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Using Feed Additive «Yoddar-Zn» to Production Beef.

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ABSTRACT

Using in diet for calves of Kazakh white-headed breed, feed additive "Yoddar-Zn», contributed to increase intensity their growth (II group), slaughter parameters and quality beef. Most highly effective additive is revealed with complex use feed additive "Glimalask-Vet» (I group). Young animals I and II experimental groups were superior analogues of control by live weight at the age 18 months by 7.11 and 4.04 %, the mass of flesh of carcasses - by 9.67 and 3.93%. Feed conversion to protein from animal I and II groups of experimental animals were higher than control 0.61 and 0.26% fat - 0.65 and 0.29%. The level of meat production on the profitability of the experimental group was higher by 7.38 and 4.32%.

Keywords: feed additive, growth rate, body weight, carcass yield, morphological composition of carcasses.

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INTRODUCTION

According with scientists [1, 2, 3, 4, 5, 6], the degree of realization animal genetic potential depends mainly on the level of feeding rations and their usefulness. The authors consider it appropriate to increase the usefulness of diets use different feeding and dietary supplements, and higher effect has complex additives. Feed analysis revealed that in diets of beef cattle Lower Volga region is a shortage of minerals, such as iodine and zinc.

A number of studies [7, 8, 9] revealed that the animal organism more fully assimilated elements in organic form.

There is evidence of high efficiency use organic acids as acidifier's drinking water. Acidity organic acids contribute to an increase to consume volume of water and reduce level pathogenic bacteria, coming from diet, due to changes pH.

MATERIALS AND METHODS

It was studying efficiency use feed additives "Yoddar-Zn" and "Glimalask-Wet". The main components feed additive "Yoddar-Zn» are iodine and zinc in organic form. The "Wet-Glimalask" – glycine, ascorbic acid, malic acid. The developers of feed additives are: "Yoddar-Zn" «File N-Vet Snub" (Moscow), "Glimalask-Vet" - GNU NIIMMP (Volgograd).

To carry out the experiment in cattle shed "Shurupovskoe" Frolovsky district of Volgograd region were selected 30 calves Kazakh white-headed breed at the age of 12 months, of which were formed 3 groups by 10 animals each. Conditions and level feeding all of experimental calves were similar. The animals had kept separately in feedlot by groups.

The animals of control fed a general economic diet, designed according norms of feeding to get 950-1000 g average daily gain. In the diet, for calves I test group had feed additive "Yoddar-Zn" at the rate of 100 g per 1 ton feed and feed additives "Glimalask-Wet" at a dose of 400 grams per 1000 liters of drinking water. Calves from II test group had fed with basic diet feed additive "Yoddar-Zn» at the rate of 100 g per 1 ton of feed.

RESULTS AND DISCUSSION

Adding to diet for calves feed additives had a significant impact to dynamics of growth their body weight during the experiment. At the age of 15 months calves I and II experimental groups feeding "Yoddar-Zn" and "Glimalask-Wet", surpassed by live weight calves from control group by 27.4 kg, or 6.29% ($P > 0.999$) and 7.5 kg, or 1.7% ($P > 0.95$). Calves at 18 months of age this superiority was 35.9 kg, or 7.11% ($P > 0.999$) and 20.4 kg, or 4.04% ($P > 0.999$).

Intensity growth animals of all experimental groups were relatively high throughout the experience. Indicators of absolute (145.0, 180.5 and 164.9 kg) and average daily weight gain of the experimental calves (805.56, 1002.78 and 916.11 g) evidence this.

Young animals I and II experimental groups had average daily gain higher than control, did not consume feed additives by 197.22 and 110.55 g.

Upon reaching calves, 18 months of age were studying mea quality and productivity of experimental calves.

In the process of deboning carcasses revealed that calves I and II experimental groups mass of flesh were higher than control by 20.9 kg, or 9.87% ($P > 0.999$) and 8.50 kg or 3.93% ($P > 0.95$) and the yield of flesh higher - 1.0 ($P > 0.95$) and 0.50%.

Chemical analysis results of meat has revealed physiological maturity meat at test animals. Dry matter contained more into the flesh of carcasses from calves experimental groups compared with control by 2.03 ($P >$

0.99) and 1.23% ($P > 0.95$). Protein content into average samples of flesh from calves experimental groups was higher than analogues from control by 0.68 and 0.47%. Fat content more into the flesh from calves of experimental groups by 1.25 ($P > 0.95$) and 0.74%. The iodine content was also higher into samples from calves of experimental groups by 39.3 and 26.71%, than in controls (Table. 1).

