

ТҮЙІН

Қазақтың бактриан тұқымы мен түркімен дромедары, Аруана тұқымының жас түйелерінің Қазақстан жерінде туғаннан бастап 48 айға дейінгі жас аралығындағы биологиялық дамуы талқыланды.

Зерттеу объектісі ретінде Балқаш аймағындағы қазақтың бактриан тұқымы мен Отырар-Түркістан аймағындағы түркімен дромедары тұқымының жас түйелері алынды.

Зерттеулер 3 күннен 48 айға дейінгі жас аралығында жүргізілді. Жас малдардың дене бітімінің параметрлері мен тірілей салмағының өзгеруіне талдау өлшемдері алу (өркеш аралығының биіктігі, дененің қиғаш ұзындығы, кеуде орамы, жіліншік орамы) және тірілей салмағы өлшеп орташа тәуліктік өсімдерді есептеу арқылы жүргізілді. Жас малдардың тірілей салмағын стационарлық таразыда 1 кг дәлдікпен өлшеп немесе Қазақстан Республикасы № 15886 өнертабыстық Патенті бойынша жастық коэффициентін қолданып есептеу арқылы анықтады.

Ағзаның сандық көрсеткіштерінің жоғарылауы туғаннан 48 айға дейінгі жас аралығындағы тірілей салмағының тәуліктік өсу динамикасы арқылы анықталады. Жүргізілген зерттеулер бойынша Қазақтың бактриан тұқымының жас еркек түйелерінің есептік кезеңдегі орташа тәуліктік өсімі 193,9 г-нан 665,8 г-ға дейін, ұрғашы жас түйелерде 201,5 г-нан 628,7 г-ға дейін өзгерді. Түркімен дромедар тұқымының еркек жас түйелерінің орташа тәуліктік өсімі 180,5 г-нан 709,2 г-ға дейін, ал ұрғашы малдарда 207,2 г-нан 655,2 г-ға дейін өзгерді.

Туылғаннан бастап 48 айға дейінгі жас аралағында еркек малдарда да, ұрғашы малдарда да дене кеңдігі, жинақылық, дене толықтығы индекстері артады. Сүйектілік индексі шамалы өзгереді.

РЕЗЮМЕ

Была проанализирована биология развития молодняка верблюдов породы казахский бактриан (*Camelus bactrianus*) и туркменского дромедара (*Camelus dromedarius*) породы Арвана от рождения до 48-месячного возраста в условиях Казахстана.

Объектом исследований служил молодняк верблюдов породы казахский бактриан Прибалхашской зоны и туркменский дромедар Отырар-Туркестанской зоны Казахстана.

Исследования проводили с 3-дневного возраста до 48-месячного возраста. Анализ изменения параметров телосложения и массы тела молодняка проводился путем снятия промеров (высота между горбами, косая длина туловища, обхват груди, обхват пясти) и определения живой массы с последующим вычислением среднесуточных приростов. Живую массу молодняка определяли путем взвешивания на стационарных весах с точностью до 1,0 кг или расчетным способом с использованием возрастного коэффициента согласно Патента Республики Казахстан на изобретение №15886.

Увеличение количественных параметров организма определялось динамикой среднесуточного прироста живой массы от рождения до 48-месячного возраста. В проведенных исследованиях среднесуточные приросты за учетный период у молодняка верблюдов породы казахский бактриан варьировали от 193,9 г до 665,8 г у самцов, а у самок - от 201,5 г до 628,7 г соответственно. Среднесуточные приросты живой массы у молодняка верблюдов туркменского дромедара варьировали от 180,5 г до 709,2 г у самцов, а у самок - от 207,2 г до 655,2 г соответственно.

От рождения до 48-месячного возраста индексы формата, широкотелости, сбитости и массивности увеличивались как у самцов, так и у самок. Индекс костистости менялся незначительно.

