

# CHANGES IN THE BEHAVIOR OF COWS IN CONNECTION WITH PASTURE AND LIVESTOCK FARMING CONDITIONS

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**Annotation.** The article comparatively studies the behavior of cows inseminated from bulls of the Schwyz breed of German selection with local cows of the Schwyz breed and local breeding cows of the second generation in the conditions of pastures and livestock farms. Cows from the first group were more active than their peers from the second group, both on pastures and in conditions of keeping cattle. In grazing conditions pastures, the behavioral characteristics of cows in both groups differed significantly from those in livestock farms.

**Key words.** Livestock, Schwyz breed, German breed bull, cow, ethology, behavior, active movement, pasture, cattle, standing position, chewing, cow milking, defecation, urination, bed rest, movement.

**Introduction.** Ethology is one of the most important external features of animals and has a direct effect on productivity. In recent years, a great deal of attention has been paid to the study of the ethology or behavior of cattle, among other animals.

The various forms in the behavior of animals are determined by conditioned and unconditioned reflexes. Unconditioned reflexes have a genetic basis and are inherited from their parents during the process of phylogeny. Conditional reflexes formed a certain strict conditions, conditions change, re- formed and changed. If an

animal falls and other conditions, teaching urban adaptation to the conditions will change in the character [7].

Behavior is an important form of animal life and plays a special role in its adaptation to external environmental conditions [1; 11; 13].

Humans have been trying to increase the milk and meat productivity of cattle for many years. In order to increase the milk productivity of cows, they are far removed from the natural habitat by humans. In modern complexes, they are fully controlled by man[3].

By the ethology of cattle is understood, first, the study of their behavior, and the actions in it are recorded in sequence. The results of genetic observations show that 50% of mammalian behavioral elements are congenital [17].

Based on the observations of Phillips C. [18], he argues that calves sleep 13 hours a day as a norm, and bulls and dairy cows 7 to 10 hours (five-cycle interval approximately 1.5 hours). It was concluded that when cows were kept untied, the rest period was reduced to 5 hours per day.

The microclimate in the dairy has a direct impact on their behavior and milk yield. When the temperature in the barn was lowered to +50 C, their standing time was extended. Bedtime is reduced. At the same time, as a result of cooling the floor, the cows preferred to stand upright [9; 20].

The comfort status of the cows is directly affected by the width and length of the area or box set aside for each head of animal to rest. The comfort of the resting place has a direct positive effect on the milk productivity of cows and the profitability of milk production [8].

In the studies Ulimbashev M.B. [12], Holsteinized bodies spent more time consuming food than their Schwyz counterparts. Holstein cows spent 23,7-26,0 % of the day in the barn and 34,0-35,6 % in the pasture, while first-generation Schwyz cows spent 22,7 % and 32,2 %, respectively.

Muratova L.M. In [10], Simmental cows spent 402 minutes feeding when kept in a barn, while Schwyz cows were limited to 308 minutes.

Fesyun V.G. In their experiments [14], it was concluded that high-yielding cows spend more time on chewing than low-yielding cows.

According to American scientists, high-yielding cows receive feed 12 times a day and spend 5 hours feeding in the manger [19].

In experiments of Khisamov R.R., Kayumov N.A., Safiullin N.A. [15], was observed that the cows spent 248 to 285 minutes a day lying down and chewing, and slept a lot on the right side. Black-and-white cows spent 285,3 minutes lying on the right side and 154,9 minutes on the left side. Jersey cows spent 17,2 % of the day chewing while lying down, while the black-and-white breed spent 19,8 %. It took 2,8-3,1 times more time to chew in the supine position than in the upright position.

Water plays an important role in biochemical processes in the body. It also controls body temperature. When cows are tied up, they drink water 5-7 times a day and spend 5-8 minutes on it. The number and amount of water you drink will depend on your diet and weather conditions. Cows with different productivity drink different amounts of water. Cows with 15-20 liters of milk per day drink 38 l, cows with 20-25 kg of milk drink 40 l, and those with more than 25 kg of milk drink 50 l of water [22].