Table 1: Chemical composition flesh of carcasses from experimental calves (n = 3)

Indicators	Groups		
	Control	I Group	II Group
Average sample flesh of carcasses			
Moisture, %	68,73±0,23	66,70±0,25	67,50±0,12
Dry matter, %	31,27±0,23	33,30±0,25	32,50±0,12
Protein, %	18,39±0,16	19,07±0,36	18,86±0,43
Fat, %	11,85±0,35	13,10±0,15	12,59±0,37
Ash, %	1,03±0,02	1,13±0,09	1,04±0,07
Iodine, mg/kg	4,53±0,50	6,31±0,52	5,74±0,80
Eye muscle			
Moisture, %	76,27±0,46	74,34±0,28	75,22±0,49
Dry matter, %	23,73±0,46	25,66±0,28	24,78±0,49
Protein, %	21,21±0,51	23,00±0,23	22,18±0,61
Fat, %	1,41±0,07	1,54±0,13	1,48±0,15
Ash, %	1,11±0,02	1,12±0,03	1,12±0,04
Iodine, mg/kg	5,54±0,55	7,86±0,39	6,64±0,23

The content of tryptophan was higher into average sample of flesh and eye muscle from calves of experimental groups. The protein quality index average sample flesh of carcasses from calves experimental groups were higher than control by 0.73 and 0.28, and eye muscle - 0.95 and 0.69, it indicating a more intensive accumulation in their body muscle full proteins.

The effectiveness of growing beef cattle for meat is not only connected with his absolute meat productivity, but also with conversion raw protein and energy feed to products. The intensity to accumulation protein and fat in the edible parts of animal body is related with intensity their growth, body weight and its chemical composition.

Analysis results of studying are had revealed that the value edible parts of body experimental animals varied considerably. The edible part of the body calves from I and II experimental groups were higher than control by 26.6 kg, or 9.48% ($P > 0.99$) and 12.12 kg, or 4.32% ($P > 0.95$). Calves from I group exceeded by weight of edible parts the calves from p II experimental group by 14.48 kg, or 4.95% ($P > 0.95$), it indicating a positive effect feed additives "Yoddar-Zn "and" Glimalask-Wet ". Similar results are had revealed of study offal, blood and internal fat.

Table 2: Conversion energy and protein of feed into beef production

Indicators	Groups		
	Control	I Group	II Group
The edible part of the body, kg	280,72±3,16	307,32±2,98	292,84±3,02
incl:			
offal and blood	48,72±0,51	52,01±0,34	50,67±0,47
internal fat	15,60±0,28	18,00±0,19	17,27±0,23
Contain into tissues of the body:			
Protein, kg	49,69±0,44	55,01±0,50	51,96±0,39
Fat, kg	42,67±0,41	47,27±0,38	44,80±0,35
Energy, MJ	2504,02±34,63	2778,17±21,71	2629,70±20,59
Protein conversion coefficient (PCC), %	9,41	10,02	9,67
Total energy conversion coefficient (TECC), %	7,85	8,50	8,14

The fact that the experimental calves has differently to conversion nutrients of feed to growth, are revealed different deposition into the body the protein and fat. Thus, into edible part of the body young animals from I and II experimental groups, the protein has delayed more than in the controls by 5.32 kg or

10.71% ($P > 0.999$) and 3.05 kg or 5.87% ($P > 0.99$), fat - by 4.60 kg or 10.78% ($P > 0.999$) and 2.47 kg or 5.52% ($P > 0.95$), the energy - 274 , 15 mJ, or 10.95% ($P > 0.999$) and 125.68 kg, or 5.02% ($P > 0.99$) (Table. 2). At the same time most effectively synthesized in the body of protein and fat calves who consumed feed additives in the complex.

Studying feed additives to diets for experimental calves had a marked effect on the rate of conversion nutrients. Thus, protein conversion coefficient of calves I and II experimental groups was higher than control by 0.61 and 0.26%, energy - 0.65 and 0.29%. Calves from I experimental group consumed a diet with both feed additives, superior analog from second experimental group by conversion protein – 0.35 and energy – 0.36%.

CONCLUSION

Calculations have revealed that the use in feeding calves raised for meat, feed additives "Yoddar-Zn" and "Glimalask-Vet" economically feasible. At the same time an increase in the absolute increments and feed consumption per unit of growth. The production cost per 1 kg of a gain from calves I and II experimental groups were lower than analogues from control by 4.2 and 1.7 rubles, profit per calf more by 1458.0 and 807.0 rubles, the level of profitability more by 7.38 and 4.32%. At the same time calves from I experimental group as compared with calves from II group profit by 1 calf was more by 651 rubles, and the level of profitability was higher by 3.06%, respectively (Table. 3).

Table 3: Economic efficiency of beef production

Indicators	Groups		
	Control	I Group	II Group
The absolute gain of body weight for a period of experience, kg	145,0	180,5	164,9
The cost feed per 1 kg of growth, ECE	8,0	7,5	7,8
Live weight in 18 months. Kg	505,3	541,2	525,7
Production costs, rub.	11108	13058	12211
The cost price per 1 kg of live weight gain, rub.	76,6	72,4	74,1
The estimated realizable value, rubles.	13920	17328	15830
Profit rubles.	2812	4270	3619
The level of profitability,%	25,32	32,70	29,64

The use to feeding calves, raised for meat, feed additives "Yoddar-Zn" and "Glimalask-Vet" allows increasing the intensity of growth, slaughter quality, chemical and biochemical composition of meat, and the economic indicators. Using these additives by complex in feeding calves are more efficiently.

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