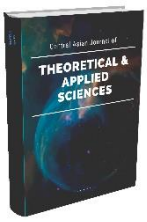

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The Results of Determining the Dynamics of Antibody Titer in Cows' Blood Serum After Immunization with The Associated Inactivated Vaccine "ENTEROVAC - 5"

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Abstract: *The article gives the findings of scientific study on the viral vaccination "Enterovak - 5" in the farm "Yokub ota" in the Kushtepa district of the Fergana area. The findings of evaluating the dynamics of antiviral and bacterial antibody titers in cow blood serum after immunization with the related inactivated vaccine "Enterovak - 5" are presented. It has been demonstrated that inoculated cows have dramatically enhanced antibodies against viruses, which are the causal agents of viral illnesses, as well as Escherichia and Proteus.*

Key words: *cow, vaccine, polyvalent, inactivated, pneumoenteritis, antibodies, virus, RNGA, titer.*

Introduction. The pathogenesis of illnesses in cattle is dominated by viral-bacterial gastrointestinal and respiratory disorders in calves. Traditional cow breeding technique accounts for 55-70 percent of all cases of illness in calves, whereas industrial technology accounts for up to 100 percent of all cases of disease in calves. Diseases of the respiratory system account for 33.2-44.0% and more than 60% of all instances of illness in calves, respectively. Currently, viral-bacterial etiology gastrointestinal and respiratory illnesses in cattle are common around the world.

The most significant component of the anti-epizootic strategy for viral-bacterial pneumoenteritis is vaccination prevention.

When cattle are immunized against infectious rhinotracheitis, viral diarrhea, parainfluenza-3, respiratory syncytial, rota and coronavirus infections, escherichiosis, and proteosis, intense specific

immunity is created, as well as nonspecific immunity due to the high interferon-stimulating activity of the vaccine strains of viruses. Vaccination of cattle against the aforementioned illnesses aids in the reduction of infection with the aforementioned viruses and bacteria, the development of intense immunity in deep-pregnant cows, and the development of colostral immunity in calves with prompt feeding of colostrum.

Methodology. The research was carried out in the conditions of the farm "Yokub ota" of the Kushtepa district of the Fergana region to evaluate the effectiveness of tests of the associated inactivated vaccine against viral diarrhea, rota and coronavirus infections, colibacillosis, and calf proteosis "Enterovak-5" produced by BelVitunifarm OJSC under production conditions. The vaccine was used to instill colostral immunity in newborn calves against viral diarrhea, proteosis, colibacillosis, rotavirus, and coronavirus infections in cows.

Farms threatened by viral pneumoenteritis and farms with extensive respiratory and gastrointestinal viral illnesses were chosen to test the vaccination. A veterinary inspection of the entire cattle was performed prior to vaccination, and only clinically healthy animals were vaccinated.

To put the suggested vaccination "Enterovak - 5" to the test, two groups of pregnant cows were prepared - 20 animals each (experimental and control); the cows in the experimental groups were vaccinated with the Enterovak-5 vaccine. The vaccine was injected intramuscularly in the croup region at a dosage of 5.0 cm3 (1 dose) using the following protocol: First-calf heifers were vaccinated twice at 21-day intervals. The first immunization was administered no sooner than 9 weeks before calving. The second immunization was administered no later than three weeks before to calving.

Animals in the control groups received an intramuscular injection of isotonic sodium chloride solution at a dosage of 5.0 cm3 in the croup area.

Blood was drawn from cows in the experimental and control groups prior to immunization, as well as 10-15 days before calving, 1, 3, and 5 months thereafter. Using erythrocytic diagnostics, the amount of particular antibodies to viruses in the RNGA was evaluated in the blood serum. In the RA, antibodies to Pr. Mirabilis and E.coli were measured using a diagnosticum, which is a suspension of each strain of bacteria inactivated by formaldehyde at a concentration of 2 billion microbial bodies per 1 ml.

The trials were carried out in compliance with the RNGA and RA staging guidelines.

Result and discussion. The results showed that immunity was developed and maintained in cows for at least 8 months. Immunity was generated in newborn calves 2-3 hours after colostrum consumption and lasted for 1.0-1.5 months.

The immunological response of cows to the introduction of an associated inactivated vaccination against viral diarrhea, rota and coronavirus infections, colibacillosis, and calf proteosis is shown in Table 1.

The table data indicates that an increase in antibody titers to diarrhea virus, rota, coronavirus infection and against Escherichia and Proteus was noted 15-20 days before calving, respectively, by 3.6 $\log_2$, 3.3 $\log_2$, 3.6 $\log_2$, 4 .0 $\log_2$, 3.8 $\log_2$ in relation to the control group, then 1-3-5 months after calving the antibody titers were slightly lower. But, in relation to the control group, antibody titers 1 month after calving were respectively 3.6 $\log_2$, 2.4 $\log_2$, 2.6 $\log_2$, 3.4 $\log_2$, 3.2 $\log_2$ higher, 3 months after calving by 2.6 $\log_2$, 2.0 $\log_2$, 1.8 $\log_2$, 2.8 $\log_2$, 2.6 $\log_2$ more, 5 months after calving by 1.2 $\log_2$, 1.4 $\log_2$, 1.4 $\log_2$, 1.0 $\log_2$, 1.2 $\log_2$ is greater.

Table 1. Dynamics of the titer of antiviral and bacterial antibodies in the blood serum of cows during immunization with their associated inactivated vaccine "Enterovak - 5" on the farm "Yokub ota" of the Kushtepa district of the Fergana region of the Republic of Uzbekistan

Blood draw no.	Days after vaccination	VD		Company		Crown		When		proteus	
		OG	KG	OG	KG	OG	KG	OG	KG	OG	KG
1	Initial data	3,2±0,32	3,0±0,21	3,6±0,32	3,4±0,18	3,4±0,22	3,2±0,18	4,8±0,62	4,6±0,25	4,2±0,54	4,0±0,38
2	15-20 days before calving	6,4±0,78	2,8±0,18	6,2±0,44	3,0±0,28	5,6±0,55	2,0±0,11	8,4±1,22	4,4±0,81	7,8±1,16	4,0±0,65
3	1 month after the abduction	5,4±0,65	2,2±0,11	5,0±0,78	2,6±0,44	4,6±0,62	2,0±0,28	7,4±1,32	4,0±0,32	6,4±1,65	3,2±0,65
4	3 months after the abduction	5,0±0,58	2,4±0,41	4,4±0,65	2,4±0,18	4,0±0,48	2,2±0,32	6,6±1,02	3,8±0,62	5,6±0,78	3,0±0,44
5	5 months after the abduction	3,4±0,41	2,2±0,28	3,6±0,32	2,2±0,24	3,4±0,62	2,0±0,15	4,8±0,78	3,8±0,45	4,0±0,63	3,2±0,69

Conclusion. Vaccinated cows have significantly increased antibodies against both viruses - causative agents of viral infections - and against Escherichia and Proteus, indicating that the vaccine causes the production (formation) of specific antibodies against the diarrhea virus, rotaviruses, coronaviruses, E.coli, and Proteus mirabilis, for the purpose of further transmission of colostral immunity to offspring.

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