

ANNOTATION

of the dissertation for the degree of Doctor of Philosophy (PhD) Sharapatov Tlekbol Sungatovich on the topic «Milk productivity of purebred and crossbred mares of the Kazakh breed of the «jabe» type in conditions of herd keeping» under the educational program 8D08201 – «Animal Science», in the field of training D132 – Animal husbandry.

The relevance of the dissertation work. In the "National Project for the development of the agro-industrial complex of the Republic of Kazakhstan for 2021-2025", this national project pays special attention to the development of productive horse breeding. The settlement of the tasks set largely depends on the results of breeding work through the integration of breeding achievements of population genetics into production, the definition and implementation of the genetic potential of pedigree characteristics of horses in farms, in the long term improvement of existing ones, as well as the creation of new breeds, and types [1].

Today, Kazakhstan is the largest place in Central Asia where productive horse breeding is developing. The natural and climatic conditions of the country are perfectly suitable for the successful development of herd-breeding horse breeding. According to the latest data, there are more than 4.2 million head of horses in the republic, including more than 70% of horses of the herd method of keeping, which graze on natural pastures all year round, without any top dressing. The herd method of maintenance makes it possible to favorably use inaccessible places of semi-deserts and mountainous areas, which affects the economic efficiency of koumiss and horse meat [2-5].

Today, replenishment of environmentally friendly products to the local market is important and relevant, since not only their competitiveness increases, but also their quality of manufactured products and the range of manufactured goods [6].

The country's horse breeders believe that productive dairy horse breeding is a highly promising and necessary direction. However, the current situation in the country's market conditions requires concentration in breeding and breeding work and the use of other methods in order to increase the milk production of dairy mares [7].

The current situation of the horse breeding industry needs to increase the share of breeding and productive qualities by improving the systematic use of pasture lands, as well as correctly using the breeding material of breeds using interbreeding along with pure breeding. Under these conditions, there is a high probability of an accelerated increase in the productive and adaptive qualities of horses with herd maintenance [8].

Ramazanov A.U. [9], reports that for the rational management of the productive horse breeding industry, scientists together with farm specialists conducted research on the adaptive qualities and other economically useful indicators of Kazakh horses of the jabe type, and acceptable improvements in the productivity of local horses by crossing with stallions of the Novoaltai breed, in the

future to create a separate milk and meat type among Kazakh horses. It has been established that due to targeted breeding for the II and III generations, it is possible to increase the meat productivity of herd horses by up to 30%. This experience confirms the creation of Novoltai horses in the Altai Territory, where these horses outperform their peers at an older age by about 100 kg or more. At the age of one year, the average daily increase in foals reaches up to 2 kg.

According to the research of Assanbayev Tolegen [10] and other scientists, crossing Kazakh horses with stallions of the New Altai breed in extreme conditions of the Republic of Kazakhstan significantly improves the productive qualities of local Kazakh breeds of the jabe type, since this breed has draft horses in its blood, such as Soviet, Russian and Lithuanian, these named breeds have high milk productivity, as well as good adaptive qualities in herd conditions of maintenance.

The above phenomena confirm the advantage of Novoaltai horses combining the blood of draft horses. Using the blood of these breeds, it is possible to increase the milk production of purebred Kazakh horses at times in the production of meat and milk, in the future it provides an opportunity to create a meat-and-milk type inside the Kazakh breed of the jabe type [11].

Therefore, in order to increase the milk content of local Kazakh horses of the jabe type, crossing of Novoaltai horses with a local breed is considered and recommended in the herd.

A key element of digital technologies in the agro-industrial complex are remote monitoring sensors (trackers) for the location and condition of farm animals. Their use on the basis of various communication systems allows you to remotely and quickly obtain information of interest directly from livestock locations and use the information obtained to support production solutions and prevent undesirable situations [12].

In Kazakhstan, herding horses is the main industry, at the same time it allows you to spend small costs when keeping animals on natural pastures [13, 14]. However, the use of modern technologies among horse owners is not popular enough.

The national program for the development of the agro-industrial complex for 2017-2022 is aimed at integrating modern digital technologies in important sectors in the field of animal husbandry [15].

The extensive limits of the determined temperatures of GPS trackers can be used in different seasons of the year, despite the terrain [16].

The trackers used are harmless to farm animals, with the help of trackers we are given the opportunity to remotely control, which facilitates the work of the maintenance staff [12, 17].

The purpose of the study. The aim of the research is to establish the milk productivity of purebred and crossbred Kazakh mares of the jabe type in herd conditions and the use of GPS trackers to monitor the distances traveled by herd horses on pastures.

