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Estimation Economic Efficiency of Using Feed Supplement "BIO-Extra" Into Beef Production.

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ABSTRACT

As a result of the research, the positive effect of the new feed additive "BIO-Extra" on the productivity and quality of meat products of bovine animals was established. At the same time, the highest effect was obtained with the use of a feed additive, which included components such as chickpeas, pumpkin thistle meal, extruded processing. The results of control slaughter showed that in bulls of experimental groups in comparison with the control the mass of paired carcasses was more by 10.9 and 16.5 kg, the slaughter weight by 12.0 and 18.0 kg, the yield of carcasses was higher by 0.40 and 0.92%, and the slaughter yield - by 0.59 and 1.23%. Biochemical analysis showed that in the longest muscle of the back of the young growth of the experimental groups, the content of the essential amino acid tryptophan was higher by 5.26 and 5.43%, and the protein quality index by 0.50 and 0.58.Moreover, in gobies of experimental groups, there was a decrease in individual indicators characterizing the qualitative indices of adipose tissue.

Keywords: fodder additive, extruding, steers, growth rate, meat productivity, chemical and biochemical composition of meat, fatty tissue.

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INTRODUCTION

The productivity of animals and the quality of products derived from them are related to the level of feeding, the full value of rations, the bioconversion of feed nutrients [1].

A number of researchers [2] reported on the effect on the productivity of animal bioavailability of feed nutrients. In this case, the bioavailability of feed nutrients has the properties to change under the influence of technological methods of production and their preparation for feeding animals.

One such technique is extrusion [3]. When extrusion processing significantly increases the nutritional and biological value of feeds due to the fact that the starch of cereal crops is hydrolyzed and converted to monosaccharides and dextrins. This allows to increase the content of soluble substances 5-8 times while maintaining the nutritional value of the protein and destroy or reduce the number of anti-nutritional compounds (urease, trypsin, protease inhibitors). Feed nutrients become more accessible for digestive juices and enzymes, better digested and assimilated[4].

MATERIAL AND METHODS

We studied the influence of the dietary supplement "BIO-Extra", which includes chickpeas, pumpkin milk thistle, DAFS-25, feed additives "Yoddar-Zn" and "Glimalasque-Vet", on meat productivity and quality of beef.At the same time, 2 batches of supplement "BIO-Extra" were produced. In the first variant we used chickpeas and pumpkin milk thistle in a native form, in the second - extruded [5].

In the ration of the youngest I and II experimental groups, a supplement "BIO-Extra" was added from the calculation of 400 grams per head in exchange for the corresponding part of the mixed fodder. The difference was that the gobies I of the experimental group received an additive, which included chickpeas and pumpkin milk thistle in a native form, II – extruded [6].

Young growth of the experimental groups was kept separately in groups, on indelible bedding. Feed additives were fed to animals in the composition of mixed fodders [70.

During the period of the experiment, the intergroup differences in live weight of the bull-calves were minimal - within the sampling error. At 12 months of age, in the youngsters of I and II experimental groups, the live weight was higher than that of the control analogs, by 12.2 kg (3.70%) (P> 0.99) and 13.2 kg (4, (P> 0.999), 14 months - by 18.7 kg (4.74%) (P> 0.999) and 22.2 kg (5.63%) (P> 0.999), 16 months - by 10.0 kg (4.20%) (P> 0.999) and 25.0 kg (5.52%) (P> 0.999). In this case, the bulls of the II experimental group at the age of 16 months exceeded the analogues of the 1st experimental group by the live weight by 6.0 kg (1.28%) (P> 0.95).

RESULT AND DISCUSSION

The higher intensity of growth of bull-calves, who received the feed additive "BIO-Extra", is influenced by their absolute and average daily weight gain. During the period of the experiment, the absolute increase in the bull calves of the experimental groups was more than the control analogs by 18.2 kg (9.80%) (P> 0.99) and 25.9 kg (13.95%) (P> 0,99).

It was noted that the highest absolute increments in the experimental bull-calves were at the age of 11-13 months. At the same time, monthly absolute increments ranged from 28.6 to 32.5 kg in the control group of animals, from the experimental group from 27.3 to 40.7 and from the experimental group from 28.4 to 42.0 kg.

Young animals, fed with dietary supplement "BIO-Extra", made on the basis of chickpeas and pumpkin milk meal in both native form and after extrusion, surpassed the analogs of the control group by the average daily gain for 180 days of experience by 101.1 g (9.80%) (P> 0.99) and 143.9 g (13.95%) (P>0.99). The superiority in terms of the average daily increase in the animals of the 2nd experimental group over the first experimental group was 42.8 g (3.78%) (P>0.95).

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Meat production was studied on the basis of control slaughter results. The control slaughter of the experimental bull-calves was carried out at the Volgograd Meat Processing Plant Agroin-West. Young animals, selected for slaughter, before being sent to the meat-packing plant and slaughterhouse was weighed. Loss of live weight of bull-calves during the period of transportation and pre-exposure aging made up 23.9 kg (5.26%) in the control group, 24.9 kg (5.28%) in the experimental group and 5.28% in the second group (5.20% %).

As a result of slaughter, it was found that the mass of paired carcasses of animals of I and II test groups was more than that of control samples by 10.9 kg (4.50%) (P> 0.95) and 16.5 kg (6.81 %) (P> 0.99), and the yield of carcasses is higher by 0.40 and 0.92%. The slaughter weight of bull-calves was more by 12.0 kg (4.72%) (P> 0.95) and 18.1 kg (7.12%) (P> 0.99), and the slaughter yield was higher by 0, 59 and 1.23%.

The results of boning showed that the mass of pulp in the carcasses of animals consuming the feed supplement "BIO-Extra" was more than that of the control group by 10.7 kg (5.47%) (P> 0.95) and 17, 7 kg (9.05%) (P> 0.99), and the yield of pulp is higher by 0.75 and 1.65%. The yield of bones in bull-calf carcasses out of control exceeded the performance of analogs from the experimental groups by 0.39 and 1.32%. In this connection, the meat meat index of the youngsters of the 1st and 2nd test groups was higher than the analogues, respectively by 0.19 and 0.56%.
Thus, the fodder additive studied had a positive effect on the slaughtering qualities and morphological composition of the bull-calf carcasses. At the same time, a higher effect was obtained for a group of animals that received supplementary fertilizer, which included chickpeas and pumpkin milk thistles that had been extruded.

The calculations showed that the use of the feed additive "BIO-Extra" in the feeding of bull-calves, grown for meat, is economically expedient (Table 1).

Table 1: Economic efficiency of beef production

Indicator	Group		
	Control	I	I
Absolute gain, kg	185,7	203,9	211,6
Production costs, rubles.	14206,5	15092,3	15452,2
Cost of 1 kg of increment, rubles.			
Estimated sales proceeds, rubles.	18198,6	19982,2	20736,8
The profit received from realization, rubles.	3992,1	4889,9	5284,6
The level of profitability of meat production,%	28,10	32,40	34,20

In the experimental groups per bull, profits were more than in the control, by 897.8 and 1292.5 rubles. The profitability level of beef production was higher in these groups by 4.30 and 6.10%.

CONCLUSION

It is most effective to use the feed additive "BIO-Extra", which includes components of chickpeas and pumpkin milk thistle in extruded form.

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