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THE ROLE OF IMMUNOSTIMULANTS IN THE PREVENTION OF COLIBACILLOSIS IN CALVES

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ABSTRACT

When a vaccine is used wint xitozan (a natural clear solution) then the immune globulin in calf's organ become permanent.

Key words: ecology, xitozan, immunostimulant, colibasillosis, vaccine, immunoglobulin, agglutinabilation.

INTRODUCTION

Decree of the President of the Republic of Uzbekistan dated March 28, 2019 №5696 "On measures to radically improve public administration in the veterinary and livestock sector and the implementation of the resolution of March 28, 2019 PQ-4254 on the organization of the State Committee for Veterinary and Livestock Development" Resolution of the State Veterinary Committee of the Republic of Uzbekistan No. PQ-3026 and Resolution No. PQ-4947 of February 7, 2017 on measures to organize the activities of the State Veterinary Committee of the Republic of Uzbekistan. According to the Law "On Veterinary Medicine" (in the new edition), taking into account the shortage of veterinary drugs in private, subsidiary farms engaged in animal husbandry, and the fact that veterinary drugs used in animal husbandry are mainly imported from abroad. In the future, research will focus on creating competitive biopreparations using local resources. At the expense of biopreparations produced at the institute it is possible to save the state currency spent on import.

Agriculture has a special place in the economy of the republic and great importance is attached to the development of this sector. The development and increase of profitability of animal husbandry, which is the main branch of agriculture, depends on factors such as increasing the number of farm animals in recent years, increasing their productivity, having healthy children, proper care, protection from various diseases. Infectious diseases of farm animals, especially in livestock, are considered a major threat. It is well known that an infectious disease such as colibacillosis, which occurs among farm animals, causes great economic damage and is one of the main problems in animal husbandry. In the veterinary field, the lack of biological and chemical drugs that prevent or treat diseases of farm animals further complicates the problem and contributes to the spread of infectious diseases.

Relevance of the topic. At present, the use of natural, organic, pure ecological products is important for the health of our people. In agriculture, veterinary medicine, as well as in the field of pure natural organic food products are of paramount importance. In particular, enrichment of veterinary drugs with natural pure organic matter increases the natural resistance in animals.

Colibacillosis is an infectious disease of newborns in most cases, a disease that occurs mainly in the enzootic form in calves from 1 to 8 days of age. Typical symptoms of colibacillosis: sudden rise in body temperature, severe diarrhea and weakness, accompanied by symptoms of enteritis and sepsis. It is natural that a decrease in the body's immune system leads to a rapid onset of respiratory diseases, gastrointestinal, infectious and non-infectious diseases. This condition causes economic and serious damage due to colibacillosis in young calves.

The body's fight against microbes is determined by the effect of immunoglobulins. Immunoglobulin E and immunoglobulin D are almost non-existent in farm animals (F.J. Bourne et al. 1978). IgM from macroglobulins occurs in the initial stage of immune reactions. IgG is the major immunoglobulin in serum, and its two types, IgG1 and IgG2, are distinguished. In addition to immunoglobulins, the main cell elements of the body are macrophages (monocytes), as well as viable T and B lymphocytes, which ensure the body's resistance to microorganisms and viruses. Antibiotics used in the treatment of the disease adversely affect the morphological and pathological condition of tissues and cells of the body. Although the ecologically clean, pure chitosan drug is widely studied in the plant kingdom, its level of effect on the animal body is one of the current problems.

The purpose of the study. Enrichment of the vaccine against colibacillosis with a natural compound "chitosan".

Research methods and materials. Our research was conducted in the immunology laboratories of the Veterinary Research Institute of Microbiology and the Diagnostic Center "Sangzor" in Samarkand.

