

**DETERMINATION OF THE IMMUNE BACKGROUND IN NODULAR DERMATITIS VETERINARY SCIENTIFIC RESEARCH INSTITUTE**

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**Abstract:** During the research, cattle were examined in the conditions of the Regional Diagnostic Laboratory in the Khorezm region and some districts of the Republic of Karakalpakstan using the IFT method in order to determine the immune background against nodular dermatitis. For this, blood samples were taken from 109 cattle out of a total of 1034 cattle from cattle farms in the districts of the Khorezm region and the level of the immune background was determined, as a result of which it was found that it was 23%, with an average of 3% positive results. In the Republic of Karakalpakstan, samples were taken from 142 cattle out of a total of 344 cattle, of which 36 blood samples were invalid, 106 blood samples were tested and 46.2% with an average of 5% positive results.

**Key words:** immunoglobulin, district, region, nodular dermatitis, cattle, blood, serum, hemolysis, positive, negative.

**The scope of the topic:** Today, lumpy dermatitis in cattle is one of the most urgent problems facing veterinary science and practice. Because the disease is widespread, its diagnosis is quite difficult, and the course of the disease, clinical signs and pathological changes are similar to those of a number of other diseases. This, in turn, creates serious difficulties in the diagnosis of the disease. The development of pathomorphological diagnostics for the accurate diagnosis of this disease is one of the most urgent issues today. "High-yielding cattle are more susceptible to lumpy dermatitis, and up to 90% of animals on the farm are infected with the virus" [1, 2, 5, 7].

**Materials and methods of research:** Capripox Double Antigen Multi-species Innovative Diagnostics kit [3, 4]. For this, blood samples were taken from 109 cattle out of 1034 cattle in the districts of the Khorezm region and the level of the immunophenotype was determined. It was found that the level of immunity against nodular dermatitis in cattle in the areas of Shovot, Yangiariq, Gurlan, Urgench "Ak-yop" MFY of Khorezm region, other regions of this district, Khiva, Khanka and Kalakhishkala villages of Bogat district, "Saraykul" of Takhiatash district, "Orailyk" mahalla of Chimboy district was 3%, with a total average of 23%.

In various regions of the Republic of Karakalpakstan, including "Kashi" MFY of Kungirotdistrict, "Dostloq" MFY of Qonliqo'l district, Nukus city, "Aq Oltin" veterinary department of Amudaryo district in "Toza Suv" neighborhood, "T. Guzari" of Chimboy district and "Janabozor" of Kegeyli district, a total of 344 heads as a result of random selection of cattle, blood samples were taken from 142 cattle, of which 106 blood samples were examined. Blood samples taken from 36 cattle were found to be

hemolytically unfit for examination. As a result of the research, it was found that the level of immunofon in blood serum is 46.2% and it is 5% on average.

**Results of the study:** Scientific research conducted in the Khorezm region and the Republic of Karakalpakstan to identify lumpy dermatitis in cattle farms in the following districts was tested in the VITI Regional Diagnostic Laboratory under laboratory conditions.

Blood samples tested from cattle belonging to citizens of Shavot district A total of 20 blood samples taken from cattle farms in the following districts were tested, of which 10 were positive, 6 were negative, and 4 were found to be unsuitable for testing because they were hemolyzed blood samples.

Out of 15 blood samples tested on cattle belonging to citizens of Yangiarik district, 8 were positive, 5 were negative, and 2 were found to be unsuitable.

A total of 5 blood samples were tested on the cattle belonging to the citizens of "Boldonli" MFY of Gurlan district, and it was found that 2 of them had positive and 3 negative results. No invalid blood samples were detected.

A total of 3 blood samples were examined from the cattle belonging to the citizens of "Aq-yop" MFY of Urganch district, and it was determined that 2 of them gave positive and 1 negative result. Also, no invalid blood samples were detected.

A total of 3 blood samples from cattle belonging to citizens of Urganch district were examined. Two of them were positive and 1 was found to be negative. No invalid blood samples were detected.

A total of 20 blood samples from cattle owned by citizens of Khiva district were tested; 9 were positive, 5 were negative and 5 were invalid.

