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QUALITY INDICATORS OF BLUE-COLORED PROGENY OBTAINED FROM MATING DIFFERENT GENOTYPES

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Abstract
This article presents the results of biometrical analysis and draws conclusions about the flower types and grades of blue karakul lambs, as well as the dependence of these indicators on color evenness.

Keywords: Blue karakul lambs, mating, flower types (semicircle, rib-like, flat, rosette), grade, elite, class I, class II, substandard, color evenness, excellent even, and uneven.

Introduction

Karakul sheep breeding is an important branch of animal husbandry developed in desert regions. Karakul sheep are unparalleled in the pattern, beauty, and attractiveness of their karakul pelts, which come in various colors, variegations, and assortments.

Realizing this potential to a high degree and rationally managing the breed's capabilities to maximize their use is a pressing issue.

Taking the above into account, the main direction of breeding work with blue sheep is to increase sheep with good color uniformity, targeted shades, and variegation; improve the clarity of flower patterns on the pelt surface and the quality of the wool fiber coat; increase the usable area of the pelts; and enhance

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the viability, natural fertility, and hereditary characteristics of the sheep, as well as increase the number of offspring belonging to the elite and class I. This highlights the relevance of the topic.

Research Objective: The objective of the research is to study the flower types, grades, and the dependence of these indicators on color uniformity in blue Karakul lambs obtained from mating different genotypes.

Research Location, Source, and Methods:

The research was conducted on blue Karakul lambs of the existing South Uzbekistan factory type in the conditions of the "Bobotog' Suri Qorako'lchilik" LLC farm in Kumkurgan district, Surkhandarya region. In the experiment, blue lambs obtained from mating the following groups were evaluated: ♂blue Afghan X ♀black South Uzbekistan (experimental) and ♂blue South Uzbekistan X ♀black South Uzbekistan (control). The "Guide to Breeding Work and Lamb Evaluation (Grading) in Karakul Sheep Breeding" (Yusupov S.Yu., et al., 2015) was used. Mathematical processing of the data was carried out using methods of variational statistics (N.A. Ploxinsky, 1969).

Research Results

Blue lambs are divided into shades, variegations, flower types, and grades.

The high degree of manifestation of these indicators ensures the formation of valuable flower types in lambs, and they are evaluated as belonging to higher grades.

The value of Karakul lambskins is determined by the presence of pencil curl, pea curl, and wave curl patterns on their surface, their orderly arrangement on the skin surface, and the quality of the wool fiber coat.

The more elongated and orderly the semicircular, rib-like, and flat pencil curls of various shapes are on the surface of the Karakul lambskin, the more valuable the skin is. Based on this, data on the flower type indicators of blue Karakul lambs obtained as a result of research are presented in Table 1.

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Table 1. Distribution of Progeny by Flower Types, % (X±Sx)

Groups	n	Progeny flower types			
		Semicircular pencil curl	Rib-like pencil curl	Flat pencil curl	Rosette
Experiment	297	36,0±2,7	14,8±2,0*	37,4±2,8**	11,8±1,9
Control	252	41,3±3,1	21,4±2,5*	23,8±2,6**	13,5±2,1

*P>0,95; **P>0,999;

As can be seen from the table data, the semicircular pencil curl type showed the highest results in the progeny of both the experimental and control groups. The control group progeny was 5,3 percent higher than the experimental group. In the rib-like pencil curl type, the control group progeny was also 6,6 percent higher than the experimental group (P>0,95). Flat pencil curl type lambs were highest in the experimental group, exceeding the control group by 13,6 percent (*P>0,999). The output of rosette lambs was also higher in the control group (13,5±2,1) compared to the experimental group (11,8±1,9) by 1,7 percent.

The class grade of the sheep is also important in determining their breeding value. Information on the class grade of the progeny obtained is presented in Table 2 and Diagram 1 below.

Table 2. Class Grade Indicators of the Progeny Obtained, % (X±Sx)

Groups	n	Lamb grade			
		Elite	Class I	Class II	Substandard
Experiment	297	30,6±2,6	48,8±2,9	9,5±1,7	11,1±1,8
Control	252	28,6±2,8	46,0±3,1	11,9±2,0	13,5±2,1

Based on the table data, the output of elite and Class I lambs was 79,4 percent in the experimental group and 74,6 percent in the control group. Thus, the experimental group was 4,8 percent higher than the control group. Regarding the output of Class II and substandard progeny, the control group was 4,8 percent higher than the experimental group.

