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PRODUCTIVE PROFILE OF HERD HORSES OF DOMESTIC BREEDS

Abstract. It has been established that, at pasture breeding, the fertility of meat-type mares was not more than 75%, at hand breeding - 90%. In mares of the dairy productivity direction, the fertility was 75-87%, at hand breeding - 90-96%.

The optimal parameters for dairy productivity of the Kazakh Jabe mares and Kushum breed are the average daily milk yield of at least 3.5 kg, regardless of the technological parameters of the udder (cupped, round), thickness and length of nipples.

Mare's udder consists of two separate halves - right and left. Its girth at the base was 54 cm for Jabe mares, 72 cm for Kushum mares, 10 and 15 cm of depth, respectively, 26-30 cm of length along the sideline, 23 and 28 cm of length along the midline. Nipples in Jabe mares had the following measurements: length - 3 cm, nipple girth at the base - 9 cm, the distance between nipples - 4 cm, and in Kushum mares, these indicators were 5; 12; 7.5 cm respectively.

Mares with a cup-shaped udder had higher dairy productivity of 13.75 and 15.12 liters, while mares with a rounded udder had a milking capacity of 13.39 and 14.50 l.

It has been established that in mares with a cup-shaped udder, due to their higher milking capacity, foals develop better and have a higher average daily gain in live weight. The average daily gain of Kazakh Jabe foals of 2 months of age was 1000 and 950 g, and the Kushum foals - 1190 and 1100 g.

Keywords: milking capacity, udder shape, early maturity, foals, profile.

Relevance of the topic. In the structure of the breed horse population of the Almaty region, the Kushum horses take the third place after the Kazakh horses and the Mugalzhar horse.

The Kushum horses of the Almaty region on average by centner surpass the local Kazakh horses in live weight, while in their fertility and adaptability to year-round pasture winter-grazing conditions and survival do not differ from the parameters of the Kazakh horses of Jabe type [1].

The genetic capacity in live weight of Kushum mares reaches 577 kg, and in stallions - 711 kg and more. These data show the potential for further improvement of the Kushum breed horses in such an economically useful trait as live weight.

In the qualitative transformation of herd horse breeding in Kazakhstan, the role of the Kushum breed, as the main improving breed, with high meat and dairy productivity, good adaptability to year-round pasture and winter grazing management is extremely great. But in order to meet the growing requirements, the Kushum horse must be constantly upgraded in the direction of increasing the measurements and massiveness, improving the exterior, enhancing the breeding and productive qualities that ensure high performance and adaptation to the severe herd management conditions when crossing with local Kazakh horses. In this regard, the development of breeding methods to further enhance the breeding and productive qualities of domestic horse breeds in the conditions of year-round pasture and winter-grazing management is crucial [2, 3].

In the Republic of Kazakhstan, sustained growth in the horse population is observed, from 1,235,600 animals in 2007 to 1,608,000 animals in 2013. In 2018, the number of horses already reached 2.3 million heads, that is the growth is 372,400 heads [4].

Of the total population of horses, 80% are bred in a herd way and are oriented on the horse products manufacturing - the brood contingent, horse meat, and koumiss. The main trends in the development of productive horse breeding are the increase in the population of animals, mainly on account of domestic horse breeds of meat and dairy type as the Kushum, Mugalzhar and Kazakh horses of Jabe type. The stallions of these breeds are used as improvers of local populations of herd horses, and mares used for purebred breeding. In the future, the number of horses in all regions of Kazakhstan will grow.

Horse breeding is a profitable branch of productive livestock breeding, which successfully develops in the desert and semi-desert zones of the south-east of the Republic of Kazakhstan. Horse breeding in the Almaty region is successfully combined with herd horse breeding and meat - greasy sheep breeding. In the conditions of the Almaty region, the Kushum horse breed, which is an improver of local milk-producing animals, is of particular interest.

The studies were carried out according to the program of the Ministry of Agriculture of the Republic of Kazakhstan for 2018 - 2020. URN: BR06249249-OT-18 Development of a complex system of enhancing productivity and improving the breeding qualities of farm animals, by the example of Bayserke-Agro LLP.

The aim of the research. To determine the productive profile of herd horses of domestic breeds according to fertility and dairy productivity of mares.

Methods of research. The research work was carried out on the horse-breeding farm of the Kerbulak branch of Bayserke-Agro LLP in the Talgar district of the Almaty region.

The objects of the study were the purebred Kushum and Kazakh Jabe horses.

Experiments on the study of milking capacity of mares were conducted in four groups of mares-analogs.

Under the experience were 25 milk mares, all mares were full age, from 5 to 11 years old.

To characterize the development and body build type, milk mares were measured and weighed [5]. To study the constitutional peculiarity of mares, indices of format, chest girth, massiveness, and bone were calculated. [6].

The definition of the udder shape of mares was made visually, the measurement of length and thickness of the nipples was carried out with a measuring tape (figure).

