

выявления качества мяса. Согласно результатам исследования, установлено, что содержание влаги в пробах, взятых у зараженного язя *O. felineus*, на 1,24% выше, чем у незараженного язя, белок на 0,79%, зола на 0,18%, жир на 0,27% ниже. Кроме того, известно, что по мере увеличения инвазивной экстенсивности в мясе рыбы, пораженной *O. felineus*, энергетическая ценность снижена. В пробах, взятых из мяса пораженной рыбы язя, содержание микроэлементов было на Cu-1%, Fe - 5,46%, Zn - 1,50% ниже, чем в относительно отобранном, непораженном мясе рыбы. Жирные кислоты и витамины в пробах, пораженных *O. felineus*, имела низкое содержание и не наблюдалось значительных изменений в аминокислотах.

UDC 636.2.033
MRNTI 68.41.15

DOI 10.56339/2305-9397-2023-1-1-115-121

Abirova I. M., candidate of Veterinary Science, **the main author**, <https://orcid.org/0000-0001-9310-2118>

NJSC «West Kazakhstan Agrarian and Technical University named after Zhangir khan», Uralsk, st. Zhangir khan 51, 090009, Kazakhstan, Zarina029@mail.ru

Baktygalieva A. T., PhD, [https:// orcid.org/0000-0003-2160-3890](https://orcid.org/0000-0003-2160-3890)

«Baishev University», Aktobe, st. Brothers Zhubanov 302A, 030000, Kazakhstan, a_baktygalieva@bu.edu.kz

Nasyrov S. N., veterinarian, <https://orcid.org/0000-0002-5244-1057>

«Republican veterinary laboratory», Aktobe, st. Smagulova 11, D02E3B1, 030000, Kazakhstan, 707.kz@bk.ru

Duskulov V. M., candidate of Veterinary Sciences, Associate Professor, <https://orcid.org/0000-0002-9496-5932>

«Samarkand State University of Veterinary Medicine, Animal Husbandry and Biotechnology», Samarkand city, M. Ulugbek street 77, Republic of Uzbekistan, dvoxid@mail.ru

CHEMICAL COMPOSITION OF MEAT AND RAW FATS OF YOUNG BEST OF THE KAZAKH WHITE HEAD BREED

ANNOTATION

The animals of the Kazakh white-headed breed bred in the West Kazakhstan region are distinguished not only by their high productivity, but also by their adaptability to the harsh sharply continental climate. The article describes the chemical composition of an average sample of minced meat, the longest back muscle and raw fat of the Kazakh white-headed breed at the age of 15 and 18 months.

The Kazakh white-headed breed now forms the basis of domestic beef cattle breeding. The animals of this breed are unique in their adaptability to the conditions of the domestic sharply continental climate and are successfully bred in almost all climatic zones of the country.

The Akbas are distinguished not only by endurance, but also by being not so picky about forage, a superb weight gain and high meat productivity.

The breed quickly adapts to pastures with different herbage. At birth, young bulls can weigh from 27 to 30 kg. The weight of the adult bulls is 800 to 900 kg, some reach 1100 kg. Cows weigh 500-550 kg, some individuals can gain up to 780 kg.

With intensive fattening, bulls at the age of 18 months have a live weight of 540 - 550 kg, and the slaughter yield of meat is 62-64%.

Special attention is paid to the factors influencing the change in meat. The functional properties of protein substances are affected. The energy value of meat and the nutritional value of bull meat are considered. The data obtained by us indicate an increase in fat content and a decrease in protein in minced meat with age in young animals of all genetic groups.

It is characteristic that the process of accumulation of adipose tissue in castrates of Shagatai cattle and in its crossbreeds from bulls-producers of the Ural Hereford was 6.76 and 4.72% more intense, whereas in bulls - analogues by origin – 4.46 and 2.84%.

Meanwhile, the peculiarities of the intra-breed belonging of the experimental young animals contributed to the manifestation of certain differences in fat formation in the body.

