PREVENTION OF SUBCLINICAL KETOSIS IN DAIRY COWS

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Abstract
This article describes the means of prevention of subclinical ketosis in cows, their effect on clinical and hematological parameters. In the prevention of subclinical ketosis in productive cows, LPP-1 vitamin-mineral premix 40 g per head per day, 1.5 g of sodium bicarbonate per head, 20 g of sodium bicarbonate per head per day, and the effectiveness of giving it in the 1-3 months of lactation are high. improves and increases the functional state of metabolism and liver and prevents subclinical ketosis.

Keywords: high-yielding cows, subclinical ketosis, secondary osteodystrophy, acidosis, ketone bodies, hypohemoglobinemia, dysproteinemia, hypoglycemia, hypocarotenemia, hypocalcemia, ketonemia, ketonuria, hypodynamia, hypotrophic calves. LPP-1, Orego Plus.

Relevance of the Topic

Development of effective methods of diagnosis and prevention of metabolic disorders in productive cows, including subclinical ketosis, and introduction into veterinary practice is considered one of the current problems.

As a result of subclinical ketosis of high-yielding cows, it causes great economic damage to farms due to a sharp decrease in productivity, sterility, shortening of the life span of high-yielding cows, the birth of hypotrophic calves with low vitality and susceptibility to diseases, an increase in food consumption for product production, and an increase in the cost of products [1,3].

As a result of a sharp change in the conditions of keeping and feeding dairy cows, in the winter season, hay and high-quality food in the ration are replaced by foods with high acidity, such as silage, haylage, hay, barda, they suffer from all kinds of metabolic disorders, chronic acidosis and ketosis, secondary osteodystrophy, hypomagnesemia, fatty causes diseases such as hepatodystrophy, large stomach acidosis [1, 2, 5].

In their scientific work, many scientists have improved their diet based on balancing the ration of cows, comprehensive examination of the ration, and developed the composition of soft feed enriched with vitamins and minerals. Administration of this complex has proven to prevent metabolic disorders and subclinical ketosis in cows. It was found that glucose and alkaline reserves were normalized in the blood of the experimental animals compared to the control [4].

Place, object and methods of research. Scientific researches were conducted in cows belonging to the Holstein breed at the "K. Eldor" cattle farm in Pastdargom district, Samarkand region, in order to select means for the prevention of subclinical ketosis in productive cows and to study their effects on the body.

For the experiments, 20 heads were selected from 5-6 years old 1-3 month lactating cows on the farm and they were divided into 4 groups of 5 heads each.

Cows in the first experimental group were given 40 g of LPP-1 vitamin-mineral premix mixed with soft feed per day in addition to the farm ration. 10 ml of Vetozal 10% drug was injected intramuscularly once every 20 days.

Cows in the second experimental group were given LPP-1 vitamin-mineral premix 40 g per head, Orego Plus drug 1.5 g/1 head, sodium bicarbonate 20 g/1 head mixed with soft feed in addition to farm ration.

Cows in the third experimental group were given 40 g of LPP-1 vitamin and mineral premix per head per day, 2 g/1 head of Orego Plus, and 20 g/1 head of sodium bicarbonate mixed with soft feed in addition to farm ration.

Cows in the fourth experimental group were taken as control and fed only in the method introduced in the farm. The experiments were carried out for 90 days in the 1st-3rd months of the lactation period. Cows were examined clinically, hematologically and ruminally at the beginning of the experiments and every 30 days. Ketone bodies in blood and urine were determined using Wellion vet BELUA and KETONE URS-1K indicator test.

The environment of large abdominal fluid (using rN-meter), the number of infusoria (in the form of Goryaev count) was determined [3].

The obtained results and their analysis

Experiments on group prevention of subclinical ketosis in farm cows were conducted based on the results of dispensary inspection.

At the beginning of the experiments, general weakness, loss of appetite, loss of skin cover, loss of shine, deformation of hooves, pale color of mucous membranes, movement of incisors were found in cows of all experimental groups.

