Exploring the Flower Performance of Sur Colored Karakul Sheep

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Abstract

This article provides data on the quality of flowers in the offspring using flat-type genotypes in the breeding of sur colored karakul sheep. Among them, the color of the sur is distinguished by its wool coat and the sharpness of the tip, and the sur karakul provides the color and variety of the skins. This feature of Sur skins determines their high price and wide consumer demand.

Keywords: Karakul Sheep, Wool Fiber, Lamb, Flat Flower Type, Ribbed Flower Type, Semicircular Pen Flower Type, Overgrown Flower, Solid, Loose, Flower Level, Sur Karakul Skins, Single Flower, Fiber Flower.

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INTRODUCTION

The legal framework for the sustainable development of all sectors of animal husbandry has been created in our country. An example of this is the 1993 Law "On Veterinary Medicine", law "On Breeding", adopted in 1995, also can be cited.

In this regard, the President of the Republic of Uzbekistan № PQ 308 of March 23, 2006 "On measures to encourage the reproduction of livestock in personal assistants, farmers and farms" and № PQ-842 of February 2017, № PQ-2841; resolutions No. 3603 of February 14, 2018 "On measures to accelerate the development of karakul" and № PQ-4420 of August 2019 pay great attention to the development of animal husbandry, including karakul, increasing its export potential, strengthening the feed base of the industry.

The history of the origin and further development of the Karakul sheep breed, which is one of our national prides and unique in the world, is connected with the Kyzylkum desert. This breed is now enriched with a variety of precious colors.

Among them, the color of the sur is distinguished by its wool coat and the sharpness of the tip, and the sur karakul provides the color and variety of the skins. This feature of Sur skins determines their high price and wide consumer demand.

Sur karakul sheep of Bukhara breed is one of the most valuable color groups of the breed, and the demand for karakul products of this color is high in the domestic and foreign markets. In this regard, one of the most pressing issues is the effective use of the potential of these colored sheep, improving the quality and expanding the range of products.

Generation of flower types. In our research, research has been conducted to study the heredity of sur colored flat type sheep by flower type. The data are summarized in Table 1.

Table 1: Distribution of generations into flower types according to pairing options

Pairing option	n	Flower types of generations, % (X±Sx)			
		Flat	Semicircle pencil flower (pencil flower)	Ribbed	Ribbed
Flat x flat	123	54,2±4,49	17,3±3,41[x)]	21,5±3,70[x)]	7,0±1,89[x)]
Flat x semicircle pencil flower (pencil flower)	118	43,4±4,56	27,9±4,13[x)]	15,9±3,37[x)]	12,8±3,08[x)]
Flat x ribbed	87	39,6±5,23	22,1±4,45[x)]	34,5±5,10[x)]	3,8±12,05[x)]
Flat x grown up	50	32,0±6,0	46,0±4,0	6,0±2,0	16,0±6,0

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

The data show that insemination of sheep using flat-type rams increases the weight of pencil flower of this type in generations. The yield of such generations is the highest in the "flat x flat" pairing variant (54.2 ± 4.49%), while in the remaining variants it is 43.4 ± 4.56 and 39.6 ± 5.23%, respectively. The yield of semi-circular pencil flower and rib-type lambs varies depending on which type of lamb is involved in mating. There is a certain increase in the weight of lambs of the semicircular pencil flower type (27.9 ± 4.13) and lambs of the rib type (34.5 ± 5.10).

In addition to the facts, it should be noted that insemination based on the use of flat-type rams in all cases ensures that the yield of this type of offspring is statistically high (P <0.05; 0.001).

It is known that the reproduction of flower indicators evaluated at birth of karakul sheep is polygenic in nature, and their reproduction depends to some extent on genotypic factors as well as on the influence of the external environment, which is difficult to take into account. In this regard, it can be said that the use of multiple homogeneous mating methods in the insemination of karakul sheep can also increase the occurrence of traits in the offspring to a certain extent, but does not maximize, there is a different distribution between each trait.

The length of the flowers. The length of the flowers is an important factor in the selection of karakul sheep, and its length ensures that the karakul skin is beautiful and the picture is clear. Numerous studies have found that lambs belonging to the ribbed and flat flower types are characterized by long flowers. From this point of view, the use of this type of sheep in the selection process is effective.

It should be noted that the same type of flowers at the skin level leads to longer flowers in the offspring.

The study studied the degree of distribution of generations by flower length under the conditions of insemination of flat-type sheep (Table 2, Figure 1).

