

**BULLETIN OF NATIONAL ACADEMY OF SCIENCES  
OF THE REPUBLIC OF KAZAKHSTAN**

ISSN 1991-3494

Volume 6, Number 382 (2019), 75 – 82

<https://doi.org/10.32014/2019.2518-1467.147>

UDC 636.1.082

**K. Zh. Iskhan<sup>1</sup>, V. V. Kalashnikov<sup>2</sup>, A. R. Akimbekov<sup>3</sup>, S. D. Mongush<sup>4</sup>, V. A. Demin<sup>5</sup>,  
T. S. Rzabayev<sup>6</sup>, A. K. Nesipbaeva<sup>1</sup>, M. M. Zhilkybaeva<sup>1</sup>, Y. K. Zhikishev<sup>7</sup>**

<sup>1</sup>Kazakh National Agrarian University, Almaty, Kazakhstan,

<sup>2</sup>Federal state budgetary institution “All-Russian Scientific Research Institute of Horse Breeding”,  
Divovo village, Rybnovsky District, Ryazan Region, Russia,

<sup>3</sup>Kazakh Scientific Research Institute of Animal Breeding and Fodder Production, Almaty, Kazakhstan,

<sup>4</sup>Federal State Budgetary Educational Institution of Higher Education “Tuva State University”,  
Kyzyl, Tyva Republic, Russia,

<sup>5</sup>Russian state agricultural university – Moscow Agricultural academy named after K. A. Timiryazev,  
Moscow, Russia,

<sup>6</sup>LLP «Aktobe agricultural experimental station», Aktobe, Kazakhstan,

<sup>7</sup>S. Seifullin Kazakh Agrotechnical University, Astana, Kazakhstan.

E-mail: Kayrat\_Ishan@mail.ru, vniik08@mail.ru, amin.akimbekov@bk.ru, s.mongush@mail.ru,  
demin@rgau-msha.ru, rzabayev@mail.ru, Aigul\_n78@mail.ru, m.malikovna78@mail.ru, zhanabai\_70@mail.ru

## **ZOOTECHNIC CHARACTERISTICS OF MODERN POPULATIONS OF MUGALZHAR HORSE BREED**

**Abstract.** The modern structure of the Mugalzhar horse breed consists of three intrabreed types - Embensky, Kulandinsky, Kozhamberdinsky (till 2009 - Saryarkinsky), six lines and 55 families. Live weight of stallions - 560 kg, mares - 520 kg, slaughter yield - 55-60%, yield of colts - 80-90%, milkiness of mares - up to 2000 l. Horses of Mugalzhar breed are distinguished by good health, excellent adaptability to year-round pasture maintenance.

The stallions of the Mugalzhar horse breed have an average live weight of 493.5 - 538.4 kg, mares - 452.7-469.3 kg. Body measurements in stallions of Kozhamberdinsky intrabreed type were 148.9 - 153.1 - 186.9 - 20.0 cm, of Kulandinsky intrabreed 144.9 - 151.6 - 181.9 - 19.9 cm and Embensky 145.8 - 160.7 - 184.7 - 19.8 cm.

Adult mares of the Kozhamberdinsky type have a height in the withers of 145.1 cm, an oblique body length of 152.5 cm, a chest girth of 180.2 cm and a metacarpus girth of 19.4 cm. The Kozhamberdinsky and Embensky mares showed an average body measurement of 143.8 - 149.9 - 179.3 - 19.1 cm and 144.7 - 155.2 - 180.8 - 18.9 cm.

The improvement of the breeding and productive qualities of Mugalzhar horses is carried out in order to accumulate and consolidate especially valuable economic useful traits inherent in each breeding type and the creation of a new meat and dairy breed.

The biological features of Kozhamberdinsky intrabreed type are: the ability of stallions throughout the year to maintain high fatness and even at the end of the breeding period to have higher standards. Mares are distinguished by high fecundity: 85-90 colting for 100 heads and pronounced maternal instinct. Even for the first time, the females that have become stubborn almost never throw foals. The colting, usually (up to 80.0%), occurs in the predawn hours.

**Key words:** Mugalzhar breed of horses, intrabreed type, live weight, body measurements.

**Introduction.** In 1948, a horse breed test was conducted at the farm of the Betpakdala Experimental Station (Ulanbel), Chui District, Zhambyl Oblast, which showed that the most promising, in the Betpakdala complex of seasonal pastures, is the Kazakh breed of Jabe type. According to the order of the USSR Ministry of Agriculture in 1969, the Ministry of Agriculture of Kazakhstan was tasked to create new horse breeds of meat and dairy productivity on the basis of the Kushumsky breed group and an array of Jabe type horses. Since that time, work has been begun on the creation of the Mugalzhar horse breed [1].

The work was carried out in three farms of the Mugalzhar stud farm in the Aktobe region and in the Betpakdala experimental station of the Karaganda region. In the Mugalzhar stud farm, Jabe were bred in cleanness, stallions and mares were bred and the best were sold to the two mentioned subsidiary farms [2].

