

## The Action of Introvit A + WS and Monocalcium Phosphate in the Prevention of Vitamin and Mineral Deficiency of Infertility in Cows

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### Abstract:

This article describes the clinical signs, blood tests, and diagnosis of nutritional infertility in dairy cows.

**Key words:** dispensary examinations of alimentary infertility, ovaries, corpus luteum, clinical signs, morphobiochemical parameters.

Based on the Action Strategy for the further development of the Republic of Uzbekistan, meeting the needs of the population for livestock products and ensuring food security, increasing livestock production, introducing modern advanced methods and means in the treatment and prevention of infectious and non-infectious diseases. The introduction of modern advanced methods and tools into production is of great scientific and practical importance.

In recent years, highly productive, thoroughbred cattle have been imported into the republic from foreign countries. As a result of neglect of their age, physiological state, level of productivity, periods of lactation and gestation, especially in non-standardized and low-nutritional diets of the silage-concentrate type, various pathologies of violation of vitamin and mineral metabolism are observed. As a result, there is a need to further improve the existing traditional methods of diagnosis and treatment and prophylactic measures in the fight against this pathology.

One of the urgent problems is the economic damage from alimentary infertility caused by disorders of vitamin and mineral metabolism in productive cows, their causes, the importance of food factors in their origin, development mechanisms, early detection, development and improvement of effective methods of treatment and prevention of the disease.

It is necessary to develop and improve methods of early detection and prevention of alimentary infertility in high-yielding cows, detection and prevention of the causes of infertility caused by impaired protein-carbohydrate-lipid metabolism in cows and impaired metabolism of vitamins and micronutrients in animals.

**Purpose of research:** To study the effect of Introvit A + WS and monocalcium phosphate on the prevention of infertility in productive cows.

**Research objectives.** In order to study the effect of Introvit A + WS and monocalcium phosphate, determine the causes of infertility in productive cows, developmental features, establish morphobiochemical parameters of blood and improve methods of their prevention.

**Object and subject of research.** Hemoglobin and erythrocytes were analyzed in the blood of productive cows raised in the livestock farm "Javokhir Zarchashmasi" of the Ishtikhan district of the Samarkand region, the main feed samples and the composition of the diet were studied.

**Testing method and materials.** The event was held on Holstein cows belonging to the "Javokhir Zarchashmasi" farm in the Ishtikhan district of the Samarkand region. Each had 10 cows, the infertility of which was determined using a test. The 1st experimental and 2nd control groups were

created. They underwent clinical examinations at the beginning of the experiments and every 20 days, including blood samples and laboratory tests of vaginal fluid.

Clinical examinations revealed the general condition of the cows, appetite, mucous membranes, obesity, skin and mucous membranes, the condition of the limbs, labia, vagina and cervix, uterine tubes and the condition of the ovaries.

The conditions of storage and nutrition of cows were analyzed, including indicators of microclimate in stalls, condition of floors, composition and nutrition of feed rations, laboratory analysis of the amount of minerals in feed mixture supplied to cows.

The main factors for the prevention of obstetric and gynecological diseases in highly productive cows are the creation of a solid forage base, adequate nutrition, proper feeding and care, the organization of planned grazing, a sufficient amount of vitamins and minerals to keep animals in one place, especially in winter.

To enrich the diet of dairy cows with vitamins, macro- and micronutrients, 40 days after calving, it was given for 40 days every 10 days, then after 5 days' rest, in addition to the main diet, 50 g of monocalcium phosphate was given per cow, 5 g of Introvit A + WS mixed with compound feed. The dairy cows of the second (control) group were fed only with the ration (F.R.) introduced on the farm.

The cows of the experimental and control groups were clinically examined before the start of the experiments once every 20 days, and the blood samples taken from them were analyzed for morphobiochemical parameters.

By the end of the experiments, there were practically no differences from the normative indicators in terms of clinical and physiological indicators of dairy cows in the experimental group. The cows of the control group are insensitive to external influences, decreased and changed appetite, decreased chewing and contractions of the anterior abdominal region, whitening of the mucous membranes (anemia), specific clinical signs of disorders of mineral and vitamin metabolism were reported, such as thinning of the skin on the skin of the neck, pigmentation around eyes and lips.

### **The results obtained and their discussion.**

In the experimental group, if the average heart rate per minute before the start of the experiment was  $73.6 \pm 2.4$  beats, then at the end of the experiment it was  $66.3 \pm 2.6$  beats, and the respiratory rate per minute was from  $27.1 \pm 2.5$  times to  $21.3 \pm 2.5$  times decreased and there was an increase in the movement of the large abdominal wall in 5 minutes from  $5.7 \pm 0.5$  times to  $10.4 \pm 0.5$  times (the norm is 8-12 times in 5 minutes). Bu sigirlarda azm zharayonlari me'yorlashganligidan dalolat beradi.

The cows of the control group had a deterioration in clinical parameters by the end of the experiment, that is, an increase in heart rate up to  $76.1 \pm 3.2$  beats per minute, respiratory rate, respectively, up to  $27.1 \pm 3.2$  beats per minute, large movements of the abdominal wall up to  $5.7 \pm 0.5$  beats in 5 minutes, as well as clinical features characteristic of tracking the nature of trace elements.

While some morphobiochemical parameters of the blood of dairy cows in the experiment before the start of the experiment were characterized by the same values in all groups, it was noted that in the control group of dairy cows these values worsened by the end of the period in the experiment, and in the experimental cows they improved within the physiological norm.

By the end of the experiments, the average number of erythrocytes in the blood of dairy cows in the control group was 0.52 million/ $\mu$ l, hemoglobin - 2.5 g/l, glucose - 0.11 mmol/l, total protein - 1.4 g/l, alkaline reserve - there was a decrease in the volume of CO<sub>2</sub> by 1.7%. This is due to the fact that

morphobiochemical blood parameters in dairy cows of this group deteriorate by the end of lactation.

In the experimental group, blood parameters improved compared to the initial values, that is, the average number of erythrocytes in the blood increased from  $4.8 \pm 1.6$  million / mkl to  $5.6 \pm 1.3$  million / mkl, hemoglobin - from  $86.5 \pm 1.27$  g / L to  $104 \pm 2.3$  g / L, glucose - from  $1.72 \pm 0.07$  mmol / L to  $2.35 \pm 0.06$  mmol / L, total protein - from  $66.5 \pm 1.36$  g / l to  $72.4 \pm 1.21$  g / l, alkaline reserve - from  $44.6 \pm 1.14\%$  CO<sub>2</sub> by volume to  $48.1 \pm 1.7\%$  CO<sub>2</sub> by volume. Improvement of some morphobiochemical blood parameters within physiological norms can be explained by the positive effect of the drugs used on the metabolic state of cows.

When fertilization in the control group was checked every 20 days, experiments showed that 3 out of 10 cows were inseminated by the end, that is, 30%.

Fertilization in experimental cows was checked every 20 days, and by the end of the experiments 8 out of 10 cows were fertilized, that is, 80%.

Conclusions. In order to prevent nutritional infertility in dairy cows, the use of compound feeds of 50 g of monocalcium phosphate, 5 g of Introvit A + WS daily per cow for 40 days was studied to improve the clinical and physiological status and morphobiochemical blood parameters. It has also been observed to prevent infertility in cows and increase fertility by 50%.

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