Table 2: Distribution of generations by flower length

Pairing option	n	Distribution of generations by flower length, % (X±Sx)		
		Long	Medium	Short
Flat x flat	123	53,7±4,50	36,5±4,34^{x}	9,8±2,68$^{x)}$
Flat x semicircle pencil flower (pencil flower)	118	41,5±4,55	44,1±4,57	14,4±3,23$^{x)}$
Flat x ribbed	87	56,3±5,32	34,5±5,10^{x}	9,2±3,10$^{x)}$
Flat x grown up	50	12,0±6,0	66,0±6,0	22,0±4,0

The results summarized in Table 2 confirm the results of previous studies that the use of flat-type sheep in the insemination process leads to an increase in the weight of long-flowered lambs.

In the process of insemination, the use of flat-type rams, depending on the type of flower of paired sheep, was found to increase the weight of long-flowered lambs to 41.5-56.3%, reduce the weight of short-flowered lambs to 9.2-9.8%, and medium-weight lambs 34, 5-41.1 percent.

The results of the study show that the use of flat-type sheep in all cases provides a statistically reliable result (R <0.001) higher than the yield of short-flowered offspring on long-flowering offspring, which is effective in the selection process.

Width of flowers. It is an important selection indicator and is one of the defining characteristics of pedigree. Its size varies significantly depending on the type and shape of the flowers at the skin level. Semicircular pencil flowers and flowers are mainly medium-sized, partly small and large, flat and ribbed pencil flowers and petals are medium and large.

Karakol flowers are divided into 3 groups according to their width in sur colored lambs - small (up to 5 mm), medium (5-9 mm) and large (over 9 mm) flowers.

In terms of selection importance, flowers of medium width are valuable. The selection of sheep with this width range, the commodity properties of astrakhan skins are highly valued.

Centuries of selection and targeted insemination for this trait have led to its genetic strengthening in sheep. At the same time, it was observed that in the "flat x flat" and "flat x rib" mating variants, an insignificant part (2.3-2.4%) of the lambs had small flowers and a significant part (19.5-21.8%) had large flowers.

The participation of semi-circular pencil flower type sheep in the breeding process leads to a doubling of the weight of small-flowered lambs, a certain increase in the weight of medium-flowered lambs (1.4-3.7%), a decrease in the weight of large-flowered lambs by 4.2-5.5%. detected. This is an important selection condition and it is effective to use in breeding work aimed at improving this indicator. From this point of view, the levels of flower size in different pairing options in the offspring were studied, and the results obtained are summarized in Table 3.

Table 3: Flower width of generations

Pairing option	n	Distribution of generations by flower width, % (X±Sx)		
		Small	Medium	Large
Flat x flat	123	2,4±1,38	78,2±372	19,5±3,57
Flat x semicircle pencil flower (pencil flower)	118	5.1±2,03	79,6±3,71	15,3±3,31
Flat x ribbed	87	2,3±1,61	75,9±4,59	21,8±4,43
Flat x grown up	50	-	70,0±4,0	30,0±4,0

The results of the study of flower width in the offspring obtained in the breeding of flat-type sheep show that the

majority of them (75.9-79.6%) have a medium size in terms of flower width.

Strength of flowers and location picture. In determining the pedigree and productivity of lambs, the strength of the astrakhan flowers and the picture of their location on the skin are important signs.

The strength of flowers depends in many ways on the density of wool fibers, the ratio of fiber types, length and fineness, and the structure of the flower.

Numerous studies have found that the shortness of wool fibers in the skin of lambs significantly increases the durability of flowers.

The formation of the location picture of flowers occurs on the basis of existing laws of development of wool fibers in animals and is determined by the methods and direction of selection.

Most scientific studies have shown that the formation of a picture of flowers occurs in the early stages of embryonic development of lambs, i.e. with the appearance of wool fiber follicles, while visible images are formed with the appearance of secondary flow wool fibers on the skin surface.

The shapes of the flower pictures depend on the flower types and shapes of the lambs. The semicircle pencil flower type is mostly parallel to the type of grown up - straight to the concentric, flat and ribbed types, while the type of grown up is characterized by mixed indeterminate flower pictures. From this point of view, it is possible to increase the weight of the offspring belonging to a particular type of flower by carrying out selection and fertilization work depending on the picture of the flower.

In the course of the research, the strength of flowers and the characteristics and levels of reproduction of the image were studied, taking into account the flower types of sheep in the offspring of flat-type rams. The results obtained are presented in Table 4.

The data from the table show that the strength of the flowers is manifested by certain differences in the conditions of mating sheep of different flower types with flat-type rams.