There, these stallions were used with local dams, receiving the second and third generations, and the animals of the desired type were bred in "inter se". Kazakh mares and their hybrids did not have an established origin. They were covered with Jabe stallions, the hybrids of the first generation were again put under Jabe, and the colts were castrated, then transferred to the working squad or handed over for meat. Among the hybrids of the second generation, animals of the desired type were bred "inter se", and those that had not reached the parameters of the desired type were again covered with producers of Jabe and the third-generation hybrids were bred "inter se". At the same time, we conducted establishing the lines of the best producers and families of mares. The same scheme was used for breeding in the Kulandinsky horse stud of the Kyzylorda region. The work has been carried out for 30 years. According to the order of the Ministry of Agriculture of the Republic of Kazakhstan No. 156 dated December 30, 1998, the Mugalzhar horse breed was tested. This is the first meat and dairy breed in the world, created on the basis of Jabe non-specialized intra-breed type of a local horse breed - Kazakh without the blood of factory breeds. At the same time, it was possible to increase the live weight of stallions from the indicators of the initial individuals by 100-120 kg, mares - by 80-100 kg, without significant changes in the breeding technology, and the level of selective and breeding work was raised to the factory one [2].

The development of molecular biology, population genetics, biotechnology, the development and implementation of large-scale selection, the use of computer programs for analyzing selective information have enriched the arsenal of tools for studying biological patterns and managing animal heredity, breeding processes [3-8].

**Materials and research methods.** The measurements of the horses' bodies were studied according to the Instructions on bonitation of horses of local breeds [2, 9]. The live weight of horses was determined by weighing on stationary electronic scales.

When studying the meat productivity of horses, both linear and non-linear, a control slaughter of 2.5-year-old stallions was conducted at a slaughterhouse of the stud farm using the methods of the All-Russian Research Institute of Horse Breeding [10]. The quality of the carcass was assessed by the development of muscle tissue, the presence of fatty deposits on the surface and the thickness of fat on the abdominal wall (kazy).

Marketable milkiness of mares was determined monthly during lactation by the method of control milk yield, twice a month on two adjacent days. Dairy productivity was calculated taking into account milk sucked at night by a colt, according to the formula of prof. Saigin I.A. [11].

All experimental data were processed by the biometric method according to Baimukanov D.A., et al. [12].

**Research results.** The modern structure of the Mugalzhar horse breed consists of three intrabreed types - Embensky, Kulandinsky, Kozhamberdinsky (till 2009 Saryarkinsky) six lines and 55 families. Live weight of stallions is 560 kg, of mares - 520, slaughter yield is 55-60%, yield of foals is 80-90%, milkiness of mares is up to 2000 l. Horses of Mugalzhar breed are distinguished by excellent health, excellent adaptability to year-round pasture maintenance. Mugalzhar horses are bred in almost all regions of Kazakhstan.

The stallions of the Mugalzhar horse breed have an average live weight of 493.5 - 538.4 kg, mares - 452.7 - 469.3 kg. Body measurements in stallions of Kozhamberdinsky intrabreed type were 148.9 - 153.1 - 186.9 - 20.0 cm, of Kulandinsky - 144.9 - 151.6 - 181.9 - 19.9 cm and Embensky - 145.8 - 160.7 - 184.7 - 19.8 cm (table 1).

Adult mares of the Kozhamberdinsky type have a height in the withers of 145.1 cm, an oblique body length of 152.5 cm, a chest girth of 180.2 cm and a metacarpus girth of 19.4 cm. The Kozhamberdinsky and Embensky mares showed an average body measurement of 143.8 - 149.9 - 179.3 - 19.1 cm and 144.7 - 155.2 - 180.8 - 18.9 cm respectively.

The study of the exterior characteristics of herd horses showed that they have high rates of massiveness indexes of 142.6-158.5, which characterize them as typical meat animals.

The improvement of breeding and productive qualities of horses is carried out in order to accumulate and consolidate especially valuable economically useful traits inherent in each intrabreed type and the creation of a new meat and dairy breed of horses.

