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# RESULTS OF FOLLOWING IMMUNE FUND CONTROL FOR PREVENTION OF PROTEIN DISEASE, EPIZOOTIC SUSTAINABILITY IN FERGANA REGION

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**ABSTRACT:** In this article, in order to determine the effectiveness of prophylactic vaccination and its effectiveness in specific regions of the country, protein pathogen, its types A, O, Asia-1 The results of determining the level of immunity are described. The Fergana Regional State Center for Diagnosis of Animal Diseases and Food Safety analyzed the system of preventive measures against protein disease, taking into account the amount of antibodies formed in prophylactically vaccinated cattle using modern methods and monitoring the effectiveness of prophylactic vaccination.

**Keywords**: Protein, infectious disease, virus, enzyme-linked immunosorbent assay (IFT), materials, buffer zone, vaccine, serotype, serovarian.

## INTRODUCTION

Protein is one of the most common infectious diseases of animals and causes great economic and social damage. The disease has the potential to spread rapidly over long distances in the short term without borders, despite differences in geography and climate. Protein deficiency has been reported in many parts of the world. According to the International Bureau of Epizootics (IBE), it occurs annually in 55-70 countries. An analysis of data from the International Epizootic Bureau shows that despite the measures taken, the epizootic situation with protein disease remains tense and there is always a risk that the protein virus could enter any part of the world.

Prophylactic vaccination of farm animals against proteinuria is carried out systematically, proteinuria has not been registered in the country in recent years, but our country borders with neighboring Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Afghanistan. the presence of the disease keeps us at risk of entering and spreading our territory. Therefore, the implementation of a system of preventive measures against protein disease in livestock farms is very important in increasing the number of livestock and livestock production, providing the population with quality, safe livestock products.

Degree of study of the problem. Scientists have done a lot of work to study the causative agent of proteinuria in animals, to develop special

prophylactics, treatment, prevention of the disease [5,6,7]. All this in their work emphasizes that the entry of a protein pathogen into the territory of the country is extremely dangerous for the development of animal husbandry and the achievement of food independence.

Scientists say that as soon as a protein virus enters the body's mucous membranes, the body's immune system fights the virus, first creating a specific local and then humoral immunity to eliminate or reduce its effects. If an animal is infected with one type of protein virus, the body develops monovalent immunity against that type, and then when it is infected with other types of viruses, it develops bivalent, polyvalent immunity against them. Therefore, if animals do not know which type of virus is prevalent in the border areas in areas prone to protein disease immunity and special prophylaxis, it is not possible to vaccinate animals prone to polyvalent immunity with polyvalent vaccine against types A, O and C, Asia -1. data are given in [1, 2, 3, 4]. If an animal is infected with one type of protein virus, then the body develops a monovalent immunity against that type, and then if it is infected with other types of viruses, it develops bivalent, polyvalent immunity against them. Scientists recommend vaccinating animals prone to A, O and C, Asia-1 types of the virus with a polyvalent vaccine to create polyvalent immunity if it is not clear which type of virus is present in the border areas in areas at risk of protein disease [8,9,10, 11.12].

Materials and methods. The methodological basis of our study is the study of the effect of the level of antibodies on the protein virus after vaccination on the level of resistance, taking into account its polytypes. To this end, we used epizootiological, immunological, and statistical research methods in conducting our research. Enzyme-linked immunosorbent assay (IFT) test kits from Id-vet of France and The Federal center is protected by animal health VNIIZJ of Russia were used. As of November 1, 2021, the Regional Department of Veterinary and Livestock Development used the vaccine for the prevention of protein disease LLC "AGROVET" FMD vaccine cultural mono- and polyvalent sorbed inactivated types: A-Iran 05, O -Panasia 2, Asia-1.

Research results and their analysis. In the Laboratory of Virology of the State Center for Diagnosis of Animal Diseases and Food Safety of Fergana region, serum samples from livestock farms of neighboring Andijan and Namangan regions are tested for proteinuria, its level of immunity to types A, O, Asia-1. The tests were performed by immunoenzyme assay to determine. Pathological samples were tested for viral antigens.

The IFA test kits used were obtained from Id-Vet in France and Federal center is protected by animal health VNIIZJ in Russia.

The strength and duration of immunity in vaccinated animals depends on the quality of the vaccine. Therefore, in order to increase the effectiveness of protein control measures, blood samples were taken from vaccinated animals at different intervals (30-60 days) and tested in the laboratory using serological methods (ELISA). For comparison, serum samples from unvaccinated animals were also tested for proteinuria.

