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РЕЗЮМЕ

В данной работе был исследован "RT/RIBSP-07/16" серотип 16 вируса катаральной лихорадки овец (КЛО), выделеный от мелкого рогатого скота на территории Республики Таджикистан в 2007 году для получения активного специфического антигена и сыворотки. Для получения сывороток использовались овцы в возрасте 7-9 месяцев с живой массой 20-25 кг. Для получения вирусной суспензии и антигена штамма вируса КГЛ «RT/RIBSP-07/16» использовались клеточные культуры VERO, выращенные стационарным методом в матрасах объемом 1,5 литра. Для инфицирования монослоя клеточных культур применялась инфекционная доза вируса в концентрации 0,004 ТЦД50/кл, а также поддерживающая питательная среда DMEM, доведенная до pH 7,0-7,4, с добавлением 2% сыворотки крупного рогатого скота. Антигенная активность культуральных суспензий штамма вируса КГЛ «RT/RIBSP-07/16» определялась в реакции диффузионной преципитации. Осуществлен сравнительный анализ влияния замораживания на активность антигена. Установлено, что замораживание более одного раза снижает активность специфического антигена. На основе концентрированного и очищенного антигена вируса КЛО получены специфические сыворотки на овцах и козах с активностью в реакции диффузионной преципитации (РДП) 1:8, 1:32 и в реакции связывания комплемента (РСК) 1:128, 1:32 соответственно. Полученные специфические сыворотки к серотипу 16 вируса КЛО показали высокую специфичность с гетерогенными и гомогенными антигенами. В результате проведенных исследований, были приготовлены специфические антигены и получены специфические сыворотки на основе 16 серотипа вируса КЛО пригодные для постановки лабораторных методов.

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INDICATOR OF BLOOD FLUID OF EXPERIMENTAL ANIMALS

ANNOTATION

The indicators of a biochemical blood test allow you to get an idea of the functional state of the body's systems, identify metabolic disorders, identify complications, assess the severity of the disease, differentiate similar diseases, monitor the effectiveness of treatment and predict the outcome of the disease.

The functions of the blood system are closely related to the condition and work ofother organs – when functioning is disrupted, the chemical composition of the blood changes.

Blood as a liquid tissue is one of the components of the body's internal environment. It washes all the cells, delivering the necessary substances to them and taking away their waste products. When describing specific blood diseases , other terminological elements are used, denoting the shaped elements of blood: leuc - white, erythr- red, thromb- thrombus. Studying the patterns on energy metabolism in homeontase body of meat animals will give a correct idea of the direction of processes related to their productivity and the degree of adaptation to environmental conditions, it is known that

the composition of blood and the nature of the processes in the body are interdependent. Therefore, any changes that occur in the tissues of the body are reflected in the blood.

The blood system is a complex functional structure that unites erythrocytes, leukocytes, platelets and plasma. Mollusks and arthropods have an open circulatory system filled with hemolymph. In a number of invertebrates, all vertebrates, and humans, the circulatory system is closed and the blood is isolated from the tissue fluid and lymph. Increase the oxygen capacity of blood in the representatives of the class in mammals, it was possible to reduce the size of red blood cells by displacing the nucleus and increasing the number of cells.

The hematological parameters of young animals within the limits of the physiological norm were higher in young Ural Hereford Shagatai cattle. In particular, in favor of the Ural genotype, albumin breeding in the group of bulls was 3.17 g m (7.9 % P<0.95) among castrates, 1.93 g m (5.0% P<0.95).

Key words: *blood, hemoglobin, bulls, albumin, type of cattle, physiology, alpha, young animals, adaptability.*

Introduction. With the current state of beef cattle breeding and the use of various technologies for raising young cattle in this regard, higher demands are placed on the animal [1, 2]. When feeding in summer on natural pastures and keeping in light rooms in winter, beef cattle must have adaptive plasticity to local climatic and feeding conditions [3]. The adaptability of animals to environmental conditions can be indicated by hematological indicators, which are connected in a certain way by economically useful qualities.

