http://www.moderntechno.de/index.php/meit/article/view/meit25-01-060
DOI: 10.30890/2567-5273.2023-25-01-060

УДК. 636.2. 0834.085. 2.11. 39.

THE INFLUENCE OF DIFFERENT DIET RECIPES ON THE PRODUCTIVITY OF A NEW POPULATION OF SIMMENTAL BEEF BEEF BUGS IN DIFFERENT GROWING PERIODS WHEN HIGH CONDITIONS ARE ACHIEVED IN THE CARPATHIAN REGION OF BUKOVINA

ВПЛИВ РІЗНИХ РЕЦЕПТІВ РАЦІОНІВ НА ПРОДУКТИВНІСТЬ НОВОЇ ПОПУЛЯЦІЇ БУГАЙЦІВ МЯСНИХ КОМОЛИХ СИМЕНТАЛІВ В РІЗНІ ПЕРІОДИ ВИРОЩУВАННЯ ПРИ ДОСЯГНЕННІ ВИСОКИХ КОНДИЦІЙ В УМОВАХ КАРПАТСЬКОГО РЕГІНУ БУКОВИНИ

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In the presented article, the question of the effectiveness of fattening of Bukhay cattle of a new population of the Bukovina zonal type of meat Komologo Simmental cattle, at an average level of feeding with the use of different feeds in ration recipes in percentage terms in different physiological periods of cultivation in the conditions of the Carpathian region of the Carpathians, is highlighted. It was established that during the 151 days of the first winter main period of the experiment, the average daily gains of the animals of the control group amounted to 589 g, which is 33 g (5,6%) and 86 g (14,6%) less than the same-age Boga animals of the first and second experimental groups where corn silage and hay age were separately included in the ration recipes. It was determined that the introduction of 10% haulage and 10% corn silage into the recipe of the diet of ruminants III - experimental group in terms of nutrition contributed to the growth of average daily gains of 775g, which is 166 g or 28% more than peers of the control group at the expense of 1 kg of gain 7,1 k. unit, which by 2,1 k. unit. less than control animals. On the prescription rations of the second winter period, during 179 days, the daily gains of bulls in the III experimental group amounted to 732 g, which is (6,0%) higher than peers of the control group, with feed consumption per 1 kg of gain of 11,6 units., which by 0,8 k. unit less than the people of Bugai, whose ration recipes contained fodder accepted in this controlled farm. In the research, it was found that with losses per 1 kg of growth, 121,5 MJ, consumption per 100 kg of live weight of 2,19 kg of dry matter, and also, with the concentration of exchangeable energy in 1 kg of dry matter, 9,1 MJ by Bugai cows of the III - research group contributed to obtaining the highest daily gains of 731 g for a full growing cycle from birth to 20 months of age with the achievement of a final live weight of 445 kg, which indicates a very high genetic potential of meat productivity The inclusion of 10% silage and 10% hay in the recipe of the ration of Bugai cattle of the III research group both in summer and in winter increased the number of erythrocytes in the blood by 0,24 million/ml3, hemoglobin by 0,32 g% and protein in the serum - by 0,32%, also higher alkaline reserve and carotene content - by 26 mg%.

Key words: *Bugatti, rations, fodder, exchangeable energy, slaughter output.*

Statement of the problem. In the conditions of military operations, one of the main problems of the high productivity of the new population of beef cattle is the use of cheap technology and high-quality feeding with low feed costs per unit of livestock production, which is most relevant in the conditions of the foothills of the Ukrainian Carpathians.

Currently, in the process of creating market relations, economic contradictions and problems of livestock production are becoming very acute, both in dairy and in meat cattle breeding. In the not-so-distant past, when the previously formed system of regulation was destroyed by administrative levers, without changing them by new market ones, it led to a decline in production and to a reduction in the sale of livestock products in the area of the Bukovyna region.

Therefore, the main task in solving the above problems belongs to the meat and livestock industry, as one of the main industries, the development of which contributes to the solution of the food problem in this region of the Ukrainian Carpathians.

Analysis of recent research and publications. Today, agrarian scientific zootechnical research has become more and more active regarding the development of promising cheap technologies for feeding young beef cattle, which is the most valuable for obtaining profitable beef for basic and subsidiary farms for breeding meat lump Simmentals for the Western Carpathian region.

In this regard, in order to realize the high genetic potential of meat productivity embedded in the proven ruminant breeds of this region, new developments and experimental justifications of the breed's own feeding technologies are needed, taking into account the regional features of the fodder base of the Carpathian zone.