The result of the reaction is an indicator of the protein resistance of antibodies that inactivate the virus and is a key factor in assessing the strength of immunity. Determining the level of immunity, especially for each serotype, increases the effectiveness of disease prevention measures. Animals with low levels of immunity need to be revaccinated.

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**Table 1**

**Results of immunoenzymatic analysis (IFT) of samples of blood serum and pathological material of large horned animals vaccinated and unvaccinated against proteinuria in the farms of Fergana region in 2021**

| № | Business name | Number (head) Sample name Type | Sample name | Type A | Type O | Type Asia-1 | Used test system |
|---|---|---|---|---|---|---|---|
| 1 | Uchkuprik district “Khovoqand Kokand” LLC | 10 vaccinated | Blood serum | 0 | 0 | 0 | ID.vet |
| 2 | Furqat district “Remaining river” Agrozom | 16 unvaccinated | Blood serum | 0 | 0 | 0 | ID.vet |
| 3 | Uzbekistan district “Qorayoz bobo” F / X | 10 unvaccinated | Blood serum | 0 | 0 | 0 | ID.vet |
| 4 | Private livestock farm "Simental" of Qoshtepa district | 10 vaccinated | Blood serum | 50 % | 0 | 0 | VNIIZJ |
| 5 | Fergana district "Yukori Vodil" | 19 vaccinated | Blood serum | 16 % | 32 % | 68 % | VNIIZJ |
| 6 | Fergana district "Qorayantoq" | 29 vaccinated | Blood serum | 21 % | 66 % | 72 % | VNIIZJ |
| 7 | Fergana district “Boltaboyev Al-Aziz” F / X | 10 vaccinated | Blood serum | 0 | 60 % | 40 % | VNIIZJ |
| 8 | Fergana district “Erdon” F / X | 25 vaccinated | Blood serum | 96 % | 77 % | 100 % | VNIIZJ |
| 9 | Fergana district “J.G’oipov” F / X | 15 vaccinated | Blood serum | 80 % | 87 % | 100 % | VNIIZJ |
| 10 | Iskandar Oltiariq Fayz, Oltiariq district, Fergana region | 1 ta | Pathological pattern | 0 | 0 | 0 | VNIIZJ |

In the laboratory of IFA of the State Center for Diagnosis of Animal Diseases and Food Safety of Fergana region in Uchkuprik district of Fergana region "Khovokand Kokand" LLC was tested for serum virus A-, O-, Asia- No antibodies were detected against type 1 at all.

No antibodies to the A-, O-, Asia-1 types of the protein virus were detected in the serum of 16 heads from Agrozom “Kalgan Daryo” Furkat district, 10 heads belonging to “Karayoz Bobo”

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farm of Uzbekistan district, and in the serum of unvaccinated cattle.

Antibodies to the A virus type A virus were detected in 80% of the serum of 10 vaccinated cattle of the private livestock farm "Simental" of Qoshtepa district. However, no antibodies against O-, Asia-1 types were detected. This means that these types of viruses in animals can cause disease. To prevent this, animals need to be re-vaccinated.

Antibodies to type A virus virus were detected in 16% of 19 vaccinated cattle serum samples from Yukori Vodil farm in Fergana district, in 32% against protein virus type O, and in 68% against Asia-1 protein virus.

Antibodies to type A protein virus were detected in 21% of 29 vaccinated cattle serum samples from the Karayantak farm, in 66% against protein O-type virus, and in 72% against Asia-1 protein virus.

No antibodies to type A antibodies were detected in 10 samples of vaccinated cattle serum from Boltaboyev Al-Aziz farm, 60% to antibodies to type O virus and 40% to antibodies to Asia-1 protein virus.

Antibodies to type A virus virus were detected in 96% of 25 vaccinated cattle serum samples from Erdon farm, in 77% to protein O-type virus, and in 100% to Asia-1 protein virus.

Antibodies to type A protein virus were detected in 80% of the inoculated serum samples of 15 head of cattle vaccinated from the J.Goipov farm, in 87% against the protein virus type O, and in 100% against the protein virus type Asia-1.

"Iskandar Oltiariq Fayz" 1 pathological sample was tested for viral antigens and a negative result was obtained (Table 1).

The results of the study show that in Fergana region in 0-96% (average 37.6%) of 118 vaccinated cattle in different farms were infected with type A protein virus, in 0-87% (on average) Antibodies were detected against 46%) O-type, 0-100% (average 54.3%) against Asia-1 type. This is due to the low protein background of cattle and the need to re-vaccinate them on some farms.

