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**THE IMPORTANCE OF CLINICAL EXAMINATION IN THE ORIGIN OF
NUTRITIONAL DEFICIENCIES IN PRODUCTIVE COWS**

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Аннотация: В статье изучены случаи бесплодия у коров, содержащихся в условиях фермерских хозяйств Каракалпакстана, специализирующихся на скотоводстве. В исследовании проведены акушерско-гинекологическое диспансеризация стельных и новотеливших коров, анализ динамики клинических признаков и основных гематологических показателей крови. Полученные результаты показали, что в период начала лактации у коров наблюдается несоответствие физиологической нагрузки адаптационным возможностям организма, нарушение метаболических процессов и гематологические изменения, взаимосвязанные с алиментарно-климатическими факторами. Проведённые исследования подтверждают важность клинических и гематологических обследований в раннем выявлении и профилактике бесплодия.

Ключевые слова: бесплодие, алиментарный, коровы, алиментарный рацион, клинические показатели, гематологические показатели, лизуха, физиологическое состояние, частота дыхания, пульс.

Annotation: The article investigates cases of infertility in cows raised in cattle-breeding farms of the Republic of Karakalpakstan. The research included obstetric-gynecological dispensation of pregnant and newly calved cows, analysis of the dynamics of clinical signs, and evaluation of the main hematological parameters. The obtained results showed that at the onset of lactation, cows often experience an inability to adapt to increased physiological load, disruptions in metabolic processes, and hematological changes associated with alimentary and climatic factors. The study confirms the importance of clinical and hematological examinations for the early detection and prevention of infertility.

Keywords: infertility, alimentary, cows, alimentary ration, clinical indicators, hematological indicators, pica (lizukha), physiological state, respiratory rate, pulse.

Relevance of the topic. Modernization and accelerated development of livestock farming in our republic is an important part of the strategy for the development of the entire agricultural sector. In order to further improve the sustainable provision of the population with affordable and high-quality milk and dairy products, a number of systematic measures have been implemented in recent years. The “Development Strategy of New Uzbekistan” for 2022-2026 sets out such important tasks as “increasing the production volumes of livestock products by 1.5-2 times, implementing new projects to increase the number of livestock and increase their productivity, artificial insemination of 2.4 million (52 percent) cows and calves of calving age in households, strengthening the feed base of livestock, breeding high-yielding varieties of food crops, harvesting 2-3 times a year and increasing productivity by 1.2 times”. In Uzbekistan, one of the important tasks in increasing livestock production is to increase animal productivity, strengthen the food base, create highly productive herds of cows, and use cattle adapted to udder-shaped milking machines.

The productivity, health, and fertility of cows largely depend on their maintenance and feeding conditions. As a result of nutritional imbalances and non-compliance with sanitary and hygienic rules in farms, many alimentary infertility, mastitis, ketosis, and other diseases are

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recorded. Therefore, it is important to study the nutritional value of the diet of cows and the level of satisfaction of their physiological needs on a scientific basis.

In addition, systematic study of clinical indicators is of great diagnostic importance for early detection of metabolic disorders and reproductive problems in cows. Clinical dispensary allows you to assess the general physiological condition of the animal through heart rate, respiratory rate, body temperature, and other indicators.

Research object and methods. In order to study the causes of alimentary infertility and the characteristics of its course in productive cows imported from abroad and maintained at the “Saparov O’mirbek” farm in the Nukus district of the Republic of Karakalpakstan, obstetric-gynecological dispensary studies were conducted on cows 50-65 days old after calving. In this study, 10 cows were selected as a reference group based on the “similar pairs” principle from 4-6-year-old cows with infertility detected at the Saparov O’mirbek farm in the Beruniy district, and their clinical and physiological status was determined by conducting clinical examinations and obstetric-gynecological examinations every 20 days. Laboratory tests were conducted on blood samples taken from them to determine some morphobiochemical indicators for 60 days.

Due to the fact that cows in the livestock farm are mainly kept in one place, the level of fatness of cows is below average, endometritis, mastitis, hypovitaminosis, prolonged service period, delayed recovery of genitals after childbirth, uterine and ovarian insufficiency, and infertility were noted among cows.

By conducting clinical examinations using generally accepted methods, it was observed that cows had a decrease in appetite, increased roughness and decreased gloss of the skin, sagging in some parts of the body, decreased skin elasticity and dryness, pallor of visible mucous membranes, and a decrease in response to external influences.

Analysis of the results obtained. In a barren cow on a cattle farm, the body temperature was on average $38.5 \pm 0.04^{\circ}\text{C}$ (normal - 37.5°C - 39.5°C), the number of heartbeats per minute was on average 75.6 ± 2.8 times at the beginning of the tests, and 77.4 ± 2.9 times at the end of the tests (normal - 50-80 times), the respiratory rate per minute was 25.8 ± 2.7 times at the beginning, and 27.4 ± 2.9 times at the end of the tests (normal - 12-25 times per minute), the number of contractions of the abdominal wall in 5 minutes was on average 4.6 ± 0.6 times at the end of the tests (normal - 5-12 times) (Table 1). These data indicate that physiological indicators deteriorate towards the end of the studies compared to those at the beginning of the tests.

Table 1

Clinical indicators of cows in the experiment (Saparov O'mirbek farm) (n=10)

Inspection time	Clinical indications			
	Body temperature, $^{\circ}\text{C}$	Heart rate, per minute	Number of breaths, per minute	Rumination, in 5 minutes
In the inspections	38.4 ± 0.4	75.6 ± 2.8	25.8 ± 2.7	5.8 ± 0.6
On the 20th	38.4 ± 0.3	76.5 ± 2.6	26.6 ± 2.6	5.1 ± 0.7
40th day	38.5 ± 0.4	77.2 ± 2.7	27.2 ± 2.9	4.8 ± 0.5
60 days	38.5 ± 0.5	77.4 ± 2.9	27.5 ± 3.1	4.6 ± 0.6

During the examinations conducted on the farm, it was found that 50-60% of cows had clinical signs typical of alimentary infertility. In dairy cows, alimentary infertility is accompanied by clinical signs such as changes in appetite, pale mucous membranes, increased heart rate and respiratory rate, a decrease in the number of abdominal contractions, hair loss

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around the neck and eyes, increased body temperature and decreased gloss, and deformity of joints and hooves.

Conclusion. Clinical, obstetric-gynecological and ultrasound examinations conducted on farms showed the widespread prevalence of alimentary infertility in cows. During rectal palpation, uterine atony, shrinkage and hardening of the ovaries, immaturity of the follicles, as well as signs of unabsorbed corpus luteum and uterine subinvolution in 30–35% of cows, indicate a profound violation of metabolic and reproductive processes.

Clinical observations showed the presence of signs characteristic of alimentary infertility in 50–60% of cows. In particular, such changes as decreased appetite, pale mucous membranes, increased heart rate and respiratory rate, decreased abdominal contractions, loss of hair and gloss, as well as deformation of joints and hooves were detected.

The results obtained indicate that the main causes of alimentary infertility in cows are insufficient nutritional content of feed rations, vitamin-mineral deficiency, and metabolic disorders. It was also found that regular clinical, obstetric-gynecological, and hematological examinations are an important factor in early diagnosis of alimentary infertility and the development of effective preventive measures.

Foydalanilgan adabiyotlar.

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