



## MAIN FACTORS AFFECTING MILK PRODUCTIVITY OF CATTLE

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The milk productivity of cattle is the amount of milk received from one cow during a certain period of time: days, weeks, months. This is one of the main indicators of the economic efficiency of the economy in animal husbandry. The assessment is carried out in relation to each cow and the entire herd as a whole. The productivity index of cows depends on many factors and can change both up and down.

The higher the milk yield, the lower the feed costs per 1 kg of finished products. In the end, the cost of milk also falls out, because at exceptional prices about 60% is the cost of feeding cattle. Keeping highly productive animals costs on average 1,5-2 times cheaper than regular livestock, so producers are interested in increasing milk yields.

In modern animal husbandry, the success of animal husbandry is determined not only by the feeding, breeding and age of animals, but also by 20% of the microclimate and conditions of detention. From animals under the best feeding conditions, it is impossible to achieve the best productivity if the microclimate conditions are not perfect. On the other hand, optimal microclimate conditions alone cannot ensure high productivity if the level of feeding and the quality of the animals do not allow it. It is worth knowing that the parameters of the microclimate greatly affect the service life of buildings and equipment, and the working conditions of the maintenance personnel. Cattle are not whimsical in their content. So, with its content, one must strive for the simplest solution to the problem of comfort. Comfortable keeping of cows is the creation of conditions that meet the physiological needs of animals, taking into account their physiological state, and in return the cow will thank you with an increase in productivity.

Animal comfort implies 4 main conditions under which a cow feels ideal:

- 1) a dry, soft place to rest;
- 2) fresh air and coolness;
- 3) unlimited access to feed;
- 4) unlimited access to water.

Cows have been known to lie down for up to 12 to 14 hours a day if the place to rest is comfortable. If a cow is forced to lie down on a damp, hard floor, then the duration of lying down can be reduced to 6 hours, and the reduced lying down period inhibits milk production by up to 30%. Stalls should provide the animal with the opportunity





to unhindered to fit and get up, lean forward. The neck restraint should be positioned about 122-127 sm above the mat.

The stall for cattle performs the most important functions, depending on the type of content. With loose technology, this is a simple place for resting and digesting food, and with a tie-down method, milking and feeding of the animal is performed in the stall. Productivity, ease of maintenance and therapeutic measures depend on the correct choice and preparation of the stall.

One of the main requirements for bedding material is to reduce the heat loss of animals during their rest on the floor. The use of bedding material keeps the skin of the animals clean and provides them with a dry, warm and soft resting place that needs daily cleaning. The use of bedding also improves the work of milkmaids, increases resistance. With prolonged contact of animals with a cold floor (more than 12 hours a day), there are large heat losses, an increase in feed consumption, a decrease in productivity, colds and the prevention of hoof diseases and bursitis. The hard cover causes bruising, bedsores, so the animals avoid resting, which also reduces productivity.

Straw, sawdust, peat, wood shavings, sand, synthetic materials are used as bedding material - they absorb moisture without harming animals. Also, this material is easily removed by scrapers, a transporter or a tractor.

Of all microclimate factors, air temperature depends on the impact on the productivity of animals and on how much feed they eat. Cows are animals that are very fond of coolness. It has been established that for dairy cows the lower limit of the optimum temperature is  $+5^{\circ}\text{C}$ , and the upper limit is  $+25^{\circ}\text{C}$ . The most comfortable temperature regime for a cow is from 7 to  $+17^{\circ}\text{C}$ . At the same time, cows tolerate a decrease in temperature much easier than an increase. The selection and variety of feed, their ratio in the ration, feeding regime and many other factors affect milk production.

The greatest amount of high-quality and cheap milk can be obtained only with complete and satisfying the needs of feeding cows throughout lactation. Violation of these principles and the established feeding regimen, interruptions in feeding, feeding of low-quality feed lead to a shortage of milk, a decrease in its quality and an increase in its cost. With an increase in the level of feeding, accompanied by an increase in milk yield, the cost of feed for the production of 1 kg of milk decreases.

To increase the milk productivity of cows, it is important to provide livestock with a balanced ration. The ration is calculated by nutritional value, chemical composition. The ratio of dry matter, protein, sugar, fat, starch, as well as energy value, matters.





Dairy cows should receive phosphorus, copper, calcium, cobalt, zinc, carotene, and a complex of vitamins.

The cellulose of roughage is contained in an amount of up to 10% of the ration. Fat is necessary to obtain the fat content of milk and must make up at least 60% of the substances that are mixed with milk. The art of cow feeding is to get a full cow to eat a little more feed. The genetic potential of modern cows is very high, and the correct feeding technology is important for its realization. A well-balanced ration is especially important during milking (early lactation) when the cow is deficient in nutrients. Otherwise, the risk of metabolic disorders and weight loss increases. Healthy and moderately well-fed (3.5-3.75 points) cows move more easily from the dry period to the lactation period.

The cow is a ruminant animal with a four-chambered stomach, the largest of the chambers being the rumen. Its volume is about 150-200 liters. In the rumen, a microflora is formed that helps to digest and absorb nutrients from the feed. The feed a cow consumes is also food for the bacteria in her rumen. More frequent distribution of feed affects the activity of cows: they will more often approach the feed stall, drinkers, and then rest in the stall.

Milk is almost 90% water, so it is not surprising that the water consumed by a cow has a big impact on milk yield. If cows are provided with the correct water supply, then the animals will drink more, eat more and, due to this, give higher milk yields. All this is very simple and at the same time very important. To assimilate 1 kg of dry feed, a cow needs up to 5 liters of water, and to obtain 1 liter of milk - 4-5 liters of water. Highly productive cows consume up to 150-200 liters of water per day.

Cows drink quickly, up to 20 liters per minute. Decreased water consumption leads to reduced milk yield. For example, reducing water consumption by 40% reduces milk yield by 25%. Cows drink water during meals and immediately after milking. 30% of the amount of liquid cows consume after milking. The optimum water temperature is 15-17°C. With such indicators, animals consume the maximum amount of water.

Cows love to drink clean, fresh water. They are very sensitive to poor quality water. The quality of water depends on the content of bacteria, chemicals, organic matter and minerals in it.

Increasing the milk productivity of livestock does not require large investments and serious modernization of the enterprise. You can get growth as a result of simple actions. Improving the conditions of detention, rational nutrition can increase milk yield up to 10% or more.





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