



GROWING PUREBRED AND CROSSBRED BULLS FOR MEAT USING VARIOUS TECHNOLOGICAL METHODS

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Abstract

It has been established that the mineral and vitamin feedings introduced into the diet of bovine bulls during fattening improve the digestibility of nutrients in eaten feed, increase the formation of meat productivity and daily gain in live weight, as well as the effectiveness of rearing technology in farms.

Keywords: Bull, cattle, feeding, minerals, vitamin, nutrients, digestibility, meat productivity, live weight, average daily gain, efficiency.

Introduction

Intensification of animal husbandry provides for an all-round increase in the productivity of livestock, obtaining the maximum amount of products per unit of fodder. A necessary condition for the successful solution of this problem is the provision of livestock with fodder. In strengthening the fodder base, it is necessary to follow the path of increasing the yield of fodder crops, the most rational use of meadows, a significant expansion of industrial production of combined fodder enriched with high-protein additives, vitamins, trace elements, antibiotics and other means that increase the nutritional value of feed. Modern chemistry opens up great opportunities for improving the quality of the composition of compound feeds through the use of chemical additives. Supplying animals in sufficient quantities with various chemical compounds and biostimulants will make it possible to more fully use the reserves to increase the productivity of animals, improve quality and reduce the cost of production [2,4,7].

Among the factors determining the adequacy of feeding cattle bulls during fattening, the conditions of mineral and vitamin nutrition are of significant importance. In connection with the expansion and detailing of ideas about the requirements of bulls and the physiological role of biogenic mineral elements and vitamins, these issues have become of great importance.

An increase in meat productivity, on the one hand, and the use of products and wastes of technical processing as feed, on the other, has led to the fact that quite a part of the diet does not meet the needs of bulls in certain minerals and vitamins. As a result, there was a need to use mineral and vitamin supplements and premixes. Their inclusion in the diets is due to the content of minerals and vitamins in the feed and the recommended rates of need for them in bulls.

In the literature on this issue, a significant amount of both experimental material and data on best practices in beef production has been accumulated. However, they were obtained in various natural



and economic zones of the country, each of which has its own characteristics of animal husbandry. Therefore, this paper considers the features of mineral and vitamin nutrition of bulls when fattening mainly in the sharply continental climate of the Fergana Valley. Particular attention is paid to the importance of minerals and vitamins in metabolism, their content in the most common feeds, the effect on meat productivity and physiological state. Methods of covering the deficiency of minerals and vitamins in the diets of cattle bulls during fattening on farms are considered.

It is known that the functions of cells in the animal body are associated with minerals and vitamins. The importance of minerals and vitamins for cattle bulls during fattening can be judged by the consequences that arise when they are insufficiently or excessively intaken into the body. These consequences can be very diverse, but the main ones are as follows:

1) disruption of the functional activity of organs and systems and the occurrence of alimentary diseases; 2) decrease in meat productivity and meat quality; 3) deterioration in the use of nutrients in the diet and an increase in feed costs for the formation of meat productivity.

Of course, all these phenomena can be the result of some disease or insufficient content of energy and nutrients in the diet, but when they occur in healthy animals and with sufficient feeding, it is necessary to pay attention to the content of minerals and vitamins in the diet [1,5,9].

Objects and methods of research. To study the optimal level of mineral nutrition of bulls of the black-and-white breed when fattening for meat, a series of experiments was organized and carried out in the farm "Shukurdavlat" of the Kushtepa district of the Fergana region. When conducting the experiments, it was assumed that the provision of minerals would be complete if the deficiency was compensated to a certain level by mineral supplementation.

Research results and discussion. 1. The first experiment was carried out on 12-month-old bulls of the black-and-white breed during 150 days of the winter-stall period. In the preliminary period of the experiment, the bulls were fed the basic ration consisting of 6-8 kg of forb hay, 20-25 kg of silage, 8-12 kg of fodder beet, 2-3 kg of ground barley and 2-2.5 kg of cotton meal. 1 kg of dry matter of the diet contained 45.9 g of minerals, including: 5.0 g calcium, 3.3 g phosphorus, 18.7 g potassium, 89 mg manganese, 11.9 mg copper, 0.46 mg cobalt and 40.9 mg zinc.