A total of 18 blood samples were examined from cattle belonging to the citizens of Khanka district. Fifte of them were positive, 2 were negative, and 1 was found to be an invalid blood sample.

A total of 14 blood samples were taken from cattle belonging to the citizens of the village of Kalakhishkala, Bogot district, and 7 of them were positive, 6 were negative, and 1 was found to be an invalid blood sample (Table 1).

Table 1. According to the analysis, out of 98 blood samples taken randomly from cattle owned by the population in the districts of Khorezm region, the total level of immunity against lumpy dermatitis was 58, of which 36 were detected with IgG antibodies, and 22 with IgM antibodies. During the experiments, a total of 36 blood samples were negative, of which 15 were negative with IgG antibodies, and 14 were negative with IgM antibodies. As a result of the tests, the level of immunity in cattle vaccinated against lumpy dermatitis from cattle owned by the population in the districts of Khorezm region was found to be 23% on average, while in 8 districts this indicator was 3% of the immunity level.

1- table

**Results of determination of the immune background in the blood serum of cattle vaccinated against lumpy dermatitis in the districts of Khorezm region**

№	Farm name	Blood serum sample	Hemolysis	Test results			
				IgG		IgM	
				positive	negative	positive	negative
1	Shavat district	20	4	6	2	4	4
2	Yangiarik district	15	2	6	0	2	5
3	Gurlan district "Boldonli" MFY	5	0	5	3	0	0
4	Urganch district "Aq-yop" MFY	3	0	0	0	2	1
5	Urgench district	3	0	1	1	1	0
6	Khiva district	20	5	4	5	5	0
7	Khanka district	18	1	9	1	6	1
8	Kalakhishkala village, Bogot district	14	1	5	3	2	3
	<b>Total</b>	<b>98</b>	<b>13</b>	<b>36,7</b>	<b>15</b>	<b>22</b>	<b>14</b>

As a result of random selection of 344 head of cattle from different regions of the Republic of Karakalpakstan, blood samples were taken from 142 head of cattle, of which blood samples taken from 106 head of cattle were examined (Table 2).

According to the results of the immunophone analysis, the immunophone against the virus of nodular dermatitis was preserved in the cattle in the territories of the Republic of Karakalpakstan among the large horned animals vaccinated against the disease of nodular dermatitis. It was found that the level of the immunophone was 5% when the level of the immunophone was calculated from the examined blood sera of 46.2 percent.

**Cross-section of districts in the Republic of Karakalpakstan**

A total of 16 blood samples were examined from the cattle belonging to the citizens of the "Kashi" M.F.Y.

A total of 15 blood samples were examined from the cattle belonging to the citizens of "Dostloq" M.F.Y of Qonlikol district, of which 7 were positive, 1 was negative, and 7 were found to be invalid.

A total of 8 blood samples from cattle belonging to the citizens of Nukus city were examined, 3 of them were positive, 3 were negative, and 2 were found to be invalid.

15 blood samples from cattle belonging to the citizens of the "Toza Suv" neighborhood of the Amudarya district "Aq Oltin" veterinary department were tested.

Near of them were positive and 4 were found to be invalid. No negative blood samples were detected.

17 blood samples from cattle belonging to citizens of the Orta Qala neighborhood of Amudarya district "Orta Qala" veterinary department were checked, 11 of them had positive results, 1 negative result, and 5 of them were found to be invalid.

A total of 15 blood samples were examined in the cattle belonging to the citizens of the "Saraykol" veterinary point of Takhyatosh district, of which 2 were positive, 4 were negative, but 9 blood samples were found to be invalid.

A total of 3 blood samples were tested on cattle belonging to the citizens of "T. Guzari" neighborhood of Chimboy district, and it was found that all of them had positive results.

A total of 9 blood samples from cattle belonging to the citizens of "Orayliq" neighborhood of Chimboy district were examined. Four of them had positive results, 3 were negative, and 2 were found to be invalid blood samples.

A total of 19 blood samples from cattle belonging to the residents of the "Janabozor" neighborhood of Kegeili district were examined, of which 12 had a positive result, 3 were negative, and 4 were found to be invalid.