Climate change it has a direct and immediate impact on animal husbandry. High temperatures, droughts, changes in precipitation and extreme weather events
negatively affect the health and productivity of animals. This can lead to a decrease in the availability of feed and water, a deterioration in digestive efficiency, a decrease in growth and development, as well as an increased risk of diseases in animals.

Climate change has become one of the most significant challenges facing agricultural systems worldwide. This includes the new technologies and practices aimed at increasing the resilience and adaptability of animals to climatic factors. It is also important to take climate change into account when developing breeding programs and selecting animals for breeding. In general, climate change is a serious global problem that has a negative impact on livestock production. To ensure sustainable and efficient animal husbandry, adaptation measures must be developed and implemented to help animals better cope with changing climatic conditions.

The expansion of the range of beef cattle breeding and its further intensification require the genetic diversity of bred breeds that are well adapted to specific climatic, economic, and feeding conditions [1-3]. As is known, each breed has its own economically useful characteristics, which can be maximally manifested only in certain environmental conditions [4-6]. The external environment has a great influence on the level of functioning various body systems, which affects the productive capabilities of animals [7, 8]. The sustainable preservation of high productivity largely depends on the skillful use by veterinary specialists of the adaptive properties of the animal body during breeding in various conditions.

According to the interior indicators of animals, it is possible to judge to a certain extent their adaptability to certain growing conditions. Blood plays an important role in the body. The main property of matter, metabolism, is carried out through blood. Another important function of blood it is the delivery of oxygen from the lungs to the tissues, hemoglobin contained in red blood cells.

M.A. Derkho ,A.Zh. Baltabekova , B.K Balabaev , A.O. Derkho the biochemical blood count was studied in bulls aged 8, 11, 15, 18 and 21 months, as well as at the ages of 3, 5 and 8 years. It was found that in the statistical sample of the breed, the control boundaries of biochemical blood parameters fluctuated in the following ranges: total protein 63.32-86.24 g/L, albumin 23.41-43.41 g/L, REA 2.25-5.16 mmol/L,AT 1.40-4.20 mod/hl, ALT 0.95-3.30 mmol/h·l, total lipids 0.50-4.37 g/L, triglycerides 0.11-0.89 mol/L, cholesterol 1.24-5.01 mol/L, HDL cholesterol 0.94-2.53 mmol/L, LDL cholesterol 0.59-2.20 mol/L [11-15].

Blood is divided into two fractions: circulating (55-60% of the total volume) and deposited (40-45%). Blood is deposited in the capillary system of the liver (15-20%), spleen (15%), and skin (10%).

The study of blood, as one of the types of tissues of the internal environment, is of crucial diagnostic importance.

A blood test makes it possible to identify hidden, non-clinically apparent changes in organs and tissues, as well as to assess the functional state of both individual organs and the entire organism [1].

Blood is highly reactive.The morphological composition and physiological properties of blood reflect the general physiological. Normal wall animal composition, properties of blood are constant within certain limits, however, this constancy is very relative, since even minor changes in the functioning of individual organs and body systems lead to certain changes in the properties of blood [7].

It is known that the intensity of protein metabolism in an animal's body can be judged to a certain extent by the biochemical composition of the blood. Proteins are very informative in this regard, which, being an important component of blood, are in constant exchange with proteins of body tissues, are characterized by various physico-chemical and biological properties and perform peculiar functions [3].

Deposited blood contains more shaped elements than circulating blood vessels. Both blood fractions are in dynamic equilibrium, their ratio is determined by the state of the body.

The main functions of blood are:

- participation in metabolism – the blood carries nutrients that pass to the cells through the interstitial fluid;

- excretory – metabolic products enter the bloodstream through the interstitial fluid, which are transported to the excretory organs;

- Hemoglobin plays the main role in the transport of oxygen , and salts dissolved in blood plasma play the main role in the transport of carbon dioxide.;

- humoral regulation thanks to hormones, electrolytes, intermediate and final metabolic products entering the blood;

- homeostatic – thanks to blood, the constancy of the internal environment (homeostasis) is maintained, which is necessary for the vital activity of cells.

