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Significance of Immunological Reaction (Ift) in Sheep Chlamydiosiosis

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Abstract: *The article reports on the stability of the immune system in the body when using the GOA formalin emulsified vaccine against sheep chlamydiosis.*

Keywords: *Chlamydia, immunoglobulin, vaccine, immunity, immunophone, antigen, microorganism, receptor, serotype.*

Relevance of the topic.

In the case of all farms, we can see for years that chlamydia of small and large horned animals does tremendous economic harm to the economy of our republic. Up to 12% of domestic animal abortions each year are brought on by chlamydia. In addition to A.A. According to the Volkovas, up to 50% of miscarriages in agricultural animals are brought on by hamidiosis. The care of sick animals and the efforts to stop the sickness cost a lot of money.

His data showed that the prevalence of small horned animals was 18-43.6 in the US, 9-21.6 in Canada, 16-24.8 in the Netherlands, 18-57 in France, and 14-46.4 in England. It was also reported that chlamydia was 6-26.2 percent prevalent in Australia and 3-34 percent prevalent in Israel.

Inflammation of the placenta, particularly the cotyledons, miscarriage in the second half of the cervix, or the birth of lambs and calves (often young animals) without the ability to survive, as well as lung inflammation, are all symptoms of the enzootic communicable infectious illness chlamydia.

Chlamydphila abortus ovis, a member of the Chlamydiacea family and Chlamydiacea psittaci genus, is the responsible party. The size of the intracellular parasite Chlamydia is between 250 and 300 nm. They are bacteria with thick cell walls that contain DNA and RNA. The chlamydia-causing agent has a complicated antigenic structure with antigenic centers unique to three taxa, species, and serogroups. Its gender is lipo-polysaccharide because, like gram-negative bacteria, it has a thermostable cell wall. The epitope, which establishes the specificity of the genus, has a unique binding receptor embedded in a carbohydrate and an oligosaccharide molecule made up of three monomers, which is how antigenicity is displayed. Different antigenic serotypes have different cysteine-rich amino acid localizations in the protein membrane of species-specific determinants.

The purpose of the study.

Our experiment to evaluate the efficacy of the vaccine using IgM and IgG test kits created by "UNIGEN" and "XEMA" LLC uses the stability of the GOA formalin emulsified vaccine against sheep chlamydiosis on the immune system as the primary criterion.

Research object and methods.

In the Dehkanabad district, Kashkadarya region, the specialized complex for cooperative livestock breeding of "M. Ibragimov Karakolchilik shirkat" LLC, along with production conditions in the regional diagnostics, regional diagnostics, and research of diseases of young animals laboratories of VITI, studies were conducted on diseases that affect young animals.

The quantity of immunoglobulins and how they affected the infections affected the body's ability to fight off germs. Agricultural animals almost never have immunoglobulin-E or immunoglobulin-D identified in them. (F.J. Bourne et al. 1978). The first step of immunological reactions is marked by the appearance of IgM from macroglobulins. The primary immunoglobulin in blood serum is IgG, which has two subtypes: IgG_1 and IgG_2. The primary cellular components of the body, in addition to immunoglobulins, are macrophages (monocytes), as well as active T and V lymphocytes, which guarantee the body's resistance to pathogens and viruses. The morphological and pathological status of the body's tissues and cells is negatively impacted by the antibiotics used to treat the disease. It is important to remember that polyclonal activation syndromes are what lead to false positive outcomes in such enzymatic and sequential processes. The creation of certain defensive protein enzymes and the reaction by V lymphocytes against foreign antigens that have entered the body in an unusual way are simultaneously stimulated by special substances called superantigens in the individual (ontogonistic) period of the animal body. In actuality, these processes are represented by a simultaneous, non-specific rise in the antigen titer to numerous infections. [5] According to literature sources, technical flaws in the production of the reaction as well as immunodeficiency circumstances may be to blame for false negative results in the detection of antigens.

IFT was carried out using "Socorex" dispensers, ELx405 microplate washers, and ELx808 microplate automated analyzers. Using a computer and the Bio-Tek KC4^{TM} software, the reaction's results were electronically (and hence electronically) interpreted.

Serological and immunological reactions in the bodies of sheep who had received the vaccine were examined in 30 sheep separated into three groups in order to research the efficacy of IgM and IgG test kits created by "UNIGEN" and "XEMA" LLC.

Ten sheep were part of experimental group I, and they received two subcutaneous injections of the "emulsified vaccine against chlamydiosis."

In experimental group II, 10 heads received the "Chlamydiosis emulsified vaccination" just once.

