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**THE RELATIONSHIP OF MILK PRODUCTION OF MARES OF THE
NOVOOLEXANDRIVSKII DRAFT HORSE BREED WITH THE DURATION OF
THEIR PREGNANCY AND THE SEX OF FOALS**

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Mares' milk as a food product is traditionally produced in significant volumes in Asian countries: China, Mongolia, Kazakhstan, Kyrgyzstan, Uzbekistan, etc. [2, 6, 10, 11]. In these countries, the share of mare milk production is more than 8% in the total milk production sector [9, 11], and it is traditionally used for the production of fermented milk drinks (ayran, kumiss, kurut, chalap, etc.). At the same time, the consumption of mare's milk and its processed products has spread in recent decades in the European Union [7-9]. In European countries, the share of mare milk in total milk production is only 0.1%, which is about 1300 tons. In general, more than 30 million people in the world regularly consume mare's milk and its processed and freeze-dried products [1, 5, 8].

The Novooalexandrivskii draft horse breed is a national treasure of Ukraine and is characterized by its versatility, including for milk production. The high nutritional value of mares' milk, the absence of allergenic proteins, the unique composition and stereo specificity of fatty acids [1, 4-5, 7] determine the increasing popularity of this

product in the field of dietary and baby food, cosmetics, and hence the relevance of its research. Factors influencing the milk production and properties of mare milk are one of the important objects of scientific research in this area.

The research material was the database of Novoalexandrivskii draft mares, the results of control milking and milk samples of mares. Control milking and milk samples were collected in June and August 2024 from mares of the Novoalexandrivskii draft horse breed of the Dibrivskii Stud № 62 branch of the State Enterprise «Horse Breeding of Ukraine» (n=16). Mares were milked twice in a specially equipped milking parlor in separate stalls, foals were milked in close proximity to mares during milking, which facilitated the milk yield reflex and nervous balance of mares and foals. Milk samples were collected in sterile containers with a preservative separately for the first and second milking of the day. According to the documents of breeding records, the timing of foaling of the experimental mares and the sex of their foals were determined. The relationship between the studied traits was determined by the correlation method.

The average duration of pregnancy of the experimental mares was established at the level of 335.6 ± 2.85 days with limits 320–358 діб ($C_v=3,176$). The superiority in daily milk yield of mares with pregnancy duration of more than 350 days was proved by the results of control milking both in June and August. The daily milk yield was significantly and positively correlated with high probability ($p<0.01$) with the duration of pregnancy of the experimental mares in June ($r=0.759$), while this correlation was significantly lower for the milk yield in August ($r=0.270$). The duration of pregnancy was positively and significantly correlated with the age of mares ($r=0.429$). It was found that mares gestated stallions 9.1 days longer than mares ($p<0.05$).

The superiority in the content of dry matter, fat and the ratio of fat to protein in milk samples of experimental mares with duration of pregnancy of more than 340 days was proved by the results of control milking in June and August.

Mares with a gestation period of more than 340 days also had the highest lactose content and freezing point in samples taken in June and protein in samples taken in August. Mares with a gestation period of 331–340 days had the highest protein and skimmed milk solids content in milk samples obtained in June and the highest freezing point in samples obtained in August.

It was found that mares that were foaled by stallions had a high degree of probability ($p<0.01$) of higher daily milk yield, as well as milk yield for the first and second milking. This is probably due to the fact that stallions are born larger and require more milk, which is controlled by the mare's hormonal background [3, 12]. The milk yield in June in mares that gave birth to stallions was significantly higher (by 0.511 liters, $p<0.01$) than in August. In mares that gave birth to fillies, the level of milk yield remained unchanged with slight fluctuations between the first and second milking.

It was found that milk samples (collected in both June and August) from mares that gave birth to stallions had a higher content of dry matter (by 0.448 and 0.335 ml, respectively), fat (by 0.08 and 0.12%, respectively), and fat to protein ratio. The

protein content was higher in samples taken in June from mares that gave birth to mares and in August from mares that gave birth to stallions, but the difference was small and not significant.

The lactose content, on the contrary, was higher in samples taken in June from mares that gave birth to stallions and in August from mares. According to the index of skimmed milk solids, there is a significant advantage in the milk of mares collected in June (with the advantage of mares that gave birth to stallions). In the milk samples collected in August, the skimmed milk solids index was lower, but with an insignificant difference in favor of mares that gave birth to mares.

The freezing point varied little and unreliably due to the factor under study, but prevailed in milk samples taken in June from mares that gave birth to stallions, and in August from mares that gave birth to fillies.

A small number of somatic cells were found in milk samples taken in June from two mares that gave birth to mares, and in August from four mares that gave birth to foals of both sexes, however, we consider it inappropriate to link this factor to the sex of foals.

Thus, it was established that the factors of the duration of pregnancy of Novo-Alexandrovsky heavy-duty mares and the sex of their foals are interrelated to varying degrees with the daily milk yield and the main indicators of its quality.

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