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CHANGES IN LIVE WEIGHT OF SIMENTAL BULLS OF DIFFERENT PRODUCTION TYPES OVER TIME

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Abstract:

The article provides information on the dynamics of changes in the live weight of Simental bulls of different production types over time. Bulls of the meat-milk type are 6th in live weight of their peers of the milk-meat type; 9; 12; 13.2 in periods of 15 and 18 months, respectively; 15.4; 19.3; Prioritized 24.0 and 29.5 kg. Bulls in both groups were found to be higher than the state standard requirement for the Simental breed in terms of live weight.

Keywords: Farms, cattle, bulls, Simental, production types, milk-meat type, meat-milk type, live weight, state standard requirement, etc.

INTRODUCTION

The livestock industry plays an important role in ensuring food security for the growing population of Uzbekistan. More than 64 percent of the total meat produced in the republic corresponds to the share of cattle breeding. As of January 1, 2022, the total number of cattle in the republic is 13,557.6 thousand, of which 92 percent or 12,464,8 thousand are owned by farmers and residents, 889.3 thousand in farms, 203.5 thousand in rural areas. being carried out in farms that perform economic activities. Accordingly, the production of meat products is being carried out in these farms.

In recent years, special attention has been paid to the development of farms. This paves the way for systematic organization of production. Mechanization of production in farms makes it possible to grow cheap and high-quality milk and meat.

Production in cattle breeding is related to several main factors. These factors include: the organization of adequate nutrition, the creation of standard storage conditions, the proper organization of breeding work, and the mechanization and automation of production processes.

The decisions taken by the government in recent years have been a major factor in the development of the livestock sector, especially the cattle sector. In accordance with these decisions, bred cattle from developed foreign countries were brought to the territory of the country, and thanks to their use, the milk and meat productivity of the cattle increased significantly. Many Simental cattle were brought from European countries such as Germany, Austria, and France. This breed is considered to be a milk-meat cattle breed, and quality milk and meat products are produced from this breed in various regions in exchange for creating favorable conditions for them.

One of the problems of meat production in Uzbekistan is the establishment of proper breeding and fattening of the obtained offspring, along with purebred breeding from the Simental breed, crossing them with existing dairy breeds.

Breeding of beef in Uzbekistan is expected to be carried out by dairy and beef cattle breeds in the near future. It should be noted that the level of efficient use of biological properties of cattle is not high, it is only 50-60%.

According to [10; p.3-9.], the main source of beef production is dairy and multi-product breeds. They will have a live weight of 450.0-600.0 kg at the age of 15-20 months.

In [7; p.17-19.] studies, bulls belonging to the Simental breed grew rapidly, and according to this indicator, they left behind their equals, the Kalmyk and Kazakh white-breasted breeds. During the experiment from 8 months to 17 months, they gained 327.0 kg of additional live weight. The average daily gain was 1211.5 grams. This indicator was equal to 287.8 kg, 1065.9 g and 320.3 kg to 1186.2 g in their equal Kalmyk and Kazakh white bulls.

[16; p.123-124.] stated that the genotype plays an important role in the growth and development of the organism system, which is evident in the future productivity. Therefore, it is necessary to rely on genetic laws when using breeds in hybridization.

According to [14; p.80.], it is appropriate to use the method of calculating the "Production Type Coefficient" when dividing them into production types in cattle breeding.

[11; p.18-20.] stated that the meat productivity of Simental bulls depends on the types of constitution, and according to the quantitative and qualitative characteristics of this indicator, bulls of the meat-milk type have priority over other types.

In [6; p.17-18.] research, Simental (n=62) and domestic (n=53) female calves of German selection were cared for from birth to 18 months. In terms of live weight at 18 months, the Simentals of the German breed surpassed their peers of the local breed by 20.6 kg (6.50%). In another experiment, on the same farm, when bulls were reared up to 18 months, German-bred bulls had a daily gain of 748.0 g and a live weight of 454.0 kg at 18 months. According to these indicators, they surpassed bulls of domestic breeding, respectively: 38.5 kg (9.3%).

[13; p.127-136.] noted that the Simental breed is one of the ancient cultivated cattle breeds, which are distinguished from other breeds by their high combination of meat and milk productivity. The Simental breed has a large, strong constitution and good adaptability. That is why they are widely distributed and are the founders of many dairy, mixed and beef cattle breeds and systems.

[5; p.320.] researches, it has been proven that intensive technology breeding and fattening of young cattle up to 18 months of age is economically effective. At this age, it will be possible to grow quality meat from cattle. The results of scientific research have shown that the meat of young cattle has a high content of water and protein. And the amount of fat will be less. In meat breeds, the slaughter yield at 15 months was 60-62%.

According to [4; p.21-23], [2; p.24-27], [12; p.16-17.], meat cattle breeds are superior to milk and milk-meat cattle in terms of meat productivity. However, the results of the research conducted in recent years have shown that if young cattle of milk and hybrid breeds are raised in intensive technology, they will not be inferior to beef cattle in terms of daily growth and meat productivity.

