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# MEAT PRODUCTIVITY OF COLD RAISED RED STEPPE BREED

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**Abstract:** The article discusses the effectiveness of growing young cattle in light-weight premises in individual cages and in houses for individual maintenance from 3 days of life to 60 days of age and then in open areas with shady canopies by the "cold" method in all age periods differed from peers higher energy growth. The results obtained allowed a significant advantage in terms of meat productivity of bulls. Their superiority over analogues grown and indoors was 31.2 kg before slaughter live weight, 19.3 kg of internal fat, 2.57 kg, slaughter weight, 22.25 kg, which led to a higher slaughter yield.

**Keywords:** Gobies, meat, slaughter weight, lightweight premises, slaughter exit, with a shady canopy, productivity, quality.

**Introduction.** When raising calves, the way the animals are kept is of significant importance. However, despite the fact that in recent years new approaches to raising calves have been developed, however, research on these issues, taking into account the genotype of the livestock being bred and the specific conditions of its maintenance, is insufficient, which determines the relevance of the topic. In this regard, the search and implementation in agricultural enterprises of resource-saving methods for keeping young cattle, aimed at increasing growth, development, immunobiological characteristics of the body, meat productivity, has great scientific and practical significance and determines the relevance of the topic [1, 2, 3, 4 ] .

**Materials and methods.** To conduct the experiment, 3 groups of red-steppe bulls of 15 heads each were formed according to the following scheme (Table 1), according to the principle of analogues.

Table 1.

Experiment scheme.

| Group | Technology option | | |
|---|---|---|---|
| | From birth to 2 months | From 2 to 12 months | From 12 to 18 months |
| Control | Closed premises, group housing without a leash | On areas with a shady canopy, group keeping without a leash | Fattening indoors, on a leash |
| 1st experienced | In individual houses | On areas with a shady canopy, group keeping without a leash | Fattening on areas with a shady canopy, on a leash |
| II-nd experimental | In buildings of lightweight | In buildings of lightweight | Fattening on sites with a shady canopy |

| | | | |
|---|---|---|---|
| | construction in individual cages | construction with group keeping with walking | on a leash |

Fatness was determined from each group by the degree of development of muscle and adipose tissue visually and by palpating the animal.

Meat productivity, chemical composition and quality of meat from experimental bulls were studied according to the VNIMS methodology (1984). When the bulls reached 18 months of age, a control slaughter of three animals from each group "Cattle for slaughter, beef and veal in carcasses, half-carcasses and quarters" was carried out; pre-slaughter live weight was taken into account during slaughter. By keeping cattle without feed before slaughter for a set time, the cattle are provided with a free watering hole, which is stopped three hours before slaughter.

Mass of steamed fluff, mass of internal fat, slaughter mass and slaughter yield. The morphological composition, fluff deboning of the experimental groups of bulls was subjected to five naturally anatomical parts (cervical, shoulder, scapular, lumbar, and hip) on the third day after slaughter, which was carried out in accordance with GOST for sausage classification. As a result of deboning, the absolute and relative content of muscle and fat in the bones and tendons was determined in the carcass.

In order to analyze the chemical composition, samples of the longissimus dorsi muscle (between the 9th-11th ribs) and intermuscular fat, 200 g each, were taken, the pulpy part of the half-carcass was passed through a grinder, and after thorough mixing, samples of minced meat of 400 g were selected. In the average meat samples - minced meat and longissimus dorsi muscle, the concentration of moisture, dry matter, protein, fat and ash was determined according to the VNIIMS method (1984). Along with this, the content of complete (tryptophan) and incomplete (hydroxyproline) proteins was determined in the muscle tissue of bull calves, the ratio of which was used to determine the protein quality index (PQI).

The digital material obtained in the research was processed using the methods of variation statistics to determine the reliability of the differences using the algorithms proposed by N.A. Plokhinsky (1969).

**Results and discussion** . In our study, the diets of experimental bulls consisted of feed produced on the farm. The main diet for up to six months is milk 300 kg, skim milk 450 kg and then alfalfa hay, corn silage, alfalfa haylage, green alfalfa, green corn and mixed feed. During the experiment, feeding of young animals of all groups was the same.

In order to study the meat productivity of experimental bulls at the age of 18 months, a control slaughter was carried out at a meat processing plant. The fatness of all studied groups of animals was recognized as the highest, and the resulting carcasses, in accordance with GOST 7595-79, were classified as the first category.

The results of the control slaughter of bull calves raised in various ways are presented in Table 2.

Table 2.