In view of the above, due to the various reasons for feeding beef cattle, where straw and silage with low energy concentration prevail, both for agricultural science and for production, an important condition is not only to identify the genetic meat potential of animals, but also to identify them in optimal conditions with the use of different ration recipes, when hereditary predispositions in ruminants are most fully manifested, and to study their economic value in the production conditions of the Carpathian region of Bukovyna.

At the same time, one of the important basic factors in the new conducted research was to prove the justification of the concentration of exchangeable energy in the dry matter of fodder, recipes of rations and their structure in different periods of growing Boga cattle of the meat direction of productivity at an average level of feeding in this controlled region of the Carpathians [2,8].

For the first time in our research, the following issues were planned: patterns of consumption of exchangeable energy and dry matter per 100 kg of live weight of cattle in age dynamics, concentration of exchangeable energy and structure of rations by period, influence of different concentration of exchangeable energy in dry matter of fodder on slaughter indicators, meat productivity and beef quality of experimental animals [4,6].

Therefore, our goal is to study for the first time the features and effectiveness of various models of ration recipes on the fattening qualities of Bukovyna zonal type of

meat Komologo Simmental cattle at an average level of feeding with the use of different feeds in a percentage ratio in different physiological periods of cultivation in the conditions of the foothill zone of the Chernivtsi region.

Presentation of the main research material. Scientific and economic research was carried out in the SE "Chernivetske" village. Tsuren, Hertsaiv district, Chernivtsi region, in the beef production shop on four groups of cattle of the new population of the Bukovyna zonal type of meat Komologo Simmental cattle in each of 10 heads with an average live weight at the beginning of the experiment of 110 - 116 kg in 3 months. of age, which were grown up to 20 months of age according to the developed scheme:

Scheme of a scientific and economic experiment

Groups	Number of heads	Peculiarities of animal feeding in the main period of the experiment	
		IN SUMMER	IN WINTER
Control group	10	Basic ration (OR): green mass - 70%, final feed - 30%	Basic ration (OR): barley straw, hay, corn silage
I - experimental	10	OR: 50% - green mass, 20% - corn silage, 30% - final feed	OR: corn silage - 20% in terms of nutrition
II – experimental	10	OR: 50% - green mass, 20% - hay, 30% - final fodder	OP: + hay - 20% in terms of nutrition
III- experimental	10	OR: 50% - green mass, 10% - corn silage, 10% - hay, 30% - final fodder	OP: + 10% corn silage + 10% hay for nutrition
IУ– experimental	10	OR: 50% - green mass, 20% - corn silage, 30% - final feed + stimulant	OR: 20% - corn silage, 30% - final feed + stimulant

In researches, meat ruminants are fed twice a day, and they are kept captive. Distribution of fodder in batches. Concentrated feeds were fed in a dry state. According to the digested protein, the rations for the experimental bulls of all five groups were equalized according to the adopted new detailed norms for beef cattle.

Therefore, all ration recipes were balanced according to the new norms, taking into account live weight and average daily gains of 700 - 800 g [1,5]. They kept a group account of the consumed feed by weighing the given and their residues. The growth of Bugai children was calculated based on the results of monthly weighing. Each period of the experiment began and ended with an individual weighing of the Bugai people.

Control over the intensity of the growth of experimental animals was carried out by weighing them individually at the beginning of grazing on cultivated pastures and at the end of the accounting period of research. In the preparatory and final periods, the Bugai cattle were on the diet adopted in the controlled farm.

At the end of the research, with the achievement of the average live weight of 421-430 kg by the bulls, a control slaughter of three animals from each group was

carried out. The need for exchangeable energy was calculated on the basis of an assessment of the actual nutritional value of feed, taking into account the concentration of energy available for exchange in 1 kg of dry matter of feed.

Biometric processing of the results of the test indicators was carried out according to the methods described in such publications under the editorship [7,9].

Research materials were processed by the method of variational statistics using a personal computer.

Research results. Due to the use of fodder, the following amount of products was obtained by the research cattlemen. It was established that during the 151 days of the I - winter main period of the experiment, the average daily gains of the animals of the control group amounted to 589 g, which is 33 g (5.6%) and 86 g (14.6%) less than those of Bugai animals of the same age as the I and II - experimental groups where corn silage and haylage were included in the ration recipes.

According to the results of the developed scheme of the experiment, it was established that the introduction of 10% hay and 10% corn silage into the recipe of the diet of Bugays III - experimental group in terms of nutrition contributed to the growth of average daily gains of 775 g, which is 166 g or (28%) more than peers of the control group with expenses per 1 kg of increase of 7.1 k. units, which by 2.1 k. units. less than control animals. For the entire 1st winter period, each head of this group received an additional 25 kg of growth.

