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PRINCIPLES OF KARAKUL BREEDING AND MONITORING OF THEIR BIOPRODUCTIVE TRAITS IN THE DESERT - LANDSCAPE ZONE

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Abstract:

The article presents studies of various scientists on the origin of the Karakul sheep, shows the monitoring of the biological productivity of animals bred in various desert-landscape (ecological) zones from the desert: Kara-Kum, Kyzyl-Kum, foothill semi-desert and up to the northern desert zone. The model of landscape selection in the formation of the northern Kazakh Atyrau Karakul breed is established. It is shown that the Karakul sheep as a unique breed is not only the material wealth of the state, but also its cultural and spiritual wealth.

Keywords: Karakul sheep; history of the origin of the Karakul sheep; desert-landscape zones; ecological types of sheep; monitoring of animal bio productivity; morphological signs; blood enzymes.

INTRODUCTION.

Karakul breeding, as a branch of desert animal husbandry, occupies an important place in the economy of the Central Asian states - Uzbekistan, Kazakhstan, Turkmenistan and Tajikistan. Only in Uzbekistan, 40% of its territory, about 20.0 million hectares, belongs to a desert landscape zone, where the well-being of the indigenous population is mainly associated with karakul farming. Among the breeds of sheep created by mankind, a special place is occupied by the Karakul breed of sheep, which gives Karakul skins that are amazing in beauty, diverse in curls and colors, called in the world as "Bukhara-Karakul", Bogolyubsky S. N. [3] the same researcher notes that Uzbekistan is the birthplace of this unique breed.

An Arab traveler who visited Turkestan in the X century, Ibn Haukal, wrote about the presence of a prototype of such a breed. The first use of the word karakul is found in the book Abu Bakr Muhammad ibn Jafar An-Narshahi "History of Bukhara" written in 943-944, where it is said that fur coats made of sheepskins and karakul skins were sold in the bazaars near Bukhara. Quite noble curls are present in newborn lambs of the Sandi and Malpura breeds, bred in India, the state of Rajasthan. When crossing them with Karakul rams, lambs of the first generation F^1 in terms of the quality of the karakul did not differ much from the purebred karakul. Nevertheless, the Karakul sheep appeared in the area of the Khiva - Bukhara - Chardzhou triangle, along the Amu Darya of the Great Silk Road.

MATERIALS AND METHODS

The material for the research was Karakul sheep bred in various desert - landscape regions. The air temperature, the amount of precipitation for the year were obtained from the materials of hydrometeorological stations. The qualitative and quantitative traits of lambs were evaluated according to the generally accepted Instructions for the grading of karakul lambs. Forage yield on pastures, daily distillation of sheep and others according to L.S. Gaevskaya [5]. The materials were processed according to the method of N.A. Plokhinsky [8].

RESULTS AND DISCUSSION

It is generally accepted that Asia, including Central Asia and Iran, is one of the main centers of origin and domestication of animals, where sheep were one of the first animals to be trained. But the formation of any breed, especially the ancient ones, to which the Karakul one also belongs, leaves its mark on the culture, way of life, customs of the peoples living on this territory. Frequent migrations, mixing of peoples, which took place in different historical periods, also led to the movement of animals accustomed to humans to new areas, as a result of which mixing with other aboriginal animals occurred. The Karakul sheep as a product of desert animal husbandry was created precisely in such a complex cycle of history and

absorbed them into itself. The study and generalization of materials on the origin of Karakul sheep gives us reason to believe that this breed is one of the oldest, at the same time as it became a smush sheep in the modern sense in the last 300 – 400 years, which falls on the period of rapid development of trade between the West and the East, the Turkestan khanates with Russia, and through it the West, since only the emergence of a wide demand for such a product could stimulate sheep breeders to produce high-quality karakul.