The need to drink water depends on the nature and conditions of keeping the cows. The physiological condition of the cows is also affected. Cattle on the farm drink water every 2-4 hours [6].

An N.N., Kasenov B.R. [2] found that Canadian Holstein cows spent 4,2 minutes more drinking water during the day than their black-and-white counterparts.

Defecation is a complex physiological process characterized by the expulsion of food debris from the digestive system. The frequency of defecation depends on the quality and quantity of food consumed. The act of defecation occurs after a period of feeding and rest.

One of the important physiological processes in the body is the excretion of urine. C reading in the process of cows and rear lift the tail of the first bend. Urine

excretion is repeated 6-11 times per day, and cows excrete up to 30 liters of urine [4; 16].

The behavior of cows depends on their storage and milking technology. Non-binding cows have a high nutritional activity, and they spend 5% more time on feed intake and chewing return than bred cows [5; 21].

Analysis of these data suggests that the study of behaviors in cattle still requires multidisciplinary and complex research.

**The purpose of the study.** To study the effect of keeping in pasture and cattle conditions on the behavioral characteristics of s cows of the second breed of the Schwyz breed.

**Object and method of research.** Object and method of research. The object of the study was the generation of Schwyz cows bred locally with German-bred Schwyz bulls (Group I) and second-generation Schwyz cows of local selection (Group II).

V.I.Velikjanin's [2000] timekeeping method was used to observe the behavior of cows. In addition, the daily movements of the cows were recorded on video surveillance tape. Biometric processing of digital data obtained during the experiment.

**Results obtained and its analysis.**The climatic conditions of Uzbekistan are unique, with four seasons. In winter, mountainous areas receive more rainfall in some years and less in others. The rainfall in spring is the same. In summer, a dry hot climate prevails. In years with high rainfall, pasture productivity in mountainous areas is naturally high. During periods of drought, however, this takes the opposite view.

The experimental farm "Bosh Bulak Chorva" has 1000 hectares of pastures, which can be used for grazing cows from early spring to late summer, depending on the amount of rainfall and pasture productivity. The pasture is located in a mountainous area where various plants grow. Springs close to the pasture are used to provide water for the cows. Light shelters have been built near the pasture for the cows to rest. Milking of cows is also organized here. Cows are given 1,5 kg of

wheat bran in the morning and evening for additional feeding before milking. To meet the cows' demand for minerals, salt is placed around the pasture.

When cows are fed in new conditions, they try to adapt to these conditions, causing changes in their behavioral performance. In their day-to-day movements, they have a different look than the one in the barn.

The experimental cows were fed in a separate group on the pasture. As a result of observing the behavior of cows during grazing, we obtained the following data.

Table 1

**Behavioral indicators of keeping cows in pasture conditions , (n-10 ), (X  $\pm$  S<sub>x</sub>)**

№	Indicators	Groups			
		I		II	
		Minutes	% Of time of day	Minutes	% Of time of day
	Duration of observation	1440	100	1440	100
1.	Standing up right, total	863,0 $\pm$ 10,0	59,9	826,8 $\pm$ 12,0	57,4
2.	In cluding: Stand still	90,0 $\pm$ 8,04	6,25	108,0 $\pm$ 9,0	7,5
3.	Food in take and exercise	531,4 $\pm$ 6,01	36,9	500,4 $\pm$ 5,20	34,75
4.	Drink water	27,5 $\pm$ 0,50	1,91	25,0 $\pm$ 1,10	1,7
5.	Chewing back in an upright position	170,1 $\pm$ 2,24	11,8	148,2 $\pm$ 3,80	10,3
6.	Comfort movement	6,0 $\pm$ 0,45	0,41	7,5 $\pm$ 0,21	0,52
7.	Bed position total	577,0 $\pm$ 4,90	40,1	613,2 $\pm$ 7,54	42,6
8.	In cluding: Chewing gum in the supine position	302,0 $\pm$ 7,88	21,0	333,6 $\pm$ 10,0	23,16
9.	Lying motionless	275,0 $\pm$ 5,02	19,1	279,6 $\pm$ 8,0	19,41
10.	Milking	10,0 $\pm$ 0,30	0,7	8,7 $\pm$ 0,25	0,61
11.	Defecation	15,6 $\pm$ 0,45	1,1	16,0 $\pm$ 0,65	1,12
12.	Separation of urine	12,4 $\pm$ 0,51	0,86	13,0 $\pm$ 0,72	0,9