Research objectives. According to the chosen goal, we have identified the following tasks:

1. carrying out zootechnical characteristics of horses of experimental groups and to study the growth and development of purebred and crossbred foals;
2. to set the sizes (volumes) of udders and nipples of experimental mares;
3. determination of milk productivity and chemical composition of milk of purebred and crossbred mares;
4. to study the duration of grazing and rest of herd horses in different seasons of the year using GPS trackers;
5. to determine the economic efficiency of milk production of purebred and crossbred mares of the Kazakh breed of the jabe type in conditions of herd maintenance.

Scientific novelty. For the first time in the North-East of Kazakhstan, comprehensive studies of the milk productivity of purebred and crossbred mares of the Kazakh breed of the jabe type in conditions of herd maintenance using digital technologies were conducted.

The practical and theoretical significance of the dissertation work. In the conditions of the north-east of Kazakhstan, a comprehensive comparative assessment of purebred Kazakh horses of the Jabe type and their hybrids with stallions of the Novoaltai breed in conditions of herd maintenance was carried out. Based on the results obtained, farms are offered the most desirable dairy types of mares. In addition, the conducted scientific and practical research of digital technologies using GPS trackers made it possible to establish the daily frequency and duration of grazing and rest of herd horses in different seasons of the year on natural pastures, which favorably influenced the milk yield and safety of young horses.

Publication and approbation of dissertation materials. Based on the research results of the dissertation, 18 scientific papers have been published:

In scientific journals in the Scopus database:

- Increasing the milk productivity of Kazakh jabe horses. Brazilian Journal of Biology. 2023, Brazilian Journal of Biology, 2023, vol. 83, e277915. | <https://doi.org/10.1590/1519-6984.277915>. <https://www.scielo.br/j/bjb/a/pBQ8zbFgS7qMmhrbG63j34L/?lang=en#>. Percentile 61.

- Creation of smart farms in the herd horse breeding of Kazakhstan (results of using trackers) OnLine Journal of Biological Sciences. 2023, 23(1). P.p. 44-49. DOI: <https://doi.org/10.3844/ojbsci.2023.44.49> Percentile 41.

In publications recommended by the committee for quality assurance in the field of Science and higher education of the Ministry of Science and higher education of the Republic of Kazakhstan:

- Bulletin of Science of S.Seifullin KATRU. – 2022 - №1 (112). – С. 233-241. DOI 10.51452/kazatu.2022.1(112).927.

- Multidisciplinary journal. 3i: intellect, idea, innovation - интеллект, идея, инновация. № 2 July 2022 г. – С. 85-94. DOI: 10.12345/22266070_2022_2_85.

- Bulletin of Science of S.Seifullin KATRU. – 2022 - №4 (115). – С. 232-243. Doi.org/10.51452/kazatu.2022.4.1253.

- Science and Education of Zhangir Khan State Technical University. – 2023. - № 1-2 (70). – P. 87-98. KOKCHBO DOI 10.56339/2305-9397-2023-1-2-87-98.

In scientific publications:

- Monograph. Publishing house of Astana-SMART Company LLP, 2023. – 116 pages.

- Recommendation. S.Seifullin KATRU Publishing House, 2023, - 40 p.

The remaining 10 scientific research papers were reported at International and National scientific and practical conferences.

The main provisions submitted for protection:

- live weight and body measurements of horses of different genotypes;
- udder and nipple sizes, the relationship of udder sizes (volumes) with the dairy productivity of mares;

- milk productivity and chemical composition of milk of purebred and crossbred mares of the Kazakh breed of the jabe type;

- the effect of the duration of grazing on the dairy productivity of mares using GPS trackers.

The connection of the dissertation with state programs. These studies on the comprehensive study of the dairy productivity of horses of different genotypes in herd conditions were carried out within the framework of a program-specific financing project on the following topic: BR10865103 «Development and creation of scientifically based Smart farms (herd horse breeding, beef cattle breeding) using various at least 3 digital solutions for each area of digitalization implementation for the actual production tasks of agricultural entities and the formation of the necessary reference database for this purpose for training employees of farms and peasant farms and transferring digital knowledge to students.»

Volume and structure of the dissertation. The dissertation is written on 118 pages of computer text in the format (Word), and consists of a review of literature, research methods, research results, conclusions, practical proposals for production, a list of literature and applications. The thesis is illustrated with 28 tables and 25 drawings. The list of literature includes 209 titles, of which more than 80 are in foreign languages.