In [15; p.33-36.] research, internal organs, nutrition system, and growth issues were studied. When feeding young cattle, it is necessary to use such a technology that, when fattened, it is possible to grow high-quality meat from them at a low cost. It should be noted that the formation of meat productivity in cattle is directly influenced by breed, genotype, intrabreed and production types. Therefore, it is appropriate to organize breeding based on the biological capabilities, growth and development conditions of young cattle.

In [3; p.17-19.] studies, Simental bulls reached a live weight of 516 kg at the age of 18 months when they were fattened. In this case, 7.8 feed units were used for 1 kg of growth. Heavy cuts (264 kg) were taken from the slaughter of bulls, and the weight of internal fat was 22 kg.

[1] stated that in many scientific and economic experiments, cattle of high live weight were raised when Simental bulls were intensively fattened. When bulls were fattened in intensive technology up to 18 months, 29 ts of feed units were spent per head of cattle. The average daily gain during the period was 814 g. Live weight before slaughter was equal to 484 kg.

[8; p.60.] states that breeding and fattening of meat-milk type cattle gives good results in order to produce meat of sufficient quality from young Simental cattle. Simentals of this type are superior to other production types by 5.0-6.8% in weight and 4.0-7.1% in slaughter yield.

The purpose of the study. Studying the dynamics of weight change and live weight of Simental bulls of different production types by comparing them with the requirements of the breed standard.

Research object and method. Simental bulls of different production types were selected as research objects. Bulls of milk-meat group I and meat-milk type bulls were assigned to group II according to breed, age and live weight. In the experiment, the live weight of the bulls was determined monthly by weighing their live weight. The digital data obtained in the research were entered into the Microsoft Excel program by N.A. Biometric processing was done according to the Plukhinsky method.

Research results and analysis. When feeding young cattle for meat, it is necessary to directly take into account their breed and breed, individual characteristics, together with feeding and storage conditions. The bulls of both groups in the experiment were cared for on the basis of intensive technology in the feeding and storage conditions adopted on the farm. Bull rations were formulated based on their live weight and daily growth rate using farm-grown feed. The fact that the bulls of group II (meat-milk type) consumed more and used food more effectively than their counterparts of group I (milk-meat type) reflected in their growth and development.

Table 1

Live weight change dynamics of experimental bulls

Age, months	Groups by types of production			
	Group I (milk-meat)		Group II (meat-milk)	
	X±Sx	Cv, %	X±Sx	Cv, %
In birth	32,0±0,58	6,29	32,5±0,58	6,22
3	109,0±0,60	1,92	118,4±0,65	1,89
6	190,3±0,72	1,31	203,5±0,83	1,41
9	252,9±2,68	3,67	268,3±2,83*	3,66
12	326,5±3,23	3,43	345,8±4,04*	4,05
15	401,3±3,02	2,61	425,3±3,11*	2,53
18	479,4±2,07	1,49	508,9±2,87*	1,96

*P≤0,001

As can be seen from the data of Table 1, the average difference in the live weight of calves at birth in groups I and II was 0.5 kg in preference to calves of the meat-milk type. The difference in live weight of calves in groups I and II was 9.4 kg (8.62%) at 3 months, with the dominance of meat-milk type calves. Also 6 in live weight; 9; 12; 13.2 kg

(6.93%) at the ages of 15 and 18 months, respectively; 15.4 kg (6.1%); 19.3 kg (5.91%); By 24.0 kg (5.98 %) and 29.5 kg (6.15 %), the bulls of the second group recorded priority over their peers of the first group (*R≤0.001).

It was observed that the bulls in both groups maintained in intensive technology increased their live weight significantly during the periods.

There are state standard requirements for live weight for bulls of different breeds in terms of productivity. It can be concluded that the bulls that meet the requirements of the standard have been cared for according to zootechnical standards. For this purpose, in order to evaluate the growth and development of bulls in our research, we compared their live weight in different periods with the requirements of the state standard for the Simental breed.

Table 2

Comparative evaluation of the live weight of bulls in the experiment with the indicators of the state standard

Simental breed bulls	Age, months				
	6	9	12	15	18
Live weight according to the state standard, kg	180	250	320	380	440
In groups by types of production live weight of bulls, kg					
Group I (milk-meat)	190,3	252,9	326,5	401,3	479,4
Difference from the standard, kg ±	+10,3	+2,9	+6,5	+21,3	+39,4
Group II (meat-milk)	203,5	268,3	345,8	425,3	508,9
Difference from the standard, kg ±	+23,5	+18,3	+25,8	+45,3	+68,9

As shown in Table 2, the live weight of bulls in both groups was higher than the standard requirements set by the state for the Simental breed in all periods during the experiment. 6 bulls of group I in research; 9; 12; At the age of 15 and 18 months, according to the state standard requirement for live weight: 5.72; 1.16; 2.03; 5.60 and 8.95 percent prevailed, while in Group II these indicators were 13.05, respectively; 7.32; 8.06; It was found to be higher by 11.92 and 15.66 percent. Therefore, proper feeding and storage positively affected the growth and development of bulls, ensuring that they exceeded the requirements of the state standard for live weight for the Simental breed.