Table 1 – Body measurements and live weight of adult horses of the Mugalzhar breed

Type	Animals ex	n	Measurements, cm				Live weight, kg
			height in the withers	oblique body length	girth		
					of chest	of metacarpus	
Kozhamberdinsky	♂	15	148.9±1.2	153.1±1.4	186.9±2.9	20.0±0.21	505.9±18.1
	♀	150	145.1±1.1	152.5±1.8	180.2±2.2	19.4±0.05	465.2±11.4
Kulandinsky	♂	18	144.9±1.1	151.6±1.6	181.9±2.5	19.9±0.18	493.5±14.8
	♀	220	143.8±1.2	149.9±1.9	179.3±2.3	19.1±0.05	452.7±9.3
Embensly	♂	24	145.8±1.3	160.7±1.3	184.7±2.8	19.8±0.45	538.4±21.6
	♀	210	144.7±1.2	155.2±1.4	180.8±2.1	18.9±0.22	469.3±12.5

**Kozhamberdinsky interbreed type of Mugalzhar horse breed.** Horses of Kozhamberdinsky intrabreed type of Mugalzhar breed have high meat and dairy productivity. The live weight of stallions on average for the period of 2012-2018 was 538 kg, the best ones reach 580-600 kg, mares - 485-540 kg. Slaughter yield amount up 60%, the yield of colts is 85-90% per 100 mares. Year-round pasture maintenance of horses is practiced. The milkiness of mares is high, colts at the age of 6-7 months have a live weight of 220-240 kg.

Biological features of the Kozhamberdinsky intrabreed type horses are: the ability of stallions throughout the year to maintain high fatness and even at the end of the breeding period to have higher standards.

Mares are distinguished by high fecundity: 85-90 coltings for 100 heads and pronounced maternal instinct. Even for the first time, the females that have become stubborn almost never leave colts. The colting, usually (upto 80.0%), occurs in the predawn hours.

Stallions have well-defined herd instincts. The fights between them are mostly ritual, without serious injuries. However, in a limited space (pens, splits) stallions can even inflict damage to each other. Sexual maturity in mares usually occurs at the age of two, in colts - at the age of three.

As can be seen from the above materials, the improvement of herd horses by the method of purebred breeding can be conducted quite effectively. But, it takes quite a long time. For example, it took 15 years to increase the live weight by 56.0 kg.

Currently, Kozhamberdinsky type stallions are widely used in the subsidiary farms of Zhaitap-Mugalzhar LLP of the Akmola region, at Algabas-Mugalzhar LLP and KazybekBek LLP of the Almaty region. Stallions of this type are good improvers of low-producing local horses, bred by herds. Already the first generation exceeds in live weight by 40-45 kg of 2.5-year-old peers of local populations.

In the Kozhamberdinsky type of the Mugalzhar horse breed there are two factory lines of Maupas and Mesker. There are 54 mares and 3 stallions in the Maupas line, 58 mares and 4 stallions in the Mesker line.

*The genealogical line of Maupas № 9 - 1955.* The ancestor of the line - the stallion Maupas 9-55, champion of the USSR VDNKh breed of 1964, chestnut, without a sign, had a high live weight (520.0 kg), a long barrel-shaped body, a well-developed chest (chest girth 187.0 cm), sufficient height (144.0 cm), strong, well-placed legs with strong hoofs, somewhat short steep pastern, slightly lowered croup, good hair covering, strong mane, bangs and tail.

Maupas 9-55 perfectly kept the body throughout the year, had good herd instincts and sufficient sexual vigor. Every year, 18-22 mares were covered with a colting rate of 85.0-90.0%. For 15 years, this stallion has been used in the herd of the Betpakdala experimental station from 1958 to 1972. Now, the grandchildren and great-grandchildren of this outstanding producer successfully work in the republic's breeding farms. At the same time, the stallions of this line show a high hereditary capacity.

The line of Maupas 9-55 continues through the stallions: Maral 13-78 (144.0-156.0-186.0-19.5-525.0); Mak 87-79 (148.0-154.0-186.0-19.5-490.0); Madrid 147-79 (146.0-154.0-185.0-19.5-485.0); Marten 91-80 (146.0-156.0-180.0-19.5-495.0); Matery 77-79 (146.0-157.0-186.0-20.0-490.0); Mayak 115-72 (147.0-153.0-187.0-20.0-510.0) and Manezh 187-74 (143.0-155.0-186.0-20.0-510.0). On average, the height at the withers is 145.7 cm, the length of the body is 155.0 cm, the chest girth is 185.1 cm, the

metacarpus girth is 19.7 cm and the live weight is 500.7 kg. These indicators for mares were respectively 142-151.9-181.3-18.8 cm and 441.0 kg.

*The genealogical line of Mesker M 98, 1962.* The ancestor of this line was Mesker stallion No. 98, born in 1962, champion of the Kazakh SSR VDNKh in 1972. The stallion of the bay-brown suit, without signs, was distinguished by a good combination of medium-sized growth (139.0 cm at the withers), with a long massive body (format index 112.0%), a well-developed chest (182.0 cm), live weight (520.0 kg), relatively light head, powerful neck with a pronounced fat ridge, relatively short strong, well-set legs, strong hooves and well-developed muscles, especially in the area of the croup.