A total of 106 blood samples from vaccinated cattle were examined in the territories of the Republic of Karakalpakstan, of which 56 blood samples showed positive results, while 23 blood samples showed negative results. However, 36 blood samples were found to be invalid due to numerous errors in blood sampling (Table 2).

**Table 2**

**The result of determining the immune background in the blood serum of cattle vaccinated against nodular dermatitis in the districts of the Republic of Karakalpakstan**

T/ P	Farm name	Blood serum sample	Hemolysis	Test results			
				IgG		IgM	
				positive	салбий	ижобий	салбий
1	Call district "Kashi" M.F.Y.	16	3	3	5	2	3
2	"Dostloq" of Konlikol district	15	7	4	1	3	0
3	Nukus city	8	2	2	3	1	0
4	"Toza Suv" neighborhood, Amudarya district	15	4	7	0	4	0
5	O'рта Qala village, Amudarya district	17	5	8	1	3	0
6	Takhyatosh district	15	9	2	4	0	0

	"Saraykol"						
7	Chimboy district "T. Guzari"	3	0	2	0	1	0
8	Chimboy district Oraylyk M.F.Y	9	2	3	2	1	1
9	Kegeili district "Jamabozor" M.F.Y	17	4	6	2	4	1
	<b>Total</b>	<b>142</b>	<b>36</b>	<b>30</b>	<b>18</b>	<b>19</b>	<b>5</b>

According to the results of Table 2, 49 positive results were detected in the blood serum of the blood samples tested during the study, while IgG antibodies were detected in 30 of them, and IgM antibodies were detected in 19 blood samples. 23 of the tested blood samples were negative, of which 18 were negative for IgG antibodies and 5 were negative for IgM antibodies. Out of 106 blood samples, 49 blood samples were positive, which was 46.2 percent, and the average immunobackground level was 5%.

**Conclusions:**

1. According to the results of scientific research, when tested using the ELISA method, the average level of immunity against lumpy dermatitis in 8 regions of the Khorezm region was 3%.

2. The average level of immunity against lumpy dermatitis in 9 regions of some districts of the Republic of Karakalpakstan was 5%.

3. The average level of immunity against lumpy dermatitis in the Khorezm region was 36 IgG immunoglobulin positive blood samples from cattle, 22 blood samples were positive IgM positive.

4. The negative result of the titer of antibodies against lumpy dermatitis in the blood samples tested in this region was 15 IgG antibodies negative, 14 IgM negative.

5. In the blood samples tested in the districts of the Republic of Karakalpakstan, the level of the immune background against lumpy dermatitis was determined to be positive in 30 IgG antibodies, and positive in 19 IgM antibodies.

6. In cattle, the level of the immune background against lumpy dermatitis was determined to be negative in 18 IgG antibodies, and negative in 5 IgM antibodies.

**List of references**

1. Абдалимов, С.Х Турсунов С.С «О нодулярном дерматите крупного рогатого скота/ 2019 г. Московская обл., Городской округ Подольск, пос.Дубровицыд. 60.

2. Вацаев Ш.В. Черных О.Ю., Чернов А.Н., Лысенко А.А. Динамика эпизоотического процесса при нодулярном дерматите крупного рогатого скота в Чеченской Республике за 2015-2016 гг // Ветеринарный врач. г. Казань, № 3. 2018 г.-37-40 с.

3. Долгов В. В. Иммунохимический анализ в лабораторной медицине /-

М.-Тверь: ООО «Издательство» «Триада», 2015. С.-34-38

4 Егоров А.М., Осипов А.П., Дзантиев Б.Б., Гаврилова Е.М. Теория и практика иммуноферментного анализа-М: Издательство "Высшая школа", 1991.- С. 3-42.

5. Мищенко А.В., Караулов А.К., Мищенко В.А “Нодулярный дерматит крупного рогатого скота”/–Текст: непосредственный// Ветеринария. – 2016. – № 4.– 3-6 с.

7 Salimov Kh.S., Ismatova R.A., Tursunov C.S. Abdalimovlar S.H. On measures “Diagnosis, treatment, prevention and control of nodular dermatitis in cattle”. Methodological recommendations. Samarkand-2022 y 15 p.