During the research, we tried to study the growth rate of bulls. In the table below, we have highlighted the indicators of growth rate during the period of growth and fattening of young cattle of different production types.

The following table shows that standard feeding and storage had a positive effect on the growth rate of the experimental bulls during the periods.

Table 3

Growth factor of experimental bulls

Periods by age, month	Production types	
	Group I (milk-meat)	Group II (meat-milk)
0-3	3,40	3,64
0-6	5,95	6,26
0-9	7,90	8,25
0-12	10,20	10,64
0-15	12,54	13,08
0-18	14,98	15,65

The data in Table 3 shows that both groups of bulls had high growth rates during the breeding and breeding period. It was found that beef-milk production type bulls slightly outperformed their dairy-meat type bulls in terms of growth performance over the periods. Bulls of the second group had a growth coefficient of 15.66 times compared to their live weight at the time of birth at the age of 18 months, while this indicator was 0.68 times less than that of the II group. In both groups, it was observed that the growth coefficient was at a high level at 12 and 15 months.

CONCLUSION. The growth and development indicators of Simental bulls of different production types were at the standard level. There was no significant difference between groups I (milk-meat) and II (meat-milk) between the live weight of the calves entered into the group at birth. A slow predominance was observed in calves of the meat-milk type during the last periods after birth. In this case, bulls of the second group of meat-milk type are equal to 3 bulls of the first group; 6; 9; 12; 9.40 kg in periods of 15 and 18 months, respectively; 13.2 kg; 15.4 kg; 19.3 kg; 24.0 kg and 29.5 kg. The bulls in the experiment exceeded the requirements of the state standard for live weight during the periods. Both groups of bulls treated with intensive technology showed a high growth rate.

REFERENCES

1. Багрий, Б.А.,Доротюк Э.Н. Племенная работа в мясном скотоводстве / Москва, Колос. – 1979.
2. Дедов, М.Д. О симментальской породе крупного рогатого скота// Сельское хозяйство за рубежом. – 1973. - №11. – С.24-27.
3. Еременко, В. Совершенствование мясных пород скота // Молочное и мясное скотоводство. - 2005. - №6. - С. 17-19.
4. Кибкало, Л. И. Мясная продуктивность симментальского молод-няка и помесей с голштинами и лимузинами//Достижения науки и техники АПК. - 2003. - №7. - С. 21-23.
5. Кибкало, Л. И. Интенсивные технологии производства молока и говядины. - Курск: Изд-во КГСХА, 1995. – С. 320.
6. Карпова О., Анисимова Е. Адаптивный подход к использованию симменталов в поволжье // Молочное и мясное скотоводство. 2005. №1. С. 17-18.
7. Кайдулина А.А., Григорян Л.Ф. Формирование мясной продуктивности бычков в зовисимости от их породной принадлежности. // Зоотехния. 2010. № 12.С. 17-19.
8. Левантин, Д.Л. Использование различных пород крупного рогатого скота для производства мяса / – М. – 1989. С. – 60.
9. Плохинский, Н.А. Руководство по биометрии для зоотехников// Н.А.Плохинский. - М.: Колос,1969. С. – 256.
10. Скоркина И., и др Мясная продуктивность бычков разных генотипов // Молочное и мясное скотоводство. 2004. №3. С.- 9.
11. Смакуев Д.Р. Влияние молочной продуктивности коров симментальской породы на рост и оплату корма у бычков, вырашиваемых по технологии мясного скотоводства // Зоотехния. 2014. №2. С.-18-20.
12. Стрекозов, Н. Комплексная оценка симменталов поможет селек-ционерам // Животноводство России. – 2004. - №11. С. -16-17.
13. Стрекозов, Н.И. Пути увеличения производства молока и мяса крупного рогатого скота в Российской Федерации / Н.И. Стрекозов, Г.П. Легошин // Мат. междун. науч. конф. – Элиста. – 2002. – С.-127-136.
14. Танана Л.А., Климов.Н.Н и др. Типы конституции сельскохозяйственных животных и их использование в селекционно-племенной и технологической работе. Учебное пособие. Брянск-Гродно-Москва, 2014. С.-80.
15. Эрнст, Л.К. Создание мясного типа симментальского скота // Зоотехния. – 1993. - № 8.С.- 33-36.
16. Amin A.A. Effect of the separate and cumulative lactation on the efficiency of selection indices for improvement in total milk yield performance // AllattenyesrtTakarmanyozas. – 1997. – Vol. 46. – № 2. – p. 123-124.