The Mesker line is presented by 98-62 stallions: Mergen 67-75 (144.0-162.0-194.0-20.5-555.0 kg); Metan 121-78 (148.0-154.0-189.0-19.5-530.0); Mramor 15-80 (147.0-154.0-183.0-19.5-490.0); Medok 59-78 (143.0-154.0-185.0-19.5-480.0); Meiman 107-78 (148.0-162.0-185.0-20.0-500.0); Meteor 16-82 (148.0-155.0-186.0-19.5-490.0); Mrak 179-78 (145.0-152.0-180.0-19.5-480.0) and Mesyats 10-83 (150.0-157.0-183.0-19.5-485.0). They have an average height in withers of 145.7 cm, body length of 155.0 cm, chest girth of 185.1 cm, metacarpus girth of 19.7 cm and live weight of 501.3 kg. For mares these figures were 141.8-152.5-181.3-18.8 cm and 445.7 kg, respectively.

**Kulandinsky intrabreed type of Mugalzhar horse breed.** The created Kulandinsky intrabreed type of the Mugalzhar horse breed possesses, first of all, very high adaptive qualities to the harsh and harsh conditions of the Aral Desert of the Republic of Kazakhstan.

The research and production work carried out in this direction in the "Kulandinsky" stud farm in the Aral region of the Kyzylorda region shows that this task was successfully completed by in-breed selection at isolating the most desirable type (Jabe), while the live weight of adult mares was increased on average from 350.0 to 430.0 kg, in stallions from 390.0 to 480.0 kg.

As a result of long and fruitful work aimed at improving the breeding qualities and increasing the meat productivity of Jabe-type horses, the highly productive factory lines of Mugalzhar breed of Kulandinsky intrabreed type of Patok 131-64 and Zaliv 136-65 stallions and uterine families 40-70; 56-71; 62-76; 28-78.

The selection of horses in the Kulandinsky intrabreed type, according to the data in table 2, will allow mares and stallions with good growth (142.0, 145.0 cm and more), with an elongated body (148.0, 150.0 cm and more), with a large chest girth (74.0, 178.0 cm and more) and high live weight (430.0, 475.0 kg or more).

Table 2 – Minimum indicators for classifying horses of the Mugalzhar breed to the Kulandinsky intrabreed type

Indicator	Stallion	Mare
Height in the withers, cm	145.0	142.0
Oblique body length, cm	150.0	148.0
Chest girth, cm	178.0	174.0
Metacarpus girth, cm	19.0	18.0
Live weight, kg	475.0	430.0

Zootechnical parameters of young stock selection are given in table 3.

It has been established that stallions and mares consistently differ in good heights at the withers 140.7-140.3 cm, oblique body length - 147.3-145.6 cm, chest girth -170.7-168.1 cm and live weight - 384.1-374.6 kg, as well as increased massiveness of 138.1% and 135.7%.

In the Kulandinsky intrabreed type of horses, two lines were formed: Aral 4-94 and Kulan 77-95 (table 4).

The lines of Aral 4-94 and Kulan 77-95 are distinguished by an elongated body, voluminous breast, high live weight and good adaptiveness for pasture and winter-grazing keeping in all seasons of the year, and their descendants have 8.6 points for fitness. All these qualities are well inherited. Their sons, daughters, grandchildren, great-grandchildren are characterized by good height, elongated body, large chest, and large live weight.



Table 3 – Zootechnic indicators of the young stock selection of the Kulandinsky type

Age, months	Body measurements, cm				Live weight, kg
	height in the withers	oblique body length	girth		
			of chest	of metacarpus	
Stallions					
6	118.0	113.0	127.0	15.0	175.0
12	124.0	122.0	139.0	15.5	230.0
18	135.0	136.0	150.0	16.0	280.0
24	137.0	138.0	156.0	17.0	320.0
30	138.0	140.0	164.0	17.5	365.0
Mares					
6	116.0	112.0	123.0	14.5	170.0
12	122.0	122.0	133.0	15.0	220.0
18	132.0	133.0	147.0	15.5	260.0
24	134.0	135.0	154.0	16.0	300.0
30	136.0	138.0	160.0	17.0	340.0

Table 4 – Live weight, body measurements and indices of horses of the Aral 4-94 and Kulan 77-95 lines compared to the breed standard

Indicator	Aral 4-94				Kulan 77-95			
	stallions n=10		mares n=55		stallions n=7		mares n=50	
	M±m	to the standard, +, -	M±m	to the standard, +, -	M±m	to the standard, +, -	M±m	to the standard, +, -
Live weight, kg	486.0±2.5	+51.0	438.1 ±2.4	+23.1	479.4 ± 2.9	+44.4	431.2 ±5.3	+16.2
Height in the withers, cm	146.6±0.2	+3.1	143.7 ±0.2	+2.1	145.7 ±0.1	+2.2	141.9 ±0.3	+0.9
Oblique body length, cm	152.8±0.3	+4.3	150.3 ±0.3	+3.3	151.0 ±0.3	+2.5	147.2 ±0.4	+1.2
Chest girth, cm	183.3±0.6	+5.8	179.9 ±0.5	+3.9	180.0 ±0.28	+2.5	177.1±0.4	+1.1
Metacarpus girth, cm	21.1 ±0.1	+2.1	18.6 ±0.1	+0.6	20.6± 0.07	+1.6	18.2 ±0.05	+0.2
Indices, %								
Massiveness	154.7	+7.3	148.5	+0.3	156.6	+9.2	150.7	+2.5
Format	104.2	+0.8	104.6	+0.4	103.6	+0.2	104.4	+0.2
Wide body	125	+1.3	125.2	+0.3	123.6	-	124.8	-
Bone	14.4	+1.2	12.9	10.2	14.2	+1.0	12.8	+0.1