There is a dependence on the genotype of the intensity of the immune response to various antigens. At the same time, it is possible to use traditional breeding methods and breed lines and breeds of animals with a high immunological status.

According to I.V. Mironov et al. despite the objective difficulties in determining the level of natural resistance of animals, there are convincing materials and studies showing that with targeted breeding by selecting pairs and taking into account the immunological level of bulls and mothers, it is possible to transfer the valuable quality of natural resistance and increase the resilience of offspring.

The above functions are performed by transporting various substances between tissues and organs. Due to the transport of chemicals, the integrative function of blood is realized. Thus, blood ensures the functional unity of the body.

An important component of blood is proteins, which play an important role in the physiological processes occurring in the body of animals.

Blood proteins are in continuous exchange with proteins of the animal's body tissue. It should be noted that individual fractions of blood proteins differ in biochemical and physico-chemical properties, and therefore perform various functions in the process of vital activity.

Blood proteins, depending on their shape and size, are divided into albumins and globulins, which perform transport and protective functions.

An analysis of the data obtained indicates the influence of the season of the year on the protein compositionof animal blood serum.

An increase in total protein in the spring season of the year compared with the autumn period in heifers of all groups should be noted. Thus, this increase in the blood serum of animals was 2.17 g/l (2.7%) in the first grade, 3.69 g/l (4.5%) in the second grade, 4.25 g/l (5.1%) in the third grade, and 3.45 g/l (4.2%) in the fourth grade.

It is characteristic that the higher content he total protein in the blood serum was different from heifers III gr. They outperformed their peers of II and IV gr. in autumn, by 1.51 g/l (1.8%) and 1.13 g/l (1.4%), and in spring – by 2.07 g/l (2.4%) and 1.93 (2.3%), respectively.

The main blood proteins are albuminsand globulins. Albumins are actively involved in metabolism and regulate metabolic processes.

It was found that changes in serum albumin and intergroup differences are The condition is identical state of meosine is identical.

In the autumn period, the heifers of the control group they deviated from the level of the second and fourth groups in terms of the size of the studied.

The indicator increased by 1.66–5.05 g/l (4.20–5.12%), and in spring – by 2.00–2.79 g/l (4.90–6.80%).

Globulins are carriers of iron, calcium, cholesterol, lecithin, tocopherol and others.

According to the research results, it is possible to notethe greater stability of the globulin fraction in different periods of the year compared with the albumin fraction. There were no significant differences between animals of all groups in terms of serum levels of globulins and other fractions.

Materials and methods of research. In experimental groups I and II, steers and animals of the factory Khagatai type of Kazakh white-ceaded cattle were assigned by sex, respectively, and in groups III and IV, the offspring of animals obtained by crossing Khagatai cows with bulls of the Ural Hereford (intra-breed type of cattle) were assigned by sex.

Hematological parameters were studied by the amount of hemoglobin, erythrocytes and leukocytes in the blood. Biochemical studies of blood serum were performed by determining the total protein content and its [4].

The results of our own research. Remarkably different advantages in hemoglobin content at the ages of 3, 7 and 12 months, and leukocytes at 3 and 7 months in animals of the factory Khagatai type of cattle of the Kazakh white-headed breed, it seems to be caused by the fact that the immune system, preparation for the environment and breeding on the farm (table 1).

