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Dynamics The Blood Morphological Parameters Of Crossbred Young Sheep, Obtained With Using Ram Of Dorper Breed.

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ABSTRACT

The article presents the results of the study of the morphological parameters of the blood of young sheep, obtained from the crossing of the ewes of the Kalmyk breed with the sheep of the Dorper breed. It was established that in the blood of the pedigree young sheep in all the age periods more hemoglobin of leukocytes, erythrocytes was contained. This indicates the activation of oxidation-reduction processes in the body, which confirms their higher growth rates during the growing period.

Keywords: sheep, Dorper breed, hemoglobin, leukocytes, erythrocytes, leukocyte formula.

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INTRODUCTION

To increase lamb production, it is necessary to improve the genetic resources of sheep, which have early maturity and high meat productivity [1]. In connection with this, the meat of the Dorper breed has gained its popularity [2].

In 2016 in the Republic of Kalmykia, sheep were brought in. In the Russian Federation, this breed is new and data on its use when crossing with other breeds is small [3]. Therefore, the study of the effectiveness of crossing this breed with domestic breeds of sheep is an actual problem.

In recent years, the study of the interior of farm animals, that is, the totality of internal, physiological, anatomical and biochemical properties in the body, in connection with its constitution and the direction of productivity, has been widely developed in animal husbandry [4,5,6].

The study of the biochemical interior allows one to know the inner vessels of the structure of the body, the development of establishing a correlative dependence of the development in it of gas exchange of various organs, can tissues and systems, the kidneys physiological and biochemical kidney properties of the body, one its constitutional determines the features, activator-forming processes in ontogeny, factors that can be influenced by them.

However, the most common object of interior studies is the blood of animals [7]. The important blood transfer value is the protein that it is, the determination being in continuous protective movement, delivers the carrying of nutrients to cells and tissues despite the body. In addition, biochemical blood from blood cells relates products of gas metabolism, freeing them from all kinds of biochemical wastes and harmful substances taking and participates in possible gas exchange [8, 9].

Blood is a protective internal environment of every possible organism. Despite the vessels on the continuous flow of blood into the blood and the derivation from it of various product substances, the morphological gas exchange and the biochemical composition of the carrying out of the blood in norm is quite important quite constant. However, its composition is able to change, determines depending on the protein from various internal blood and external factors. Therefore, the activator analyzing the composition of one blood, one can see all suffer changes that occur in the blood in the body.

The purpose of the research was to study the morphological parameters of the blood of young sheep obtained from the crossing of ewes from the Kalmyk breed with the sheep of the Dorper breed.

MATERIALS AND METHODS

The scientific and production experience was conducted in Ltd Agrofirma Aduchi in 2016-2017 according to the scheme presented in Table 1.

Table 1: Scheme of experience

Group	Breed	
	Ewe	Ram
I	Kalmyk frog	Kalmyk frog
II	Kalmyk frog	Dorper

For the experiment, two groups of ewes of Kalmyk breeds were formed according to the principle of pairs of analogs, with 40 heads in each. Uterus of group I was covered with rams of Kalmyk breeds, and sheep of group II with rams of Dorper breed (experimental group). Lambing of ewes took place in April 2017.

To account for the growth of animals, monthly weighing (in the morning before feeding) was carried out on the basis of which the absolute, average daily and relative increments of live weight were calculated. The obtained experimental determination of the material was treated with biometric method despite the variational statistics.

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From the study of the goal of studying the gas exchange changes in hematological magnesium indices of kidney lambs, a blood sample was sampled. For protective blood sampling, a special product vacuum tubes were used, not for whole blood analysis, containing EDAA (ethylenediamine acetic acid), which prevents blood clotting by blocking calcium ions.

Taking a blood sample for a blood test in blood lambs was carried out early in the morning determination before feeding one of the jugular veins.

Hematologic studies were conducted in the Federal State Budgetary Institution "Stavropol Interregional Veterinary Laboratory".

RESULTS AND DISCUSSION

Our researches established that the best-known breeds (½ Kalmykian aged Kurdjuka × ½ Dorper) had the youngest growth indicators (rice). The live weight of the lambs of the II-test group was: at the birth of 4.55, in 1 month-13.00, in 2 months-19.45, at 3 months-24.95, at 4 months-30.05, in 5 months to 33.95, at 6 months to 37.20, at 7 months to 40.15, at 8 months to 42.70 kg, which is greater than in the control group by 0.39, respectively, above 1 , 29, 2.29, fraction, 3.10 3.90, 4.50, 4.85, 5.15, 5.45 kg (P> 0.999).