The greatest difference in the fat content in the flesh of the carcass between the Shagatai cattle and its breed with the Ural Hereford was observed at the age of 18 months. In Shagatai bulls and castrates, the fat content in meat was higher, respectively, by 3.58% ($P>0.99$) and 2.60% ($P>0.95$) than in half-blooded peers from Herefords of the Ural selection.

The quality of meat is also characterized by the ratio of protein and fat. In the flesh of carcasses of Shagatai bulls at the age of 15 months, the parameters of this ratio were 1:0.58, castrates - 1:0.51, and at 18 months - 1:0.88 and 1:0.95, respectively, in analogues of Ural Hereford $\times$ Shagatai cattle at 15 months, this ratio was 1:0.47 in group III and group IV 1:0.48, and at 18 months, respectively, 1:0.66 and 1:0.77.

Key words: *meat, fats, chemical composition, bulls, Kazakh white-headed breed*

Introduction. Current problem of modernity is the accelerated and directed formation of muscle tissue and the improvement of biological value of its proteins in farm animals. Science has accumulated materials revealing ways to form the productive qualities of farm animals, the essence of their age-related breed and other differences.

The natural course of development of the organism is known, general provisions on age transformations in ontogenesis are established, against which the differences and peculiarities formed under the influence of living conditions can be considered.

Thus, the entire scientific activity of zootechnicians, geneticists, and breeders is aimed at improving the meat or dairy productivity of livestock, which is of tremendous national economic importance. But one should not forget about the quality and nutritional value of the meat produced. In Kazakhstan, meat breeds account for about 30% of the total cattle population. Currently, the problem of increasing beef production in Kazakhstan is solved mainly by breeding beef breeds. At the same time, an important reserve for increasing meat resources is the development of specialized beef cattle breeding, which has a number of economic and productive features. Animals of specialized meat breeds are characterized by higher meat productivity and quality of beef, precocity, and good payment of feed products. From their slaughter receive heavy carcasses that meet international standards, high yield of edible parts, excellent raw leather. This industry is low-cost, allowing to effectively produce meat products [1].

Currently, the Republic pays more attention to the development of beef cattle breeding, as the industry is an important indicator of the state of food security of the country. In this regard, the Republic of Kazakhstan has developed and implemented state programs aimed at improving the efficiency of breeding and fattening of young meat-cattle [2].

Nevertheless, due to the presence of certain problems in the industry, a detailed and comprehensive study of the issues of state support for beef cattle breeding is necessary.

Meat is the most important high-calorie food in the nutritional balance of the country the first place is beef (45-48% of all meat produced). In a number of regions of our country for beef use specialized meat breeds [3].

Terms “biological” and “energetic” values are a particular definition of the term “nutritional value”. For example, the biological value reflects the quality of protein components of product, associated with both the digestibility of protein and the degree of balance of its amino acid composition. Meat is the flesh of certain animal species that is used as food by humans and includes many tissues and edible parts although the main tissue is the muscle. This chapter describes the muscle composition and the conversion of muscle into meat, the meat components (nitrogen compounds and enzymes, lipids, carbohydrates, vitamins, minerals, and water), their influence in meat quality, and the factors that affect meat composition.

Mechanically recovered meat composition is also outlined, due to it is a raw material used in meat product manufacture. The effects of curing and the chemical characteristics of the different varieties of meat products are also detailed, including enhanced meat, comminuted and reformed fresh meat products, cooked-cured meat products (emulsion-based and products from whole pieces), dry fermented sausages, dry-cured meat products, frozen meat and meat products, dried meats, and meat extracts. Finally, chemical aspects of the most recent type of meat products developed, healthier and

functional meat products, have also been included (low-sodium, low-fat and lipid-modified and nitrite-reduced meat products, meat and meat products with bioactive compounds) [4]. Meat composition consists of approximately 75% of water, 19% of protein, 2.5% of fat, 1.2% of carbohydrates and 1.65% of nitrogen compounds. It also contains a great amount of several minerals (calcium, phosphorus, sodium, potassium, chlorine, magnesium) and trace elements such as iron, copper, zinc and many others [5].

The Kazakh white-headed breed is heterogeneous and is represented by several intrabreed types. The formation of animals of the Kazakh white-headed breed occurred under the influence of selection and selection, different quality of animals, natural and climatic factors, feeding and keeping conditions [6, 7, 8, 17].