In the experimental period, bulls were fed the same diet, but with the inclusion of mineral feeding of the following composition, %: precipitate-11.59, sodium acid acid-12.01, sodium sulfate-7.13, potassium acid-10.12, table salt-40.29, iron sulfate-0.49, zinc sulfate-0.13, manganese sulfate-0.09, copper sulfate-0.17, cobalt chloride-0.04, potassium iodide-0.009. Such a mineral mixture was set at the rate of 8 g per 1 kg of dry matter of the diet. All salts were introduced into the diet in an aqueous solution with hay, with the exception of precipitate, which was fed in its natural form along with concentrated feed.

The introduction of such a mineral mixture into the diet of bulls made it possible to increase the concentration of minerals in the dry matter up to 54.1 g, including: calcium - up to 6.7 g, phosphorus - up to 3.5 g, potassium - up to 21.09 g, manganese - up to 100.2 mg, cobalt - up to 0.65 mg and zinc - up to 44.7 mg, copper - 12.3 mg.

In the final period, the bulls were transferred to the main diet without mineral feeding. The feeding conditions of the bulls affected the average daily gain in live weight. The transfer of bulls from the main diet to the diet with mineral feeding led to an increase in the average daily gain in live

weight from 795.0 g to 749.0 g (experimental period), and with the exclusion of feeding, productivity again decreased to 129 g.

2. The second experiment was to establish the optimal concentration of minerals in the dry matter of feed: a scientific and economic experiment was carried out in bulls at the age of 9 months.

For the experiment, 30 bulls were selected and divided into three equal groups according to the principle of analogues. The experience consisted of a preliminary period of 52 days, a trial period of 75 days and a 15-day final period. In the preliminary period, all bulls received a diet consisting of hay, silage, root crops, mixed feed and haylage. During the trial period, the compound feed was replaced by ground barley grain and cotton meal.

To create different levels of minerals in the diets of groups II and III, complex mineral feeding was introduced, which includes: table salt in group II - 40.9%, defluorinated feed phosphate - 44.3%, bicarbonate soda - 6.09%, dibasic sodium phosphate - 9.1%, magnesium oxide - 1.301%, iron sulfate - 0.014%, potassium iodide - 0.005%, respectively in group III - 20.009%; 66,001%; 7,895%; 6,159%; 1,007%; 0,151%; 0,041%; 0,061%; 0,008%.

In the diet of bulls of the second experimental group, 211 g of the mixture per head per day was introduced, which contributed to an increase in the level of minerals in the diet up to 6.21% in dry matter.

In the diets of bulls of the III experimental group, 511 g of feeding was introduced, which corresponded to 8.21% of minerals in dry matter. The diets of the first experimental group did not include top dressing, and the mineral content was 4.89% of dry matter. The content of individual macro-micro elements (potassium, sodium, zinc, cobalt, copper, manganese) in the diets of the II and III experimental groups was the same. By the end of the experimental period, there was a regular decrease in productivity in all groups, but the sharpest decrease was observed in bulls of the III experimental group (by 19.43% compared to the preliminary period). In the bulls of the first group, the productivity decreased by 16.11%, and in the bulls of the second group - only by 7.01%. It should be noted that in group II bulls fed a diet with a mineral content of 6.21% in the diet, the consumption of feed units per 1 kg of live weight gain was lower than in groups I and III. Feed payment in group II was 0.985 kg, while in groups I and III it was 0.792 and 0.889 kg of average daily live weight gain per 1 kg of feed units, respectively.

On the basis of these studies, it can be concluded that feeding bulls rations containing 6.21% of minerals per dry matter has a more favorable effect on meat productivity and feed payment than feeding rations containing 4.89 and 8.21% of minerals.

The provision of bulls raised for meat with minerals should be judged not only by their total inflow in the diet, but also on the basis of a detailed study of feeds for the content of calcium, phosphorus, potassium, manganese, copper, zinc, cobalt, iodine and other elements.

Conclusions

Thus, the daily need for feeding per animal is calculated, and then the annual need is determined depending on the specific conditions of the farm.

Summarizing the above, it can be noted that the regulation of mineral and vitamin nutrition is a necessary condition for full feeding of bulls raised for meat and obtaining high meat productivity with economical consumption of feed.



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