Table 4: Flower strength and location picture of generations

Pairing option	n	Flower durability of generations, % X±Sx)			Flower picture of generations, % (X±Sx)		
		Medium solid	Strong	Empty	PS	PC	Mixed
Flat x flat	123	36,6±4,34	47,9±4,50	15,5±3,26	45,5±4,49^{x}	37,4±4,36	17,1±3,39
Flat x semicircle pencil flower (pencil flower)	118	38,1±4,47	49,2±4,60	12,7±3,07	32,2±4,30	47,5±4,60	20,3±3,70
Flat x ribbed	87	49,4±5,36	42,6±5,30	8,0±2,91	51,7±5,36^{x}	34,5±5,10	13,8±3,70
Flat x grown up	50	12,0±4,0	50,0±6,0	38,0±5,0	-	48,0±6,0	52,0±4,0

X-P<0,05

PS-parallel - straight

PC-parallel – concentric

Under these conditions, the yield of very strong (49,4 ± 5,36%) and strong (42,6 ± 5,30%) flowering generations was observed in the "flat x rib" pairing variant, while in other variant pairs this figure was 36,6 ± respectively. 4,34 and 47.9 ± 4.50 percent and 38.1 ± 4.47 and 49.2 ± 4.60 percent, respectively. Loose wool lambs with a width of 38.0 ± 5.0% were observed in the "flat x grown up" pairing variant. At the same time, it should be noted that in the "flat x rib" variant pairing, the weight of empty-flowered lambs is almost 2 and 1.5 times lower than in the pairing of the other two variants. From this point of view, using this option, it is possible to collect genotypes with perfect heredity by obtaining high quality of wool fibers from flat-type rams, and durability properties of flowers from rib-type sheep.

Certain typological differences and features were also noted in the data obtained on the location picture of the flowers during the study. These differences and features are that the parallel-straight picture of the flowers, based on the flat and ribbed types, is clearly visible in the formation of this picture in the generations to come. The participation of semi-circular pencil flower type sheep in mating affects the distribution of lambs according to the flower picture.

In the pairing variant with flat and ribbed type sheep, the majority of lambs (45.5-51.7%) moved with a parallel image of flowers, while in the presence of a semicircular pencil flower type, this figure decreased statistically reliable (R <0.05) to 32, 2 ± 4.30%, and the weight of parallel-concentric picture lambs increased by 10.1-13.0%. In the "flat and grown up" pairing variant, the weight of lambs with a mixed floral pattern increased sharply.

The appearance of flowers of different types and shapes. It is known that different types of flowers are characterized by flowers that characterize this type. In addition to the presence of mainly specific flowers, in many cases the skin of lambs belonging to a particular type is often found in secondary parts of the skin, as well as non-specific flowers, which indicates that they are heterozygous for this indicator.

The use of such sheep even in homogeneous mating leads to the fact that the offspring have different flower types.

As long as the flowers are the same in the skin of a lamb, they can be conditionally called homozygous for flowers, and homogeneous pairing in the insemination of such sheep gives the maximum result in terms of flower type yield.

From this point of view, it is advisable to focus selection work on insemination of astrakhan sheep with as many generations of flowers of the same type as possible and to use them to the maximum in the future selection process.

The proportions of flowers in the offspring obtained in the pairing work in the tables were studied separately in lambs belonging to each flower type.

In the study of these indicators in flat-type generations (Table 5), different results were noted. Flat pencil flower (43.3 ± 6.05%) and flat yolgul (22.3 ± 5.09%) flowers of the flat type are at the highest level (66.6%) in the skin of lambs obtained from homogeneous mating of the variant "flat x flat" were observed to occur in the main part of the skin surface. Non-typical flowers occupy 33.4% of the skin area of lambs, of which 6.0 ± 2.90% are semicircular pencil flowers, 17.9 ± 4.68% are ribbed pencil flowers, 10.5 ± 3.75% are flowers of other shapes.

Continuing the analysis of the data in the table, it should be noted that the addition of semi-circular pencil flower type sheep to the mating process led to an increase in the diversity of flowers in the skin of the offspring.

Table 5: Flower ratio in flat-type lambs obtained from different mating

Pairing option	Counted lambs, numbercc	Flower ratio, % (X±Sx)					
		Pencil flower			Donagul	Yolgul	Other flowers
		Flat	Semicircle	Ribbed			
Flat x flat	67	43,3±6,05	6,0±2,90	17,9±4,68	-	22,3±5,09	10,5±3,75
Flat x semicircle pencil flower (pencil flower)	51	37,3±6,77	15,7±5,06	Flat x flat,8±3,76	13,7±4,81	13,7±4,81	11,8±4,52
Flat x ribbed	34	35,2±8,19	14,7±6,07	20,7±3,7	-	17,6±6,53	11,8±5,53
Flat x grown up	16	30,1±6,4	20,4±4,8	10,4±3,7	12,4±3,6	15,4±4,3	11,3±3,7

Almost similar results were observed in the "Flat x rib-ribbed" pairing variant used, with a 2.8% and 12.9% increase in the weight of ribbed peppers, respectively.

