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Kereyev A.K., Nurgaliyev B.E., Kuspanov M.E., Kushmukhanov Zh.S., Kereyeva D.B.
West Kazakhstan agro-technical university after Zhangir khan, Uralsk

MORPHOLOGICAL INDICATORS OF LAMBS' BLOOD IN APPLICATION PROBIOTICS VETOM 1.1

Annotation

The results of the influence of the probiotic Vetom 1.1 and Echinace purple on the morphological parameters of the lambs of the Akhaik meat and wool breed at different ages are presented in the article. The results of the study of probiotic Vetom 1.1 influence and its combination with Echinace purple shows that lambs' blood in the experimental groups the number of erythrocytes, hemoglobin, leukocytes and the level of hematocrit increase within the physiological norm. Consequently, the drugs have a stimulating effect on erythropoiesis, hemoglobin synthesis, leukopoiesis and on oxidation-reduction processes in the body of lambs.

Key words: probiotic, erythrocytes, hemoglobin, leukocytes, hematocrit.

Introduction

Antibiotics and chemotherapeutic drugs used to prevent diseases of young animals do not always give the desired results, as most microorganisms adapt to them. Antibiotics suppress not only pathogenic, but also normal microflora that leads to the development of dysbiosis and disrupts the immune-biological reactivity of the host organism, and this negatively affects to the physiological functions of the digestive tract, leads to a decrease in productivity and deterioration of product quality. With a constant bacterial load, even a healthy digestive system is a gateway for infection to the body. [12].

The latest achievements of microbiologists and veterinary specialists make it possible to eliminate the catastrophic situation after the ubiquitous application of antibiotics, including forage. After the ban on the use of feed antibiotics in animal husbandry since January 1, 2006 in the EU countries, this direction has become most relevant. Foreign companies began to conduct research and develop new products of natural origin for animals long before the current ban. Therefore, means are needed, which selectively affect only to the pathogenic microflora. Particular importance is gained by drugs obtained from natural sources. With reluctance to lag behind foreign colleagues, domestic scientists have developed new biological regulators of metabolic probiotic processes [3, 4, 5].

Probiotics are drugs that contain living microorganisms related to the normal, physiologically and evolutionarily valid flora of the intestinal tract, positively influence to the host organism, promote the restoration of digestion, increase weight gain, improve the biological status, immunize response, improve vaccine efficacy.

Probiotics are living microbial feed additives that improve the microbial balance in the animals and birds intestines. It turned out that after the introduction of a suspension from normal microflora into the alimentary tract of animals, microorganisms are able to settle down in the intestine [6].

The positive effect of probiotics has been repeatedly proven and tested in animal husbandry practice. Probiotics are widely used to increase resistance, contribute productivity, average daily growth, preservation of young animals, but in consequence, increase the economic efficiency of livestock, which is achieved in order to regulate the intestinal microbial balance. The bacterial strains introduced with the preparations are competitive in comparison with the pathogenic and conditionally pathogenic microflora [7].

Probiotic drugs are quite cheap and available. Therefore, a broader study of the possibilities of using these promising and effective drugs in various livestock sectors is needed.

Currently, probiotics are used to prevent and treat gastrointestinal diseases of infectious nature, for stimulation of nonspecific immunity, prophylaxis and treatment of digestive disorders in animals and poultry, which arising from the violation of feeding technology, the use of chemotherapeutic agents and other preparations [8].

With the use of probiotics in livestock, the safety of young animals and the conversion of feed increases. The most powerful effect of probiotics, which do not destroy the intestinal normoflora, is on young animals.

In the process of their life activities probiotics synthesize many vitamins, lipids, organic acids, alcohols and other biological active substances, performing protective functions, by disinfecting a number of toxic products. They are able to inhibit the growth of other microorganisms, in particular, pathogenic and conditionally pathogenic [9].

By now domestic and foreign science has developed and offered a wide range of probiotic drugs. The most common drug is the VETOM-1.1, which is a product of genetic engineering. The use of the drug in prophylactic purposes increases the growth of animals' live mass and reduces feed costs per unit of production, and also increases the safety of young animals. The drug does not cause adverse events in the body, does not have a carcinogenic, toxic, mutagenic and allergic effect.

The drug successfully combines with all vaccinations of animals and enhances their effectiveness, posses therapeutic effectiveness in viral and bacterial diseases with the symptom complex of diarrhea [10, 11].

The purpose of our work was to study the influence of the probiotic Vetom 1.1 on the morphological parameters of the Akzhayk lambs, meat and wool breed.