Group III (10 heads) served as the control group, receiving no medication. Based on the farm veterinarian's anamnesis data and taking into consideration the fact that the kids who had been born and had abortions the year before were not viable, the sheep chosen for the study were determined.

Results

Based on the short-term detection of the response against the inciting antigen or the particular antibody generated against it, we investigated immunoenzymatic analysis (IFT). We employed the serological approach to compare the diagnostic accuracy of the immunological method to the serological method when animals are vaccinated against chlamydia because IFT makes it possible to distinguish between infected and vaccinated animals from one another.

Based on the high specificity and sensitivity of "antigen-antibody" immunological responses, enzyme immunoassay is a laboratory experiment. IFT is made up of two distinct parts: immunological and enzymatic processes. Immune response antigen and antibody binding (virus and microbe molecules) occurred. Additionally, the outcomes of the immunological reaction may

be observed and quantified thanks to the enzymatic reaction. In order to manage the epizootological condition and ascertain the general immunophone in the farm of the "Karakolchilik shirkat named after M. Ibragimov" LLC, specialized complex for cooperative livestock breeding, Dehqonabad district, Kashkadarya region, the immunoenzymatic analysis (IFT, ELISA) reaction was used as an immunobiological method. Prior to starting the reaction, precautions were taken to assure compliance with the rules and guidelines for biological safety in the laboratory.

Detecting IgG-specific antibodies against chlamydia in the blood sera of cattle and small horned animals using immunoenzymatic analysis (IFT, ELISA). IgG antibodies to the chlamydia-causing agent, "Chlamydia IgG-IFA," were created in collaboration with the joint ventures of the Veterinary Institute, "UNIGEN," and "XEMA," LLC. The test system was used to perform "Set of reagents for detection using" ("Nabor reagentov dlya immunofermentnogo vyyavleniya IgG antitel k vozbuditelyu chlamydiya krupnogo I melkogo rogatogo skota"). and were carried out in accordance with the standard guidelines for carrying out the IFT reaction.

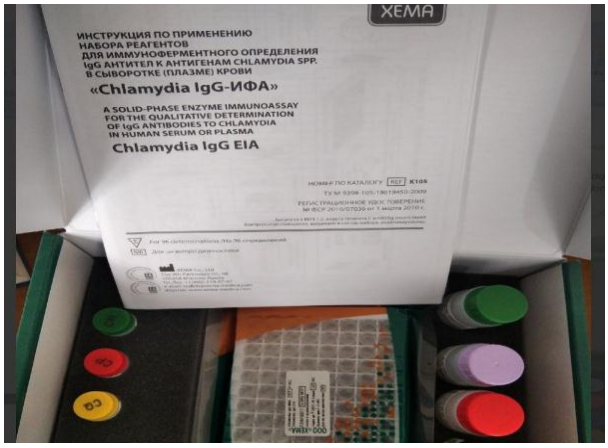

Figure1. IgM- immunoglobulin **Figure 2. IgG- immunoglobulin**

Table 1Immunological analysis of an emulsified chlamydiosis vaccine.

Groups	Number of Animals	Types of analysis		
		C-reactive protein norm 0.1-0.3 mg/l	The norm of IgM 0.4-2.3 mg/l	IgG norm 7-16 mg/l
Experimental group I	10	0,31±0,025	2,8±0,23	19,4±0,96
Experimental Group II	10	0,275±0,015	2,19±0,143	16±1,152
Experimental Group III	10	0,104	0,357	7,3

In experimental group I, it was discovered that the level of C-reactive protein was 1.55 times greater than the average. It was discovered to be 1.13 times greater than the first group II, which was in the comparative experimental group II at the standard level. According to the change in IgG, it was found that experimental group I had a disease course that was 1.69 times worse than the norm and group II had a worse course that was 1.213 times worse. IgM and IgG levels were found to be particularly high in the first group, with just a slight difference from the II group and a significantly greater effect from the III group.

Conclusions:

1. From February to May, 6.9% of chlamydia and 8.2% of chlamydia, respectively, were discovered in cattle farms in the Kashkadarya region and Samarkand, respectively.
2. Despite the excellent sensitivity and accuracy of the reactions in both cases when diagnosing chlamydiosis by serological (KBR) and immunological (IFT) approaches, it was discovered that immunoenzymatic analysis was simple to perform.
3. The chlamydiosis-causing agent's cultural morphological, tinctorial, biochemical, and pathogenic properties were investigated in a few specialist cattle farms in the Kashkadarya and Samarkand regions.
4. Oleandomycin is sensitive to doxilox, teliosin, oxacillin, and gentamicin are not sensitive, and erythromycin is less sensitive than these antibiotics when it comes to treating chlamydia.

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