So, feeding hay and corn silage to cattle up to 7 months of age in the winter period contributed to a stable increase in daily gains of 755 g, while paying for feed with products by 2.1 k. od. less compared to the control.

Our conducted research proved that during 123 days on summer prescription diets with a combined type of feeding using fodder from storage and green fodder in the amount of 50% in terms of nutrition, the growth energy of bulls of the II and III experimental groups amounted to 707 g and 732 g, which on (1.1% and 4.7%) more than the control. For 1 kg of growth in the III experimental group, 9.8 units were spent, which is lower than 0.5 units. and for analogues - control.On the rations of the second winter period of the experiment, during 179 days, the daily gains of bulls in the III - experimental group amounted to 732 g, which is 6.0% higher than peers of the control group, with feed consumption per 1 kg of gain of 11.6 units. which is 0.8 fodder units less than the animals whose ration recipes contained fodder accepted in this base farm. Over the entire research period of 454 days, the increased growth energy was preserved in the III experimental group, which was 731 g, which is 73 g (11.6%) more than the control, with a feed consumption of 8.9 k.u., and at 0.8 k. unit less than the 1st research group.

In the conducted studies, the main indicators of exchangeable energy concentration, actual consumption of energy and dry matter per 100 kg of live weight of Bugai cattle were determined according to the periods of the studies and are shown in (Table 2).

According to the data (Table 2), it was established that the consumption per 100 kg of live weight of the exchangeable energy in Bugai residents of III - research group in the second winter period is 19.8 MJ, which is 2.3 MJ less than peers of the control.

Table 2 - Concentration of exchangeable energy and dry matter per 100 kg live weight of animals

GROUP	Period	Duration of the period, days	Growth during the growth period, kg	Concentration of exchangeable energy in 1 kg MJ, of dry matter,	Costs per 1 kg of gain		Consumption per 100 kg of live weight	
					Exchange energy, MJ	Code	Exchange energy, MJ	Dry matter, g
Control group	The first winter	151	89	9,2	105,6	9,2	30,8	3,36
I - experimental			93	9,6	103,9	10,8	31,2	3,25
II – experimental			103	9,23	89,5	9,6	27,8	3,01
III-experimental			111	9,4	83,4	8,9	26,8	2,86
			96,6					
Control group	The first summer	123	87	8,8	101,0	10,3	24,5	2,79
I - experimental			86	8,5	96,9	10,3	23,4	2,76
II – experimental			87	8,3	104,5	10,2	24,2	2,92
			90,1 86,1					
Control group	The second winter	179	124	10,2	131,3	12,3	22,1	2,16
I - experimental			128	10,1	124,5	11,7	22,2	2,10
II – experimental			124	9,6	128,7	12,1	21,3	2,20
III-experimental			131	9,1	121,5	11,6	19,8	2,19
			126	9,1	104,4	9,1	30,1	3,31

With the consumption of 1 kg of live weight gain, the exchangeable energy of Bugai cows of the III - experimental group is 121.5 MJ, and the consumption of feed units is 11.6 kg, which is 0.7 feed units less than the control. At the same time, the concentration of exchangeable energy in 1 kg of dry matter was 9.1 MJ.

Data analysis shows that the general age pattern is a decrease in the consumption of dry matter and exchangeable energy per unit (100 kg) of live weight. At the same time, it was established that an increase in energy concentration from 8.6 to 9.1 MJ/kg of dry matter in the dairy growing period contributed to a decrease in the consumption of dry matter per 100 kg of live weight, but due to the higher concentration, the total daily consumption per head did not decrease and was slightly larger among the people of Bugai of the control and I - experimental groups.

Thus, with losses per 1 kg of gain of 121.5 MJ, consumption per 100 kg of live weight of 2.19 kg of dry matter, and also, at a concentration of exchangeable energy of 1 kg of dry matter of 9.1 MJ, by Bogays of the III - research group, they contributed to obtaining the highest daily gains of 731 g for a full cycle of growing from birth to 20 - months of age with reaching a final live weight of 445 kg, which indicates a very high genetic potential for meat productivity of the offspring of a new population of beef cattle bred in the Carpathian zone.

Therefore, taking into account this biological regularity, there is a need to create the necessary physiological conditions for maximum digestibility and assimilation of nutrients and energy of feed, in order to compensate for this decrease in energy consumption per unit of body weight and, thus, to ensure a high genetic intensity of growth of animals of this meat cattle.