Compared to other livestock farms, cattle vaccinated at Erdon and J.Goipov farms have a high immune background and almost 77-100% antibodies against the three types of protein virus A-, O-, Asia-1. was detected in.

The data presented in Table 2 show that in the farm "Turakhon Orzusi" of Balikchi district of Andijan region, 50% of the serum of vaccinated cattle was infected with type A virus, 50% with type O and 50% with type A virus. antibodies to Asia-1 type were detected in At the TBZ Milk farm in Qurghonteppa district, only 99.6% of serum samples were found to contain antibodies to the O-type virus. This increases the farm's complete absence of immunity to the A- and Asia-1 types of the protein virus and increases the risk of contracting the disease in susceptible animals. Pathological samples from 10 cattle from this farm were tested for viral antigens and tested negative.

**Table 2**

**Results of enzyme-linked immunosorbent assay (IFT) testing of samples of blood and pathological material of large horned animals vaccinated against proteinuria in the farms of Andijan region in 2021**

| № | Business name | Number (head) | Sample name | Type A | Type O | Type Asia-1 | Used test system |
|---|---|---|---|---|---|---|---|
| 1 | Balikchi district "Turakhon orzusi" F / X | 40 | Blood serum | 50 % | 50 % | 50 % | VNIIZJ |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2 | TBZ Milk, Qurghonteppa district | 48 | Blood serum | 0 | 99.6 % | 0 | ID.vet |
| 3 | TBZ Milk, Qurghonteppa district | 10 | Pathological pattern | 0 | 0 | Used test system | VNIIZJ |

As a result of our research, 0-50% (average 25%) of 88 cattle vaccinated against protein disease from 2 farms of Andijan region were infected with type A protein virus, 50-99.6% (average 74.8%) Antibodies to type O, 0-50% (average 25%) against type Asia-1 were detected. This means that the immune background of the protein in cattle is only good against type O virus and is insufficient to protect against protein disease due to low levels of the remaining A- and Asia-1 types.

**Table 3**

**Results of enzyme-linked immunosorbent assay (IFT) testing of large horned animals vaccinated against proteinuria in farms of Namangan region in 2021**

| № | Business name | Number (head) | Sample name | Type A | Type O | Type Asia-1 | Used test system |
|---|---|---|---|---|---|---|---|
| 1 | Uychi district | 20 | Blood serum | 60 % | 100 % | 100 % | VNIIZJ |
| 2 | Chartak district | 20 | Blood serum | 70% | 100 % | 100 % | VNIIZJ |

Antibodies to type A protein virus were detected in 60-70% of serum samples taken from farms of Uychi and Chartak districts of Namangan region, and in 100% to O- and Asia-1 types (Table 3). In these 2 farms, 60-70% (average 65%) of 40 cattle vaccinated against protein disease were diagnosed with antibodies to type A protein virus, 100% to type O, and 100% to Asia-1 type. In Namangan region, cattle demonstrate the effectiveness of specific prevention of proteinuria.

As a result of our research, the immune background of the protein virus A-, O- and Asia-1 in animals vaccinated against protein in Fergana, Andijan and Namangan regions allows veterinarians to obtain information about immunity to this disease and to monitor immunity. , shows the need to improve disease prevention and control measures through vaccination in immunocompromised farms.

**Conclusion:**

1. Epizootic stability to protein disease can be achieved by controlling the immune background generated after vaccination in susceptible animals.

2. Prevention of the disease requires complex measures such as mass and compulsory vaccination of animals, timely implementation of veterinary and sanitary measures, compliance with biological safety measures, constant monitoring of the movement of livestock and products.

3. In order to prevent the entry and spread of the disease in the country, in the districts bordering on neighboring countries, ie in the buffer zones, 30 km from the state border to the interior of the country. all remotely inclined animals should be vaccinated twice a year in the spring and autumn according to the plan, and

regular veterinary and sanitary measures should be carried out.

4. In order to determine the dynamics of accumulation of antibodies in animals vaccinated against the protein in the buffer zones, monitoring studies can identify, analyze and evaluate the effectiveness of vaccination against antibodies to types A, O and Asia-1 of the protein virus. Animals with low levels of immunity need to be revaccinated

5. The results of determining the immune background in cattle vaccinated against protein in the Fergana region will allow to develop a scientifically based system of preventive and anti-epizootic measures aimed at achieving sustainable peace of protein disease. At the heart of this is the analysis and account of threats of virus entry and spread, real risks. Vaccination is only effective if antibodies to the virus A, O, and Asia-1 types are detected in 80% or more serum samples.

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