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ENERGY EFFICIENCY NUTRIENT FEED BEEF CATTLE CALVES FOR OPTIMIZATION OF MINERAL NUTRITION

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Drawn on the results of two scientific and economic experiments study the effect of feeding young cattle mineral premix consisting rations composed by new norms feeding. The application of new standards for nutrition feeding and balancing on the last mineral composition using the suggested premixes significantly increases the productivity of young Aberdeen Angus and Volynska beef breeds.

Energy nutrients, food, mineral premix, digestibility, young, meat cattle.

Problem, analysis of recent publications on the solution. In recent years, global food production man observed the growing role of specialized beef cattle. Analysis of beef in more than 200 countries around the world shows that in the last 20 years it has grown by more than 11.6 million. Tons (25.5%). In total production volume of beef cattle breeds of meat is about 54% [1], while in Ukraine this figure is only 1.8%.

The result of the efforts of scientists of Ukraine established domestic breeds of cattle meat direction of productivity with high genetic potential [5], for the manifestation of which is necessary to ensure full feeding, and it can be arranged only if detailed rules feeding, a sufficient number of high-quality forage and top-dressing's that animals need to ensure all components supply. Theoretical problems of feeding cattle meat breeds and types in Ukraine have been insufficiently studied, and, as

noted M.V. Zubets et al. [1], still there is no sufficient domestic scientific work that disclose the general nature and all necessary components classical technology beef cattle and practical experience almost absent.

Standards of feeding beef cattle [2], have several disadvantages, which include: incomplete understanding of the rearing of cattle for meat; does not include breed, size and sex of animals, the concentration of energy and nutrients in the ration dry matter depending on the performance of young welfare and so on. Today there is no deep theoretical developments and experimental data on the needs of young beef cattle in nutrients, especially minerals, substances that inhibits the growth performance of young animals.

In the western part of the feed steppes of Ukraine held two scientific and economic experiments to determine the optimal number of components for balancing rations and feed additives for feeding young full of beef cattle.

Material and methods research. Experiments were carried out by groups analogs as recommended A.I. Ovsyannikov [3] E.I. Chigrinov et al. [6] at the Aberdeen-Angus calves and beef breeds Volyn scheme given in Table. 1.

1. Scheme of scientific and economic experiments

Group of animals	Year period	Periods of experience	
		preparatory (12-15 days)	main (62-64 days)
I – control	winter summer	Basic ration[x]	
II – research	winter summer	Basic ration	Research ration[xx]
III – research	winter summer	Basic ration	Research ration + premix 100% from the norm

Note: [x] – Basic ration – Economic ration, compiled by the rules [2] based on obtaining the average growth at 1100-1200 g, balanced by organic matter;

[xx] – Research ration – ration, compiled according to our standards [4] based on obtaining the average growth at 1100-1200 g, balanced by organic matter.

Based on the survey of existing conditions in the region of feeding cattle meat breeds were developed recipes mineral premixes, checks have been carried out experimentally.

Results. Further studies designed to feed typical conditions of the western steppes of Ukraine feeding rations of different gender and age groups of cattle meat direction of productivity. Whereas these animal rations provide basic components of the power deficit excluding certain minerals premix developed recipes for winter and summer seasons.

It was established that the use of standards developed at feeding Nutrition calves helped improve the absorption of essential nutrients feed (Table. 2).

2. Digestibility of nutrients subjects youngsters, M±m

Indicator	Winter			Summer		
	Groups of animals / nature feeding					
	I / basic ration	II / research ration	III / research ration + premix	I / basic ration	II / research ration	III / research ration + premix
Dry matter	58.60± 0.67	60.27± 0.87	61.90± 0.55*	60.83± 0.32	63.13± 0.19*	65.43± 0.41*
Protein	58.13± 0.62	59.50± 1.19	62.47± 1.38*	60.43± 0.59	62.20± 0.60*	66.17± 0.12*
Fat	54.90± 0.40	57.00± 0.87*	57.77± 0.44*	58.37± 0.52	60.07± 0.48*	60.90± 0.32
Cellulose	53.03± 0.38	54.10± 0.15*	54.30± 0.79*	51.40± 1.45	53.50± 0.26	60.63± 0.70*
Nitrogen-free extractives	67.13± 0.90	68.93± 0.90	70.93± 0.58*	70.43± 0.52	71.80± 0.57*	72.80± 0.47

Note: hereinafter * – P>0.95.