The rational use of energy, feed protein per 1 kg of increase in live weight and slaughter weight by cattle was studied.

Table 3 - Consumption of substances per 1 kg of live weight gain.

INDEXES	GROUP				
	Control group	I-experimental	II-experimental	III-experimental	1У-experimental
For 1 kg of live weight gain					
Exchange energy, MJ	96,9	105,1	107,6	96,8	96,8
Dry substances, kg	10,6	10,0	9,5	9,0	10,7
Fodder units, kg	9,7	9,4	9,0	8,9	9,6
Digestive protein, g	997	970	955	890	998
Final feed, kg	2,4	1,7	1,4	1,3	
Per 1 kg of slaughter weight					
Exchange energy, MJ	165	170	174	158	163
Dry substances, kg	16,9	16,2	15,3	14,7	15,8
Fodder units, kg	15,5	15,3	14,6	14,5	15,1
Digestive protein, g	1596	1570	1542	1453	1590
Final feed, kg	3,8	2,7	2,2	2,1	
For 1 kg of carcass pulp					
Exchange energy, MJ	86,3	84,3	84,8	78,4	85,6
Dry substances, kg	8,5	8,4	7,5	7,3	8,4
Fodder units, kg	8,1	7,6	7,1	7,2	8,0
Digestive protein, g	834	779	753	722	835
Final feed, kg	2,0	1,3	1,1	1,1	1,9

According to the data (Table 3), cattle of the III - experimental group spent 96.8 MJ of exchangeable energy, 9.0 feed units of dry matter, 8.9 of digestible protein, 890 g of digestible protein, and 1.3 of concentrated feed per 1 kg of live weight gain. kg less than the control by 0.3, 1.6, 0.8, 107 and 1.1.

It was established that for 1 kg of slaughter weight, Bugai cattle, which were fed corn silage and haylage at 10% nutritionally for a long time in the ration recipe, spent 158 MLd (9.5%) of exchangeable energy, 14.7 kg (8.7%) of dry matter , k. od. 14.5 (9.3%), digestible protein 1453 g (9.1%) and feed 2.1 (5.5%), less than peers of the control.

In order to study the meat productivity when reaching a pre-slaughter live weight of 450 kg, a control slaughter of Bugai cattle was carried out at the meat processing plant at the age of 20 months, 4 heads from each group.

It was established that the slaughter yield in the animals of the III - research group was 53.4%, which is 1.8% more, the weight of the paired carcass was also 19 kg more than the control. Thus, in terms of slaughter weight, bulls of the III - research group exceeded the animals of the control group by 15 kg ($p<0.05$), and also by 2.7% in terms of carcass yield. The mass of internal fat in bulls of the III - experimental group was 7.3 kg, which is 1.4 kg (23.7%) more than peers of the control group.

Thus, bulls of III - experimental group, which are characterized by higher slaughter indicators (slaughter yield 53.4%, carcass yield 51.3%, slaughter weight 235 kg, weight of paired carcass - 228 kg in comparison with the control and I - experimental groups Carcasses obtained from animals of III - research group are characterized by better fullness and muscularity of the thigh.

To determine the quality of meat products, the morphological composition of animal carcasses was studied. The results of deboning carcasses according to the scheme of sausage production. The data analysis shows that bullocks of the III - experimental group in terms of muscle tissue yield of 90.2 kg in the carcass exceeded the control and experimental groups by 11.6 and 6.3 kg of meat, respectively. There was no significant difference between the groups in terms of yield per 100 kg of pre-slaughter mass, pulp, tendons and bones, but the Boga cattle of the III experimental group had 2.1 kg (11.4%) more pulp than the control.

During the control slaughter, the mass of internal was determined organs of experimental animals.

As shown by the data (Table 4), no significant differences between the groups of animals were observed in the mass of the lungs, liver, heart, kidneys, and spleen. The weight of all organs was within the physiological norm and depended only on the pre-slaughter weight of the animal. However, the weight of the liver in the III-experimental group was 6.1 kg, which is 0.45 g more than peers of the control group.

4 hours before slaughter, blood was taken from the experimental Bugai cattle. The inclusion of 10% silage and 10% haylage in the recipe of the ration of the III experimental group both in summer and in winter increased the number of erythrocytes in the blood by 0.24 million/ml3, hemoglobin by 0.32 g% and protein in the serum - by 0.32%, also higher alkaline reserve and carotene content - by 26 mg%. No difference was observed in the rest of the blood parameters of individual Bugai

cattle.

