

## Environmental Factors Influencing The Milk Of Dairy Cows In The Climate Conditions Of The Republic Of Karakalpakstan

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### Abstract

*Cattle breeding is one of the most important branches of animal husbandry, which, along with livestock products (meat, milk), plays a large role in providing our people with raw materials for the light industry. In this article, the main task facing livestock specialists today is to increase the number of pedigree cattle in cattle breeding, to study the adaptation of the animal organism to the external environment when forming the most productive herds of cattle.*

Keywords: Climate, milking methods, grazing, cow health, breeding, service period, scientific feeding, feeding rate, adaptation.

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### 1. Introduction

In the sharply continental climate of the Republic of Karakalpakstan, the demand for meat and dairy products is very high, therefore, increasing the number of livestock, dramatically increasing the production of livestock products, growing dairy products from them, radically improving the breeding quality of livestock, widespread use of breeding and selection achievements and the need to apply new methods is one of the urgent issues of today.

Also, in order to increase the productivity of cattle, it is important, first of all, to pay special attention to improving their breeds, to study foreign experience and apply it in our republic, especially to create modern livestock complexes in the regions, as well as to import

high-yielding cattle adapted to the climatic conditions of our republic from foreign countries.

**Climatic conditions.** Karakalpakstan, Uzbekistan is located on the northwestern side along the Amu Darya. It borders the Kyzylkum Desert to the east, the Ustyurt Plateau to the west, and the Aral Sea. In general, the conditions of Karakalpakstan are cold in winter, very hot in summer, and the pastures are very wide, which is somewhat convenient for our livestock breeders.

According to L.E. Babushkin (1889), the temperature and humidity in Karakalpakstan are 80-100 mm, with very dry winds. The cold winter period lasts up to 81-102 days.

According to the republican metro station, the average

cold temperature in January is 7-10°C, and in July the temperature is 26-35°C. Sometimes the air temperature reaches 43-45°C. This circumstance has a great influence on the development of animal husbandry. Therefore, in Karakalpakstan and other regions of Uzbekistan, agricultural specialists, including livestock breeders, and biologists, dependent on climatic conditions, face a major task, namely developing scientifically based feeding and feeding standards for livestock to develop agricultural livestock and produce more products from them, and providing scientifically based proposals for studying physiological processes depending on their living conditions.

For this purpose, work is underway to separate grazing of pedigree cattle imported from other republics and to use the semen of pedigree male cattle to inseminate local cattle (cows and rams) to form herds that yield more milk and meat.

According to T.F. Tavit Dravon, pedigree cattle imported from other republics into Uzbekistan's hot climate age quickly, cardiovascular diseases occur, and when cattle reach 6-8 years of age, the characteristics of their main organs change. For example, the back bends, the muscles relax, and the legs become crooked. This phenomenon is not found in our local goods. According to him, with adaptation to new climatic conditions, the physiological processes in the animal's body suddenly change, that is, on hot summer days, thermoregulation increases, and breathing and heart rate accelerate.

F.F. Eisner showed that a high level of air temperature affects productive cows more, since the increase in body temperature and the process of metabolism are closely related to the product.

According to many scientists Yu.O. Raushenbach, D. Phillips, N.N. Soldatenkov, E.Yu. Karchevsky, A.G. Azizov, the effect of solar heat reduces cow's milk production. This often depends on the breed, calving time, age, and especially on feeding and nutrition. T.Kh. Ikramov says that cattle brought to Uzbekistan adapt faster than other breeds. Scientists (A.A. Agabeli, I.Akhmedov, Sh.A. Akmalkhonov, O.Saryjayev) note that the summer heat has a great influence on the calving of cattle, since the temperature and sunlight affect the animal's body, disrupting its normal functioning. As a result, the activity of the cow's reproductive organs weakens, respiration and heartbeat increase, and the body's temperature rises. This leads to a decrease in output.

Yu.O. Raushenbakh and S. Sodikov proved that when converting pedigree cattle from one district to another, crossing them with local cattle and increasing the number of offspring from them in the farm gives good results. They also determine the profitability of forming a dairy herd on the farm through the selection of highly productive cattle.

A.G. Avizov indicates that the average annual milk yield of Latvian brown cattle imported to Uzbekistan from the Baltic republics was 2830 kilograms, and Estonian red cattle - 2850 kilograms, which, according to their condition, significantly reduced the milk yield.

According to T.F. Tavit'darova, cattle calving decreased by 30% in summer compared to winter (70%). Therefore, the heat of the weather, combined with natural and climatic factors, has a significant impact on cattle calving. Local livestock in the conditions of Karakalpakstan are well adapted to such conditions. It is not a separate breed, but livestock that grows dairy and meat products on farms. A cow's annual milk yield is 1000-1200 kg, weight is 250-300 kg, calves are born small, their average weight at birth is 16-18 kg.

According to the writings of U.Nasirovyu, A.V.Asaturov, T.Kh.Ikramov, M.Ajibekov, U.Kalimvetov, it was established that it is possible to increase milk and meat productivity in farms by correctly organizing the feeding and grazing of pedigree livestock imported to Karakalpakstan from other republics.

