жағдайларына тәуелсіз пп индексі ретінде кешенді селекциялық индексті ескеру қажет екенін атап өткен жөн. Кешенді сыныптың ең жоғары көрсеткіштері бар бұқалар саны көп болған кезде кешенді индекстері бар бұқалар саны азайды, бұл сыныптық бағалаудың сыртқы факторлардың жағдайларына тәуелділігін көрсетеді. Осылайша, гобилерді өз өнімділігі бойынша сынау нәтижелері сыныптық және индекстік бағалаудың әртүрлі сапалық және сандық көрсеткіштерімен сипатталды, бұл ет тұқымдарының гобилерін өз өнімділігі бойынша сынауды ұйымдастыру әдістемесін жетілдіру қажеттілігін тудырады.

УДК 636.082.2:636.2
МРНТИ 69.25.01, 69.25.14 ***DOI 10.56339/2305-9397-2022-4-3-99-107***

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BREEDING WORK WITH KAZAKH WHITE-HEADED CATTLE WITH THE FORMATION OF THE NECESSARY GENE POOL

ANNOTATION

The most obvious and important goal of selection is the maximum receipt of the economic effect from the implementation of activities aimed at increasing selection and breeding work. An equally important direction on the way to creating highly efficient animal husbandry is the widespread use of economic models. In practical work, the breeding value of an animal is determined by many features with different economic significance. According to the test results of Kazakh white-headed bulls on their own productivity, they were carried out in accordance with the «Instructions for evaluating beef bulls on their own productivity and offspring quality» (Almaty, 2010) - No. 1 dated December 26, 2009. checking and evaluating beef bulls for the quality of their offspring and testing bulls for their own productivity (Order of the Ministry of Agriculture of the Republic of Kazakhstan dated 19.07.2010, No. 456, as well as the «Instruction for grading cattle of beef breeds» (Order of the Ministry of Agriculture of the Republic of Kazakhstan dated 16.06 .2000, No. 162)). The studies were carried out in «Aisulu» farm, «Dongelek» farm, «Hafiz» farm, «Chapaevsky» LLP, «Eset» farm, «Zhannat» farm, «Tolegen» farm, «Alem» farm and «Naryn» farm West Kazakhstan region. The results of the study showed that in the farm «Aisulu» the live weight of bulls when removed from the test at the age of 15 months. amounted to 401.7 kg, with an average daily gain of 810.8 g with a feed consumption of 7.0 feed units. Also, the indicators of the class and index evaluation of bulls based on the results of their testing for their own productivity had a similar trend in the farms of the «Dongelek» farm, «Hafiz» farm, «Eset»и farm and «Naryn» farm and corresponded to the standard and higher.

Key words: *Kazakh white-headed, breed, selection, gene pool, live weight, class, cows, bulls, growth rate, test.*

Introduction. The most obvious and important goal of breeding is to maximize the economic effect of carrying out activities aimed at improving breeding work [1 – 5].

It is believed that setting a selection goal and determining selection criteria based on it are

fundamental principles in the development and organization of a scientifically based breeding program in beef cattle breeding.

Thus, the results of the introduction of the breeding program are largely determined by the improvement of the characteristics of the highest economic importance. It is necessary to take into account the rational use of additive genetic variability of quantitative traits in the selection of animals, which leads to the improvement of the evaluation system and the accuracy of identification of selection and genetic parameters of economically useful qualities of beef cattle. On the other hand, the result of breeding work in herds should justify the funds spent on its implementation.

Recently, there has been a change in the orientation of breeding selection in the populations of farm animals: the attention of breeders has shifted from assessing the typicality and severity of the breed towards improving productivity, both in purebred and crossbreed herds.

An equally important direction towards the creation of highly efficient animal husbandry is the widespread use of economic models [6].

In practical work, the breeding value of an animal is determined by many signs with different economic significance [7 – 10].

Thus, the simultaneous improvement of animals by several indicators allows to achieve the maximum possible genetic progress in accordance with economic goals, as well as to increase net profit, profitability of production and the total breeding value of the herd, which is a fundamental concept, the final goal of breeding, which is extremely rarely fully realized in animal husbandry

Materials and methods of research. The type of animals was determined by eye, taking into account the assessment of the exterior, features of the physique, the size of measurements and body indices. The growing technology was as follows: calves were suckled after birth for up to 8 months; after weaning they were transferred to rearing for 210 days; after feeding on natural pastures for 120 days. The total duration of cultivation and feeding was 540 days.