Animals of the Kazakh white-headed breed bred in the West Kazakhstan region are distinguished not only by high productivity, but also by adaptability to the harsh sharply continental climate. It can be said with confidence that it was the animals of this breed that ensured the accelerated development of beef cattle breeding and, first of all, its main technological operation “cow-calf” [9, 10, 11, 12, 13, 14, 15, 16, 19].

Sh.A. Makaev et al. [20] as a result of studies conducted in various herds came to the conclusion that Kazakh white-headed cattle are much better adapted to the conditions of dry and semi-desert steppes than purebred Herefords of English and Canadian selection.

According to Ya.F. Stepanenko, A.S. Chebotoreva, at the Ankatinsky state farm, the daily increase in live weight of one thousand head of bulls from May to September varied by groups from 750 to 1260 g [18, 20, 21, 22, 23]. In the autumn months, the growth decreased, which is associated with the intensive deposition of fat in the Kazakh white-headed cattle towards the end of feeding and the deterioration of grass stand on natural pastures.

Materials and research methods. The chemical composition of meat was determined by the results of control slaughter at the age of 15 and 18 months. 3 bulls from each group at the Aktep meat processing plant in the Alginsk district of the Aktobe region according to the methodology of VASKhNIL, VIZH, VNIIMP (1977).

Research results. Characteristically, the process of accumulation of nutrients in the fleshy part of the half-carcasses of the young animals of the experimental groups was not the same [table 1].

So, at the age of 15 months. the share of dry matter in the average meat sample of Shagatai bulls and its crossbreeds from Ural Hereford bulls was higher, respectively, by 2.03% ($P>0.99$) and 0.69% ($P<0.95$) than in analogues by origin, kept at that time on pasture cultivation. The lower amount of dry matter in the meat of steers-castrates of both genetic groups can be explained by the content in the age period from 12 to 15 months. them on the run. A less nutritious diet and increased physical activity in pasture cultivation prevented excessive deposition of fat and, accordingly, lower accumulation of dry matter. It is impossible not to notice that in this period, the highest indicator was characterized by animals - the descendants of Shagatai breeders, the lowest - by the Ural Herefords.

Different conditions of keeping young animals affected their productivity during subsequent fattening on the site.

Table 1 – Chemical composition of the average sample of minced meat, % ($X\pm Sx$)

Index									
Humidity		Dry		Including					
		substance		fat		protein		ash	
age, months									
15	18	15	18	15	18	15	18	15	18
1	2	3	4	5	6	7	8	9	10
I group									
69,27± 0,220	66,09± 0,15	30,73± 0,22	33,91± 0,15	10,94± 0,23	15,40± 0,41	18,86± 0,44	17,60± 0,29	0,93± 0,02	0,91± 0,02
II group									
71,30± 0,37	65,84± 0,38	28,70± 0,37	34,16± 0,38	9,38± 0,36	16,14± 0,44	18,38± 0,51	17,09± 0,21	0,94± 0,03	0,93± 0,01

1	2	3	4	5	6	7	8	9	10
III group									
71,10± 0,44	69,39± 0,32	28,90± 0,44	30,61± 0,32	8,98± 0,31	11,82± 0,50	18,98± 0,37	17,86± 0,19	0,94± 0,01	0,93± 0,01
IV group									
71,79± 0,52	67,89± 0,33	28,21± 0,52	32,11± 0,33	8,82± 0,43	13,54± 0,51	18,46± 0,28	17,66± 0,19	0,93± 0,02	0,91± 0,02