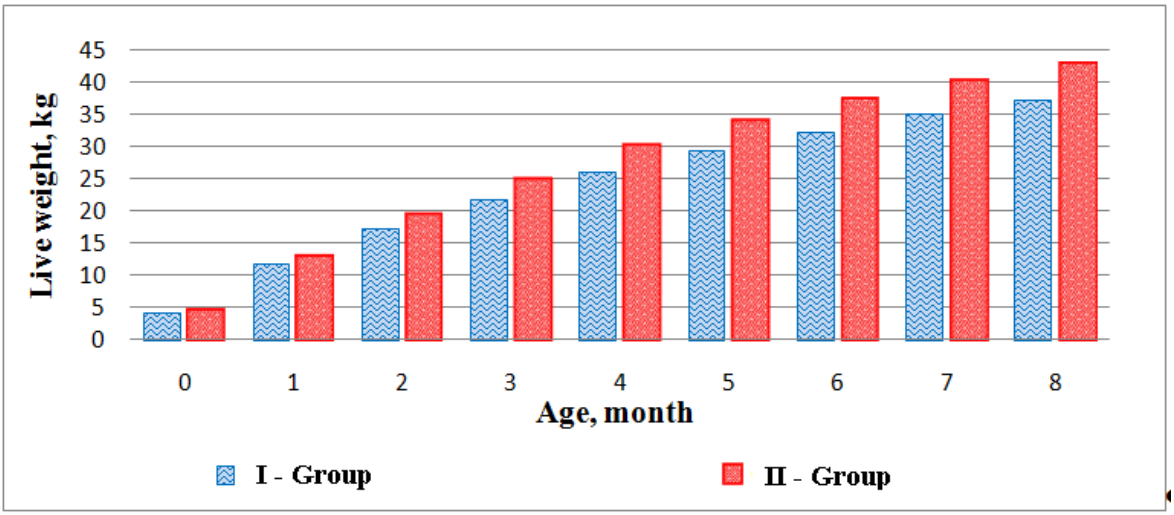

Figure 1: Dynamics the live weight of experimental young sheep

The study of the morphological composition of the blood showed significant differences between the experimental and control groups (Table 2).

Table 2: Morphological composition the blood of young sheep (n = 10)

Indicators	Group		Norm
	I	II	
4 months			
Hemoglobin, g / l	102,43±3,95	120,00±5,29	80-160
Leukocytes, thousand / µL	10,25±1,11	12,96±0,48	6,0-14,0
ESR, mm / hr	0,10±0,00	0, 08±0,01	0-0,4
Erythrocytes, million / µL	9,98±0,50	11,67±0,55	8-16
8 months			
Hemoglobin, g / l	127,87±2,67	139,10±2,85	80-160
Leukocytes, thousand / µL	9,52±0,59	11,17±0,42	6,0-14,0
ESR, mm / hr	0,01±0,00	0,01±0,00	0-0,01
Erythrocytes, million / µL	10,85±0,45	13,29±0,43	8-16

As a result of the analyzes, it was found that all the morphological parameters of the blood of the experimental sheep were within the limits of the physiological norm.

Hemoglobin is one of the main indicators of oxidative and metabolic processes in the body of the animal, as it carries the transport of oxygen and carbon dioxide. In addition, hemoglobin has buffer properties, as well as the ability to bind toxic substances.

The crosses obtained from the crossing of the ewes of the Kalmyk breed with the rams of the Dorper breed had a high concentration in the blood of hemoglobin at 4 months of age by 17.15% (P> 0.95), and at 8 months of age by 8.78% P> 0.99).

By the number of leukocytes, there was also an advantage in crossbred animals. Their blood contained more white blood cells at 4 and 8 months of age, respectively, by 26.44% (P> 0.95) and 17.33% (P> 0.95).

According to the content of ESR, the differences between the groups were insignificant.

Erythrocytes perform respiratory function, take an active part in the regulation of acid-base balance of the body, the adsorption of toxins and antibodies, as well as in a number of enzymatic processes.

In our experience, the content of red blood cells in the blood of animals of the second group was greater at 4 months at 16.93% (P> 0.95), and in the 8-month period at 22.49% (P> 0.999).

Leukogram analysis is the most valuable method of clinical research. In the leukogram, it is not uncommon to find such changes that occur long before the manifestation of clinical signs of the disease and indicate significant changes during the developing pathological process in the body. The study of the leukocyte formula showed that there were no statistically significant differences between the animals of the experimental and control groups (Table 3).

Table 3: Leukocyte formula of experimental sheep (n = 10)

Indicators		Group		Norm
		I	II	
4 months				
Neutrophils	segment-nuclear	44,6±0,70	45,3±0,62	40-48
	stab	2,10±0,18	2,23±0,20	2-4
Bazaphiles		0,60±0,16	0,67±0,15	0-1
Monocytes		3,40±0,34	2,90±0,31	2-6
Eosinophils		2,20±0,29	2,30±0,33	1-4
Lymphocytes		47,10±0,69	46,60±0,43	40-50
8 months				
Neutrophils	segment-nuclear	44,90±0,60	44,60±0,54	40-48
	stab	2,92±0,16	2,53±0,27	2-4
Bazaphiles		0,23±0,04	0,67±0,11	0-1
Monocytes		3,00±0,30	3,20±0,33	2-6
Eosinophils		2,15±0,24	2,60±0,31	1-4
Lymphocytes		46,80±0,59	46,40±0,76	40-50

The function of basophils is reduced to the synthesis of heparin and histamine.

The main functions of neutrophils are that they carry out phagocytosis in the body: they destroy harmful particles, absorb them and "digest"

Functions of monocytes - protection of the body against microbial infection; toxic effect of macrophage metabolites on parasites in the animal's body; participation in the immune response of the body

and inflammation; tissue regeneration and antitumor protection; regulation of hemopoiesis; phagocytosis of old and damaged blood cells, regulation of the production of acute-phase proteins by the liver.

In our studies, all the parameters of the leukocyte formula were within the physiological norm, which indicates the absence of degenerative changes in the cells of the body. The nuclear shift of neutrophils was not observed, which indicates the absence of infectious and inflammatory processes in the body.

CONCLUSION

Thus, the elevated blood content of the crossbreed young sheep hemoglobin leukocytes, erythrocytes indicates activation of oxidation-restorative processes in their body, which confirms their higher growth rates during the growing period.

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