Thus, in winter young second group digested dry matter intake by 1.7%, and the third – by 3.3% (P>0.95) better over analog first group. Animal research groups also significantly better digested fat (in 2.1-2.8%) and fiber (to 1.1-1.3%). Cubs third

group 3.8% (P>0.95) compared to the control group animals better peretravlyuvav nitrogen-free extractives.

For herbal diets young digested feed slightly better compared to the winter period, but differences in the digestibility of nutrients animal experimental and control groups were similar.

Gross energy from the diet in winter animals in the control group was 155.3 MJ, their analogues second – 9.1%, and the third – 10.8% higher (Table. 3). Energy digestible nutrients in young first group was lower by 10.9% compared to the analogous second and 14.7% – the third group.

3. The balance of energy in the body young, MJ/day; M±m

Indicator	Winter			Summer		
	Groups of animals / nature feeding					
	I / basic ration	II / research ration	III / research ration + premix	I / basic ration	II / research ration	III / research ration + premix
The gross energy	155.3± 0.03	169.4± 0.29*	172.1± 0.76*	181.8± 0.24	201.4± 0.43*	204.3± 0.30*
Energy digestible nutrients	92.1± 0.81	103.3± 1.14*	107.9± 1.72*	112.2± 0.23	127.9± 1.09*	135.9± 0.47*
The exchange energy	88.1± 0.82	94.5± 1.55*	98.9± 0.90*	94.6± 0.52	100.8± 0.80*	106.0± 1.26*
Heat	69.25± 0.65	73.25± 1.10*	75.31± 0.30*	72.42± 0.40	75.44± 0.48*	77.66± 0.91*
Clean energy growth	18.85± 0.22	21.22± 0.65*	23.59± 0.61*	22.13± 0.12	25.39± 0.32*	28.39± 0.35*
Clean energy maintenance	25.71± 0.15	26.13± 0.14*	26.59± 0.07*	30.71± 0.07	31.07± 0.04*	31.27± 0.13
Clean energy	44.56± 0.33	47.35± 0.76*	50.18± 0.59*	52.84± 0.15	56.46± 0.28*	59.66± 0.46*

The exchange energy in animals of the control group was 88.1 MJ/day or 56.7% of the gross, while the second group of young it was higher by 7.3% (P>0.95), representing 55.8% of the gross, and the third – 12.3% (P>0.95), or 57.5% of the gross energy.

Clean energy growth in the first group of animals was 18.85 MJ, whereas in the other counterparts – 12.6%, and the third – 25.1% more. In summer pure energy, delayed increase in body weight in animals of the first group was 22.13 MJ per day, while in the second group of calves by 14.7% (P>0.95), and the third – 28.3% (P>0.95) more. This animal study groups exceeded the energy exchange control on 6.6-12.1% (P>0.95).

Gross energy exchange in the first group of animals was at 52.0%, and energy digestible nutrients – 84.3%, while in the second group counterparts – 50.1 and 78.8%, and the third – 51.9 and 78.1% respectively. As a result, when using the proposed rules feeding combined with the developed premixes average daily calves were 1188 g in the winter and 1189 grams – in the summer, approaching the performance that involve these rules. It should be noted that feeding animals the standards of Agricultural Sciences [2] provided the animals receiving daily average increases at the level of 954-960 g that 19.2-19.8% from calves that were fed by the proposed regulations.

Conclusions. It is advisable to use the proposed rules feeding young cattle combined with premixes developed that will significantly increase the average daily live weight of animals in the region. To ensure full feeding animals in the western part of Ukraine developed tentative rations of cheap local feed and premixes recipes that take into account the specific valuation batteries in the region.

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