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PRODUCTIVITY OF THE ABERDEEN-ANGUS BREED BRED IN DIFFERENT REGIONS OF THE REPUBLIC OF KAZAKHSTAN

ANNOTATION

The article presents the genealogical structure, breed class composition of the herd, live weight of bulls-producers, cows, young stock, and milk yield of Aberdeen-Angus cows bred in different regions of the Republic of Kazakhstan, as well as the results of the study of the growth and development of young stock of the Aberdeen-Angus breed from 8 to 15 months of age for the last two years.

The live weight of animals of meat breeds is the main indicator of meat productivity. Animals of the Aberdeen-Angus breed—bulls, producers, cows, and young stock at 8–15 months of age by live weight—in all age periods exceeded the requirements of the breed standard. At the same time, in 2023, there will be a decrease in the average daily gain compared to 2022. Farms need to pay attention to the issues of balanced feeding of young animals, applying feed additives, or using various feeds.

Selection and directed breeding of animals with the best performance indicators and genetic potential allowed us to achieve stable parameters of animal productivity. In general, farms conduct systematic breeding work to improve the Aberdeen-Angus breed.

Key words: *Aberdeen-Angus breed, live weight, average daily gain, feed costs, breeding bulls, milk yield*

Introduction. Domestic scientists in the republic must preserve and improve the productive and breeding qualities of domestic and imported cattle by creating effective selection and pedigree work.

The purpose of breeding work in cattle breeding is to change the genetic fund of animals and improve their traits. The means of changing the gene pool is breeding, which uses productivity as the leading indicator for changing this trait at the genetic level. The breeding value of livestock is one of the links in the practical implementation of the breeding program in herds and populations with the purpose of directed formation of the intended hereditary traits in animals and selection of desirable individuals in determining the breeding value of bulls [4].

Materials and methods of research. The breeding value of animals was determined according to "Instruction on the bonding of cattle of beef breeds" (Order of the Ministry of Agriculture of the Republic of Kazakhstan from 16.06.2000, № 162).

The live weight of bulls-producers and cows was determined by weighing animals before feeding. Cows' milkiness was determined by the live weight of calves at 6 months of age.

The growth intensity of young stock was studied based on the monthly individual weighing of steers grown in different housing and feeding conditions. Based on the weighing results during the growing period, the productivity indicators of young animals were determined: live weight and average daily gain.

Results and their discussion. Studies on improving selection and breeding work and forming the necessary gene pool of the Aberdeen-Angus breed were conducted in farms "Sisengaliev," "Musa," and "Korzhyh" in the West-Kazakhstan region, LLP "Nur-Zhailau NS" in the Amangeldinsky district of the North-Kazakhstan region, and farm "Ardak" in the Akkuly district of the Pavlodar region.

Genealogical structure of the Aberdeen-Angus breed is presented on belonging to bulls-producers EG FRONTIER 678 OF107, EG POUND MARKER 612 OF415, S A V Premier 0096, S A V Viper 0986, E G POUND MARKER 612 OF 415, BUFFALOS FINAL PRODUCT 12, BUFFALOS MIDLANDER 143, RANDY'S REACH OUT 112, BUFFALOS KING EMPIRE 133, BUFFALOS CC&7 JR 118, BUFFALOS SURTITLE 136, BUFFALOS SIR CC&7 18, DF TOTAL 1729, KAF N61, SCHELKES K37 ABERDEEN 169, SCHELKES IRONWOOD 1380A, SCHELKES K37 ABERDEEN 171, SCHELKES EXPEDITION 1063M, SCHELKES K37 ABERDEEN 164, Schelskes Expedition 1064M, SCHELKES K37 ABERDEEN 159, SCHELKES K37 ABERDEEN 187, SCHELKES ON TARGET 1067M, SCHELKES 747 LEGEND 134, Connealy True Answer 892.

