



FORMATION OF MEAT PRODUCTIVITY OF ABERDEEN-ANGUS BULLS

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ABSTRACT

This article examines the formation of meat productivity in Aberdeen Angus bulls under feeding and management conditions in Uzbekistan. The study analyzes growth dynamics, fattening characteristics, live weight indicators, and economic efficiency of bulls of German and Russian selection from 7 to 17 months of age. The research results showed that German-selected Aberdeen Angus bulls demonstrated higher live weight gain, better slaughter indicators, and greater profitability compared to Russian-selected bulls. The findings confirm the importance of balanced feeding and proper management in increasing beef productivity and improving the economic efficiency of cattle farming.

Keywords: Aberdeen Angus bulls, meat productivity, beef cattle farming, live weight, fattening, feeding ration, economic efficiency, cattle breeding, beef production, livestock farming.

Relevance of the Topic. Increasing the production of livestock products is one of the most important and pressing issues in agricultural science and practice. One of the main directions for solving this problem is increasing meat production, especially beef production, which accounts for more than half of the country's meat balance.

In Uzbekistan, scientific research has been conducted on the influence of various factors on the milk and meat productivity of Holstein cattle, as well as on their dependence on constitutional types. As a result, positive indicators have been achieved in improving cattle productivity. In this regard, conducting scientific research and selecting cows according to their constitutional type alongside other major breeding traits determines the relevance of this field.

The purpose of the research is to study the possibilities of increasing meat productivity in Aberdeen Angus bulls and to develop practical recommendations for production. In this connection, the following tasks were set:

1. To study the growth and development of Aberdeen Angus bulls from 6 months to 17 months of age;
2. To determine the fattening characteristics and meat productivity of the bulls;
3. To determine the economic efficiency of beef production;
4. To develop proposals and recommendations for production practices.

Implementation of the research results. The research was carried out in the Raim Bo'riyev neighborhood of Muzrabot district with the aim of increasing the production of high-quality beef and heavy hide raw materials, as well as improving the profitability of beef cattle farming.

Factors Affecting Meat Productivity

Depending on the type and level of feeding, the live weight of animals, body conformation, the amount and morphological composition of weight gain, as well as feed consumption per 1 kg of additional live weight, may vary. After birth, different parts of the animal's body grow at different rates. If animals are fed at a low nutritional level, the skeletal system and tissues that grow intensively during this period are more adversely affected, resulting in delayed normal growth and development.



The ration of bulls aged 7–12 months consisted of the following: 2.3 kg of alfalfa hay, 2.8 kg of corn silage, 3.4 kg of corn grain, 4.0 kg of mixed feed (compound feed), and 5.6 kg of potato waste (carnage). On average, the ration contained 13.01 kg of dry matter, 11.4 feed units, 971.2 g of crude protein, and 1292.1 g of digestible protein.

Each feed unit contained 106 g of digestible protein, the sugar-to-protein ratio was 0.6, and the metabolizable energy amounted to 10.0 MJ per kg of dry matter.

The ration of bulls aged 13–17 months included 2.4 kg of alfalfa hay, 3.4 kg of corn silage, 5.6 kg of corn grain, 6.6 kg of crushed feed, and 5.0 kg of mixed feed. On average, the ration contained 13.4 kg of dry matter, 18.6 feed units, 1458.5 g of crude protein, and 1791.0 g of digestible protein.

The fiber level in the dry matter of the ration was 10.9%, while crude protein accounted for 10.8%. One feed unit contained 96 g of digestible protein, and the metabolizable energy was equal to 10.0 MJ per kg of dry matter.

Feeding Ration for Bulls from 7 to 17 Months of Age. Table 1

Feeding type of	the amount of day, kg	Dry substance, kg	EKA	OE, MJ	Crude protein, g	of raw fiber, g	Excess cooked in protein	Ca, g	P, g	granulated sugar G
7 months to 12 months, which is the bull for the nutrition of the diet										
of alfalfa hay	2.3	1.9	1.54	15.4	332.2	581.9	232.2	39.1	5.1	from 46.0
Corn silage and	2.8	0.7	0.64	6.4	70	210	39.2	3.92	0.28	16.8
Corn pieces of	3.4	2.9	4.14	14.5	350.2	129.2	248.2	1.7	17.7	136.0
Wet corn (my hand)	5.6	3.6	0.86	8.8	122.4	277.2	86.4	6.8	3.2	248.6
Complex feed	4.0	3.4	4.03	40.3	72.4	39.8	672.0	6.6	2.8	222.4
Total	18.1	12.5	11.70	117.4	1014.2	1392.1	1326.1	61.9	30.9	807.6
13 months, 17 months, which is the bull feed the diet of										
Alfalfa hay	2.4	2.0	1.61	16.1	345.6	607.2	242.4	40.8	5.3	48
Corn silage and	3.4	0.8	0.78	shares 7.8	85.0	255.0	47.6	4.8	0.3	20.4
Wet corn (my hand)	5.6	3.6	3.14	31.6	257.6	308.0	179.2	11.76	6.72	386.4
Corn pieces of	6.6	5.7	8.05	50.5	679.8	250.8	481.8	3.3	34.3	264.0
Complex feed	5.0	4.3	5.04	50.4	90.5	49.7	840.0	8.2	3.5	278.0
Total	23.0	13.4	18.6	186.4	1458.5	1470.7	1791.0	68.9	50.2	996.8