It was established that stallions from the Aral 4-94 line exceed the standard of the breed in live weight by 51.0 kg, height at withers by 3.1 cm, oblique body length by 4.3 cm, chest girth by 5.8 cm, metacarpus girth by 2.1 cm. The stallions from the Kulan 77-95 line exceed the breed standard by 44.4 kg - 2.2 cm - 2.5 cm - 2.5 cm - 1.6 cm, respectively.

Mares from the Aral 4-94 line exceed the breed standard in live weight by 23.1 kg, height at withers by 2.7 cm, oblique body length by 3.3 cm, chest girth by 3.9 cm; metacarpus girth by 0.6 cm, and the mares from the Kulan 77-95 line by 16.2-0.9-1.2-1.1-0.2 respectively.

**Embenskyi ntrabreed type of Mugalzhar horse breed.** Embenskyintrabreed stallions have a height at withers of 145.5-146.2 cm, an oblique body length of 159.1-157.2 cm, that is, oblique body length exceeds height at withers by 13.6-11.0 cm. For stallions - producers a chest girth is 185.8-184.9 cm, a metacarpus girth varies from 19.9 cm to 19.7 cm, live weight over the period 2010-2018 averaged 552.2-530.7 kg.

Mares of Embenskyintrabreed type have a height at withers 143.8 - 144.2 cm, slanting body length 151.8 - 159.9 cm, chest girth 175.6 - 185.7 cm, metacarpus girth 18.5 -18.7 cm, live weight 456.2 -

Table 5 – Zootechnic indicators of adult Embensky type mares obtained from inbreeding and outbreeding

Group	n	Measurements, cm				Live weight, kg	Index of massiveness
		height in the withers	oblique body length	chest girth	metacarpus girth		
Closeinbreeding	44	144.1±0.27	159.9±0.53	181.8±0.62	18.7±0.03	492.4±4.1	165.2
Mildinbreeding	570	144.2±0.07	155.2±0.13	185.7±0.16	18.7±0.01	481.9±0.9	161.7
Outbreeding	720	143.8±0.11	151.8±0.18	175.6±0.26	18.5±0.01	456.2±1.6	153.1

492.4 kg. For 2010-2018, the measurements and live weight of mares of this type are respectively equal to: 145.0-155.4-180.8-18.9 cm and 480.2 kg.

The modern population of stallions and mares of the Embenskyinrabreed type in terms of body measurements and live weight are distinguished by uniformity in the main zootechnic indicators (body measurements, live weight, early ripeness). Table 5 shows the zootechnic characteristics of Embensky type mares of the Mugalzhar breed of horses.

**К. Ж. Исхан<sup>1</sup>, В. В. Калашников<sup>2</sup>, А. Р. Әкімбеков<sup>3</sup>, С. Д. Монгуш<sup>4</sup>,  
В. А. Демин<sup>5</sup>, Т. С. Рзабаев<sup>6</sup>, А. К. Несипбаева<sup>1</sup>, М. М. Жылқышыбаева<sup>1</sup>, Е. К. Жикишев<sup>7</sup>**

<sup>1</sup>Қазақ ұлттық аграрлық университеті, Алматы, Қазақстан,

<sup>2</sup>Федералдық мемлекеттік бюджеттік мекеме «Бүкіл Ресейлік Жылқы Шаруашылығы» ғылыми-зерттеу институты, Рязан облысы, Рыбинск ауданы, Дивово ауылы, Ресей,

<sup>3</sup>Қазақ мал шаруашылығы және азық өндірісі ғылыми-зерттеу институты, Алматы, Қазақстан,

<sup>4</sup>«Тува мемлекеттік университеті» мемлекеттік бюджеттік білім беру мекемесі, Қызыл қаласы, Тыва Республикасы, Ресей,

<sup>5</sup>Жоғары білім беру саласындағы федералдық мемлекеттік бюджеттік білім беру саласының мемлекеттік орталығы – К. А. Тимирязев атындағы Мәскеу аграрлық академиясы, Мәскеу, Ресей,

<sup>6</sup>ЖШС Ақтөбе ауылшаруашылық тәжірибелік станциясы, Ақтөбе, Қазақстан,

<sup>7</sup>С. Сейфуллин атындағы Қазақ агротехникалық мемлекеттік университет, Астана, Қазақстан