The results of the study of the ratio of flowers in the skin of semicircular pencil flower type lambs from different pairs are given in Table 6.

From the data in the table it is possible to recognize the significant advantage of its specific flower weight in the semicircular pencil flower type, as well as the known effect of flat-type rams involved in fertilization, ie flat peppers (8.1-12.2%) and Yolguls at the skin level of lambs obtained in all mating options 6.7-11.8%) can be seen. Of course, in this case, even if the weight of the semi-circular pencil flowers and flowers of the type occupies the main area (59.8-68.6%), the degree of heterozygosity of the flower species of the offspring increases. This complicates the process of selecting and fertilizing sheep in the later stages. In this regard, it is advisable to use a homogeneous method on the type of flower when fertilizing flat-type sheep.

The study examined the proportion of flowers found at the skin level of the offspring from different mating options (Table 6).

The fact that ribbed-type lambs are obtained from different pairs of ewes results in different levels of flower appearance at the skin level. Involvement of rib-type sheep in mating at the skin level of this type of offspring increase the weight of typical rib-shaped pencil flowers (59.6 ± 9.04) and yol flowers (20.4 ± 7.36%) to 77.3% reduce the weight of other flowers, flower variety Studies have shown that it can reduce the diversity of species.

In the offspring obtained in other variant mating variants, a slight decrease in the weight of flowers typical of the type and an increase in the number of flowers found on the skin of lambs in the variant "flat x semi-circular pencil flower" were observed.

Table 6: Flower ratio in semicircle pencil flower type lambs obtained from different pairs

Pairing option	Counted lambs, number	Flower ratio, % (X±Sx)					
		Pencil flower			Donagul	Yolgul	Other flowers
		Flat	Semicircle	Ribbed			
Flat x flat	21	12,2±7,14	45,2±10,86	8,6±6,12	15,8±7,95	10,3±6,63	7,9±5,89
Flat x semicircle pencil flower (pencil flower)	33	8,1±4,75	52,4±8,69	-	16,2±6,41	11,8±5,62	11,5±5,55
Flat x ribbed	19	10,6±7,06	44,9±11,41	12,6±7,61	14,9±8,17	6,7±5,73	10,3±6,97
Flat x grown up	23	10,1±3,4	56,4±8,1	10,2±6,1	18,1±6,1	-	5,2±6,1

Table 7: Flower ratio in rib-type lambs obtained from different mating

Pairing option	Counted lambs, number	Flower ratio, % (X±Sx)					
		Pencil flower			Donagul	Yolgul	Other folwers
		Flat	Semi circle	Ribbed			
Flat x flat	26	13,9 ±6,78	-	43,9 ±9,73	-	28,6 ±8,86	13,6 ±6,72
Flat x semi circle pencil flower (pencil flower)	19	-	13,8± 7,91	45,7 ±9,77	8,7± 5,56	21,8 ±8,10	10,0 ±5,88
Flat x ribbed	30	14,2 ±6,37	-	56,9 ±9,04	-	20,4 ±7,36	8,5± 5,09
Flat x grown up	3	-	33,3± 0,6	59,9 ±9,65	-	-	6,5± 3,6

Table 8: The proportion of flowers in lamb-type lambs obtained from different pairs

Pairing option	Counted lambs, number	Flower ratio, % (X±Sx)					
		pencil flower			Piece flower	Yolgul	Other flowers
		Flat	Semi circle	Ribbed			
Flat x flat	9	11,7 ±10,7	28,6 ±15,06		39,6 ±16,30		20,1 ±13,35
Flat x semicir(pencil flower)	15	9,7± 7,64	31,6 ±12,00		43,1 ±12,79	-	15,6 ±9,37
Flat x ribbed	4	5,9± 11,78	15,1 ±17,90	12,5 ±16,54	40,2 ±24,52	8,3± 13,79	18,0 ±19,21
Flat x grown up	8	-	56,2 ±7,4	6,4± 4,2	-	28,4 ±10,4	9,0± 3,2

The results of the study of the proportion of flowers found in the skin of lambs of the grown up type of lambs obtained from mating sheep in different variants (Table 8) showed a certain improvement in flower quality in lambs of this type. https://youtu.be/veUobKMe-f

In this case, in grown up type lambs, the majority of the typical flowers of the type make up the weight (39.6-43.1%), as well as 5.9-11.7% flat, 15.1-31.6% half, although short at the skin level. circle, 12.5% of ribbed grown ups and 8.3% of Yolguls.

CONCLUSION

In general, it can be concluded that the use of flat-type genotypes in the breeding of sur colored sheep allows a known and significant improvement in the quality of flowers in the offspring.

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