In cows of the first experimental group, at the beginning of the experiments, that is, in the first month of lactation, the number of breaths and pulses per minute was 28.4±0.6 and 78.6±3.1 on average, and in the cows of the second experimental group, it was 26.5±0.8 and 68, respectively. ,9±3.6 times, in cows of the third experimental group it was 26.6±0.6 and 68.2±3.4 times. In the control group, these indicators were observed to increase by 32.7 ± 0.5 times and 82.3 ± 3.5 times, respectively, in the number of breaths and pulses. By the end of the experiments, the number of contractions of the large abdominal wall movement of cows in 2 minutes was equal to 3.6±0.08 times on average in the first group, accordingly, it was

3.8±0.08 times on average in the second group, 3.8±0 in the third group, 06 times, in the control group it averaged 3.2±0.05 times (average 3-5 times in 2 minutes).

The amount of hemoglobin in the blood at the beginning of the experiments in cows of the first experimental group was on average 86.6±4.5 g/l, glucose - 2.18±0.05 mmol/l, total protein - 78.8±4.3 g/l , carotene - 0.323±0.45 mg%, alkaline reserve - 42.4±2.5 volume%C02, at the end of the experiments, these indicators were correspondingly, on average 92.4±3.6 g/l, 2 , increased to 25±0.08 mmol/l, 78.5±3.2 g/l, 0.335±0.28 mg%, 47.1±2.3 volume% CO2, the amount of hemoglobin in the blood of cows in the second experimental group at the beginning average 83.5±2.2 g/l, glucose - 2.11±0.04 mmol/l, total protein -79.2±4.2 g/l, carotene - 0.322±0.21 mg%, the alkaline reserve is 46.8±2.4 volume%C02, and at the end of the experiments, these values were on average 95.6±4.2 g/l, 2.46±0.06 mmol/l, respectively , increased to 74.3±3.5 g/l, 0.365±0.18 mg%, 48.9±2.5 volume%CO2.

In the cows of the third experimental group, the amount of hemoglobin in the blood at the beginning of the experiments was on average 85.4±2.5 g/l, glucose - 2.12±0.04 mmol/l, total protein - 79.5±3.8 g/l , carotene - 0.318±0.31 mg%, alkaline reserve - 44.2±2.8 volume%C02, at the end of the experiments, these indicators were respectively 94.5±3.4 g/l on average, 2, It was noted that it increased to 44±0.03 mmol/l, 75.8±3.2 g/l, 0.360±0.24 mg%, 48.2±2.3 volume%CO2.

In the control group, by the end of the experiments, compared to the values at the beginning of the experiments, the amount of hemoglobin increased to 76.5±4.8 g/l, glucose - to 2.13±0.06 mmol/l, carotene - to 0.292±0.33 mg% , it was found that the alkaline reserve decreased to - 42.4±3.9 volume%C02 (R< 0.05).

The amount of ketone bodies in the blood in the first experimental group was on average 1.326±0.06 mmol/l at the beginning of the experiments, and at the end it was on average 1.074±0.05 mmol/l, and in the second group, correspondingly, on average from 1.318±0.06 mmol/l to 1.026± It was found that it decreased from 1.315±0.05 mmol/l to 1.024±0.06 mmol/l in the third group. The amount of ketone bodies in the blood of cows in the control group was on average 1,328±0,06 mmol/l at the beginning of the experiment, and by the 3rd month of lactation, it increased to 1,402±0,08 mmol/l on average (the norm is 0,172-1,032 mmol/l).