Most scientists who studied the Karakul sheep believed that it takes more than one century to reproduce this breed anew. In our opinion, the Karakul breed can be reproduced within 4-5 generations, for this purpose, the fat-tailed sheep of Turkestan populations, first of all, the Jaidar breed should be crossed with lean-tailed or fat-tailed sheep bred in Iran, such breeds are now in the Central Asian states. Currently, the Karakul breed of sheep bred in the Central Asian republics has a complex structure. The breed is differentiated into pedigree, factory, more productive ecological types, including animals of different colors and colors. The complexity of the structure of the Karakul breed creates certain advantages for it, for example, various desert-landscape breeding zones of these animals from the southern sandy desert "Kara – Kuma" (Republic of Turkmenistan), the Southern gypsum zone "Kzyl–Kuma" (Republic of Uzbekistan) mountain – plain zone (Republic of Tajikistan) to the zone of the northern desert (Republic of Kazakhstan).

As a result of landscape selection (the term and model of selection was first proposed by the American biologist S.Wright in 1931) [9]. including desert - landscape selection, the Karakul breed acquired elasticity, high adaptability to various landscape-ecological-pasture-forage conditions, all this made it possible to ensure high viability and productivity of animals through the use of inbreeding. Karakul sheep bred in various desert-landscape zones acquire special features and differ in the size and weight of the skins, curls, hair length, fertility, etc. This shows the peculiarity of the natural and climatic conditions of each zone, that is, the landscape (soil, vegetation, precipitation, temperature, duration of the winter period, etc.). (1-table). The following should be added to the materials presented in the table:

- the southern sandy desert-the Karakul sheep bred in these conditions is well developed, strong with strong ligaments of limbs, hardy and mobile. Sheep retain wool pigmentation for a long time;
- gipsirovannaya desert-sheep are medium-sized, harmoniously built, strongly graying with a large fat content;
- foothill semi-desert-the sheep is larger, multi-haired. Lambs are relatively large;
- northern desert – in the formation of the Karakul sheep type attached to the northern desert, purebred breeding and crossing with the short-tailed Edilbaev breed were used. Populations of Karakul sheep in Kazakhstan were formed into a special type developed by climatic endurance in conditions of severe and long winter;
- mountain-plain zone. The animals bred here are large with a high shearing of wool. Lambs are large, the doodle is thickened not dense enough, the hair is elongated Dyachkov I. N. [4].

From the formed ecological types of Karakul sheep, it is necessary, in our opinion, to pay attention to the type of animals formed in the zone of the northern desert (Kazakhstan) and the mountain - plain as a typical example (analog) of the model of landscape selection of Karakul sheep, that is, the movement of the population from one adaptive zone to another atypical. Since with an increase in variability and a decrease in elimination, the population begins to occupy not only the top of the adaptive elevation, but also its various positions (slopes), while part of the population may end up on the lower slopes, that is, at the foot or another additive peak. Then the population or its part under the influence of selection will inevitably begin to move (rise) to this new additive side. In connection with the above, using landscape selection, it is possible to model the change in the environment, the role of gene drift-the value of the degree of isolation and other factors that determine the direction of selection and its intensity.

A striking example of landscape selection is the population of Karakul sheep formed in the middle and northern strip of Kazakhstan, where at present, according to A. Ombayev [7], 14 highly productive breed and factory types of Karakul sheep of different colors and colors have been created, in addition, for the first time in this region, breeders of Kazakhstan have created the Atyrau curd - tailed smush meat-fat breed (A.A.Ombayev [7]), which, like the purebred Karakul sheep, produces smush, original colors and colors.

Currently, the variety of colors of the doodle is admired by any person - it is black, gray (shirazi) of different shades, blue, silver, pearl; sur colors-golden, silver, lilac, diamond, apricot flower, bronze, amber, platinum, candle flame; Giginishvili N. S. [6] brown of different shades, pink, (diamond color), shaturi, white, etc. You will not find such a range of colors in other animal species. Science has developed the main methods of breeding work with Karakul sheep of different colors.