There was a hand milking of mares on the farm, 5 times a day, with intervals between milkings at 2–2.5 hours. This frequency of milking is associated with the anatomical and physiological features of the udder structure and the excretion of milk in mares.

Figure 1 – Measurement of length and thickness of the nipples

Mares were milked only in the daytime, at night they were kept together with foals on pasture. Milk mares were served by two milkmaids and a herdsman.

The commercial milkiness of mares was determined monthly during lactation using the method of control milk yields, twice a month on two adjacent days [3].

Dairy productivity was calculated taking into account milk sucked at night by a foal, according to the formula of professor I.A. Saigin [7].

$$Уc = \frac{Уф \cdot 24}{m}$$

where У*с* - daily (gross) milk yield of mares; *У*ф – actual (marketable) milk yield in l; T - time spent for milking (hours).

Biometric processing of digital materials was carried out according to the standard technique. [8].

Research results. In determining the productive profile of horses, the reproductive qualities of Kazakh Jabe horses and the Kushum breed were studied depending on the class (elite + I, II, non-class) and the direction of productivity (meat and dairy).

In the flocks of mares of the meat direction of productivity in the population of 20-30 heads, one stud horse was assigned.

In mare flocks of the dairy productivity in the number of 15-20 heads, one stallion was assigned. The re-mating was carried out after two days, which allowed providing pregnancy more than 75% of mares. 10 days after the re-mating stray from flock mares were returned to service. With the manifestation of the estrus, the mare was mated in the same manner as during the first estrus. For prophylaxis of altering of the mated horses, they were checked for the presence of pregnancy according to physiological data throughout the entire breeding season.

It was established that, at pasture breeding, the fertility of mares of the meat direction of productivity was not more than 75%, with a hand breeding - 90%. In mares of dairy productivity, the fertility was 75-87%, at hand mating - 90-96%.

From the mated contingent, there were excluded mares born in 2017. 3 years old and older female horses were allowed to be mated. Of the three-year-old mares, the underdeveloped and weak ones were not allowed for mating, and of the full-aged mares - those who were unable to bear and feed the foal.

It was found that the main causes of low fertility are: stallions have frequent mounting; poor fatness of mares; incomplete feeding (lack of nutrients, minerals, and vitamins in the diet); genital diseases in mares. A similar problem exists in dairy breeding [9, 10].

The optimal parameters for dairy productivity of the Kazakh Jabe mares and the Kushum breed are the average daily milk yield of at least 3.5 kg, regardless of the technological parameters of the udder (cupped, round), thickness and length of nipples.

Mare's udder consists of two separate halves - right and left. Its girth at the base was 54 cm for Jabe mares, 72 cm for Kushum mares, 10 and 15 cm of depth, respectively, 26-30 cm of length along the sideline, 23 and 28 cm of length along the midline. Nipples in Jabe mares had the following measurements: length - 3 cm, nipple girth at the base - 9 cm, the distance between nipples - 4 cm, and in Kushum mares, these indicators were 5; 12; 7.5 cm respectively.

Most often mares have a cup-shaped and round shape of the udder. Rarely with a goat udder shape, but such mares were picked out from herds.

Dairy productivity of mares was studied, depending on the udder shape on the second month of lactation (from April 25 to May 25, 2019).

In the Bayserke Agro farm, mares foal in mid-March and early April. The milking of experimental mares began on April 25th.

Horses of both groups due to various udder shape did not have the same milking capacity (table 1). Mares with a cup-shaped udder had higher dairy productivity of 13.75 and 15.12 liters, while mares with a rounded udder had a capacity of 13.39 and 14.50 liters of milk.

From there, when creating farms for koumiss production, mares with a cup-shaped udder should be selected.

An important measure in the selective and breeding work is the elaboration of a control scale for the development of young stock. To this end, we conducted a study of the growth and development of young animals of both breeds (table 2).

Table 1 – Milking capacity of mares depending on the udder shape

Indicators	Breed			
	Kazakh breed of Jabe type		Kushum breed	
	Udder shape			
	Cup-shaped	Rounded	Cup-shaped	Rounded
Number of animals	4	3	3	2
Actual milk yield per day, l	5.73±0.3	5.58±0.5	6.30±0.4	6.04
Milking capacity:				
Per day, l	13.75±0.5	13.39±0.8	15.12±0.5	14.50
Per month, l	412.50±26.1	401.70±14.7	453.60±23.4	435.0

Table 2 – Growth and development of foals.

Indicators	Breed			
	Kazakh breed of Jabe type		Kushum breed	
	Udder shape			
	Cup-shaped	Rounded	Cup-shaped	Rounded
Number of animals	4	3	3	2
Live weight: at the age of 3 days, kg	41	39	48	47
At the age of 1 month, kg	82±3.1	79±4.5	93±5.9	90
At the age of 2 months, kg	112±5.4	107±7.7	129±9.2	123

At the age of one month, the average daily gain in live weight of foals of the Kazakh and Kushum mares with a cup-shaped udder was 1518 and 1667 g, and with the rounded shape of the udder - 1481 and 1592 g respectively. The average daily live weight gain in the Kazakh Jabe foals of 2-month-old age was 1000 and 950 g, while in Kushum foals - 1190 and 1100g.