During the research period, all animals were kept in the same conditions. Rationing of feeding was carried out in accordance with the detailed norms of feeding farm animals, taking into account their physiological needs. The daily feeding rations were compiled taking into account the chemical composition of the feed of own production.

According to the weighing data, the absolute, average daily gains in live weight were calculated.

The study of linear growth was carried out by periods: at birth, at the age of 3, 6, 9, 12 and 15 months. The linear growth of experimental animals was determined by taking the following measurements: height at the withers, height in the sacrum, chest circumference, chest depth, chest width, width in makloki, oblique length of the trunk, girth of the pastern. On the basis of these measurements, the indices of physique were calculated: legginess, sprawl, downness, thoracic, pelvic-thoracic, massiveness and bony.

The breeding value of the genotypes of the studied breeds was determined based on the guidelines «Evaluation of bulls of meat breeds by the quality of offspring and testing of bulls by their own productivity, taking into account: growth intensity, feed payment and meat forms».

According to the results of the testing of Kazakh white-headed bulls by their own productivity, they were carried out in accordance with the «Instructions for the evaluation of bulls-producers of meat breeds by their own productivity and quality of offspring» (Almaty, 2010) - No. 1 of December 26, 2009. The decision of the NTS of the Ministry of Agriculture of the Republic of Kazakhstan, the inspection and evaluation of bulls-producers of meat breeds by the quality of offspring and the test of bulls on their own productivity (Order of the Ministry of Agriculture of the Republic of Kazakhstan dated 07/19/210, No. 456, as well as the «Instructions for the bonification of beef cattle» (Order of the Ministry of Agriculture of the Republic of Kazakhstan dated 06/16/2000, No. 162)).

The main signs of the self-productivity test were live weight at the age of 8 and 15 months, average daily live weight gain over a period of 8-15 months, feed costs per 1 kg of live weight gain, meat molds. A selection index was calculated for each trait, and a complex selection index was established for each bull.

Accounting of eaten feed during the control feeding of bulls of the «Aisulu» farm, «Alem» farm was determined individually, and for bulls of other farms - by the method of accounting for group feeding, which is allowed by the instructions.

Table 1 – Class composition of the Kazakh white-headed breed herd

Name of the farm	By herd										By cows									
	Elite-record		Elite		I class		II class		**generally**		Elite-record		Elite		I class		II class		**generally**	
	head.	%	head.	%	head.	%	head.	%	**head**	**%**	head.	%	head.	%	head.	%	head.	%	**head.**	**%**
«Aisulu» farm	141	21,0	313	46,4	220	32,6	-	-	**674**	**100**	118	21,7	252	46,4	143	31,9	-	-	**513**	**100**
«Dongelek» farm	450	51,3	286	32,6	142	16,1	-	-	**878**	**100**	139	56,3	104	42,1	4	1,6	-	-	**247**	**100**
«Hafiz» farm	49	7,6	250	38,9	328	51	-	-	**627**	**100**	17	5,0	109	32,3	196	58,1	-	-	**322**	**100**
«Chapaevsky» LLP	49	7,7	255	31,8	485	60,5	-	-	**801**	**100**	19	5,8	130	39,5	180	54,7	-	-	**329**	**100**
«Eset» farm	37	5,5	282	41,3	363	53,2	-	-	**682**	**100**	4	1,3	162	52,4	143	46,3	-	-	**309**	**100**
«Zhannat» farm	4	4,0	55	26,9	141	69,1			**204**	**100**	1	1,8	34	56,6	25	41,6	-	-	**60**	**100**
«Tolegen» farm	2	0,6	80	26,5	216	72,0	3	0,9	**301**	**100**	1	1,0	36	35,3	65	63,7	-	-	**102**	**100**
«Alem» farm	51	5,2	362	37,2	541	55,9	17	1,7	**971**	**100**	31	7,6	193	47,2	182	44,5	3	0,7	**409**	**100**
«Naryn» farm	21	7,1	154	51,8	122	41,1	-	-	**297**	**100**	7	5,9	65	55,1	46	39,0	-	-	**118**	**100**

As can be seen from Table 1, according to the results of the individual bonitization of the entire herd in the Aisulu farm, 100% of the 674 heads are assigned to the desired type, fully comply with the minimum requirements of the Kazakh white-headed breed standard, including 141 heads assigned to the elite record class. or 21%, in the «Dongelek» farm (678 heads) – 450 heads. or 51.3%, «Hafiz» farm (627 goals.) – 49 heads or 7.6%, «Chapaevsky Breeding Plant» LLP (801 heads) – 49 heads, or 7.7%, «Eset» farm (682 heads.) – 37 heads, or 5.5%, «Zhannat» farm (204 heads) – 4 heads, or 4.0%, «Naryn» farm (297 heads) – 21 heads, or 7.1%, respectively.