The Aberdeen-Angus breeding herd, which is contained in different regions of the Republic of Kazakhstan, is mainly represented by purebred animals. The breed class composition of the Aberdeen-Angus breed herd, a crucial factor in our research, is detailed in Table 1. This composition provides insights into the diversity and purity of the breed in different regions.

Table 1 – Pedigree class composition of Aberdeen-Angus breed herds

Name of farm	Year	By herd								On cows							
		Elite-Record		Elite		Class I		Total		Elite-Record		Elite		Class I		Total	
		head	%	head	%	head	%	head	%	head	%	head	%	head	%	head	%
Farm "Musa"	2022	67	80,4	16	19,6			84	100	34	67,2	16	32,6			50	100
Farm "Sisengaliev"	2022	78	8,8	18	20,6	62	70,6	88	100	46	22,9	96	47,7	59	29,4	20	100
	2023	15	14,2	35	31,6	60	53,9	117	100	10	0,3	76	26,2	20	70,5	29	100
Farm "Korzhyh"	2022	34	23,9	41	28,9	67	47,2	142	100	23	23	24	24	53	53	10	100
LLP "Nur-Zhailau NS"	2022	35	39,4	35	39,1	19	21,4	89	100	19	40,5	21	43,0	68	14,1	48	100
	2023	18	32,9	26	47,7	11	20,3	76	100	18	32,6	26	47,1	11	20,3	56	100
Farm "Ardak"	2022	26	24,3	72	67,2	89	8,3	107	100	24	39,7	36	60,3	-	-	60	100
	2023	26	27,7	61	63,0	82	8,6	95	100	17	40,0	25	60,5	-	-	42	100

According to the data of the analysis of the class composition of farms, it can be characterized that farms conduct systematic breeding work to improve the Aberdeen-Angus breed but have some peculiarities in the introduction of selection and breeding work with the specifics of farms.

Animals obtained due to the conducted work are registered in the Republican Chamber. The pedigree class composition of the herd of animals of farm "Musa" according to the data of 2022 is

represented by elite-record class - 80,2 %, elite - 19,8 %, and all cows are referred to the highest classes.

The breed class composition of the herd of the farm "Sisengaliev" in 2022 is represented by animals of elite-record class—8.8%, elite—20.6%, I class—70.6%. The class "elite - record" corresponds to 22.9% of cows, class "elite" corresponds to 47.7% of cows, and 1 class corresponds to 29.4% of cows from the whole herd.

According to the data of 2023 breed class composition, the herd of farm "Sisengaliev" is represented by animals of elite-record class—14.2%, elite—31.9%, and I class—53.9%. The number of cows in the class "elite-record" corresponds to 0.3%, to the class "elite" - 26.2%, and to 1 class—70,5% of cows.

According to the 2022 appraisal of the farm "Korzbyn," the specific weight of elite and elite-record class animals amounted to 52.8%, and the remaining 47.2% of animals met the requirements of 1 class. According to the appraisal results, the number of purebred cows amounted to 100 heads, of which 47% were cows of higher classes.

The class composition of the herd in 2022 LLP "Nur Zhailau NS" is represented by animals of class elite-record-39,4%, elite-39,0%, 1 class-21,6%, the total number of cows amounted to 481 heads, of which "elite-record" corresponds to 40,5%, to class "elite" - 43,6%, and to 1 class 68 (14,1%) heads of cows.

The pedigree class composition of herd 2023 of LLP "Nur Zhailau NS" is represented by animals of elite-record class - 32,9%, elite - 47,1%, I class - 20,0%. The total number of cows amounted to 566 heads, of which "elite-record" - 32,9 %, to class "elite" - 47,1 %, 1 class - 20 % of cows.

"Ardak" farm was assigned to the highest bonding classes according to the monitoring results for 2022 - 91,7%, 1 class - 8,3%. The total number of cows amounted to 605 heads, of which "elite - record" - 39.7%, to the class "elite" - 60.3%.