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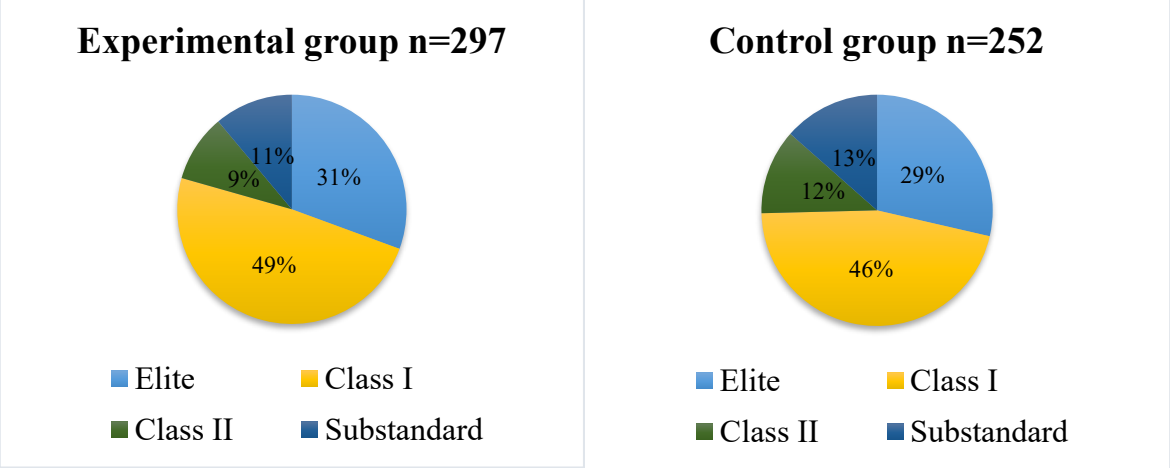

Diagram 1. Class Grade Indicators of the Obtained Experimental and Control Group Progeny, %

It was noted that the progeny of the experimental group was higher than the control group in terms of the output of desirable elite and Class I progeny. In this regard, we can see that the Afghan blue rams used in the experimental group gave a positive result.

Figure 1. Progeny of Afghan genotype with medium blue hue and light blue variegation.

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Relationship between Color Uniformity of Progeny and Flower Type and Class Grade Indicators. As we know, the role of these studied indicators in selection is very high. Accordingly, it is known to us that when color uniformity is in excellent and even condition, the remaining indicators of the progeny are also high to a certain extent. We focused on these indicators in our research, and the results obtained are summarized in Table 3.

Table 3. Relationship between Color Uniformity and Flower Type of the Obtained Progeny, % (X±Sx)

Groups		n	Progeny flower types			
			Semicircular pencil curl	Rib-like pencil curl	Flat pencil curl	Rosette
Experiment	Excellent	144	36,8±4,0	16,7±3,1	46,5±4,2	-
	Uniform / Even	112	44,6±4,7	16,1±3,5	39,3±4,6**	-
	Uneven	41	9,8±4,6	4,8±3,3	-	85,4±5,5*
Control	Excellent	108	36,1±4,6	24,1±4,1	39,8±4,7	-
	Uniform / Even	93	54,9±5,2	27,9±4,6	17,2±3,9**	-
	Uneven	51	27,5±6,3	3,9±2,7	1,9±1,9	66,7±6,6*

*P>0,95; **P>0,999

Analysis of the table shows that in the distribution of excellent color uniformity progeny by flower type, the semicircular pencil curl progeny in the experimental group (36,8 ± 4,0) was 0,7 percent higher than the control group (36,1 ± 4,6). In the rib-like pencil curl type, the control group was 7,4 percent higher. In the flat pencil curl type, the progeny in the experimental group was 6,7 percent higher. We can see that there were no rosette progeny in either group.

In the division of progeny with uniform color uniformity into flower types, the progeny in the control group was 10,3 and 11,8 percent higher for the semicircular pencil curl and rib-like pencil curl types, respectively. For the flat pencil curl type, the experimental group (39,3 ± 4,6) was 22,1 percent higher than the control group (17,2 ± 3,9) (P>0,999). There were no rosette progeny in this color uniformity.

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In the case of uneven color uniformity, the division of progeny into flower types showed that the semicircular pencil curl progeny in the experimental group was 17,7 percent lower than the control group. In the rib-like pencil curl type, the experimental group was 0,9 percent higher. In the flat pencil curl type, no such progeny were obtained in the experimental group. Only the control group progeny was 1,9 percent. We can see that the output of rosette type progeny was higher in both groups. In this case, the experimental group progeny (85,4 ± 5,5) was 18,7 percent higher than the control group progeny (66,7 ± 6,6) (*P>0,95).