### **МҰҒАЛЖАР ЖЫЛҚЫТҰҚЫМДАРЫНЫҢ ҚАЗІРГІ ПОПУЛЯЦИЯСЫНА ЗООТЕХНИКАЛЫҚ СИПАТТАМАСЫ**

**Аннотация.** Мұғалжар жылқы тұқымының заманауи құрылымы үш түрден тұрады: Ембі, Құланды, Қожамберді (2009 жылдан бастап Сарыарқа) және алты аталық із және 55 аналық ұя. Тірі салмағы айғырдың 560 кг, бие 520, таза сойыс шығымы 55-60%, құлын шығымы 80-90%, сүттілік деңгейі 2000 л. Мұғалжар жылқы тұқымы өз денсаулығының мықтылығымен және жыл бойы жайылымға жақсы бейімделумен ерекшеленеді.

Мұғалжар жылқы тұқымының айғырларының орташа салмақтары 493,5 – 538,4 кг, ал, биелері 452,7 – 469,3 кг.

Қожамбердинді тұқым ішкі типінің айғырларының дене өлшемдері 148,9 - 153,1 - 186,9 - 20,0 см, Құланды 144,9 - 151,6 - 181,9 - 19,9 см және Ембі 145,8 - 160,7 - 184,7 - 19,8 см.

Қожамбердинді тұқым ішкі типінің сақа биелерінің дене өлшемдері: шоқтық биіктігі 145,1 см, денесінің қиғаш ұзындығы 152,5 см, кеуде орамы 180,2 см және жіліншік орамы 19,4 см. Ембі және Құландытұқым ішкі типінің биелерінің орташа дене өлшемдері: 143,8 – 149,9 – 179,3 – 19,1 см және 144,7 – 155,2 – 180,8 – 18,9 см.

Мұғалжар жылқы тұқымының асылдық, өнімдік қасиеттерін жетілдіру кезінде жинақталған өте құнды қасиеттерін, шаруашылыққа тиімді жақтарын жаңадан құрылып отырған етті-сүтті бағыттағы жылқы тұқымдарына және тұқым ішкі типіне берілуі жүзеге асырылады.

Қожамберді жылқыларының биологиялық ерекшеліктері мыналар болып табылады: айғырлардың жыл бойы жоғары қонымдылығын сақтап қалу қабілеті және үйірге түскен кезеңінің өзінде жоғары қонымдылықта болуы. Биелері жоғары өнімділікпен сипатталады: 100 бас үшін 85-90 құлындайды және құлынына деген аналық сезімінің жоғарлығымен. Тіпті бірінші рет құлындаған бие құлындарын ешқашан тастап кетпейді. Әдетте, құлындау (80,0% дейін) таң уақытта болады.

**Түйін сөздер:** мұғалжар жылқы тұқымы, тұқым ішкі тип, тірі салмақ, дене өлшем.

К. Ж. Исхан<sup>1</sup>, В. В. Калашников<sup>2</sup>, А. Р. Акимбеков<sup>3</sup>, С. Д. Монгуш<sup>4</sup>,  
В. А. Демин<sup>5</sup>, Т. С. Рзабаев<sup>6</sup>, А. К. Несипбаева<sup>1</sup>, М. М. Жылқышыбаева<sup>1</sup>, Е. К. Жикишев<sup>7</sup>

<sup>1</sup>Казахский Национальный аграрный университет, Алматы, Казахстан,

<sup>2</sup>Федеральное государственное бюджетное учреждение «Всероссийский научно-исследовательский институт коневодства», Рязанская область, Рыбновский район, п. Дивово, Россия,

<sup>3</sup>Казахский научно-исследовательский институт животноводства и кормопроизводства, Алматы, Казахстан,

<sup>4</sup>Федеральное государственное бюджетное образовательное учреждение высшего образования «Тувинский государственный университет», Кызыл, Республика Тыва, Россия,

<sup>5</sup>Российский государственный аграрный университет – Московская сельскохозяйственная академия им. К. А. Тимирязева, Москва, Россия,

<sup>6</sup>ТОО «Актюбинская сельскохозяйственная опытная станция», Актюбе, Казахстан,

<sup>7</sup>Казахский агротехнический университет им. С. Сейфуллина, Астана, Казахстан

### ЗООТЕХНИЧЕСКАЯ ХАРАКТЕРИСТИКА СОВРЕМЕННОЙ ПОПУЛЯЦИИ ЛОШАДИ МУГАЛЖАРСКОЙ ПОРОДЫ

**Аннотация.** Современная структура мугалжарской породы лошадей состоит из трех внутрипородных типов – Эмбинского, Куландинского, Кожамбердинского (до 2009 года Сарыаркинский) шести линий и 55 семейств. Живая масса жеребцов 560 кг, кобыл 520, убойный выход 55-60%, выход жеребят 80-90 %, молочность кобыл до 2000 л. Лошади мугалжарской породы отличаются отличным здоровьем, прекрасной приспособленностью к круглогодичному пастбищному содержанию.