For example, when local cattle (cows) were inseminated with steppe red steppe bull semen, the weight of the obtained twins increased by 200-350 kilograms, and the milk fat content by 0.6-1.8 percent.

B. Danilev (1970) noted that in the same climate, feeding, and feeding conditions, domestic and Kazakh white-headed cattle increased their live weight by 20-30%. They grew rapidly, and meat production was significantly higher than that of local cattle. When crossing local cattle with bulls, the milk yield of offspring increased by 25-30%. The weight of the bulls increased, and the slaughter yield and meat quality improved. The conducted experiments have proven to yield good results.

Similar scientific experiments are also being conducted in livestock farms of the republic.

**Milking methods:** The well-being of farm animals, their physiological conditions, and milking methods

significantly influence milk production. Milking methods play a significant role in milk production and secretion. The larger the volume of the udder, the more milk a cow has. According to V.N. Nikitin's recommendations, the excretion of udder fluid decreases by 5% per hour after milking. But over time, it will replace it. Especially before milking, the udder fills up. Therefore, the cow's udder is massaged before milking.

This is often a physiological process carried out by the nervous system. Cow udders vary in shape, with cylindrical and thyroid udders being milky. For example, cows with shield-shaped udders of black-and-white and steppe-red steppe cattle produce 700-1200 kilograms more milk per year than goats. In recent years, cow udder massage has been carried out using mechanisms. Especially when providing the dairy complex with dairy cows. The amount of milk delivered per minute and time is recorded.

**Plowing:** Scientists are proving that increasing cows' milk production is also related to plowing. The tied cow is taken out to the field for 2-3 hours daily and driven for 2-3 kilometers. It is necessary to walk them every day. On very rainy and snowy days, livestock are not allowed to go out to the fields. Because the body's energy is spent more on resistance forces, the fat content of milk and milk decreases. However, in complexes with a large number of goods, they are not carried out. Because production requires a lot of labor and is economically unprofitable, therefore, a microclimate and conditions are created in the barn to preserve the health of cows and save time from use.

**Cattle quality:** Although cattle are of the same breed, it is known that the amount and composition of milk vary depending on feeding and feeding conditions. Therefore, selection based on animal productivity, especially selection based on milk fat content and protein content, is a responsible responsibility of every livestock specialist. For this purpose, scientific work carried out in our republic should bring the annual milk yield of cows to 3000-4000 liters, and fat content to 3.8-4.0 percent. Also, such work continues to be carried out by the scientific staff of the Research Institute of Animal Husbandry of Uzbekistan on the study of steppe red desert and cattle.

**Living conditions:** The average temperature of the cows' resting place should not exceed +8-10°C. Cool air activates metabolism in cattle and increases milk fat content. However, extreme cold negatively affects the

body of livestock. Some animals die from heat intolerance or lose their milk production. For example, if the air temperature in the barn reaches 42-43°C, then the productivity of cows decreases by 50-60%. On farms, summer shelters are built to protect cows from the heat, they are provided with pond water, and zooveterinary measures are carried out. As a result, milk yield and fat content of cows increase in the morning compared to the evening.

**Cows' health:** If physiological processes in cows are disrupted, milk production and its composition change. If the cow is sick, its milk production decreases, and it even stops giving milk. Milk sours in the udder, sugar decreases, and protein, salt, and enzymes increase. Processing of milk obtained from such a cow and preparation of other products is not allowed.

**Origin:** In breeding farms, when selecting dairy cattle, their origin is taken into account. In this case, a breeding card is drawn up based on maternal and paternal education. If the mother is dairy and the father selects them based on milk fat content, the resulting breeding calves will be valuable.

**Heredity:** Good paternal and maternal traits in living organisms are passed down through generations (genotype). For example, cow's milk, milk fat and protein content, weight, and other characteristics continue to grow and develop under certain conditions with the appearance of calves (phenotype). All information about cows is recorded on the farm's individual livestock paper. Consequently, fertilization depends on external influences, nutrition, feeding, and care conditions. Therefore, in recent years, the heritability of such traits of cows as milk, milk fat content, protein, and weight has been studied.

## 2. Conclusion

The cow's lactation period (service period). During this period, the cows' udders enlarge and milk production decreases. Physiological metabolism in the body is activated, especially noticeable 55-60 days before childbirth. Because the embryo (calf) in the mother's womb grows quickly. Near labor, the udder glands swell significantly. As milk production approaches, its function increases. During these days, special attention is paid to feeding and grazing the cow. Succulent feeds are reduced in the ration, and more protein-rich, vitamin-rich feeds are given. At this time, silage is removed from the ration. After calving, the cow is unable to consume all the feed

she gives, and it also needs more energy to release digestible substances from the body to produce milk. Therefore, milking should be stopped at least 50-60 days before calving. This contributes to the effective passage of the calving season in cows. Timely weaning of cows allows for increased yields in the future.

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