From the data in Table 1, it can be seen that the cows in group I outperformed the cows in group II, which were their counterparts, in terms of behavior. The vertical movement of cows in the experimental group I averaged 863

minutes per day or 59,9 % of the day, while in the control group II the figure was 826,8 minutes or 57,4 %, respectively. Group I cows were more active during the day for 36,2 minutes than group II cows. In addition, the cows in the experimental group I spent 31 minutes longer on feed consumption and movement time than the cows in the control group II, 2,5 minutes more on drinking water, and 21,9 minutes more on returning chewing upright. Of course, these indicators have a direct positive effect on the milk yield of cows.

At the same time, cows in the I-experimental group were observed to spend 18 and 31,6 minutes less time, respectively, than cows in the II-control group, standing still, returning chewing in the supine position.

No significant difference was observed in the intergroup cows in terms of time spent on milking, defecation, and urinary excretion.

When the cows were grazed in the pasture, we witnessed that the cows used the pasture effectively in the morning and in the evening. It was also observed that cows consumed pasture grass well after milking. This can be explained by the fact that the weather is cool in the morning and the cows are hungry. During the first 15 days of April and May, the cows did not consume much water because the grassland was rich in water. As the days got warmer and the amount of moisture in the feed decreased, the demand for water by the cows also increased and we witnessed them spending more time drinking water.

At the end of the grazing season, the cows are transferred to storage conditions in the barn. This period coincides with the end of summer and the beginning of autumn. After the cows are returned from the pasture, they are fed on farm-raised feed. It now uses nutrients such as harvested alfalfa and corn. Cows are kept in the barn until the fall and winter as well as the early spring. There is a pasture near the barn, which has feed troughs in front of it, and water troughs on the side. Cows are fed in the grazing areas during rearing in the barn. During the cold or rainy days of the day, cows are fed with readings installed inside the barn. Sufficient space has been set aside for cows in the grazing area. Milking

of cows is carried out in the morning and evening in the barn. At this time, the cows are fed fodder.

In our experiments, we tried to learn how to detect changes in the behavior of cows when keeping them in a cattle shed. Based on the data obtained, Table 2 was formed.

Table 2

**Cattle stabling conditions, behavioral indicators, n = 10, ( $X \pm S_x$ )**

№	Indicators	Groups			
		I		II	
		Minutes	% Of time of day	Minutes	At the time of day relative, %
	Duration of observation	1440	100	1440	100
1.	Standing up right, total	799,0±11,0	55,48	780,0±9,90	54,17
2.	In cluding: Stand still	200,5±8,05	13,92	220,2±8,0	15,33
3.	Consumption of food	395,2±6,0	27,44	372,2±5,82	25,84
4.	Drink water	23,7±0,55	1,64	22,0±1,0	1,53
5.	Chewing back in an up right position	166,1±3,14	11,53	152,0±3,51	10,56
6.	Comfort movement	13,5±0,5	0,94	13,6±0,42	0,94
7.	Bed position total	534,1±6,60	37,1	560,0±7,52	38,9
8.	In cluding: Chewing gum while lying down	280,3±8,0	19,46	288,8±9,5	20,0
9.	Lying motionless	253,8±6,0	17,64	271,2±5,42	18,83
10.	Milking	11,0±0,60	0,76	11,3±0,80	0,79
11.	Movement	65,0±1,73	4,51	58,4±2,05	4,06
12.	Defecation	17,90±0,82	1,24	16,1±0,75	1,12
13.	Separation of urine	13,0±0,68	0,9	14,2±0,54	1,0

As can be seen from the data in Table 2, we can distinguish that cows in the period of care in the barn were more active in the behavioral indicators than those grazed in the pasture.