In the final period of rearing animals of groups II and IV after transfer from fattening to a feedlot, they were distinguished by a relatively high level of dry matter growth in the average meat sample. It is important to note that the period from 15 to 18 months. at different levels of productivity, a relatively low (1.71% and 3.90%) growth rate of dry matter was observed in young animals of both breed groups of the Ural Hereford, which, apparently, is still due to the late maturation and long growth of the Herefords of the Ural selection. In the final fattening period, despite the remaining comfortable conditions for feeding and keeping, the intensity of accumulation of dry matter in the meat of bulls was relatively low, in comparison with the groups of castrates. It is likely that non-castrated animals filled intramuscular fat depots during the first stage of intensive fattening, and the increase in the studied indicator at the second stage of fattening occurred mainly as the mass of subcutaneous and intermuscular adipose tissue increased. So, in the period from 15 to 18 months. the specific gravity of dry matter in the average sample of meat from bulls of both genetic groups increased by 3.18 and 1.71%. When considering the dynamics of dry matter in meat in a more general sense for the entire period of cultivation, the bull-calves of both genotypes were inferior in terms of this indicator to the castrates-analogues by origin. Among castrates, the descendants of Shagatai cattle were characterized by the maximum value of the proportion of dry matter in the pulp. With a relatively equal protein content in the pulp of carcasses of bulls and castrates of different genetic groups, the highest fat content at the age of 15 months. found in gobies. They outperformed castrates of origin, respectively, by 1.56% ($P>0.95$) and 0.16% ($P<0.95$). These data indicate that different growing technologies have left a certain imprint on the nutritional value of meat.

The calm state of the young animals of groups I and III, apparently, contributed to the intensification of the process of fat accumulation in the body. Shagatai bulls were characterized by the highest amount of fat in the pulp - by 1.96% ($P>0.99$) more than in half-bred peers Ural Hereford × Shagatai cattle. It should be noted that the meat of castrates of the same genotypes that were on the pasture contained noticeably less fat. In all experimental bulls, the highest rates were found in the conditions of the feedlot. Differences between the groups of young animals in terms of fat accumulation were also traced in the subsequent period, when the castrates were transferred to the feedlot, as a result of which all animals were placed in absolutely equal conditions for feeding and keeping.

Conclusion. Our data indicate an increase in fat content and a decrease in protein in minced meat with age in young animals of all genetic groups. The results are presented in table 2.

It is characteristic that the process of accumulation of adipose tissue in castrates of Shagatai cattle and in its crossbreeds from Ural Hereford bulls was 6.76 and 4.72% more intense, while in bulls - analogues by origin - 4.46 and 2.84%.

Meanwhile, the peculiarities of the intrabreed belonging of the experimental young animals contributed to the manifestation of certain differences in fat formation in the body.

The greatest difference in the content of fat in the pulp of the carcass between Shagatai cattle and its breed with the Ural Hereford was observed at the age of 18 months.

In Shagatai bulls and castrates, the content of fat in meat was higher, respectively, by 3.58% ($P>0.99$) and 2.60% ($P>0.95$), than in half-bred peers from Herefords of the Ural selection.

Table 2 – The chemical composition of the longest back muscle at 18 months ($X \pm S_x$)

Index				
Humidity	Dry substance	including		
		fat	protein	ash
I group				
76,72±0,738	23,28±0,738	2,82±0,119	19,48±0,603	0,98±0,019
II group				
76,38±0,675	23,62±0,676	3,34±0,082	19,30±0,584	0,98±0,020
III group				
76,71±0,659	23,29±0,659	2,44±0,082	19,88±0,558	0,97±0,020
IV group				
75,23±1,190	23,47±1,190	2,92±0,031	19,56±0,818	0,99±0,006

The quality of meat is also characterized by the ratio of protein and fat.

In the pulp of carcasses of Shagatai bulls at the age of 15 months. the parameters of this ratio were 1:0.58, castrates - 1:0.51, and at 18 months. – 1:0.88 and 1:0.95, respectively, in analogues Ural Hereford × Shagatai cattle at 15 months. this ratio was 1:0.47 in group III and 1:0.48 in group IV, and at 18 months, respectively, 1:0.66 and 1:0.77. It is known that the nutritional value of meat is largely determined by the chemical composition of muscle tissue, which is the main component of the carcass. Data on the chemical composition of the longissimus dorsi muscle show a significant increase in fat content with the age of the animals and a decrease in the amount of moisture. At the age of 15 months. the greatest accumulation of fat in muscle tissue was found in bulls of both genotypes grown in a feedlot. The difference in their favor, in comparison with castrati-analogues by origin, kept at that time on natural pastures, was 0.18-0.25%. Animals of origin of Shagatai cattle were distinguished by a high fat content in the longissimus dorsi muscle: the advantage over their peers of the Ural Hereford breed was 0.27% ($P > 0.95$) among bulls, and 0.20% ($P < 0.95$) among castrates. The increase in fat content in muscle tissue in the final fattening period in Shagatai bulls was 0.69%, in crossbred bulls 0.58%, castrates, respectively, 1.46 and 1.24%.