Table 1 – Picture of blood composition

Group	Parameter				
	age,months	hemoglobin, g/l	red blood cells, 10^{12}/l	white blood cells,10^{9}/ l	acid capacity, mmol/l
		M±m	M±m	M±m	M±m
I	the third	110,3±0,82	7,82±0,12	7,05±0,15	109,8±1,32
	seventh	113,4±1,20	7,73±0,15	6,24±0,15	114,5±1,88
	twelfth	114,6±1,32	7,76±0,06	5,98±0,44	117,5±1,18
	fifteenth	120,4±1,46	7,24±014	5,91±0,55	123,3±1,51
	eighteenth	116,5±1,09	6,09±0,12	5,61±0,06	118,4±1,51
II	the third	108,1±1,05	7,78±0,102	6,88±0,14	112,1±0,81
	seventh	111,5±1,21	7,37±0,16	8,24±0,12	115,2±1,49
	twelfth	115,3±1,55	7,75±0,17	6,24±0,05	119,4±1,39
	fifteenth	119,2±1,16	7,84±0,07	5,81±0,11	120,4±1,81
	eighteenth	115,9±0,80	5,15±0,05	6,65±0,07	118,7±1,29
III	the third	109,9±0,84	7,73±0,07	6,58±0,112	108,5±1,84
	seventh	1113±1,21	7,91±0,17	6,56±0,10	115,7±1,76
	twelfth	111,9±1,44	7,78±0,16	6,04±0,13	118,3±1,28
	fifteenth	123,4±1,61	6,63±0,17	6,77±0,12	126,5±1,27
	eighteenth	116,5,±1,16	5,43±0,09	6,44±0,06	121,4±1,26
IV	the third	109,8±1,05	6,90±0,114	6,73±0,06	111,5±1,31
	seventh	111,2±1,64	6,85±0,04	7,44±0,15	116,8±1,32
	twelfth	113,4±1,62	6,55±0,14	6,88±0,12	117,4±1,41
	fifteenth	119,2±1,29	6,46±0,15	6,68±0,13	118,8±1,70
	eighteenth	117,3±0,85	5,05±0,05	6,54±0,05	119,3±1,46

Approximately in the fifteenth term, according to the concentration and morphology of the blood Khagatai cattle. It shows that some values have a very high index of biochemical movements in the physiology of both groups, which showed an increased meat orientation.

Table 2 – The indicator of protein in blood fluid

Group	Age, months	Unified protein	Albumins	Globulins including globulin fractions				A/G
				in total	Alpha	beta	gamma	
I	the third	75,5± 0,68	36,41±0,44	37,18± 0,21	12,74± 0,14	10,56± 0,13	14,88±0,16	1,05±0,01 9
	seventh	73,31± 0,62	32,21±0,19	41,16± 0,39	12,34± 0,34	13,65± 0,21	14,16±0,44	0,86±0,01 3
	twelfth	78,19± 0,79	37,82±0,39	40,27± 0,56	12,13± 0,13	11,18± 0,38	15,00±0,45	0,98± 0,023
	fifteenth	73,45± 0,66	37,73±0,46	43,34± 0,45	14,35± 0,34	13,39± 0,35	15,77±0,32	0,95± 0,19
	eighteenth	82,39± 0,40	37,34±0,30	44,17± 0,56	13,30± 0,24	13,44± 0,27	19,25±0,34	0,84± 0,09
II	the third	73,20± 0,42	36,87±0,48	35,46± 0,27	10,51± 0,15	13,85± 0,14	15,01±0,35	1,05± 0,003
	seventh	71,30± 0,36	35,01±0,35	38,19± 0,40	12,14± 0,23	13,08± 0,24	15,89±0,28	0,89± 0,014
	twelfth	75,03± 0,71	36,18±0,60	41,80± 0,58	14,27± 0,14	13,52± 0,18	14,02±0,32	0,89± 0,010
	fifteenth	81,82 ±1,11	37,00±0,59	41,88± 0,34	13,25± 0,24	13,53± 0,16	16,14±0,25	0,88± 0,09
	eighteenth	84,11± 0,92	37,86±0,47	45,54± 0,29	13,57± 0,18	14,01± 0,19	21,97±0,31	0,84± 0,03
III	the third	73,41± 0,35	38,71±0,45	37,57± 0,67	12,27±0 ,13	10,97± 0,35	14,35±0,15	1,05± 0,005
	seventh	73,88± 0,38	37,8±0,29	38,27± 0,36	13,33± 0,16	12,44± 0,35	14,12±0,56	0,95± 0,014
	twelfth	79,81± 0,69	38,89±0,30	41,80± 0,47	13,58± 0,23	12,00± 0,33	13,93±0,05	0,96± 0,09
	fifteenth	86,21± 0,83	42,09±0,48	47,11± 0,65	13,93± 0,18	13,00± 0,45	14,14±0,29	0,95± 0,018
	eighteenth	83,91± 1,13	39,88±0,59	43,13± 0,44	13,00± 0,14	13,01± 0,34	16,13±0,38	0,93± 0,014
IV	the third	73,61± 0,69	36,97±0,56	37,67± 0,47	12,88± 0,33	11,34± 0,06	13,43±0,11	1,05± 0,007
	seventh	74,81± 0,58	35,80±0,51	38,80± 0,18	11,62± 0,24	13,35± 0,23	15,86±0,15	0,93± 0,014
	twelfth	77,41± 0,75	37,46±0,29	38,80± 0,059	12,00± 0,19	13,02± 0,33	15,86±0,34	0,98± 0,09
	fifteenth	81,80± 0,85	38,19±0,52	40,80± 0,54	13,00± 0,19	14,31± 0,23	15,28±0,33	0,95± 0,018
	eighteenth	83,59± 1,29	39,38±0,25	43,22± 0,58	14,00± 0,16	14,03± 0,14	19,15±0,63	0,921± 0,019