Slaughter qualities of experimental animals

| Index | Group | | |
|---|---|---|---|
| | Control | I-experienced | II-experienced |
| Pre-slaughter live weight, kg | 399.6 ± 4.12 | 429.3 ± 3.10 | 430.8 ± 3.44 |
| Weight of steamed carcass, kg | 208.19 ± 3.60 | 225.81 ± 3.68 | 227.9 ± 3.38 |
| Steam carcass yield % | 52.1 | 52.6 | 52.9 |

| | | | |
|---|---|---|---|
| Internal fat mass, kg | 10.78 ± 0.31 | 12.62 ± 0.46 | 13.35 ± 0.52 |
| Yield of internal fat, % | 2.7 | 2.94 | 3.1 |
| Slaughter weight, kg | 219 | 238.43 | 241.25 |
| Slaughter yield, % | 54.8 | 55.54 | 56 |

From Table 2 it can be seen that the results of the control slaughter indicate that various housing methods had a positive effect not only on the intensity of growth and development of the latter bulls, but also on the yield of slaughter products.

According to the scientific data, there was a significant difference in the indicators of pre-slaughter live weight, fresh carcass weight and internal fat at 18 months of age in animals. The animals of experimental group II, which were kept in light-weight buildings and areas with shady canopies, had the highest mass of fresh carcasses. They outperformed their peers in the control group by 19.71 kg or 9.46% (P>0.95) of the I-experimental group. They were superior to their peers in the control group by 17.62 kg or 8.47% (P>0.95). The animals in the control group had the lowest weight of the steamed carcass, 208.19 kg. There were no significant differences in the weight of the fresh carcass between experimental groups I and II (established). Regardless of different housing conditions, the slaughter yield of bulls of all groups was quite high (54.8, 55.54, 56%).

To fully characterize meat qualities, it is important to know not only the weight of the carcass and slaughter yield, but its components. This is due to the fact that a significant part of the carcass consists of inedible parts, which include bones, ligaments, cartilage and tendons [5, 6, 7] .

In order to study the meat qualities of experimental bulls under various housing conditions, we carried out deboning of half-carcasses, which took into account the weight of meat bones and tendons. This data is reflected in Table 3.

Table 3.

Morphological composition of experimental animal carcasses

| Index | Group | | |
|---|---|---|---|
| | Control | I-experienced | II-experienced |
| Weight of chilled semi-carcass, kg | 104.5 ± 3.24 | 112.6 ± 3.62 | 114.4 ±3.76 |
| Weight of chilled semi-carcass, % | 100 | 100 | 100 |
| Pulp weight, kg | 78.48 ± 2.10 | 85.12 ± 2.26 | 86.94 ± 2.78 |
| Pulp yield, % | 75.10 | 75.60 | 76.00 |
| Bone mass, kg | 22.40 ± 3.36 | 24.30 ± 3.28 | 24.71 ± 3.42 |
| Bone yield, % | 21.46 | 21.58 | 21.62 |
| Mass of tendons and ligaments, kg | 3.60 ± 0.11 | 3.18 ± 0.13 | 2.75 ± 0.12 |
| Yield of tendons and ligaments, % | 2.44 | 2.82 | 2.40 |
| Meat index | 3.65 | 3.96 | 4.02 |

It is known that the pulp part of the carcass is of greatest interest to the consumer. This is primarily muscle and adipose tissue. At the same time, the presentation and taste of the product largely depend on the content of the latter and the place of its localization. The yield of pulp, bones and their ratio allowed us to identify the effectiveness of raising bulls for meat.

An analysis of the table showed that the most valuable part of the carcass, the pulp, of the bulls of the II experimental group amounted to 86.94 kg. They exceeded their peers in the control group in this indicator by 8.46 kg or 10.7% (P>0.95). There did not seem to be a significant difference between experimental groups I and II, the most valuable part of the carcass in terms of pulp. During the study, no special distinctive features were established, either in terms of absolute or relative indicators of the content of bones in the carcasses of experimental animals, although there was some superiority in their relative mass in favor of their peers when kept in lightweight buildings and on the site.

The research results showed that the carcass meatiness index reached the highest value in the bulls of the II experimental group, on average 4.02 units; their advantage in the studied indicator over the animals of the control groups was, respectively, 0.37 or 10.1%. Consequently, the bulls of experimental group II had higher carcass quality indicators than their peers.

**Conclusions and offers.** In the conditions of Uzbekistan, the sustainable development of domestic cattle breeding requires a set of measures aimed at improving the organizational and economic mechanism of management based on the introduction of modern resource-saving production technologies.

Thus, bulls raised using “Cold” methods at all ages differed from their peers in having higher growth energy. The results obtained allowed a significant advantage in terms of meat productivity of bulls. Their superiority over their farmed and indoor counterparts was in terms of pre-slaughter live weight of 31.2 kg, fresh carcass weight of 19.3 kg of internal fat, 2.57 kg and slaughter weight of 22.25 kg, which led to a higher slaughter yield.

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