However, at 18 months young Shagatai cattle × Ural Hereford were inferior to their peers on the maternal basis by 0.38-0.42% ($P < 0.95$; $P > 0.95$).

REFERENCES

- 1 Gussenov, B. Sh. The development of foreign trade in the era of globalization [Text]/ B. Sh. Gussenov [and etc.] // Espacios. Vol. 39 (Number 47). - 2018.- P. 22.
- 2 Dyrka, S. The main aspects of the development of foreign economic activity in the era of globalization [Text]/ S. Dyrka [and etc.] // Bulletin of national Academy of sciences of the Republic of Kazakhstan. Volume 6, Number 376). - 2018. - P. 234 – 238.
- 3 Iskakov, A.J. Agriculture of the Republic of Kazakhstan: yesterday and today [Text]/ Iskakov, A.J. //Journal Bulletin of the Treasury. - 2010.- P. 22.
- 4 Apple, JK .Yancey JWS Water-holding capacity of meat In: Kerth CR (ed) The science of meat quality [Text]/ JK. Apple // Wiley-Blackwell, Ames. - 2013.- P. 119–146.
- 5 Lawrie, R.A. Lawrie's Meat Science [Text]/ R.A. Lawrie // 6th Edition, Woodhead, Cambridge.- 2006.- P. 11-30.
- 6 Dzhulamanov, K.M. Genetic and paratypical factors of formation of breeding and productive qualities of Kazakh white-headed and Hereford cattle breeds [Text]/ K.M. Dzhulamanov // abstract. diss... Doctor of Agricultural Sciences Orenburg. -2008.- P. 49.
- 7 Dzhulamanov, K.M. Method of forecasting and evaluation of meat productivity of herefords [Text]/ K.M. Dzhulamanov [and etc.] // Bulletin of meat cattle breeding. -2015.- No.4 (92). - P.21-26.
- 8 Dzhulamanov, E.B. Breeding of Hereford cattle to increase meat productivity [Text]/ E.B. Dzhulamanov [and etc.] // Bulletin of the Buryat State Agricultural Academy named after Fillipov, V.R. - 2017.- No.1(46).- P. 29-35.

9 Dubovskova, M.P. Indicators of natural resistance and immunological markers in breeding work [Text]/ M.P. Dubovskova [and etc.] // Prospects for the development of beef cattle breeding and reserves for increasing beef production: Collection of scientific tr. VNIIMS. –Orenburg.- 2001.- Issue 54.- P.27-31.

10 Dubovskova, M.P. The use of meat breeds of French-Canadian breeding [Text]/ M.P. Dubovskova // Dairy and meat cattle breeding. -2003.-No.6. - P.54-56.

11 Dubovskova, M.P. Superiority of crossbreeds over the Kazakh white-headed/ M.P.Dubovskova [and etc.] // Animal Husbandry of Russia. -2008.- No. 4. - P. 56-59.

12 Dubovskova, M.P. New genotypes of the Kazakh white-headed breed - a source of high-quality beef production[Text] / M.P.Dubovskova //Theory and practice of meat processing.- 2011.- No.1. -P.11-13.

13 Dzhulamanov, K.D. Slaughter qualities of the Shagtai type of Kazakh white-headed cattle and its crossbreeds with Ural [Text] / K.D. Dzhulamanov [and etc.] // Proceedings of the Orenburg State Agrarian University.- 2015.- 6 (56). -P.130-133.

14 Dubrovin, A.I. Ecological and nutritional assessment of meat of bulls of different breeds, fattened on diets with excessive content of heavy metals [Text] / A.I. Dubrovin [and etc.] // Zootechnia. -2012. -No. 4.- P.14-16.