Жеребцы мугалжарской породы лошадей имеют в среднем живую массу 493,5 – 538,4 кг, кобылы 452,7 – 469,3 кг. Промеры тела составили у жеребцов Кожамбердинского внутрипородного типа 148,9 – 153,1 – 186,9 – 20,0 см, Куландинского 144,9 – 151,6 – 181,9 – 19,9 см и Эмбенского 145,8 – 160,7 – 184,7 – 19,8 см.

Взрослые кобылы Кожамбердинского типа имеют высоту в холке 145,1 см, косую длину туловища 152,5 см, обхват груди 180,2 см и обхват пясти 19,4 см. Кобылы Кожамбердинского и Эмбенского типа показали в среднем промеры тела 143,8 – 149,9 – 179,3 – 19,1 см и 144,7 – 155,2 – 180,8 – 18,9 см.

Совершенствование племенных и продуктивных качеств лошадей мугалжарской породы ведется с целью накопления и консолидации особо ценных хозяйственно-полезных признаков присущих каждому внутрипородному типу и созданию новой мясомолочной породы лошадей.

Биологическими особенностями лошадей Кожамбердинского внутрипородного типа являются: способность жеребцов в течение всего года сохранять высокую упитанность и даже в конце случного периода иметь высшие кондиции. Кобылы отличаются высокой плодовитостью: 85-90 выжеребок на 100 голов и ярко выраженным материнским инстинктом. Даже впервые ожеребившиеся матки практически никогда не бросают жеребят. Выжеребка, как правило (до 80,0%), происходит в предрассветные часы.

**Ключевые слова:** мугалжарская порода лошадей, внутрипородный тип, живая масса, промеры тела.

#### Information about authors:

Iskhan Kairat Zhaleluly, Candidate of Agricultural Sciences, Associate Professor, Associate Professor of the Department of Physiology, Morphology and Biochemistry named after Academician N. Bazanovoy of the Kazakh National Agrarian University, Almaty, Kazakhstan; Kayrat\_Ishan@mail.ru; <https://orcid.org/0000-0001-8430-034X>

Kalashnikov Valery Vasilievich, Doctor of Agricultural Sciences, Professor, Academician of the Russian Academy of Sciences, Scientific Supervisor, All-Russian Scientific Research Institute of Horse Breeding, Divovo village, Rybnovsky District, Ryazan Region, Russia; vniik08@mail.ru; <https://orcid.org/0000-0003-2974-3732>

Akimbekov Amin Richardovich, Doctor of Agricultural Sciences, Chief Researcher of the Horse Breeding Department of the Kazakh Scientific Research Institute of Animal Breeding and Fodder Production, Almaty, Kazakhstan; amin.akimbekov@bk.ru; <https://orcid.org/0000-0002-1697-8113>

Mongush Sayana Darzhaevna, Candidate of Agricultural Sciences, Associate Professor at the Department of Agricultural Production Processing Technology, Federal State Budgetary Educational Institution of Higher Education “Tuva State University”, Tuva Republic, Russia; s. mongush@mail.ru; <https://orcid.org/0000-0002-4838-0618>

Demin Vladimir Aleksandrovich, Doctor of Agricultural Sciences, Professor of the Department of Horse Breeding, Federal State Budgetary Educational Institution of Higher Education “Russian State Agrarian University – Moscow Agricultural Academy named after K. A. Timiryazev, Moscow, Russia; demin@rgau-msha.ru; <https://orcid.org/0000-0003-3201-3618>

Rzabayev Tolybek Serikbayevich, Candidate of Agricultural Sciences, Chief Researcher of the Horse Breeding Department of Aktobe Agricultural Experimental Station LLP, Aktobe, Kazakhstan; rzabaev@mail.ru; <https://orcid.org/0000-0003-4650-5816>

Nesipbayeva Aigul Kadirovna, Candidate of Veterinary Sciences, Associate Professor of the Department of Physiology, Morphology and Biochemistry named after Academician N. U. Bazanova of the Kazakh National Agrarian University, Almaty, Kazakhstan; Aigul\_n78@mail.ru; <https://orcid.org/0000-0002-1986-3637>

Zhilkybaeva Meruert Malikovna, Associate Professor of the Department of Physiology, Morphology and Biochemistry named after NB Bazanova, Candidate of Biological Sciences, Kazakh National Agrarian University, Almaty, Kazakhstan; m.malikovna78@mail.ru; <https://orcid.org/0000-0002-4746-9514>

Zhikishev Yerlik Kaliaskerovich, PhD doctoral candidate of the department "Technologies of production of livestock products" of S.Seifullin Kazakh Agrotechnical University, Astana, Kazakhstan; zhanabai\_70@mail.ru; <https://orcid.org/0000-0002-4370-3721>