Analysis of the total protein content in the blood serum of bull calves and castrates of various genotypes gives us an idea of the level and intensity of nitrogen metabolism in the body, and consequently, the nature of the development of the animal itself.

In our study, the content of total serum protein revealed a certain dependence on the conditions of maintenance, feeding factor, age of animals and genotype.

A comparative analysis of the data obtained indicates that the total protein content in the blood serum of both bullocks and castrates of the Ural Hereford-Khagatai cattle breed was higher throughout the observation period than in peers of groups I and II.

The albumin content in the young animals of the studied genotypes changed in accordance with productivity.

Their increased content in all technological periods of cultivation was observed in animals-descendants of bulls-producers of the Ural Hereford. The maximum albumin content was found in bull calves of both genotypes at the age of 15 months, and in castrates of similar origin at a later age of 18 months, at the final fattening after pasture keeping.

As a result of the above, the difference in this indicator in favor of the Ural breeding genotype was 3.17 g/l (7.9%; P>0.95) in the group of bulls, 1.93 g/l (5.0%; P>0.95) among castrates.

By the age of 18 months, the total protein content in bulls of both genotypes decreased compared to previous periods. We tend to note this with a decrease in metabolic processes, as evidenced by the indicators of the average daily increase in body weight in animals of these groups. It should be noted that with age, a slight increase in globulins occurred in the blood serum of bulls and castrates of all groups. This suggests that with age, along with the growth of muscle tissue, the process of fat deposition begins to develop. The total amount of globulins increased in group I from 36.19 to 45.15 g/l, group II from 36.42 to 46.64 g/l, group III from 36.59 to 44.12 g/l, and group IV from 36.66 to 44.21 g/l.

It should be noted that the globulin fraction of total protein in the studied age periods, with the exception of 3 months of age, is both in absolute and relative terms greater than the albumin fraction, and the albumin-globulin coefficient in most cases turned out to be below unity.

Gamma globulins from globulin fractions were significantly increased. Steers and castrates of factory-type cattle of the Kazakh white-headed breed were characterized by a high content of this fraction in the blood serum. Bulls of both genotypes showed slightly better dynamics of γ, α, β-globulin fractions.

Discussion. This article highlights the growing challenges in beef cattle breeding and the impact of climate change on the industry. With the introduction of advanced technologies and increased expectations from livestock, it's evident that higher demands are placed on the adaptability of cattle. The study emphasizes the crucial role of hematological indicators, such as blood composition, in assessing how animals adapt to their environment.