15 Durdusov S.D. Beef cattle breeding in Kalmykia[Text] / S.D. Durdusov // Zootechnia. - 2000.-No.11.- P.10-11.

16 Durov, A.S. Evaluation of genealogical lines of cattle of the Hereford breed at different stages of breeding [Text] / Durov, A.S. // Bulletin of the Altai State Agrarian University. -2015. - №12.(134).-P.93-97.

17 Dusaeva, E.M. The system of managing the competitiveness of agricultural sector products[Text]/ E.M. Dusaeva // Bulletin of the Orenburg State University.- 2004. -No. 1. –P. 88-91

18 Duskaev, G.K. Features of industrial and innovative development of the agro-industrial complex economy based on beef cattle breeding [Text] / G.K. Duskaev [and etc.] // Bulletin of beef cattle breeding. -2013. -No.5 (83).-P.78-82.

19 Dyuldina, A.V. Meat productivity of Aberdeen Angus bulls of various origin[Text] / A.V. Dyuldina // Dairy and meat cattle breeding.- 2016.- No.8. -P.31-33.

20 Eliseva, V.G. Histology. Moscow "Medicine"[Text] / V.G. Eliseva [and etc.]//.-1972.- P.611c.

21 Eremenko, V. Improvement of meat breeds of cattle [Text] / V.Eremenko [and etc.]//Dairy and meat cattle breeding. -2005. -No.6. -P. 17-19.

22 Amerkhanov, Kh.A. Indicators of meat productivity of bulls when assessing their own productivity [Text] / Kh.A. Amerkhanov [and etc.]// Zootechny.- 2011. -No.5. -P.13-15.

23. Belomytsev, E.S. The main directions of increasing beef production [Text]/ E.S. Belomytsev // Problems of beef cattle breeding: tr. VNIIMS. Orenburg.- 1994.- Issue 47. - P.32-36.

ТҮЙІН

Батыс Қазақстан облысында өсірілген қазақтың ақбас тұқымды жануарлары жоғары өнімділігімен ғана емес, сонымен қатар қатал континенттік климатқа бейімделуімен де ерекшеленеді.

Мақалада 15 және 18 айлық жас аралығындағы қазақ ақбас тұқымының орташа сынамасы - тартылған ет, ең ұзын арқа бұлшықеті және шикі майының химиялық құрамы сипатталған.

Қазақтың ақбас тұқымы қазіргі уақытта отандық етті мал шаруашылығының негізін құрайды. Бұл тұқымның жануарлары отандық күрт континентальды климаттың жағдайына бейімделуімен ерекшеленеді және елдің барлық дерлік климаттық аймақтарында сәтті өсіріледі. Олар тек төзімділікпен ғана емес, сонымен қатар жемге деген талғампаздықпен, керемет салмақпен және жоғары ет өнімділігімен ерекшеленеді. Тұқым әртүрлі шөпті жайылымдарға тез бейімделеді.

Туылған кезде бұқашықтардың салмағы 27-ден 30 кг-ға дейін болуы мүмкін, ал ересек бұқалардың салмағы 800-900 кг, кейбіреулері 1100 кг-ға жетеді. Сиырлардың салмағы 500-550 кг, кейбір даралар 780 кг-ға дейін жетуі мүмкін. Қарқынды бордақылау кезінде 18 айлық бұқашықтардың тірі салмағы 540-550 кг, ал сою өнімділігі 62-64% құрайды.

Еттің өзгеруіне әсер ететін факторларға ерекше назар аударылады. Акуыздық заттардың функционалдық қасиеттері әсер етеді. Еттің энергетикалық құндылығы мен бұқа етінің тағамдық құндылығы қарастырылады. Біз алған мәліметтер барлық генетикалық топтардағы жас жануарларда жасына қарай тартылған ет құрамындағы майдың жоғарылауын және акуыздың төмендеуін көрсетеді.