Materials and methods

The objects of the study were the lambs of the Akzhayk meat and wool breed of the Educational and Scientific Center of the West Kazakhstan Agrarian and Technical University after Zhangir khan animal husbandry department.

For the conduct of scientific and economic experience, a control group and 3 experimental groups of 4 monthly lambs with 50 heads in each - 25 males and 25 females - were formed according to the method of para-analogues.

During the experiment, lambs received the same economic diet. Lambs were kept in identical conditions. As part of the main ration of the lambs of the 1st test group, vetom 1.1 was given at a dose of 75 mg per kg of body weight once a day for 10 days, a repeated cycle of application after 20 days. 2nd experimental - 10gr Echinacea purple per 1 kg of feed 1 time per day for 10 days, repeated cycle of application after 20 days, 3rd test - vetom 1.1 at a dose of 75 mg per 1 kg of mass + 10gr Echinacea purple per 1 kg feed once a day for 10 days, re-use after 20 days.

During the whole period of the experiment, the clinical and physiological state of the lambs was determined by daily inspection. At the same time, attention was paid to general behavior, appetite, water consumption, mobility.

Blood was taken from the lambs three times during the experiment for hematological studies of experimental groups. To study the effect of feeding the preparations and their combinations on the biochemical blood indexes of 8 lambs (4 males and 4 females) from each group before feeding, and then through the 10th and 40th days were taken from the jugular vein, in the morning before feeding.

Laboratory studies were conducted in the laboratories of the Scientific Research Center of the West Kazakhstan Agricultural and Technical University after Zhangir khan.

During the morphological studies of blood, the number of erythrocytes and hemoglobin on CPK-3 was determined, the leukocytes were counted in the Goriaev chamber, and the hematocrit

was measured by centrifugation [12]. All data obtained during the experiment were processed biometrically using a personal computer [13].

Results and discussion

Morphological blood indexes in experimental lambs prior to the use of drugs were within the physiological norm (Tables 1, 2).

Under the influence of Vetom 1.1, the number of leukocytes, erythrocytes, hemoglobin, and hematocrit in the lambs of the 1st test group who received a probiotic for 10 days at a dose of 75 mg per kg of body once a day, with repeated application at 20 days, were higher in comparison with analogues from the control after the first feeding.

After re-feeding, the hemoglobin content and hematocrit level were also higher, the number of erythrocytes was reduced to the level of the control group, and the number of leukocytes was lower than the control group.

Table 1. Morphological parameters of lambs blood after first use of probiotic Vetom 1.1

Index	Group			
	Control	1st experimental	2nd experimental	3rd experimental
Erythrocytes, 1012/l	7,13±0,07	7,49±0,14	7,28±0,18	7,52±0,11
Hemoglobin, g/l	90,87±0,18	106,63±0,29	97,7±0,57	107,55±0,29
Leukocytes, 109/l	6,87±1,21	7,69±1,38	7,44±0,28	8,87±0,73
Hematocrit, %	31,24±1,56	33,12±1,07	32,27±1,21	34,29±1,36

Table 2. Morphological parameters of lambs blood after repeated application of probiotic Vetom 1.1

Index	Group			
	Control	1st experimental	2nd experimental	3rd experimental
Erythrocytes, 1012/l	7,61±0,04	7,59±0,07	7,41±0,05	7,89±0,046
Hemoglobin, g/l	95,12±0,31	96,31±0,28	95,87±0,27	96,58±0,41
Leukocytes, 109/l	7,03±2,28	6,56±1,74	5,51±2,29	8,12±2,08
Hematocrit, %	32,17±0,42	33,14±0,58	32,03±0,73	37,58±1,18

Lambs of the second group, which received 10 g of Echinace purple per 1 kg of feed once a day for 10 days, a repeated cycle of application after 20 days, the number of erythrocytes, leukocytes and the level of hematocrit were increased in comparison with the control group after the first feeding, re-feeding were below the benchmark. The amount of hemoglobin after the first and re-feeding was higher.

Lmbs of the 3rd group which received vetom 1.1 at a dose of 75 mg per kg of body weight + 10 g of Echinacea purple per 1 kg of feed 1 time per day for 10 days, a repeated cycle of application after 20 days, the number of leukocytes, erythrocytes, hemoglobin and level hematocrit were higher in comparison with the analogues from the control after the first and re-feeding.

Conclusions

Thus, under the influence of the probiotic Vetom 1.1 and its combination with Echinacea purple in the blood of the lambs of the experimental groups, the number of erythrocytes, hemoglobin, leukocytes and the level of hematocrit within the physiological norm increase. Consequently, the drugs have a stimulating effect on erythropoiesis, hemoglobin synthesis, leukopoiesis and on oxidation-reduction processes in the body of lambs.