The effects of climate change, particularly extreme temperatures, droughts, and unpredictable weather patterns, are becoming more evident in animal husbandry. These environmental changes negatively impact livestock health, feed availability, growth, and overall productivity. The study identifies a clear need for adaptation measures, including the development of new technologies, breeding practices, and strategies to boost the resilience of animals. It underscores the importance of factoring in climate change when planning breeding programs and selecting animals for reproduction, which can ultimately enhance livestock's ability to withstand the challenges posed by changing climates.

From the results of the study on Shagatai cattle bulls and their crossbreeds with Ural Hereford bulls, we observe significant differences in blood composition, particularly in erythrocyte counts, hemoglobin levels, and protein content. These findings suggest that blood composition can be used as an indicator of the level of oxidative stress in the body, which may be linked to increased meat productivity. Interestingly, the study found that animals kept in feedlots showed higher protein content in their blood serum, compared to their pasture-raised counterparts. This suggests that controlled feeding conditions might enhance the development and growth of cattle, contributing to improved productivity.

The article also explores the albumin and globulin fractions of the blood serum, noting the importance of these proteins in the development of animals. A higher albumin content in the Ural Hereford-Khagatai crossbreeds indicated a direct relationship with their productivity. Interestingly, as the cattle aged, metabolic changes were observed, with a slight increase in globulin content and a shift towards fat deposition, which could be seen in the blood protein profile.

In conclusion, this article emphasizes the need to adjust animal husbandry practices to counter the effects of climate change. By incorporating scientific insights into breeding programs, particularly those related to blood composition and the overall health of cattle, the industry can improve its adaptability and efficiency in the face of these global challenges. Understanding and addressing these factors at both the physiological and genetic levels will be crucial for the future of sustainable beef production.

Conclusions. The article discusses the estimation of the intersubjective meaning of the aporepressor essence of the blood fluid of experimental animals is diverse in genetics, which helps to gain a vision of the degree of nitrate metabolism and the formation of the body. The main conclusions of the solution are described now: the composition of protein in the liquid in all groups Ural Hcereford-Khagatai breed was higher compared to animals from other groups (I and II) throughout the observation period. This suggests a positive influence of the Ural Hereford genotype on protein metabolism. The albumin content, a key protein fraction, was found to vary with the productivity of the animals. Increased albumin levels were observed in Ural Hereford descendants throughout their growth phases. The highest albumin content was recorded in 15-month-old bull calves and 18-month-old castrates after finishing fattening on pasture.By 18 months of age, the total protein content in bulls of both genotypes showed a decrease, likely due to reduced metabolic processes as evidenced by lower daily body weight gain. This indicates a natural shift in metabolism as the animals age. With aging, the globulin content in the blood serum increased across all groups, indicating the onset of fat deposition in addition to muscle growth. This was supported by a notable rise in globulins, particularly in groups I and II, which also showed a slight increase in the ratio of globulin to albumin.Steers and castrates from the Kazakh white-headed breed showed a significant increase in gamma globulins, a fraction of globulins. However, bulls of both genotypes displayed slightly better dynamics in gamma, alpha, and beta globulin fractions, suggesting improved overall immune function and protein metabolism in these animals.

In conclusion, the study highlights that genotype, age, and environmental factors such as feeding and management conditions significantly influence protein metabolism and the development of the animals, with the Ural Hereford genotype demonstrating superior results in terms of total protein and albumin content.

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ТҮЙІН

Биохимиялық қан анализінің көрсеткіштері дене жүйелерінің функционалды жағдайы туралы түсінік алуға, метаболикалық бұзылуларды анықтауға, асқынуларды анықтауға, аурудың ауырлығын бағалауға, ұқсас ауруларды ажыратуға, емдеудің тиімділігін бақылауға және аурудың нәтижесін болжауға мүмкіндік береді.