The results of determining the amount of ketone bodies in the urine samples taken from the experimental cows showed that in the first experimental group, the amount of ketone bodies at the beginning of the experiments was on average 2.424±0.04 mmol/l, and at the end of the experiments, it was found to decrease to 1.764±0.06 mmol/l on average. Accordingly, in the second experimental group, the average from 2.436±0.05 mmol/l to 1.563±0.08 mmol/l, in the third experimental group from 2.451±0.04 mmol/l to 1.568±0.06 mmol/l, decreasing it was determined to go. It was observed that the amount of ketone bodies in the urine of control group cows increased from 2,428±0,05 mmol/l to 2,484±0,05 mmol/l (normal - 1,548-1,720 mmol/l). This situation is evidence of increased ketonemia and ketonuria in

cows with the increase of lactation period. It is noted in the literature that during subclinical ketosis, the amount of ketone bodies in milk, blood and urine increased up to 1.5 times [4].

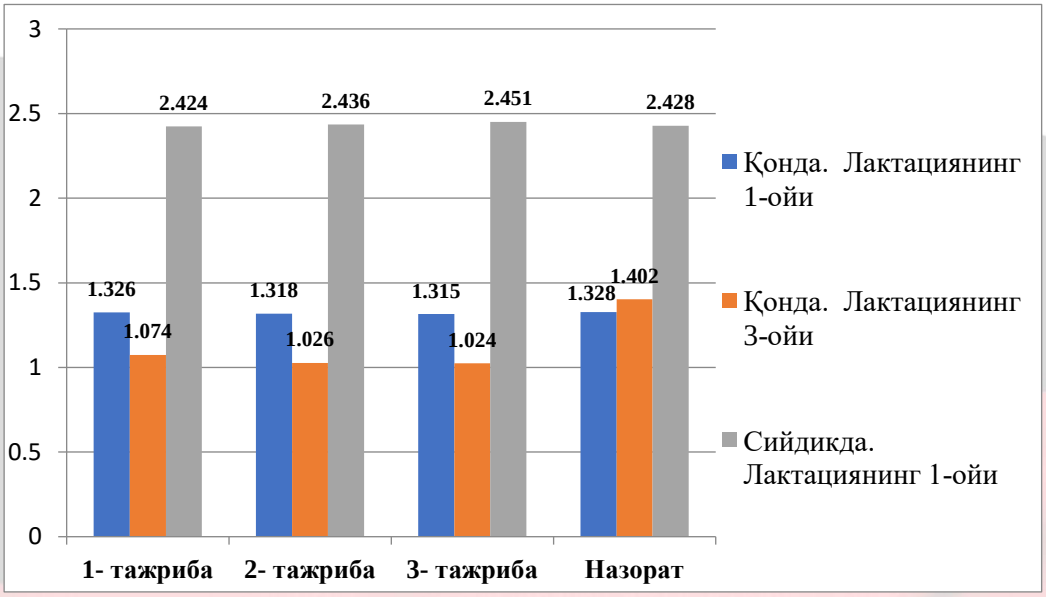

Figure 1. The amount of ketone bodies in the body of dairy cows

1- table

Ketone bodies		1- experience	2- experience	3- experience	Control
In the blood	**А**	1,326±0,06	1,318±0,06	1,315±0,05	1,328±0,06
	Б	1,074±0,05	1,026±0,04	1,024±0,06	1,402±0,08
In the urine	**А**	2,424±0,04	2,436±0,05	2,451±0,04	2,428±0,05
	Б	1,764±0,06	1,563±0,08	1,568±0,06	2,484±0,05

Note: A is the beginning of the experiment; B is the end of the experiment;

In the group prevention of subclinical ketosis in dairy cows, the ration of 40 g of LPP-1 vitamin-mineral premix and 1.5 g/1 head of Orego Plus drug, 20 g/1 head of sodium bicarbonate mixed with soft feed, compared to other groups of clinical and hematological indicators proved to be relatively positive in experiments.

Conclusion: In order to prevent subclinical ketosis in productive cows, during the first three months of lactation, 40 g of LPP-1 vitamin-mineral premix, 1.5 g/1 head of Orego Plus drug, and 20 g/1 head of sodium bicarbonate mixed with soft feed should be used in their diet. the effect is high, it reduces the amount of ketone bodies in the blood by 36.6% and in the urine by 58.9%, compared to the control group.

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