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Кереев А.К., Нургалиев Б.Е., Куспанов М.Е., Кушмуханов Ж.С., Кереева Д.Б.

Западно-Казахстанский аграрно-технический университет имени Жангир хана, Уральск

МОРФОЛОГИЧЕСКИЕ ПОКАЗАТЕЛИ КРОВИ ЯГНЯТ ПРИ ПРИМЕНЕНИИ ПРОБИОТИКА ВЕТОМ 1.1

Аннотация

В статье приведены результаты влияния пробиотика ветом 1.1 и эхинацей пурпурной на морфологические показатели ягнят акжайкской мясо-шерстной породы породы в различном возрастах. Результаты исследования влияния пробиотика ветом 1.1 и его сочетания с эхинацей пурпурной показывает что в крови ягнят опытных групп повышается количество эритроцитов, гемоглобина, лейкоцитов и уровень гематокрита в пределах физиологической нормы. Следовательно, препараты оказывают стимулирующее влияние на эритропоэз, синтез гемоглобина, лейкопоэз и на окислительно-восстановительные процессы в организме ягнят.

Ключевые слова: пробиотик, эритроциты, гемоглобин, лейкоциты, гематокрит.

Кереев А.К., Нургалиев Б.Е., Куспанов М.Е., Кушмуханов Ж.С., Кереева Д.Б.

Жәңгір хан атындағы Батыс Қазақстан аграрлық-техникалық университеті, Орал

ВЕТОМ 1.1 ПРОБИОТИГІН ҚОЛДАНУ КЕЗІНДЕГІ ҚОЗЫЛАР ҚАНЫНЫҢ МОРФОЛОГИЯЛЫҚ КӨРСЕТКІШТЕРІ

Андатпа

Мақалада ақжайық етті-жүнді қой тұқымдарының қозыларына Ветом 1.1 пробиотигін және күңгірт қызылкүренді әртүрлі жасында үйлестіре қолдану кезіндегі қанның морфологиялық көрсеткіштерін зерттеу нәтижелері берілген. Ветом 1.1 пробиотигін және күңгірт қызылкүренді қолдану нәтижелері тәжірибе тобындағы қозыларда эритроцитер, гемоглобин, лейкоциттер және гематокрит деңгейінің физиологиялық нормадан жоғарылағанын көрсетеді. Осыған орай, аталмыш препараттардың қозылар организміндегі эритропоэз, гемоглобин синтезі, лейкопоэз және қышқылдану-қылпына келу процесстеріне стимулдеуші әсерінің бар екенін көрсетеді.

Кілт сөздер: пробиотик, эритроциттер, гемоглобин, лейкоциттер, гематокрит.

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Комекбай М.С., Шабдарбаева Г.С.

НАО «Казахский национальный аграрный университет», г. Алматы

УСОВЕРШЕНСТВОВАНИЕ ДИАГНОСТИКИ ТЕЙЛЕРИОЗА КРУПНОГО РОГАТОГО СКОТА

Абстракт

В статье приведены результаты исследований по разработке нового способа диагностики тейлериоза крупного рогатого скота, включающего исследование сыворотки крови животных, отличающийся тем, что исследование осуществляется постановкой реакции непрямой иммунофлуоресценции на предметном стекле с использованием в качестве антигена стабилизированный эритроцитарный диагностикум, на основании наличия или отсутствия свечения ставится соответствующий диагноз. Способ диагностики тейлериоза крупного рогатого скота имеет ряд преимуществ, главным из которых является повышение достоверности исследования.

Ключевые слова: Тейлериоз, трансмиссивное заболевание, переносчик, трансфазная передача, анемия, желтушность, спленмегалия, серологические тесты, растворимые и корпускулярные антигены, комплемент, сыворотка, эритроцитарный диагносткум, сенситин, сенсибилизация.

Введение

Тейлериоз крупного рогатого скота (синонимы: «Береговая лихорадка», «Солма», «Ірі қара безгегі) - это остро и подостро протекающее сезонное, протозойное, трансмиссивное заболевание, вызываемое внутриклеточными простейшими, характеризующееся поражением эритроцитов крови и клеток РЭС, проявляющееся лихорадкой, односторонним лимфоденитом, анемией, желтухой, нарушением сердечно-сосудистой и пищеварительной систем, прекращением лактации, абортами. Это самая опустошительная инвазия из группы кровепаразитозов.