Breed class composition of the herd of animals in the farm "Ardak" 27,7 % of animals are referred to the class elite record, 63,7 % of heads to the class elite, and 8,6 % of heads in the 1st class. All the cows are classified into the highest classes.

We have studied the indicators of the live weight of bulls - producers, and cows of the above-mentioned farms (Table 2).

Table 2 – Live weight of bulls-producers and cows of Aberdeen-Angus breeds, kg

Farms	Age, years											
	Breeding bulls						Cattle					
	3		4		5 and older		3		4		5 and older	
	n	X±Sx	n	X±Sx	n	X±Sx	n	X±Sx	n	X±Sx	n	X±Sx
1	2	3	4	5	6	7	8	9	10	11	12	13
2022												
Farm "Musa"	-	-	-	-	-	-	85	485,1±17,30	39	518,4±19,7	384	559,22±21,54
Farm "Sisengaliev"	-	-	-	-	-	-	400	489,56±26,05	-	-	-	-
Farm "Korzbyn"	-	-	-	-	-	-	26	447,8±5,05	64	460,9±4,58	-	-
LLP "Nur-Zhailau NS"	9	703,7±2,85	-	-	-	-	106	465,1±7,03	37	487,8±5,19	338	493,7±4,98
Farm "Ardak"	15	680,0±2,14	10	770,0±1,29	10	805,0±2,15	134	430,0±2,17	12	480,0±3,18	273	560±2,09
2023												
Farm "Sisengaliev"	-	-	-	-	14	842,4±2,82	-	-	31	520,0±8,63	-	-

1	2	3	4	5	6	7	8	9	10	11	12	13
LLP "Nur-Zhailau NS"	-	-	-	-	-	-	117	430,5±2,22	77	498,0±2,18	372	481,4±2,58
Farm "Ardak"	5	657,8±1,98	5	788,9±2,01	3	822,0±2,24	101	438,0±1,5	13 1	482,0±9,8	223	521,0±10,12

From the data in Table 2, in farm "Musa" in 2022, cows 3 years old exceeded the breed standard by 21.3%, 4 years old by 17.7%, and 5 years and older by 16.5%.

According to the data of boniting 2022, KH "Sisengaliev" cows at 3 years of age exceeded the breed standard by 22.39%. According to the data of 2023, the live weight of bulls-producers at the age of 5 years and older exceeded the breed standard by 9.4%, and cows at the age of 4 years-18.2%.

According to the results of bonding 2022 of the farm "Korzbyn," cows at the age of 3 exceeded the breed standard by 11.9% and by 4.75% at the age of 4.

In LLP "Nur Zhailau NS," according to the results of research in 2022 live weight of bulls-producers at the age of 3 years exceeded the breed standard by 8.3%, while the live weight of cows at the age of 3 years exceeded the breed standard by 16.3%, 4 years of age by 10.8%, at the age of 5 years and older by 2.8%.

According to the 2023 LLP "Nur Zhailau NS data," the live weight of cows at 3 years of age exceeded the breed standard by 7.6%, at 4 years of age by 13.2%, and at 5 years of age and older by 0.2%.

According to the 2022 bonding data, the live weight of bulls-producers of the farm "Ardak" exceeded the breed standard at the age of 3 years by -4.6%, at the age of 4 years by 8.4%, at the age of 5 years and older by 4.4%. The live weight of cows exceeded the breed standard at 3 years of age by --7.5 %, at 4 years of age by 9.0%, and at 5 years and older by 16.6%.

According to the results of monitoring in 2023 in farm "Ardak," the live weight of bulls-producers at the age of 3 years corresponded to the breed standard at the age of 4 years by 11,1%; at the age of 5 years and older by 6,7%. The live weight of cows exceeded the breed standard at 3 years of age by --9.5 %, at 4 years of age by 9.5%, at 5 years and older by 8.5%.