The experimental part of the study was carried out in the laboratory of VITI "Study of diseases of young cattle" and in the laboratory of immunology of the Diagnostic Center "Sangzor". In order to study its effectiveness in the case of experiments in 9 head calves studied changes in the body's immune system of immunoglobulin - M, immunoglobulin-G, S - reactive protein (CBR). The causative agent of infectious disease colibacillosis is E. coli. Immunological reactions were performed in calves to study the effectiveness of adding a solution of chitosan (0.38%) with a vaccine prepared from the coli strain. The body's fight against microbes is determined by immunoglobulins. Immunoglbulin-E and immunoglobulin-D were almost not found in farm animals (F. J. Bourne et al.1978). Ig M is a macroglobulin that occurs in the early stages of immune reactions. Ig A is a macroglobulin secreted mainly by various glands. Ig G is the major immunoglobulin in blood serum, of which two types Ig G1 and Ig G2 are distinguished. In addition to immunoglobulins, the main cellular elements of the body are macrophages (monocytes), as well as vital - T and B - lymphocytes. In the granular apparatus of neutrophils are localized antimicrobial proteins - murodilase, myelopiroxidase and lactopheresis. They have strong lysozyme activity, immunoagglutination and heteroagglutination properties, showing a tsynergic bactericidal effect. (A.A. Vasilev et al., 1982; G.M. Rotova et al., 1985; M.B. Guiar et al., 1979). Although the drug chitosan is widely studied in the plant kingdom, the study of its levels of effect on the animal body is one of the current problems. Experiments were also performed on 9 calves to study its effectiveness by adding a solution of chitosan succinate (0.38%) (7 ml per 100 ml) to the vaccine prepared from the E. coli strain.

The studies examined the agglutination reaction and the analysis of immunoglobulins (IgM and ImG) in the pre- and post-vaccination periods of GOA formol vaccine against colibacillosis with the addition of a "naturally activated" chitosan solution to calves.

The experiments were performed on the following 3 heads of calves divided into 3 groups:

Group I - experimental group, 3 head of calves were vaccinated against colibacillosis GOA formol vaccine in a volume of 3 ml with a solution of natural organic, environmentally friendly pure chitosan succinate (0.38%).

Group II - experimental group, 3 head of calves were vaccinated only with GOA formol vaccine against colibacillosis.

Group III was the control group, and 3 calves were not vaccinated.

Research results and analysis. In our study, serum immunoglobulin M, immunoglobulin G, protein content, and agglutination reaction analyzes were obtained from calves in the experimental and control groups (Table №1).

In the prevention of colibacillosis in calves

Method for determining the effect of immunostimulants Table №1.

Groups	Number of head of animals	Таҳлил турлари				
		The AR titer (taj.oldigi) is normally 1: 200	AR titer (after vaccination)	C reactive protein is normally 0.1-0.3 mg / l	IgM norm 0.4-2.3 mg / l	IgG is normal 7 - 16 mg / l
I group experience	3	1 : 200	1 : 1600	0,42	2,9	20
		1 : 200	1 : 800	0,34	2,7	16
		1: 200	1 : 800	0,4	2,8	18
Group II experience	3	1 : 200	1 : 400	0,3	2	17
		1 : 200	1 : 800	0,32	2,4	16
		1 : 200	1 : 400	0,3	2,2	17
	3	1 : 200	1 : 200	0,26	0,9	9
		1 : 200	1 : 200	0,29	1,2	12
		1 : 200	1 : 200	0,26	1,0	11

As can be seen from the table; In group I experimental animals, the AR (average) titer was 1: 200 before the experiment and 1: 1066.7 after vaccination, ie the titer increased 5 times after vaccination, in experimental group II animals the AR (average) titer was 1: 200 before the experiment, after vaccination, the titer increased by 1: 533.3, ie 2.67 times after vaccination, and in the control group III, the AR (average) titer remained unchanged both before and after the experiment. After vaccination, the average protein content was 0.4 in experimental group I, 0.3 in experimental group II, and 0.27 in control group III. This shows that the difference between the first experimental group of the protein was 1.33 times greater than that of the second, 1.5 times greater than that of the third control group, and 1.1 times greater than that between the second and third groups. In turn, immunoglobulin M and G were studied comparatively, while the GOA formol vaccine against

IgM colibacillosis was averaged 2.8 in the group supplemented with a solution of natural organic, environmentally friendly pure chitosan succinate, while the average in the control group was 2.2 in the GOA formol vaccine against colibacillosis. the average was 1. The groups using the vaccines were found to be several times higher than the animals in the control group.

Conclusion: In order to prevent colibacillosis in calves, a mixture of a natural organic, pure ecologically immunostimulatory solution of chitosan enriched with a solution of chitosan, which has a natural organic, immunologically stimulating effect, was used to prevent colibacillosis in farm animals.

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