In the «Tolegen» farm, 99.1% of the 301 heads met the minimum requirements of the breed standard, including the elite class-a record of 2 heads (0.6%), in the «Alem» farm out of 971 heads 98.3%, the elite class has a record of 51 heads or 5.2%, respectively.

According to the breeding stock, 513 heads of cows in the «Aisulu» farm 100% met the minimum requirements of the standard for the Kazakh white-headed breed, including 118 heads were assigned to the elite record class. or 21%, similar indicators were also observed in the remaining farms of the «Dongelek» farm (247 heads) – 139 heads, or 56.3%, «Hafiz» farm (322 goals) – 17 heads, or 5.0%, «Chapaevsky» farm (329 heads) – 19 heads, or 7.7%, «Eset» farm (309 heads.) – 4 heads, or 1.3%, «Zhannat» farm (60 heads) – 1 head, or 1.8%, «Naryn» farm (118 heads.) – 7 heads or 5.9%, respectively.

According to the breeding stock, 513 heads of cows in the «Aisulu» farm 100% met the minimum requirements of the standard for the Kazakh white-headed breed, including 118 heads were assigned to the elite record class. or 21%, similar indicators were also observed in the remaining farms of the «Dongelek» farm (247 heads) – 139 heads, or 56.3%, «Hafiz» farm (322 goals) – 17 heads, or 5.0%, «Chapaevsky» farm (329 heads) – 19 heads, or 7.7%, «Eset» farm (309 heads) – 4 heads, or 1.3%, «Zhannat» farm (60 heads.) – 1 head. or 1.8%, «Naryn» farm (118 heads) – 7 heads, or 5.9%, respectively.

In the «Alem» farm, 99.3% of 409 heads of breeding stock meet the breed standard and are classified as elite-record – 7.6% (31 heads), elite – 47.2% (193 heads) and Class I – 44.5% (182 heads). Cows with the lowest elite-record class turned out to be in the farms of the «Zhannat» farm and «Tolegen» farm.

Indicators of live weight of animals serve as the main indicator of the state of breeding work with the breed. Table 2 shows the indicators of the live weight of breeding bulls and cows in all age periods.

Table 2 – Live weight of bulls-producers and cows of the Kazakh white-headed breed, kg

Name of the farm	Age, years											
	Bulls-producers						Cows					
	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
«Aisulu» farm	-	-	9	943,3± 27,6	5	1057,2 ±40,4	64	464,9± 5,05	108	520,4± 5,56	170	537,0 ±3,95
«Dongelek» farm	4	770,6 ± 4,26	3	865,3 ± 5,34	3	945,7 ± 5,84	47	478,0± 7,10	56	500,9± 4,73	140	543,9 ±4,10
«Hafiz» farm	11	628,4± 5,7	-	-	-	-	95	442,2± 5,6	-	-	227	536,6 ±7,9
«Chapaevsky» LLP	14	371,2± 7,7	1	80	1	60	49	450,36± 7,25	178	502,32 ±8,96	102	539,85 ±9,06
«Eset» farm	10	421± 7,27	-	-	-	-	43	421,0± 6,70	152	476,7± 4,26	114	557,7 ±8,75
«Zhannat» farm	3	384± 4,53	-	-	3	680± 11,7	60	477,5± 10,25	-	-	-	-
«Tolegen» farm	2	425± 3,81	-	-	9	770± 5,7	39	417,5± 3,25	63	435,8± 5,35	-	-
«Alem» farm	7	504± 7,22	3	550± 3,98	5	621± 4,18	111	450± 6,11	21	494± 3,01	298	545± 5,18
«Naryn» farm	7	480± 4,25	2	542± 5,68	-	-	-	-	168	477± 9,24	-	-

From Table 2, there were 14 breeding bulls in the farm «Aisulu», of which 4 years of age - 9 heads, 5 years and older – 5 heads and all the bulls-producers belonged to the "elite-record" class. Similar indicators are also observed in the «Dongelek» farm (10 heads), 3-year–old - 4 heads, 4 – 3 heads, 5 and older – 3 head all of them belonged to the elite-record class, respectively.

Also, in the LLP «Chapaevsky» bulls-producers 5 years and older were of the elite class, and in the Tolegen farm - of the 1st class.