The selection and directed breeding of animals with the best performance and genetic potential allowed stable parameters of animal productivity to be achieved. In general, the study's results showed that the live weights of bulls, producers, and cows from different farms mainly exceeded the requirements of the breed standard.

We have studied the milk yield of Aberdeen-Angus cows by the live weight of young stock at 6 months of age (Table 3).

Table 3 – Milk yield of Aberdeen-Angus cows, kg

Name of farms	Age group			
	Bulls		Chicks	
	Age, month			
	n	$\bar{X} \pm S_x$	n	$\bar{X} \pm S_x$
Farm "Musa"	168	196,1±14,08	141	175,6±11,3
Farm "Sisengaliev"	104	194,1±12,75	97	181,2±16,2
LLP "Nur-Zhailau NS"	44	187,5±1,04	38	166,5±0,20
Farm "Ardak"	247	182,0±2,86	274	168,9±1,81

It follows from the data in Table 3 that the live weight of steers was at the level of elite and elite-record class, which is 7.05 - 15.35% higher compared to the breed standard; a similar pattern in live weight was observed in heifers.

In general, cows in different economic conditions were characterized by high milk yield.

As is known, live weight is an important indicator characterizing the growth and development of young stock—its study during growth gives a fairly objective assessment of meat productivity.

To characterize the growth and development of young animals, we studied the results of periodic weighing. Table 4 presents the dynamics of live weight and intensity of growth of the young Aberdeen-Angus breed.

Table 4 – Dynamics of live weight and growth intensity of young Aberdeen-Angus breed (X±Sx)

Farms	n	Live weight (kg) at the age, months.			Average daily growth from 8 to 15 months, g
		8	12	15	
		X±Sx	X±Sx	X±Sx	
Year 2022					
Bulls					
Farm "Musa"	32	274,8±3,21	340,6±2,70	402,5±3,45	764,4±3,21
Farm "Sisengaliev"	85	245,3±1,87	333,3±0,76	390,6±3,01	727,7±2,54
Farm "Korzhyh"	5	229,4±3,23	326,4±2,14	406,0±4,81	840,9±33,27
LLP "Nur-Zhailau NS"	114	227,4±1,3	318,6±0,9	376,5±1,9	710,0±0,84
Farm "Ardak"	-	-	-	-	-
Chicks					
Farm "Musa"	203	229,1 ±3,84	297,1±4,20	329,1±3,80	568,5±15,36
Farm "Sisengaliev"	140	226,1±2,89	300,3±2,13	381,5±3,12	762,5±14,85
Farm "Korzhyh"	5	205,4±3,61	275,2±1,85	333,0±4,35	605,7±8,81
LLP "Nur-Zhailau NS"	134	203,2±0,6	295,9±1,7	333,0±1,2	721,8±2,03
Farm "Ardak"	10	202,0±2,2	260,1±1,65	305,5±2,15	431,0±19,62
Year 2023					
Bulls					
Farm "Sisengaliev"	97	208,0±2,15	293,1±2,63	350,1±3,24	676,6±25,76
LLP "Nur-Zhailau NS"	129	229,5±2,7	318,0±4,2	378,5±3,9	685,0±2,5
Farm "Ardak"	15	213,0±1,99	305,5±2,78	366,0±3,56	728,5±27,45
Chicks					
Farm "Sisengaliev"	98	186,6±1,96	254,2±2,38	291,1±2,84	497,6±28,21
LLP "Nur-Zhailau NS"	129	229,5±2,7	318,0±4,2	378,5±3,9	685,0±2,5
Farm "Ardak"	15	191,2±2,12	260,4±3,10	308,7±3,02	559,5±29,12

The live weight of young Aberdeen-Angus breed at all ages exceeded the breed standard. The average daily gain in steers of different farms in 2022 was 710.0-840.9 g, and in 2023, 676.6-728.5 g. The average daily gain in heifers in 2022 was between 431-762.5g, and in 2023, 497.6-685.0g. The average daily gain in 2023 was lower than in 2022, which shows the unstable fodder base of the farms. In all age periods in different economic conditions, there were jump-like dynamics, both increase and decrease in live weight, but at the same time, the results corresponded to the breed standard. It is necessary to pay attention to the issues of balanced feeding of young animals, applying feed additives, or using various feeds.