After all the indicators of the obtained progeny are evaluated according to the "Guide to Breeding Work and Lamb Evaluation (Grading) in Karakul Sheep Breeding," the class to which the progeny belongs is tattooed with special marks on their ears and recorded in grading journals. After a certain period of time, when it is no longer possible to determine the flower indicators and wool fiber quality indicators of the progeny, we can determine which class they belong to and what indicators they had at birth based on their exterior and ear markings. Based on this, the extent to which the color uniformity of the progeny is related to the class indicators was summarized in Table 4 and Diagram 2 in our research.

Table 4. Relationship between Color Uniformity and Class of the Obtained Progeny, % (X±Sx)

Groups		n	Lamb grade			
			Elite	Class I	Class II	Substandard
Experiment	Excellent	144	63,2±4,0	36,8±4,0	-	-
	Uniform / Even	112	-	82,1±3,6	17,9±3,6	-
	Uneven	41	-	-	19,5±6,2	80,5±6,2
Control	Excellent	108	62,0±4,7	38,0±4,7	-	-
	Uniform / Even	93	5,4±2,3	80,6±4,1	14,0±3,6	-
	Uneven	51	-	-	33,3±6,6	66,7±6,6

Based on the table analysis, it was noted that the progeny with excellent color uniformity belonged to the elite and Class I in both groups. Class II and substandard progeny were not found in this color uniformity.

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In the case of uniform color uniformity, only progeny belonging to the elite class were found in the control group, accounting for 5,4 percent, and the rest were found to belong to Class I and Class II. In the experimental group, the progeny with uniform color uniformity belonged to Class I and Class II. Substandard progeny were not found in either group.

Similarly, when the uneven color uniformity was analyzed, no elite or Class I progeny were obtained in either group. Only Class II and substandard progeny were found. In this case, we can see that the output of Class II progeny in the control group was 13,8 percent higher than in the experimental group. The experimental group was higher in the substandard condition.

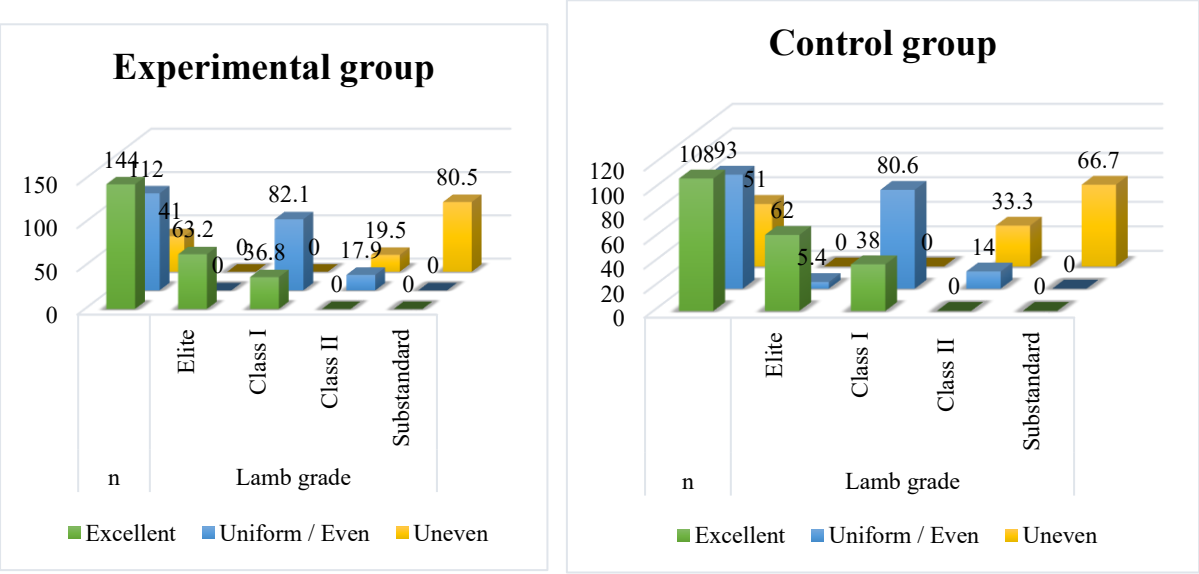

Diagram 2. Relationship Between Color Uniformity and Class of Obtained Progeny, %

It can be concluded that research in this direction was conducted taking into account the current decline in the population size of South Uzbekistan blue Karakul sheep. As a result of studying the flower type and class indicators of blue Karakul progeny obtained from mating different genotypes, and the dependence of these indicators on color uniformity, it can be seen that the output of desirable flower type and class progeny was to a certain extent superior in the experimental

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group compared to the control group. Based on this, the use of Afghan rams, which were used as the experimental group, has yielded positive results in improving these indicators. It is considered appropriate to pay attention to these aspects in selection.

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