The live weight of producing bulls on the rest of the farms of the Western region turned out to be below the breed standards, since they were fully actively used in the summer period in the case of companies.

According to the results of the study, the live weight of cows of the «Aisulu» farm at the age of 3 years reached a live weight of 464.9 kg, which is on average 3.6% higher than the breed standard. The live weight of cows aged 4 years was 520.4 kg, which exceeded the breed standard by 37.2%.

A similar pattern is observed in the «Dongelek» farm, at the age of 3 by 43.1%, at the age of 4 by 20.02%, respectively.

Full–aged cows of five years and older in all farms have an average live weight in the range of 521.5 - 557.7 kg, which corresponded to the "elite" and "1st class" classes.

The main goal of breeding in beef cattle breeding is aimed at increasing the intensity of growth of young animals. We studied the growth and development of bulls from 8 to 15 months of age (Table 3).

Table 3 – Dynamics of live weight and intensity of growth of bulls (X±Sx)

Name of the farm	Bulls				The average daily increase is from 8 to 15 months.
	n	Live weight (kg) at the age, month			
		8	12	15	
		X±Sx	X±Sx	X±Sx	X±Sx
«Aisulu» farm	15	222,3±9,04	304,5±10,0	361,3±9,97	661,9±0,77
«Dongelek» farm	49	254,3±18,8	329,3±19,2	398,8±18,4	688,0±1,97
«Hafiz» farm	20	239,6±2,1	334,8±3,0	408,5±3,8	804,3±2,2
«Chapaevsky» LLP	83	195.12±5.3	313.34±4,3	366.59±5,2	785±4,64
«Eset» farm	127	209±11,73	-	412±12,08	712±8,08
«Zhannat» farm	41	230±6,67	-	-	633±8,44
«Tolegen» farm	36	221±11,08	-	-	617±5,08
«Alem» farm	163	219±7,05	-	-	741±9,24
«Naryn» farm	62	221±3,98	-	-	642±5,10

As follows from Table 3, the live weight of Kazakh white-headed bulls of 8, 12, 15 months of age, including bulls of all farms of the West Kazakhstan region met the breed standard and had an average live weight in the range of 210.0 - 254.3 kg, 304.5 – 338.3 kg and 361.3–416.4 kg, respectively.

The dynamics of the live weight of bulls, taking into account the intensity of growth by the average daily increase in the control section in the period of 8-15 months, was in the range of 566.0–804 g.The live weight of heifers in different periods of growth is a breed trait. We also studied the live weight of heifers of the Kazakh white-headed breed in terms of live weight.

Table 4 – Dynamics of live weight and growth rate of heifers (X±Sx)

Name of the farm	heifer				The average daily increase is from 8 to 15 months.
	n	Live weight (kg) at the age, month			
		8	12	15	
		X±Sx	X±Sx	X±Sx	X±Sx
1	2	3	4	5	6
«Aisulu» farm	25	222,6±2,51	238,6±4,09	280,2±2,43	274,2±3,9
«Dongelek» farm	51	224,1±19,9	283,9±20,1	333,2±20,1	519,0±4,7

1	2	3	4	5	6
«Hafiz» farm	154	212,5±4,2	294,7±5,6	322,3±5,9	522,8±5,2
«Chapaevsky» LLP		192.53±4,1	277.21±7,5	310.45±2,5	650±2,31
«Eset» farm	124	210±9,40	-	327±8,24	543±6,33
«Zhannat» farm	43	213±9,24	-	-	548±9,17
«Tolegen» farm	102	210±9,19	-	-	521±9,23
«Alem» farm	197	205±6,14	-	-	627±5,75
«Naryn» farm	100	187±7,56	-	-	510±4,47

As follows from Table 4, the live weight of heifers of the Kazakh white-headed breed at 8, 12, 15 months of age corresponded to the breed standard and had an average live weight in the range of 187.0 – 224.1 kg, 238.6 – 294.7 kg and 280.2-333.2 kg, respectively.

The dynamics of the live weight of heifers by the average daily increase from 8 to 15 months of age was in the range of 274.2 - 650.0 g.

The breeding value of Kazakh white-headed bulls was determined based on the guidelines «Evaluation of beef bulls by the quality of offspring and testing of bulls by their own productivity, taking into account: growth intensity, feed payment and meat forms».

The main signs of the self-productivity test were live weight at the age of 8 and 15 months, average daily live weight gain over a period of 8-15 months, feed costs per 1 kg of live weight gain, meat molds. A selection index was calculated for each trait, and a complex selection index was established for each bull.