When breeding sheep of gray color (shirozi), a heterogeneous selection of black x gray color is used and, in a limited amount, a uniform selection of ♂ shirozi x ♀ shirozi. The reason for this is the appearance of 1/3 albinoid, non-viable lambs among the lambs of the sherozy color, which die before the age of one year. Science has established that the reason for this is the homozygosity of the gene dominating over the black color, which determines the color of sherozi. Such lambs at an early age are identified by the state of

weak pigmentation of the mucous membrane of the tongue, palate, inner surface of the groin, ear, etc. At the same time, it was found that the appearance of albinoids in the offspring of individual rams is different.

Desert landscape-(ecological zone)	Air temperature, C °		The amount of annual precipitation	Yield of forage on pastures q / ha	Daily distillation of sheep, km	Natural twins,%	Features of the produced karakul skins
	maximum	minimal					
Zone of the southern sandy desert (Kara-Kumy)	+ 46	-20	100 (0- 200)	1,0-1,20	15-20	1,5-5,0	The mezdra is thin, dense, the hair cover is short, the curl is dense
Zone of the southern - gypsum desert (Kizylkum)	+ 46	-20	80-15	1,6-2,0	8-10	4,0-8,0	The flesh is thin, medium dense, the hairline is short, the curl is dense
Northern desert zone	+ 45	-48	100-180	3,5-5,0	3-6	8-10	The flesh is thickened, dense, the hair is somewhat elongated, the curl is medium-
Foothill semi-desert zone	+ 40	-25	250-400	4,5-5,0	2-4	6-15	The flesh is thick, loose, the hair is long, the curl is less dense
Mountain plain zone	+ 30	-30	300-400	3,0-5,0	2-3	10-15	The flesh is not dense enough, the hair is somewhat lengthened, the curl is not dense enough

Characteristics of desert - landscape zones of karakul sheep breeding (Materials of L.S. Gaevskaya: 1971)

In search of clarification of the reason for this phenomenon, we drew attention to such a sign of the karakul sheep of the Shirozi, as the roan of the eyelashes, i.e. for the presence of unpigmented hairs on the eyelashes. Research by Aripov U. Kh. [1,2] shows that the frequency of occurrence of this trait among 1043 heads of surveyed sheep shirozi, with the presence of the trait "roan eyelashes" was 313 heads or 29.1%. We have carried out the crossing of Shirazi sheep taking into account this feature. When both parents were with the sign of roan, 63.4% of the lambs of shirozi color received from them were albinoids, which is twice as much as theoretically expected, which gave us reason to believe that the sign of "roan eyelashes" is closely linked to the shirozi lethality gene. Therefore, if there is this sign, the sheep should not be left for the tribe, but it is necessary to score on the doodle. The same author established a relatively high degree of genetic variability of O-diphenol oxidase in blood serum. So, within the colors of the Surkhandarya sur (platinum, amber, bronze) from 19.40 to 76.7 %, gray color from 32.10 to 49.14 %, black color from 34.81 to 49.20 %. The activity of other studied enzymes (aspartate and tyrosine aminotransferase, peroxidases, etc.) is less variable. From the above, we can conclude that at present, when in-depth breeding work with the breed, it is necessary to take into account and use biological methods.

Now the Karakul sheep is bred in 50 countries of the worldShe feeds people with her meat and milk, dresses and shoes with wool and leather, and gives aesthetic joy to people with her doodle. Therefore, when we talk about the doodle, we mean not only the material wealth of the country, but also its cultural and spiritual wealth.

CONCLUSION

1. It is established that Karakul sheep bred in various desert-landscape zones acquire special features and differ both in biological and productive features.

2. The variability of biochemical blood parameters in Karakul sheep of different colors and colors has been established.

3. It was revealed that the absence of the morphological feature "roan eyelashes" can be used in breeding work with gray sheep as a test indicating the viability of offspring.

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