Орал герефорд тұқымды бұқалардан алынған шағатай ірі қарасының кастраттарында және оның будандарындағы май тінінің жиналу процесі 6,76 және 4,72%-ға қарқынды болса, шығу тегі бойынша аналогтардағы бұқаларда - 4,46 және 2,84%-ға тән. Сонымен қатар, тәжірибелік жас жануарлардың тұқымшыл ерекшеліктері денеде майдың пайда болуындағы белгілі бір айырмашылықтардың көрінуіне ықпал етті.

Шағатай малы мен оның Орал герефордымен тұқымы арасындағы ұшаның целлюлозасындағы майдың ең үлкен айырмашылығы 18 айлық жасында байқалды. Шағатай бұқалары мен кастраттарының ет құрамындағы май мөлшері Орал селекциясының герефордтарының жартылай қанды құрдастарына қарағанда тиісінше 3,58 % ($P>0,99$) және 2,60 % ($P>0,95$) көп болды.

Еттің сапасы акуыз бен майдың арақатынасымен де сипатталады. 15 айлық Шағатай бұқаларының ұшаларының целлюлозасында бұл қатынастың параметрлері 1:0,58, кастраттар - 1:0,51, ал 18 айда - 1:0,88 және 1:0,95 болды, сәйкесінше, аналогтарда Орал герефорд × Шағатай малы 15 айда бұл қатынас III топта 1:0,47 және IV топта 1: 0,48, ал 18 айда сәйкесінше 1:0,66 және 1: 0,77 болды.

РЕЗЮМЕ

Разводимые в Западно-Казахстанской области животные казахской белоголовой породы отличаются не только высокой продуктивностью, но и приспособленностью к суровому резко континентальному климату.

В статье описывается химический состав средней пробы мяса - фарша, длинейшей мышцы спины и жира сырка казахской белоголовой породы в возрасте 15 и 18 месяцев.

Казахская белоголовая порода в настоящее время составляет основу отечественного мясного скотоводства.

Животные этой породы уникальны своей приспособленностью к условиям отечественного резко континентального климата и успешно разводятся практически во всех климатических зонах страны.

Отличаются не только выносливостью, но и не привередливостью к кормам, великолепным набором веса и высокой мясной продуктивностью.

Порода быстро приспосабливается к пастбищам с разным травостоем. При рождении молодые бычки могут весить от 27 до 30 кг. Вес взрослых быков 800-900 кг, некоторые достигают 1100 кг. Коровы весят 500-550 кг, отдельные особи могут набирать до 780 кг. При интенсивном откорме бычки в 18-месячном возрасте имеют живую массу 540 - 550 кг, а убойный выход мяса составляет 62-64%.

Особое внимание уделяется факторам, влияющим на изменение мяса. Затрагиваются функциональные свойства белковых веществ. Рассматривается энергетическая ценность мяса и пищевая ценность мяса бычков. Полученные нами данные свидетельствуют о повышении содержания жира и снижении протеина в мясе-фарше с возрастом у молодняка всех генетических групп. Характерно, что процесс накопления жировой ткани у кастратов шагатайского скота и у его помесей от быков-производителей уральского герефорда проходил на 6,76 и 4,72 % интенсивнее, тогда как у бычков - аналогов по происхождению – 4,46 и 2,84 %.

Между тем, особенности по внутрипородной принадлежности подопытного молодняка способствовали проявлению определенных различий по жиरोобразованию в организме.

Наибольшая разница по содержанию жира в мякоти туши между шагатайским скотом и его породности с уральским герефордом наблюдалась в 18-месячном возрасте.

У шагатайских бычков и кастратов содержание жира в мясе было больше, соответственно, на 3,58 % ($P>0,99$) и на 2,60 % ($P>0,95$), чем у полукровных сверстников от герефордов уральской селекции.

Качество мяса характеризуется также соотношением протеина и жира. В мякоти туш шагатайских бычков в возрасте 15 мес. параметры этого соотношения составляли 1:0,58, кастратов – 1:0,51, а в 18 мес. – 1:0,88 и 1:0,95, соответственно, у аналогов уральский герефорд × шагатайский скот в 15 мес. данное соотношение составляло в III группе 1:0,47 и IV группе 1:0,48, а в 18 мес., соответственно, 1:0,66 и 1:0,77.