Accounting of eaten feed during the control feeding of bulls of the «Aisulu» farm, «Alem» farm was determined individually, and for bulls of other farms - by the method of accounting for group feeding, which is allowed by the instructions.

The structure of the diet mainly contained locally produced feed, their daily amount varied depending on the age and live weight of the bulls.

Table 4 shows the results of the class and index evaluation of bulls based on the results of their own productivity tests in the studied farms, which were characterized by various indicators.

Table 4 – Test results of bulls on their own productivity of the Kazakh white-headed breed

Name of the farm	Live weight at the age of 8 months, kg	Live weight in age 15 months.		The average daily increase is from 8 to 15 months.		Spent feed per 1 kg of gain,		Meat Forms		Class	Complex index
		kg	index	g	index	feed unit	index	score	index		
«Aisulu» farm	231,5	401,7	106,4	810,8	100	7,0	93,1	54,6	100,0	Elite	99,88
«Dongelek» farm	213,0	400,3	99,9	863,1	99,2	7,4	98,0	54,9	100,1	Elite-record	99,3
«Hafiz» farm	239,6	407,89	100,15	804,29	100,00	9,09	96,59	54,75	100,00	1 class	99,18
«Chapaevsky» LLP	216,0	380,5	95,3	685,3	99,2	7,2	98,0	50,9	99,5	Elite-record	95,3
«Eset» farm	212,0	403,5	96,1	795,6	98,2	7,2	99,0	52,1	100,2	Elite-record	91,5
«Zhannat» farm	215,0	395,9	97,8	750,2	95,6	7,0	95,3	50,2	100,5	Elite	100,3
«Tolegen» farm	226,5	383,3	95,6	654,1	96,5	7,5	96,3	50,6	100,6	Elite	100,8
«Alem» farm	218	391	101,3	823,05	101,3	7,1	99,5	55,3	100,2	Elite-record	95,3
«Naryn» farm	221.12	415.6	96,1	810,3	98,2	8,2	92,0	52,1	95,3	Elite-record	95,4

In the «Aisulu» farm, the live weight of bulls when removed from the test at the age of 15 months was 401.7 kg, with an average daily increase of 810.8 g with a feed consumption of 7.0 feed units.

Also, the indicators of the class and index evaluation of bulls according to the results of their own productivity tests had a similar trend in farms

«Dongelek» farm, «Hafiz» farm, «Eset» farm and «Naryn» farm and met the standard and higher.

A different picture of the evaluation of bulls that passed the tests on their own productivity was observed in the «Zhannat» farm, «Tolegen» farm.

The complex breeding index of the above-mentioned farms was 100.3; 100.8 and 102.2, respectively.

In this regard, the data of the index assessment do not fully coincide with the indicators of the class assessment, which gives reason to believe that it is unlawful to evaluate the breeding value of a bull only on the basis of the indicators of the class assessment, and to consider the index assessment indicators more reliable.

Conclusions. As an offer to farms engaged in testing bulls for their own productivity, provide full-fledged feeding during the test period, including grain-legume hay, haylage or corn silage, end-feed, table salt, and in case of insufficient nutritional value of forage crops, use full-fledged feed additives.

Intensive balanced feeding of bulls during their own productivity testing will allow to reveal the potential of breeding animals more fully, and therefore to make a reliable selection of the best of them, which will ultimately increase the intensity of breeding to improve the breeding and productive qualities of breeding cattle of the Kazakh white-headed breed.

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РЕЗЮМЕ

Наиболее очевидной и важной целью селекции выступает максимальное получение экономического эффекта от проведения мероприятий направленных на повышение селекционно-племенной работы. Не менее важным направлением на пути создания высокоэффективного животноводства является повсеместное использование экономических моделей. В практической работе племенную ценность животного обусловливают множество признаков с разной хозяйственной значимостью. По результатам испытания бычков казахской белоголовой породы по собственной продуктивности проводили в соответствии с «Инструкцией по оценке быков-производителей мясных пород по собственной продуктивности и качеству потомства» (Алматы, 2010) - №1 от 26 декабря 2009 г. решение НТС МСХ РК, проведение проверки и оценки быков-производителей мясных пород по качеству потомства и испытание бычков по собственной продуктивности (Приказ МСХ РК от 19.07.20 10 г., №456, а также «Инструкцией по бонитировке крупного рогатого скота мясных пород» (Приказ МСХ РК от 16.06.2000 г., №162)). Исследования были проведены в КХ «Айсулу», КХ «Донгелек», КХ «Хафиз», ТОО «ПЗ Чапаевский», КХ «Есет», КХ «Жаннат», КХ «Толеген», КХ «Алем» и КХ «Нарын» Западно – Казахстанской области. Результаты исследования показали, что в КХ «Айсулу» живая масса бычков при снятии с испытания в возрасте 15 мес. составила – 401,7 кг, со среднесуточным приростом 810,8 г при затрате корма 7,0 кормовых единиц