Table 4 - Absolute mass and index of internal organs of Bugai cattle, kg (M±t)

bodies	GROUP								
	Control group	%	I-experimental	%	II-experimental	%	III - experimental	%	IУ - experimental
Lungs	3,75±0,2	0,88	3,39±0,8	0,79	3,9±0,9	0,90	4,840,5	0,11	3,91±0,3
Liver	5,65±1,5	1,3	5,90±0,4	1,4	5,8±0,5	1,3	6,1±0,8	1,4	5,7±1,3
Heart	1,62±0,2	0,38	1,9±0,005	0,44	1,5±0,2	0,35	1,8±0,2	0,41	1,5±0,4
Kidneys	1,2±0,04	0,28	1,3±0,05	0,30	1,32±0,03	0,34	1,12±0,14	0,2	1,4±0,02
Spleen	0,72±0,07	0,16	0,82±0,09	0,19	0,66±0,2	0,15	0,01±0,9	0,22	0,35±0,04

Conclusions and suggestions. The use of long-term in the recipes of the diets of the Bugai cattle of the new population of the Bukovyna zonal type of meat Komologo Simmental livestock in a combination (hay + corn silage) contributes to the growth of daily gains of 755 g with feed consumption of 8.9 k. units. (121 MJ of exchangeable energy) per 1 kg of growth, a sufficient concentration of exchangeable energy in 1 kg of dry matter of the adopted type of feed can be considered to be 9.1 MJ on average for a full growing cycle at an average level of feeding in the conditions of the foothills of Bukovyna.

The inclusion in the recipe of the ration of Bugai cattle of the new generation meat Komologo Simmental cattle in a combination of corn silage 10% and haylage 10% in terms of nutritional value of the ration increases the output of the paired carcass by 2.7%, the weight of the paired carcass by 19 kg (9.1%), slaughter yield by 1.8% and yield of muscle tissue by 11.6 kg (14.7%) from peers of the control group in the conditions of the foothill zone of the Carpathian region of Bukovyna**.**

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Анотація. *Висвітлено в представленій статті питання ефективності відгодівлі бугайців нової популяції буковинського зонального типу м'ясного комолого сименталу худоби, при середньому рівні годівлі з використанням різних кормів в рецептах раціонів у процентному відношенні в різні фізіологічні періоди вирощування в умовах Карпатського регіону Карпат.Встановлено, що протягом 151 днів І зимового основного періоду досліду середньодобові прирости тварин контрольної групи становили 589г, що на 33 г (5,6%) і на 86 г (14,6%) менше від бугайців аналогів - ровесників І і ІІ- дослідних груп, де в рецептах раціонах де окремо знаходився кукурудзяний силос і сінаж. Визначено, що уведення до рецепту раціону жуйних ІІІ - дослідної групи сінажу 10% і силосу кукурудзяного 10% по поживності сприяло зростанню середньодобових приростів 775 г, що на 166 г або на 28% більше за ровесників контрольної групи при витратах на 1 кг приросту 7,1 к. од., що на 2,1 к. од. менше за тварин ровесників контролюНа рецептах раціонах другого зимового періоду, протягом 179 днів, добові прирости бугайців в ІІІ дослідній групі становили 732 г, що на (6,0%) вище за ровесників контрольної групи, при витратах корму на 1 кг приросту 11,6 к. од., що на 0,8к. од. менше за бугайців, в рецептах раціонах яких були корми, прийняті в даному підконтрольному господарстві. В дослідженнях виявлено, що при втратах на 1 кг приросту 121,5 МДж, споживання на 100 кг живої маси 2,19 кг сухої речовину, а також, при концентрації обмінної енергії в 1 кг сухої речовини 9,1 МДж бугайцями ІІІ - дослідної групи сприяли отриманню найбільш високі добові прирости 731г за повний цикл вирощування від народження до 20 місячного віку з досягненням кінцевої живої маси 445 кг, що свідчить про дуже високий генетичний потенціал м'ясної продуктивності. Включення до рецепту раціону бугайцям ІІІ дослідної групи 10% силосу і 10% сінажу як в літній, так і в зимовий періоди, підвищувало в крові кількість еритроцитів на 0,24 млн./мл^3, гемоглобіну на 0,32 г % та білку в сироватці – на 0,32%, також вищий лужний резерв і вміст каротину – на 26 мг%.*

Ключові слова*: Бугайці, раціони, корм , обмінна енергія, забійний вихід*