In 2022, the farm "Ardak" realized steers for breeding sale. Therefore, it was impossible to study the dynamics of live weight and growth intensity of steers.

Discussion of the results obtained. According to many researchers, under different environmental conditions, the productive qualities of animals are determined by its genetic potential.

The obtained data indicate that the animals showed quite high genetic potential for productivity under optimal feeding and housing conditions.

Conclusion. From the above studies, we can conclude that animals of the Aberdeen-Angus breed, bulls-producers, cows, and young stock at 8-15 months of age by live weight in all age periods exceeded the requirements of the breed standard. At the same time, in 2023, there was a decline in average daily gain compared to 2022. Farms need to pay attention to the issue of the balanced feeding of young stock.

To identify highly productive bulls, it is necessary to organize bull testing on their own productivity on farms.

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РЕЗЮМЕ

В статье приведена генеалогическая структура, породный классный состав стада, живая масса быков-производителей, коров, молодняка, молочность коров абердин-ангусской породы разводимых в различных регионах Республики Казахстан, а также результаты изучения роста и развития молодняка абердин-ангусской породы с 8 до 15 мес. возраста за последние два года.

Живая масса животных мясных пород является основным показателем мясной продуктивности. Животные абердин-ангусской породы быки- производители, коровы, молодняк в 8-15 месячном возрасте по живой массе во все возрастные периоды превышали требования стандарта породы. В то же время в 2023 году наблюдается уменьшение среднесуточного прироста по сравнению с 2022 годом хозяйствам необходимо обратить внимание на вопросы сбалансированного кормления молодняка, применяя кормовые добавки или использовать различные подкормки.

Отбор и направленное выращивание животных с лучшими показателями продуктивности и генетическим потенциалом позволили достичь стабильных параметров продуктивности животных. В целом хозяйства ведут планомерную племенную работу по совершенствованию абердин-ангусской породы.

ТҮЙІН

Мақалада Қазақстан Республикасының әртүрлі аймақтарында өсірілетін абердин-ангус сиырларының генеалогиялық құрылымы, табынның тұқымдық кластық құрамы, асыл тұқымды бұқалардың, сиырлардың, жас малдардың тірі салмағы, сүттілігі, сондай-ақ соңғы екі жылдағы 8 айдан 15 айға дейінгі жас абердин-ангус тұқым төлдерінің өсіп – жетілуін зерттеу нәтижелері берілген.

Етті малдың тірі салмағы ет өнімділігінің негізгі көрсеткіші болып табылады. Абердин-ангус тұқымының жануарлары, аталықтары, сиырлары, 8-15 айлық төлдері барлық жас кезеңдерінде тірі салмағы бойынша тұқым стандартының талаптарынан асып түсті. Бұл ретте 2023 жылы 2022 жылмен салыстырғанда орташа тәуліктік өсім төмендегені байқалады. Шаруашылықтар жас малдарды нормаға сәйкес азықтандыру, жемдік қоспаларды пайдалану немесе түрлі тыңайтқыштарды қолдану мәселелеріне назар аударуы қажет.

Ең жақсы өнімділік көрсеткіштері мен генетикалық потенциалы бар жануарларды іріктеу және мақсатты түрде өсіру мал өнімділігінің тұрақты көрсеткіштеріне қол жеткізуге мүмкіндік берді. Жалпы, шаруашылықтарда абердин-ангус тұқымын жақсарту мақсатында жүйелі түрде асылдандыру жұмыстары жүргізілуде.

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