Также показатели классной и индексной оценки бычков по результатам их испытания по собственной продуктивности имели схожую тенденцию в хозяйствах КХ «Донгелек», КХ «Хафиз», КХ «Есет» и КХ «Нарын» и соответствовали стандарту и выше.

ТҮЙІН

Селекцияның ең айқын және маңызды мақсаты-селекциялық-асыл тұқымды жұмысты арттыруға бағытталған іс-шараларды өткізуден экономикалық тиімділікті арттыру. Экономикалық модельдерді кеңінен қолдану жоғары тиімді мал шаруашылығын құру жолындағы маңызды бағыт болып табылады. Практикалық жұмыста жануардың асыл тұқымды құндылығы әртүрлі экономикалық маңызы бар көптеген белгілерді анықтайды. Қазақтың ақбас тұқымды бұқашықтарын өз өнімділігі бойынша сынау нәтижелері бойынша "ет тұқымды бұқашықтарды өз өнімділігі мен ұрпақтарының сапасы бойынша Бағалау жөніндегі нұсқаулыққа" (Алматы, 2010)-2009 жылғы 26 желтоқсандағы №1 сәйкес ҚР АШМ ҒТК шешімі, ет тұқымды бұқашықтарды ұрпақтарының сапасы бойынша тексеру және бағалау жүргізілді өз

өнімділігі бойынша бұқашықтарды сынау (ҚР АШМ 19.07.20 10 ж. №456 Бұйрығы, сондай-ақ "етті тұқымды ірі қара малды бағалау жөніндегі Нұсқаулық" (ҚР АШМ 16.06.2000 ж. №162 бұйрығы)). Зерттеулер Батыс Қазақстан облысының "Айсұлу" ШҚ, "Донгелек" ШҚ, "Хафиз" ШҚ, "ПЗ Чапаевский" ЖШС, "Есет" ШҚ, "Жаннат" ШҚ, "Төлеген" ШҚ, "Әлем" ШҚ және "Нарын" ШҚ жүргізілді. Зерттеу нәтижелері "Айсұлу" ШҚ-да 15 ай жасында сынақтан шығарылған кезде бұқашықтардың тірі салмағы бар екенін көрсетті. 401,7 кг құрады, орташа тәуліктік өсім 810,8 г, жем-шөп шығыны 7,0 жемшөп бірлігін құрады. Сондай-ақ, бұқашықтарды өз өнімділігі бойынша сынау нәтижелері бойынша сыныптық және индекстік бағалау көрсеткіштері "Донгелек" ШҚ, "Хафиз" ШҚ, "Есет" ШҚ және "Нарын" ШҚ шаруашылықтарында ұқсас үрдіске ие болды және Стандартқа және одан жоғары сәйкес келді.

ӘОЖ 636.083.73:599.735.53
МРНТИ 68.39.18 ***DOI 10.56339/2305-9397-2022-4-3-107-114***

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АҚБӨКЕНДЕРДІҢ ЖАС ТӨЛДЕРІНІҢ ТАБИҒИ ОРТАДА ЖӘНЕ ҚОЛДА ҰСТАП ӨСІРУДЕГІ ӨСУ ҚАРҚЫНЫН САЛЫСТЫРМАЛЫ ТАЛДАУ
COMPARATIVE ANALYSIS OF THE GROWTH RATES OF SAIGA SAIGA IN THE NATURAL ENVIRONMENT AND IN CAPTIVITY

Аннотация

Табиғатта популяциялардың өмір сүру қабілеттігінің тұрақтылығын қалыптастыру үшін жабайы немесе сирек кездесетін жануарлардың түрлерін сақтау мен қалпына келтірудің әлемдік тәжірибесінде оларды питомникте өсіру жиі қолданылады. Бұл мақалада ақбөкендердің туылуынан бастап және одан кейінгі питомникте ұсталуының өсу және даму динамикасы келтірілген. Атап айтқанда, осы сирек кездесетін жабайы жануардың өсу және даму