynamics of growth and development indicators in the conditions of the Nuratau foothills, identifying certain similarities and differences between them.

No research has been conducted to study the influence of ethological types of parents, which are considered important factors, on the exterior indicators of offspring obtained from them.[3.4.5]

The aim of the research. In the conditions of Karakalpakstan the study of the dynamics of changes in exterior indicators in offspring obtained from mating of sur sheep of different ethological types was chosen as the goal of the study.

Object and methods of research. The research was conducted on Karakalpak Karakul sheep and lambs of different ethological types, bred at the Karakul Scientific and Experimental Station of the "Mulk" Karakul Breeding Farm in the Takhtakupyr District of the Republic of Karakalpakstan. During the research, animals belonging to different ethological types were paired using homogeneous and heterogeneous methods, and the age dynamics of exterior indicators in the offspring obtained from them were studied.

The experimental data obtained were subjected to mathematical processing using methods of variational statistics (N.A. Plokhinsky, 1969).[1.2]

The results of the study. Exterior dimensions are among the important biological indicators associated with the live weight of farm animals. The development and growth of exterior indicators of lambs during embryonic development and after birth are influenced by their mothers and subsequently their own feeding level, live weight, type of constitution, ethological characteristics, and a number of other factors. Large exterior indicators subsequently determine a high level of animal viability, adaptive characteristics, productivity, and hereditary traits.

It should be noted that research in karakul breeding has not been conducted in the direction of studying the influence of ethological, i.e., behavioral, types of animals on the levels of manifestation of the aforementioned indicators in offspring.

Based on the above, research was conducted in the direction of studying the age dynamics of development of exterior indicators in offspring obtained under conditions of homogeneous and heterogeneous mating of Karakul sheep by ethological type. The data is summarized in Table 1.

Table-1. Dynamics of exterior dimensions and age periods of offspring of sheep of different ethological types

Sheep ethological type	Age periods of lambs	Learn lambs, heads	Exterior dimensions, cm (X±Sx)					
			Crossbow height	Inclined body length	Chest circumference	Chest width	Chest depth	Lumbar circumference
I	at birth	30	35,44±0,18	30,41±0,15	39,76±0,13	9,28±0,05	14,56±0,07	5,56±0,03
II		30	34,76±0,17^{x}	29,76±0,17^{x}	39,11±0,11$^{x)}$	9,01±0,04$^{x)}$	14,08±0,03$^{x)}$	5,31±0,04x)
III		30	33,92±0,18$^{x)}$	29,21±0,16$^{x)}$	38,66±0,16$^{x)}$	8,69±0,11$^{x)}$	13,52±0,06$^{x)}$	5,09±0,06$^{x)}$
I	4-4,5 monthly	30	54,81±0,25	55,48±0,19	68,05±0,24	13,26±0,11	23,52±0,11	7,12±0,04
II		30	53,48±0,23	54,24±0,13$^{x)}$	67,36±0,23^{x}	12,91±0,09^{x}	22,18±14$^{x)}$	7,01±0,04^{x}
III		30	53,02±0,21$^{x)}$	53,87±0,17$^{x)}$	66,71±0,25$^{x)}$	12,46±0,12$^{x)}$	21,76±0,12$^{x)}$	6,78±0,06$^{x)}$
I	12 monthly	29	61,49±0,24	61,36±0,19	76,94±0,18	17,48±0,09	28,56±0,08	7,71±0,02
II		27	60,15±0,24$^{x)}$	60,17±0,17$^{x)}$	76,09±0,11$^{x)}$	16,94±0,09$^{x)}$	27,88±0,12$^{x)}$	7,32±0,04$^{x)}$
III		26	59,48±0,22$^{x)}$	59,54±0,20$^{x)}$	75,21±0,24$^{x)}$	16,21±0,08$^{x)}$	27,12±0,09$^{x)}$	7,03±0,03$^{x)}$
I	18 monthly	28	63,81±0,18	64,48±0,20	84,11±0,20	17,11±0,06	30,26±0,09	8,01±0,04
II		27	63,08±0,24^{x}	63,24±0,22$^{x)}$	82,89±0,16$^{x)}$	16,76±0,10$^{x)}$	29,12±0,10$^{x)}$	7,82±0,02$^{x)}$
III		26	62,17±0,21$^{x)}$	62,78±0,18$^{x)}$	81,26±0,15$^{x)}$	16,22±0,08$^{x)}$	28,55±0,13$^{x)}$	7,51±0,03$^{x)}$

X)-P<0,001

Overall, the pattern identified by most researchers is that during embryonic development, the growth of slowly growing exterior dimensions accelerates in the post-embryonic period, and conversely, during the embryonic period, a decrease in the growth of rapidly growing exterior dimensions is observed in the post-embryonic period.

At the same time, it was found that the indicators of offspring obtained from sheep of different ethological types differ to some extent from each other in terms of exterior dimensions and their dynamics, and in all cases, the statistical significance of the offspring of sheep of the first ethological type (P<0.05; 0.001) was noted.

The superiority of the first ethological type of sheep in terms of height was clearly evident in all age periods, which at birth was 0.68 and 1.52 centimeters (P<0.001) higher compared to the second and third types of sheep.

The superiority of offspring of sheep of the 1st ethological type in terms of other exterior dimensions ($P<0.001$; 0.05) requires the effective use of the potential of this type of sheep to obtain well-developed offspring and increase their productivity.

In conclusion, it can be said that considering their ethological types in mating mothers allows for a positive change in the exterior dimensions of offspring at different age periods, which has an impact on increasing productivity.

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