## REFERENCES

- [1] Rzabaev S.S. **(1981)** Enhancement of the tribal and productive qualities of the Jabe. Alma-Ata, "Kaynar", 22 p. (in Russ.).
- [2] Akimbekov A.R., Baimukanov D.A., Yuldashbayev Yu.A., Demin V.A., Iskhan. K.Zh. **(2018)** Horse breeding (ISBN 978-5-906923-27-1). Moscow. COURSE. INFRA-M. 400 p.(in Russ.).
- [3] Semenov V.G., Baimukanov D.A., Kosyaev N.I., Alentayev A.S., Nikitin D.A., Aubakirov Kh.A. **(2019)** Activation of adaptogenesis and bioresource potential of calves under the conditions of traditional and adaptive technologies. Bulletin of national academy of sciences of the Republic of Kazakhstan. Volume 1, Number 377 (2019), 175 – 189 <https://doi.org/10.32014/2019.2518-1467.20>. ISSN 2518-1467 (Online), ISSN 1991-3494 (Print).
- [4] Chindaliyev A. E., Baimukanov D. A., Karynbayev A. K., Chindaliyev E. **(2018)** Results of the targeted selective and breeding work of the simmental red-and-motley breed of dairy cattle. Bulletin of national academy of sciences of the Republic of Kazakhstan. ISSN 1991-3494. Volume 6, Number 376 (2018), P.p.34-38. <https://doi.org/10.32014/2018.2518-1467.24>. ISSN 2518-1467 (Online), ISSN 1991-3494 (Print).
- [5] Alentayev A.S., Baimukanov D.A., Smailov S.D., Semenov V.G., Abdrakhmanov K.T., Begaliyeva D.A., Omarov M.M. **(2018)** Efficiency of breeding of the alatau breed of brown cattle in the "Adal" agro-industrial company JSC. Bulletin of national academy of sciences of the Republic of Kazakhstan. ISSN 1991-3494. Volume 5, Number 375 (2018), P.p. 12-29. <https://doi.org/10.32014/2018.2518-1467.2>. ISSN 2518-1467 (Online), ISSN 1991-3494 (Print).
- [6] Ombayev A.M., Alentayev A.S., Baimukanov D.A., Karatayeva M., Nurbayev S. **(2017)** Dairy cattle breeding according to cytogenetic status. News of the National Academy of Sciences of the Republic of Kazakhstan: Series of Agrarian Sciences, No. 2 (38 ), March - April, 2017 - Pp. 18-26. ISSN 1991-3494 2224-526X (in Russ.).
- [7] Begaliyeva D. A., Alentayev A. S., Ombayev A. M., Baimukanov D. A. **(2017)** Improvement of the Technology for Young-Stock Breeding of Black-and-White Dairy Cattle in the Southeast of Kazakhstan. OnLine Journal of Biological Sciences (<http://thescipub.com/abstract/10.3844/ofsp.11376>). DOI: 10.3844 / ojbsci. 2017.
- [8] Baimukanov D.A., Pristupa V.N., Kolosov Yu.A., Donnik I.M., Torosyan D.S., Kolosov A.Yu., Orlova O.N., Yuldashbayev Yu.A., Chylbak-ool S.O. **(2019)** Improvement of breeding and productive traits of Kalmyk cattle breed. Bulletin of national academy of sciences of the Republic of Kazakhstan. Volume 2, Number 378 (2019), 128 – 145. <https://doi.org/10.32014/2019.2518-1467.51>. ISSN 2518-1467 (Online), ISSN 1991-3494 (Print).
- [9] Instructions for bonitation of horses of local breeds **(2014)**. Astana.22 p(in Russ.).
- [10] Method of determining the meat productivity of horses **(1974)** VNIIC. Moscow. 1974. Pp.5-22. (in Russ.).
- [11] Saigin I.A. **(1963)** Meat and dairy horse breeding. Agricultural production of the Urals.№ 5. Pp.12-14.(in Russ.).
- [12] Baimukanov D.A., Tarchokov T.T., Alentayev A.S., Yuldashbayev Yu.A., Doshanov D.A. **(2016)** Fundamentals of genetics and biometrics. Study Guide (ISBN 978-601-310-078-4). - Almaty: Evero, 128 p. (in Russ.).
- [13] Sklyarov Valery, Skliarova Iouliia, Utepbergenov Irbulat, Akhmediyarova A.T., et al. **(2019)** // International journal of innovative computing information and control. Vol. 15. Issue 1. P. 321-335.
- [14] Pertiwi D., Sudrajat A., Kumalasari D., Retnawati H., Waspada S.P., Dossayeva S.K., Kassymova G.K. **(2019)**. Gender equality in feminism // Bulletin of National academy of sciences of the Republic of Kazakhstan. ISSN 1991-3494. Vol. 5(381). P. 112-121. <https://doi.org/10.32014/2019.2518-1467.130>