Streptococcus sp., *Ureaplasma sp*., *Actinobacillus seminis*, *Brucella ovis*, *Histophilus somni* and *Trueperella pyogenes*. In 68% of subfertile rams were isolated one or more types of pathogens; in 26%, there was no significant growth; and in 6% of them, there was microbial contamination, and no pathogens could be isolated. All cultures resulted negative for the isolation *Mycoplasma sp*. Finally, a qPCR was performed on semen samples to determine *Ureaplasma diversum*, detecting a 46.8% of positive cultures. When comparing the scrotal circumference in rams showing with or without bacteria in semen, it was observed a significantly lower value in the rams with positive bacterial culture (30.07 ± 4.27 cm vs 32.77 ± 3.75 cm; $p<0.013$).

The most prevalent bacteria in the study were *Ureaplasma diversum,* followed by *Brucella ovis*, *Trueperella pyogenes*, *Corynebacterium sp.* and *Streptococcus pluranimalium*. In reference to the type of samples, *Actinobacillus seminis* and *Histophilus somni* were more commonly isolated in semen, while *Corynebacterium pseudotuberculosis* and *Trueperella pyogenes* were isolated in abscess and nodule samples. 71% of the rams were negative for *Brucella ovis* serology.

Conclusions. It is confirmed the high incidence of subfertility in rams from the studied farms, and the semen assessment is an essential, quick, and simple method to detect reproductive failures in rams. Ultrasonography is a useful tool for detecting injuries/pathologies at testicular or epididymal level, with high diagnostic ability than palpation/observation. The most frequent pathologies observed by ultrasonography were microlithiasis, testicular hypoplasia, abscesses, epididymitis, orchitis, cysts and hydrocele. Results support that testicular ecotexture can be a good indicator of reproductive performance, although there is no practice equipment to carry out this measure. Few information exists about the pathogens involved in subfertile rams in our area. These data give us new information, showing a high incidence of *Brucella ovis*, *Trueperella pyogenes* and *Corynebacterium sp*.

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THE DEPENDENCE OF QUALITY INDICATORS OF COWS' MILK ON THE AGE OF THEIR CALVING

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Introduction. Competition in agribusiness and the instability of cattle keeping conditions, milk prices, and the factor of prolonging the productive use of dairy cattle are becoming more and more

relevant [1]. Long-term use of cows on industrial dairy farms and complexes makes it possible to conduct extended herd reproduction, carry out genetic improvement of animals, reduce material costs for their cultivation and formation of the main herd, increase product production and reduce its cost price [2].

However, in recent years in Ukraine there has been a tendency to shorten the period of productive use of cows. A few paratypic and genetic factors influence the duration and effectiveness of the lifelong use of animals [6–8]. Among these factors, an important place is occupied by the age of the first calving of cows. The relationship between the duration of productive use and the age of the first calving of cows is predicted, the formation of the body in the early stages of ontogenesis affects the further realization of their genetic potential, although the nature and direction of this relationship cause certain discussions [3].

Knowledge of the influence of the age of animals on the level of milk productivity, the composition and properties of milk is important in the comparative assessment of the productive qualities of livestock, and in breeding and in the technology of milk production and processing [2].

Many researchers, in their studies, state that the fat content in milk decreases with the aging of cows. Cows with different calving ages and different live weights after first calving differ among themselves in terms of duration and efficiency of lifetime use. A significant difference 256 in lifetime milk yield and amount of milk fat between animals up to 27 months and more than 29 months of calving indicates the advantage of early calving in the context of productive use of cows. That the highest indicators of milk yield and milk fat per day of life, productive use and lactation in cows with the age of first calving up to 25 months testify to the intensive use and high physiological stress of lactation in animals with early calving, which in turn affects the duration and efficiency of the use of dairy cows [1,2].

Other scientists prove that the age of animals affects the fat content of milk, but it is insignificant and unstable. In young cows the degree of this effect was lower, then it increased until the 4th - 5th lactation, and then gradually decreased with age.

