

PHYSIOLOGICAL CONDITION AND PRODUCTIVITY IN BULL FATTENING FOR CORRECTION RACION ON THE EFFECT OF B VITAMINS (B₁, B₂, B₅, B₆, B₁₀, B₁₂)

In realization of the genetic productivity potential of different species of farm animals, an important place is given to full feeding. In animals body, along with proteins, carbohydrates, lipids and minerals various vitamins perform important functions. Insufficient supply of farm animals with individual vitamins has negative impact on the activity of the relevant enzyme systems, hormonal status, metabolism of nutrients, the state of the natural resistance of the various organs and organ systems, the processes of adaptation and productivity level.

Numerical searches have shown that farm animals need in different vitamins depends on the type, age, sex, physiological state, the season, the level of productivity and others. According to some reports ruminants have been providing with water-soluble B vitamins by their rumen microbial synthesis accordingly it was recommended to rations setting for cattle, sheep and goats, along with nutrients and minerals only by carotene and vitamins D and E .

However, in recent years, some works are appeared in which positive influence on the young cattle body, adding some B vitamins (B₁, B₂, B₅, B₆, B₁₀, B₁₂) to their ration is marked. So in research of Feofilova Y.B. (2006), it was found that the rations of high productive animal and microbial synthesis in their proventriculus do not satisfy the needs of ruminants with vitamins B₁ and B₂. Girard C.L. et al. (1999), at cows parenteral injection of 160 mg of folic acid once a week during pregnancy and the first month after calving the increase in milk yield and protein content in milk is observed. Tarasov D.S. (2005) in his own search has noted that the introduction in calves rations different forms of nicotinic acid has a positive effect on the growth of calves, the digestion of nutrients, balance of nitrogen, calcium and phosphorus, and biochemical indices of blood. Yaremko O.V. et al. (2006) has found out that the addition into the ration of less developed bulls vitamin B₆, it improves the use of energetic substrates in organism, increases the intensity of protein metabolism and the activity of

aminotransferase and the rise of average daily income.

As a result of the research it was found that the addition of balanced nutrients and minerals and fat-soluble vitamins A, D, E complex of B vitamins (B₁, B₂, B₅, B₆, B₁₀, B₁₂) at different doses to the basic ration of calves at fattening for in different doses in general has positive influence on the number of erythrocytes, leucocytes, platelets, hematocrit value, hemoglobin content and erythrocyte sedimentation rate, and also causes an increase in growth (total and daily average), intensity and growth rate of calves, moreover change the value of quantitative morphological indices values of venous blood and calves productivity depends on the dose additionally introduced into the ration of B vitamins. And, hematocrit value in animals of the control group was $0,31 \pm 0,02$ l/l, and in bull from 1, 2, 3 and 4 experimental group, the hematocrit value was higher and accordingly was $0,33 \pm 0,03$ ($p > 0,05$); $0,35 \pm 0,01$ ($p < 0,05$); $0,39 \pm 0,02$ ($p < 0,01$), and $0,40 \pm 0,02$ l/l ($p < 0,01$).

At the same time, it was found statistically significant increase in the number of erythrocytes in the blood of bulls from 2, 3 and 4 experimental groups was higher by 15,8 ($p < 0,05$); 28,1 ($p < 0,01$) and 29,8% ($p < 0,01$) compared with animals in the control group.

It was also found somewhat less influence of B vitamins on the number of leukocytes in the blood of animals from research groups. Thus, in the bulls of controls group the number of leucocytes was $7,9 \pm 0,2$ g/l, and in the animals from 1, 2, 3 and 4 research groups, their number was $8,2 \pm 0,4$ ($p > 0,05$); $8,8 \pm 0,2$ ($p < 0,05$); $9,1 \pm 0,3$ ($p < 0,01$) and $9,3 \pm 0,4$ g/l ($p < 0,01$).

Number of platelets in the bulls of the control group was $348,5 \pm 17,5$ g/l, animals 1 and 2 experimental groups the number of blood plates remained almost at the same level ($350,8 \pm 18,7$ and $353,7 \pm 21,3$ g/l), and in the bulls from 3 and 4 research groups, this indices has slightly increased ($360,4 \pm 18,9$ and $362,8 \pm 16,9$ g/l) ($p > 0,05$).

Hemoglobin content in the blood of calves in the control group was $102,7 \pm 4,0$ g/l, and the blood of animals from 1, 2, 3 and 4 research groups it was higher

by 5,7 respectively ($p>0,05$); 14,3 ($p<0,05$); 24,4 ($p<0,001$) and 26,8% ($p<0,001$) compared to the control group of calves.

The value of ESR in animals in the control group was $1,12 \pm 0,05$ mm/h, and in bull in 1, 2, 3 and 4 research groups it was $1,16 \pm 0,06$ ($p>0,05$); $1,27 \pm 0,04$ ($p<0,05$); $1,32 \pm 0,04$ ($p<0,05$) and $1,33 \pm 0,05$ mm/h ($p<0,05$), which exceeded the indices of animals in the control group to 3,6; 13,4; 17,9 and 18,8%.

Concerning the influence of complex B vitamins (B_1 , B_2 , B_5 , B_6 , B_{10} , B_{12}) for color index of blood then this index did not differ significantly in the control animals and search groups ($p>0,05$).

Adding to the bulls ration of research groups complex B vitamins (B_1 , B_2 , B_5 , B_6 , B_{10} , B_{12}) at different doses has also positive influence on the general and average daily income, intensity and growth rate of calves with certain features in animals from different research groups that received in addition to the basic ration of complex of B vitamins in the appropriate quantity. Thus, it was observed that in the control group of calves at the end of the experiment the living mass was $413,6 \pm 3,7$ kg and in bulls from 1, 2, 3 and 4 research groups living mass respectively increased to $421,6 \pm 4,8$; $425,9 \pm 3,5$; $433,2 \pm 4,3$ and $438,1 \pm 5,1$ kg, which is 8,0 ($p>0,05$); 12,3 ($p<0,05$); 19,6 ($p<0,01$) and 24,5 kg ($p<0,01$) more, compared to the control group animals. In the bull's control and experimental groups an average income amounted respectively $783,9 \pm 21,7$; $840,6 \pm 30,4$ ($p>0,05$); $881,1 \pm 23,7$ ($p<0,05$); $915,5 \pm 26,3$ ($p<0,01$); $925,6 \pm 28,4$ g ($p<0,01$) which was higher by 7.2; 12.4; 16.8 and 18.1% compared with the control group of animals.

It was also noted that the correction of bulls fattening ration with major complex of B vitamins (B_1 , B_2 , B_5 , B_6 , B_{10} , B_{12}) caused in animal from research groups, improve the speed and intensity of growth. Thus, the growth rate in the control group of calves was 41,1%, and the animals from 1, 2, 3 and 4 research groups accordingly it was 43,8 ($p>0,05$); 45,8 ($p>0,05$); 47,0 ($p<0,05$) and 47,1% ($p<0,05$). The intensity of growth in the bulls from 1, 2, 3 and 4 experimental groups was higher compared to the control group of animals accordingly 0,2; 0,4; 0,5 and 0,5 g/kg/day.