Considering that in mares with a cupped udder shape due to their higher milking capacity foals develop better and have a higher average daily gain.

Conclusion. In the conditions of Bayserke-Agro LLP, when breeding Kazakh breed of Jabe type and Kushum breed of dairy productivity, it is necessary to strictly select and breed mares according to the technological parameters of the udder.

It was established that mares with a cup-shaped udder had higher dairy productivity of 13.75 and 15.12 liters, while mares with a rounded udder shape had a milking capacity of 13.39 and 14.50 liters.

From there, when creating farms for koumiss production, mares with a cup-shaped udder should be selected.

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ОТАНДЫҚ ТАБЫН ЖЫЛҚЫ ТҰҚЫМДАРЫНЫҢ ӨНІМДІ ПРОФИЛІ

Аннотация. Үйірде шағылыстыру кезінде етті бағыттағы биелердің ұрықтануы 75%-дан артық емес, қолмен шағылыстыру кезінде 90%-ды құрағаны анықталды. Сүтті бағыттағы биелердің ұрықтануы 75-87%, қолмен шағылыстыру 90-96% құрады. Жабе және Көшім тұқымындағы қазақ жылқылары биелерінің сүт өнімділігінің оңтайлы параметрлері желіннің технологиялық параметрлеріне (кесе тәрізді, дөңгелек), емшегінің қалыңдығы мен ұзындығына қарамастан, кемінде 3,5 кг сүттің орташа тәуліктік сауымы болып табылады. Биелердің желін екі бөлек жартыдан тұрады –оң және сол. Оның орамының жабы тұқымында 54 см, Көшім биелері – 72 см, тереңдігі тиісінше 10 және 15 см, бүйір сызығы бойынша ұзындығы 26-30 см, орта сызығы бойынша ұзындығы 23 және 28 см. Жабе үлгісіндегі қазақ биелерінің желіні мынадай өлшемдерге ие болды: ұзындығы 3 см, желін орамы 9 см, желіні арасындағы қашықтық 4 см, Көшім биелері тиісінше 5; 12; 7,5 см. Жоғары сүт өнімділігімен 13,75 және 15,12 л тостаған желін формансы түріндегі биелер бар, ал желіннің дөңгелек түріндегі биелер 13,39 және 14,50 л сүттілігі болған. Тостаған пішіні бар желін биелерде

жоғары сүттілігіне байланысты құлындары неғұрлым жақсы дамиды және орташа тәуліктік өсуі жоғары. 2 айлық жастағы жабы құлындардың орташа тәуліктік өсімі 1000 және 950 г, ал Көшім 1190 және 1100 г құрады.

Түйін сөздер: сүттілік, желіннің пішіні, тез даму, құлындар, профиль.

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ПРОДУКТИВНЫЙ ПРОФИЛЬ ТАБУННЫХ ЛОШАДЕЙ ОТЕЧЕСТВЕННЫХ ПОРОД

Аннотация. Установлено, что при косячной случке оплодотворяемость кобыл мясного направления продуктивности составила не более 75%, при ручной случке 90%. У кобыл молочного направления продуктивности оплодотворяемость составила 75-87%, при ручной случке 90-96%. Оптимальными параметрами молочной продуктивности кобыл казахских лошадей жабе и кушумской породы является средний суточный удой молока не менее 3,5 кг, независимо от технологических параметров вымени (чашевидная, округлая), толщины и длины сосков. Вымя кобыл состоит из двух обособленных половин – правой и левой. Его обхват у основания равнялся у казахских кобыл типа жабе 54 см, у кушумских – 72 см, глубина соответственно 10 и 15 см, длина по боковой линии 26-30 см, длина по средней линии 23 и 28 см. Соски у казахских кобыл типа жабе имели следующие промеры: длина 3 см, обхват соска у основания 9 см, расстояние между сосками 4 см, а у кушумских кобыл соответственно 5; 12; 7,5 см. Более высокой молочной продуктивностью обладали кобылы с чашевидной формой вымени 13,75 и 15,12 л, тогда как кобылы с округлой формой вымени имели молочность 13,39 и 14,50 л. Установлено, что у кобыл с чашевидной формой вымени в силу более высокой молочности жеребята развиваются лучше и имеют более высокий среднесуточный прирост. Среднесуточный прирост жеребят казахского типа жабе 2-х месячного возраста составлял 1000 и 950 г, а кушумских 1190 и 1100 г.

Ключевые слова: молочность, форма вымени, скороспелость, жеребята, профиль.

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