Growth and Development of Animals

The change in the live weight of animals from birth until slaughter is an indicator of their overall growth and early maturity. Live weight is directly related to the meat productivity of the animal.

As a result of a comparative analysis of the live weight dynamics of experimental bulls raised in different countries (Russia and Germany), it was determined that the bulls of Group I had a significant advantage over the bulls of Group II (Table 2).

Dynamics of Live Weight of Experimental Bulls, kg (n = 10. Table 2,

Age (months)	Groups				d
	Igroup		IIgroup		
	M ± m	Resume, %	M ± m	Resume, %	
7	170,6±2,26	4.19	161,3±1,61	3.15	9,3



9	254,4±1,71	2.13	245,1±1.67 or	2.16	9,3
12	350,4±2,27	2.05	338,6±2,12	1.98	11,8
15	460,5±2,89	1.98	447,7±3,15	2.22	12.8 percent
17	524,8±3,07	1.85	513,7±3,26	2.00	11.1

As can be seen from the data presented in **Table 2**, the bulls of German selection demonstrated superior growth and development compared to the bulls of Russian selection throughout the observation period, from 7 to 17 months of age.

At the final stage of fattening, this difference amounted to 11.1 kg in favor of the German cattle. At 17 months of age, which corresponded to the completion of the fattening period, the average live weight of animals of German origin reached 524.8 kg, which was higher than that of the Russian-selected bulls (513.7 kg) ($P \leq 0.01$).

During the period from 7 to 15 months of age, the rate of live weight gain in the studied breed groups was almost the same; however, a slight advantage was observed in the animals of Group I (German selection).

Economic Efficiency of Raising and Fattening Bulls

The economic efficiency of raising and fattening cattle in beef cattle farming is one of the most urgent and important issues of modern agriculture.

The economic evaluation of livestock products consists of the individual values of production cost indicators. Under such conditions, the meat productivity of cattle directly or indirectly affects all indicators of the economic efficiency of cattle raising and fattening.

Under the conditions of the “Agra Chorva Baraka” cattle-breeding complex in Muzrabot district, the economic efficiency of raising and fattening bulls of different origins was calculated on the basis of production costs, the production cost per 1 kg of meat, and the selling price per 1 kg of meat. In addition, indicators such as sales revenue, profit, and profitability were also determined.

Economic Efficiency of Raising and Fattening Bulls Table 3

Per head in the experimental group

Indicators		
	Igroup	IIgroup
So'y lab weight, kg	121.7	116.5
1 kg of meat for the selling price, the sum of	90 thousand	90 thousand
The total sales price, the sum of	10 000 953	10 000 485
So'y lab the mass of costs, the sum of	7 936 565	8 924 810
1 of meat costs	65 214	630 75
The benefit, of the sum	3 435 016	1 076 674
Rentabilik level %	13.8	11.9

The calculations showed that the revenue obtained from the sale of the main products of Groups I and II amounted to 10,953,000 UZS and 10,485,000 UZS per head, respectively. The production cost of 1 kg of meat was 65,214 UZS for Group I and 75,630 UZS for Group II. The selling price of 1 kg of meat was 90,000 UZS. It should be noted that the selling price plays a significant role in product marketing, as the farm's profit and ultimately the profitability of production depend on it.



The results of the conducted research indicate that when forming groups of Aberdeen Angus bulls for rearing and fattening, the country of origin of the animals should be taken into account. Thus, under identical feeding and management conditions, bulls of German selection demonstrated certain advantages over Russian-selected bulls in fattening and slaughter indicators, which ensured higher profitability from their sale.

CONCLUSIONS

1. Imported Aberdeen Angus beef cattle of German and Russian selection demonstrated a very high adaptive potential to new environmental conditions, provided that they received balanced feeding and proper management. This was reflected in their rapid adaptation to the new environment.
2. A comparative analysis of the live weight dynamics of the experimental bulls during the growth and fattening period revealed a significant superiority of Group I over Group II. Thus, at 17 months of age, the live weight of German-selected bulls reached 524.8 kg, while the Russian-selected bulls weighed 513.7 kg. A similar pattern, favoring Group I animals over Group II, was also observed in average daily gain and absolute growth indicators.

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