Қан айналым жүйесінің функциялары басқа органдардың күйімен және жұмысымен тығыз байланысты – егер жұмыс істемесе, қанның химиялық құрамы өзгереді.

Қан сұйықтін ретінде дененің ішкі ортасының құрамдас бөліктерінің бірі болып табылады. Ол барлық жасушаларды жуады, оларға қажетті заттарды жеткізеді және олардың қалдықтарын жояды. Қан құрамы ағзада болатын қалыпты немесе патологиялық процестерді көрсетеді.

Ет жануарларының ағзасындағы метаболикалық процестердің заңдылықтарын зерттеу олардың өнімділігіне және қоршаған орта жағдайларына бейімделу дәрежесіне байланысты процестердің бағыты туралы дұрыс түсінік береді, өйткені ағзадағы қан құрамымен процестердің табиғаты өзара тәуелді екендігі белгілі. Сондықтан дене тіндерінде болатын кез-келген өзгерістер қанға әсер етеді.

Қан айналым жүйесі - бұл эритроциттерді, лейкоциттерді, тромбоциттерді және плазманы біріктіретін күрделі функционалды құрылым. Моллюскалар мен буынаяқтылардың гемолимфамен толтырылған ашық қан айналымы жүйесі бар. Бір қатар омыртқасыздарда, барлық омыртқалы жануарларда және адамдарда қан айналымы жүйесі жабық, алқантіндік сұйықтықпен лимфадан оқшауланған. Сүт қоректілер класының өкілдерінде қанның оттегі сыйымдылығын арттыру ядроның ығысуы және жасушалар санының көбеюі арқылы эритроциттердің мөлшерін азайту арқылы мүмкін болды.

Физиологиялық норма шегінде жас малдың гематологиялық көрсеткіштері Орал герефорд-Шағатай тұқымды ірі қара малдың жас малдарында жоғары болды. Атап айтқанда, Орал генотипінің пайдасына бұқалар тобындағы селекциялық альбумин 3,17 г/м2 (7,9% P<0,95), кастраттар арасында - 1,93 г/м2 (5,0% P<0,95) құрады.

РЕЗЮМЕ

Показатели биохимического анализа крови позволяют получить представление о функциональном состоянии систем организма, выявить нарушения обмена веществ, выявить осложнения, оценить тяжесть заболевания, дифференцировать сходные заболевания, контролировать эффективность лечения и прогнозировать исход заболевания.

Функции кровеносной системы тесно связаны с состоянием и работой других органов – при нарушении функционирования меняется химический состав крови.

Кровь как жидкая ткань является одним из компонентов внутренней среды организма. Она омывает все клетки, доставляя к ним необходимые вещества и удаляя продукты их жизнедеятельности. Состав крови указывает на нормальные или патологические процессы, происходящие в организме.

Изучение закономерностей обменных процессов в организме мясных животных даст правильное представление о направленности процессов, связанных с их продуктивностью и степенью адаптации к условиям окружающей среды, ведь известно, что состав крови и характер процессов в организме взаимозависимы. Поэтому любые изменения, которые происходят в тканях организма, отражаются на крови.

Кровеносная система представляет собой сложную функциональную структуру, объединяющую эритроциты, лейкоциты, тромбоциты и плазму. Моллюски и членистоногие имеют открытую кровеносную систему, наполненную гемолимфой. У ряда беспозвоночных, всех позвоночных животных и человека кровеносная система замкнута, и кровь изолирована от тканевой жидкости и лимфы. Увеличить кислородную емкость крови у представителей класса млекопитающих удалось, уменьшив размер эритроцитов за счет смещения ядра и увеличения количества клеток.

Гематологические показатели молодняка в пределах физиологической нормы были выше у молодняка крупного рогатого скота породы Уральский герефорд-шагатайский. В частности, в пользу уральского генотипа свидетельствует то, что альбумин селекции в группе быков составил 3,17 г/м^2 (7,9% P<0,95), среди кастратов - 1,93 г/м^2 (5,0% P<0,95).

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