To determine the effect of the age of calving cows on the fat content in milk and milk fat yield, we analysed these indicators from the first to the tenth lactation of cows over 20 years.

Methods and results. Calculations were performed using univariate analysis of variance. The General Linear Model (GLM General Factorial) from the SPSS 11.0 computer package of statistical programs was used. To determine the dynamics of milk fat content and milk fat yield, standard statistical indicators were used: number of animals (n), arithmetic mean (M), error of the arithmetic mean (m), root mean square deviation (σ), as well as the upper and lower limits of 95%- confidence interval. The applied algorithm determined the degree of influence of the factor (age of cows) on the fat content in the milk of cows and the output of milk fat. The level of reliability of the difference between the average indicators of fat content by gradation was also established [4,5].

As a result of the research, the degree of influence of the age of the next calving of cows on the fat content in the milk of cows was $\eta 2=0.009$, on the output of milk fat - $\eta 2=0.039$ ($P>0.999$).

The degree of influence of this factor on the output of milk fat is higher than the degree of influence of this factor on the percentage of fat in milk [5].

In general, the average fat content in the milk of cows was the highest in the second lactation (3.90%), then the fat content began to decrease until the sixth lactation and increased again with the seventh. In the tenth lactation, the average fat content drops to 3.64%, ($P>0.999$). And the highest average yield of milk fat was observed in cows after the 4th lactation (174.8 kg). Starting from the 5th lactation, the amount of milk fat began to decrease. And the lowest output of milk fat was in cows of the 10th lactation, 130.8 kg ($P>0.999$) [4,5].

Conclusions. The age of cows has a significant ($P>0.999$) effect on the fat content in the milk ($\eta 2=0.009$). The degree of influence of this factor on milk fat yield was ($\eta 2= 0.039$) with a high degree of reliability ($P>0.999$).

Thus, it is advisable to consider such a factor as the age of cows to facilitate the effective selection of animals based on the content of fat in the milk of cows and the yield of milk fat. When characterizing the ontogenesis of dairy cattle, one should consider not only changes in the lactation

curve, but also the content and yield of milk fat depending on the order of lactation according to the age of the cows, that is, the ontogenetic parabola of milk fat production.

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PHARMACOLOGICAL PROPERTIES OF 3,5,4′-TRIHYDROXY-TRANS-STILBENE – A PROSPECTIVE PLANT ANTIOXIDANT

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Polyphenols are biologically active compounds that have many beneficial effects on human and animal health due to various properties, such as antioxidant, anti-inflammatory, immunomodulatory and others (Zeng et al., 2020; Zhou et al., 2021b; Naumenko et al., 2023). One of the most studied natural nonflavonoid polyphenols from the stilbene group is 3,5,4′-trihydroxy-trans-stilbene (resveratrol) (Perrone et al., 2017; Zhou et al., 2021a). Resveratrol is a phenolic substance with pronounced antioxidant properties that was first isolated from *Veratrum grandiflorum*, from where the name was derived, and is found in more than 70 plant species, but has a high concentration in the skin of red grapes, as well as wine, peanuts, soybeans and some berries, has attracted the attention of scientists in recent decades (Meng et al., 2020; Shaito et al., 2020; Toniolo et al., 2023).

Resveratrol is known for its antioxidant properties due to the neutralization of reactive oxygen species (ROS), including hydroxyl, superoxide, and metal-induced radicals (Li et al., 2018a,b; Koshevoy et al., 2022). In addition, resveratrol is widely known for its positive effects on aging processes and its use in the complex therapy of some types of cancer (Varoni et al., 2016; Ko et al., 2017). Mechanisms of action under different pathological conditions have certain similarities, however, different changes of markers in blood and cell cultures of different species of animals were detected. For example, in mice, resveratrol delayed age-related changes, mimicking certain effects of dietary therapy, although no increase in lifespan was observed. At the same time, it was established that the antiaging and anticancer effects of resveratrol were associated with an increase in the level of NAD-dependent deacetylase (Hubbard & Sinclair, 2014; Li et al., 2018a; Koshevoy et al., 2024).