

SEASONAL VARIABILITY OF HEMATOLOGICAL INDICATORS OF KORAKOL LAMBS LIVING IN DIFFERENT ECOLOGICAL AREAS

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Annotation: This article (thesis) describes the morphological characteristics of the blood (erythrocyte, leukocyte, total protein, hemoglobin, erythrocyte sedimentation rate) of Sur Karakol lambs bred in the desert-steppe and mountain-mountain ecological region. seasonal variation in different ecological regions and their correlation with productivity and viability characteristics are presented.

Key words: black-tailed deer hemoglobin, erythrocyte, leukocyte, total protein, erythrocyte diameter, desert, ecological region, mountain ecological region.

INTRODUCTION

Relevance of the topic: Adaptation of sheep to environmental conditions is based on biochemical processes that determine the life of the organism. It has been scientifically proven that lambs have a single neuroendocrine system that coordinates the processes of adaptation to external and internal environmental factors. Therefore, the normal functioning of organs and organ systems, including the constant homeostasis that supports the body's resistance, is ensured. At present, several scientific works have been carried out by scientists describing the dependence of productivity and vitality of animals on biochemical and immunological indicators of blood. Studies on the influence of environmental factors on the level of natural resistance of the organism have also been conducted. [1,2]

Observed Karakol and fat-tailed sheep. According to E.M Kunanbayeva, A. J. Saniyazova, the heart rate and breathing rate of experimental sheep increase during hot summer days, and the body temperature remains within the physiological norm [3; 8].

Under the influence of high temperature, the amount of red blood cells and hemoglobin in the blood of animals decreases. As a result of continuous heat and hot weather, sheep's body heats up, the bactericidal activity of blood plasma and natural resistance decrease [4,7].

Physiological mechanisms of adaptation of animals to high temperature are manifested in the increase of breathing rate, heart rate, body temperature and the function of sweat glands. The amount of substances in the blood plasma and the activity of the heart initially change due to the effect of heat [5,10]. Under the influence of high external temperature, the work of the heart, heat transfer in organs and tissues in animals changes based on certain hemodynamic rules. When people are exposed to high ambient temperature, the activity of the parasympathetic part of the nervous system increases, and the rate of contraction of the heart muscles increases significantly. [6, 9].

Research material and methods: The experiments were carried out in four seasons during 2023-2024 in the desert area of Kason district of Kashkadarya region in Turon Karakolchilik LLC and in the farm "Hasan-Zukhra mountain cattle" of Samarkand region: 60 days of the flock for analysis Blood samples were taken from lambs aged 120-135 days.

Blood was taken from lambs at the beginning and end of 4 seasons. Blood sampling was performed on an empty stomach. Blood erythrocytes, erythrocyte diameter, leukocytes, total protein and hemoglobin content in the blood of lambs living in two ecological regions were determined in the "Mindray BC-240 vet" veterinary hemolyzer. Analyzes were also conducted.

Results and their analysis: Under the influence of various environmental factors, the amount of blood in the body of Karakol lambs can increase and decrease. In this case, the relationship between the liquid and its shaped elements is broken. Changes in the composition of blood components depend on the conditions of keeping, feeding and breeding animals. Our research showed that the hematological parameters of

Karakol sheep of different breeds differ from each other in different seasons of the year.

Table 1

Changes in the morphological composition of the blood of lambs living in different regions depending on the seasons. n=10 (2 months old)

Breed and type	Seasons	Ko'rsatkichlar					Average diameter of erythrocytes (mkm)
		Hemoglobin g/l, %	Erythrocyte 10^{12} ml	Leukocyte 10^9 ml	General Protein; g/l		
Black Karakol (Control)	Autumn	108,1±2,9	9,7±0,2	8,5±1,0	7,3	3,96	
	Winter	104,1±3,3	9,4±0,3	8,9±1,1	7,4	3,98	
	Summer	109,8±3,0	9,6±0,4	8,5±1,0	8,1	4,11	
	Spring	107,8±3,1	9,4±0,2	8,8±1,3	7,6	3,94	
Bukhara Suri (desert-steppe ecological zone)	Autumn	101,5±9,6	9,3±0,2	8,3±1,3	7,0	3,95	
	Winter	102,1±5,6	9,0±0,9	8,6±1,2	7,1	3,96	

	su	106,4±9	9,2±	8,4±	7,3	4,10
	mmer	,3	0,4	1,4		
	Spr	104,5±9	9.0±	8,5±	6,9	3,93
	ing	,9	0,3	1,1		
Karakalpak suri (mountain ecological area)	aut	104,9±9	9,5±	8,5±	7,1	3,98
	umn	,9	0,2	1,2		
	Wi	103,1±9	9,2±	8,7±	7,2	4,00
	nter	,1	0,2	1,6		
	su	108,1±9	9,4±	8,4±	8,0	4,04
	mmer	,6	0,2	1,3		
	spr	106,1±9	9,3±	8,6±	7,8	3,95
	ing	,7	0,2	1,2		

The obtained data show that the maximum level of hemoglobin in animals of all groups was observed in summer (109.8:106.4:108.1 g/l), respectively, and the maximum amount of red blood cells was observed in autumn: 9.5 in Karakalpak Suri, 9.7 in Black Karakol, Bukhara 9.3 million/ml was recorded. The maximum level of leukocytes rises to a high level in winter, it is 8.7 thousand/ml in the sur lambs of the mountain zone, 8.6 thousand/ml in the sur lambs living in the desert region, and the highest level is 8.9 thousand in the Black Karakol. /ml was . In winter, it was found that the amount of hemoglobin in the blood of Karakalpak Suri was 5.1 g/L lower than in summer, 4.3 g/L in Bukhara Suri, and 5.6 g/L in Black Karakol. Total protein in the blood showed a high level in the summer season, and a minimum level of total protein in the autumn season. It is noted that the total protein content in the blood of Bukhara Sur lambs is lower than that of Karakalpak Sur lambs. It was found that this indicator is higher by 0.1-0.7 g/l (2.4-3.5%) in summer than in winter.

CONCLUSION: When comparing the results of studying the blood composition of sur lambs from different ecological regions, in all seasons of the year, compared to sur lambs living in the semi-desert region of Kashkadarya, the amount of hemoglobin and protein in the blood serum of sur lambs living in the foothills of Samarkand is slightly higher. . Their volume has more red blood cells per unit, and it was observed that their diameter is higher in Karakalpak and Kara Karakol compared to Bukhara sur. It should be noted that the amount of hemoglobin, red blood cells, leukocytes and total protein was found to be relatively higher in mountain lambs.

It can also be said that the highest level of hemoglobin is 109.8 g/l in the summer season in Black Karakol, and the lowest level is 101.5 g/l in the autumn season in Bukhara Suri, which is 8.17% less. observed. The highest level of erythrocytes was found to be 9.7 million/ml in Black Karakol in the fall, and 9.0 million/ml in Bukhara Sur in spring. It was found that the highest amount of leukocytes in the blood is in the winter season (8.9g/l) in Black Karakol. It was found that the high index of total protein in the blood and the average diameter of erythrocytes corresponds to the summer season in Black Karakol lambs.

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