In cows of the I- experimental group, the average standing position during the day was 799 minutes or 55,48 % of the day, while in the cows of the II- control group this figure was 780 minutes or 54,17 % of the day. In other words, the cows in group I were more active during the day for 19 minutes than the cows in group II.

It was also found that the cows in Group I spent 23 minutes more on food intake than the cows in Group II, 1,7 minutes more on drinking water, 14,1 minutes more on chewing while standing, and 6,6 minutes more on moving.

In turn, the cows in group I spent 19,7 minutes less time to stand still than the cows in the control group, 8,5 minutes less to chew while lying down, and 17,4 minutes less to lie still. These data indicate the activity of cows in group I.

No significant difference was observed between the two groups in the results of the time spent on comfort movement, milking, defecation (rapid excretion), and urinary excretion, which were calculated from the behavioral indicators of the cows.

The following results were observed when comparing the behavioral indicators of cows of group I and group II when kept in pastures and cattle-breeding conditions.

Cows in the experimental group spent 863 minutes standing upright while grazing, compared to 799 minutes in the barn or 64 minutes more in the pasture than in the barn. In cows in the control group, these figures were 826,8, respectively; 780 and 46,8 minutes. In the pasture, the feeding and other movements of the cows took place along with the process of walking.

While the cows in Group I spent 90 minutes standing still in the pasture, in the barn it was 200,5 minutes. In other words, 110,5 minutes more time was spent in the barn than in the pasture. In group II cows, these figures were 108, respectively; 220,2 and 112,2 minutes, respectively. This can be explained by the



fact that the cows are connected at night in the barn and consume the feed in the manger.

Group I cows spent 531,4 minutes on pasture and 395,2 minutes on the barn. Group II cows spent 500,4 minutes in the pasture and 372,2 minutes in the barn. This is 136,2 minutes more in the experimental group and 128,2 minutes more in the control group than in the pasture, mainly due to the fact that cows spend 36,9% of the day in the pasture for feeding.

Group I cows spent 6 minutes in the pasture and 13,5 minutes in the barn for comfort, ie almost twice as much or 7,5 minutes more than in the barn, while the cows in the group were 7,5; 13,6 and 6,1 minutes respectively. This can be explained by the fact that cows move a lot in the grazing area when they are kept in the barn.

Group I cows spent 42,9 minutes longer for grazing, 21,7 minutes longer for ruminants, and 21,2 minutes longer for bed rest, compared to 53,2 for group II; 44,8 and 8,4 minutes can be explained by the fact that they spent a lot of time, mostly cows getting tired of walking from pasture to camp, and more time spent on vacation.

There was no significant difference in the time spent in drinking water, chewing in the upright position, milking, defecation, and urination during the period when cows in both groups were kept in pasture and barn conditions.

**Conclusion.** When cows are transferred from one condition to another for keeping, certain changes in their behavior occur. In pasture conditions, cows move faster and spend more time consuming feed and drinking water. It was found that cows spent 71,2 minutes more time consuming food and moving in the pasture than in the barn. There was no significant difference in the chewing rate of cows in the upright position under different storage conditions. The cows spent twice as much time standing upright in the barn as in the pasture. When cows are kept in the barn, they have a more comfortable movement time than in pasture conditions. In the pasture, cows spend less time defecating and urinating than those kept in the barn. This can be attributed to the fact that they expend more energy on their

movement in the pasture. It was observed that the offspring (group I) obtained from the breeding of Schwyz cows bred locally with Schwyz bulls belonging to the German selection in terms of behavior were more active than second-generation cows (group II) with their peers.

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