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CHANGE IN PHYSIOLOGICAL INDICATORS OF COWS OF THE GOLSHTIN BREED BY SEASONS OF THE YEAR

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Summary. The article describes data on the study of physiological parameters of Holstein cows by seasons, in the diet of which hydroponic green feeds are included. It was found that the inclusion of hydroponic green feeds in the diet of cows did not have a noticeable effect on physiological parameters. Body temperature, pulse, respiration have changed depending on the seasons within the limits of physiological norms, which allows us to judge the good fitness of Holstein cows to the conditions of our Republic.

Keywords. Holstein breed cows, hydroponic green fodder, vitamins, minerals, physiological norms, body temperature, respiratory rate, heart rate, productivity.

Introduction. The milk productivity of cows largely depends on the level of feeding, the balance of the ration with nutrients, as well as the amount of vitamins and minerals in the ration. Vitamins, which are considered biologically active substances in GAO, have a positive effect not only on digestion, ensuring the vitamin nutrition of feed, but also on all physiological and biochemical processes occurring in the body. With a deficiency of vitamins in the diet of cows, as a result of metabolic disorders, a weakening of the general physiological status of the body, a decrease in productivity and the occurrence of various diseases are observed.

Research material and methodology. The research was conducted at the "Mustafokul Polvon Dalasi" farm in the Bulungur district of the Samarkand region. 4 groups of Holstein breed cows bred on the farm were formed, and each group included 10 cows of the third calf and older. Cows of the control group, based on the ration adopted on the farm, were replaced with hydroponic green fodder based on the nutritional value of concentrated feeds in cows of the I experimental group by 25%, in the II experimental group by 35%, and in the III experimental group by 45%. The physiological indicators of cows were determined according to the general methodology adopted in zootechnics.

Research results. Cows of the Holstein breed were brought to the farm where the experiments were conducted from the European region, which differs sharply in natural and climatic conditions. Therefore, the study of their physiological indicators in the sharply continental climate of Uzbekistan is of particular importance. Taking this into account, the main physiological indicators of the experimental cows were studied by seasons (Table 1).

Table 1

Physiological indicators of the experimental cows, ($C \pm c\bar{x}$)

Groups	Seasons	Body temperature, 0C	Number of breathing	Pulse rate, per minute

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			movements per minute	
Control	spring	38,0 ± 0,47	29,8 ± 0,44	69,1 ± 0,76
	summer	38,6 ± 0,39	35,9 ± 0,36	73,3 ± 0,81
	autumn	38,2 ± 0,52	32,6 ± 0.28	68,7 ± 0,56
	winter	38,0 ± 0,36	28,4 ± 0,32	67,2 ± 0,90
Experiment I	spring	38,1 ± 0,50	29,7 ± 0,42	68,7 ± 0,64
	summer	38,7 ± 0,38	35,3 ± 0,28	73,6 ± 0,68
	autumn	38,1 ± 0,41	31,8 ± 0,26	69,0 ± 0,57
	winter	38, 0 ± 0,32	28,6 ± 0,41	68,2 ± 0,70
Experiment II	spring	38,0 ± 0,28	29,4 ± 0,35	69,4 ± 0,72
	summer	38,6 0,34	34,9 ± 0,27	73,4 ± 0,82
	autumn	38,2 ± 0,40	32,2 ± 0,36	68,7 ± 0,74
	winter	38,0 ± 0,38	28,1 ± 0,28	68,0 ± 0,87
Experiment III	spring	38,2 ± 0,46	29,3 ± 0,37	69,2 ± 0,78
	summer	38,8 ± 0,42	35,6 ± 0,26	73,5 ± 0,69
	autumn	38,3 ± 0,38	31,8 ± 0,41	68,2 ± 0,78
	winter	38,1 ± 0,32	29,0 ± 0,28	68,1 ± 0,84

As can be seen from the table data, no significant differences were found between the groups in the main physiological indicators of the experimental cows, and they were at the level of physiological norms in all groups. At the same time, it can be noted that these indicators in all groups of cows changed significantly depending on the season. For example, if body temperature increased by 1.6% in the control group, by 1.57% in the I experimental group, by 1.6% in the II experimental group, by 1.5% in the III experimental group compared to the spring season, then in the winter months it increased by 1.5; 1.8; 1.6 and 1.8% respectively. The number of respiratory movements per minute in the summer period increased by 20.5% in the cows of the control group, by 18.8% in the cows of the I experimental group, by 18.7% in the cows of the II experimental group, and by 21.5% in the cows of the III experimental group, respectively, compared to the winter period by 20.9; 19.0; 19.5 and 19.6%, respectively. An increase in the number of respiratory movements in summer can be considered as an increase in pulmonary ventilation, manifested as a protective and adaptive function of the body as a stress in relation to the body's high air temperature.

Corresponding to changes in body temperature and respiratory movements, the number of heartbeats per minute also changed in the experimental cows. In the summer period, the heart rate in cows of the control group increased by 6.0%, in the I experimental group - by 7.1%, in the II experimental group - by 5.8%, and in the III experimental group - by 6.2% compared to the spring period; in the winter period, compared to the summer period, it increased by 8.4; 7.4; 7.4 and 7.3%, respectively. It should be noted that such changes in physiological indicators were at the level of physiological norms.

In conclusion, the introduction of hydroponic green fodder into the ration of cows did not have a significant impact on the normal physiological parameters occurring in them, these indicators changed at the level of physiological norms depending on the air temperature of the seasons, which, in turn, indicates that the highly productive Holstein cattle imported from abroad are well adapted to the natural and climatic conditions of our republic.

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