Journal of Positive School Psychology http://journalppw.com
2022, Vol. 6, No. 9, 4066-4069

Physiological And Clinical Indicators Of Cattle

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Abstract
As all branches of national economy in our country, agriculture and its main part in livestock-breeding productive reforms are holding. as a result, the branch is developing and adding its part for peoples' abundance. This article is about dependence of physiologist and clinic indication of black white and double fertile families productivity with its connection with disposition.

Keyword. breed, clinical, heart rate, blood pressure, respiration, norm, productivity, blood, endocrine, physiological, sex, protein, haemoglobin, albumin, globulin, erythrocyte, leukocyte, dimorphism, organism.

Introduction.

Increasing the number of livestock, first of all, cattle, using their productive potential is not up to the required level, showing that the experience of advanced cattle breeding, scientific achievements and new technologies are not sufficiently applied determines the relevance of the topic. Rapid development of the livestock sector plays an important role in providing our people with cheap and high-quality meat and other food products, especially in increasing the employment and income of citizens living in rural areas.

Research object and methodology.

The research work was organized in the conditions of Tashpolatov Jhoraniyoz farm in Sherabad district of Surkhandarya region.

Adaptation of animals brought from other ecological conditions in a new area is a long-term biological process. The adaptation of animals in one or another ecoregion is related to the general physiological state of their organism, which in turn is the main indicator that determines the level of productivity.

E.A.Arzumanyan (1957) and E.V.Eydrigevich (1987) showed that there is a connection between body temperature, blood pressure, heart rate, and repetition of breathing and the productivity of animals.

According to them, high-yielding cattle have faster breathing, higher heart rate and higher blood pressure. The general clinical condition of the cattle in the experiment showed that (Table 1), their body temperature, respiration and heart rate were mostly within the physiological norm. But in the hot summer days, when the metabolic process in the animal's body was accelerated, the body temperature rose a little higher. These animals were observed when they were 6 months old, and in group I it was 38.73 C or 0.08, 0.03 and 0.07 C less than their peers, group II, III and IV. In the winter season of the year, the body temperature was slightly higher than in other seasons and was 38.4 C (group III) and 38.8 C (group IV). In the spring and autumn seasons, the body temperature was kept almost the same, regardless of the breed and sex of the experimental animals.

Heart rate also changes closely related to body temperature. When the animals were 6 months old, their heartbeat was 74.81 times per minute in calves of group I, 72.71 times at 12.15 and 21 months old, respectively; 73.60 and 71.11 times. Similar indicators were observed in animals of other groups.

Another indicator that characterizes the clinical condition of moles is respiratory activity. As can be seen from Table 1, this indicator was 30.21 (group IV) to 31.60 (group III) times in the summer season of 6-month-old calves. In winter, it decreased significantly in all groups and was 29.91-31.00 beats per minute.

Table 1 Clinical indicators of experimental animals

Indicators	Groups			
	I-Swiss bulls	Swiss II bodies	III-black bulls	IV-black bodies
Summer (6 months)				
Body temperature, C	38,73 ± 0,08	38,81 ± 0,06	38,76 ± 0,04	38,80 ± 0,60
Heartbeat, times/per minute	74,81 ± 0,92	73,90 ± 0,81	73,86 ± 0,69	74,61 ± 0,76
Breathing movements, times/minute	31,30 ± 0,54	30,10 ± 0,29	31,60 ± 1,04	30,21 ± 0,91
Winter (12 months)				
Body temperature, S	38,66 ± 0,07	38,51 ± 0,06	38,41 ± 0,46	38,76 ± 0,69
Heartbeat, times/per minute	72,71 ± 0,80	72,40 ± 0,83	71,10 ± 0,59	71,40 ± 0,59
Breathing movements, times/minute	30,91 ± 0,31	29,80 ± 0,41	31,98 ± 0,59	29,91 ± 0,67
Spring (15 months)				
Body temperature, S	38,60 ± 0,04	38,71 ± 0,02	38,63 ± 0,33	38,00 ± 0,04
Heartbeat, times/per minute	73,60 ± 0,60	69,71 ± 0,50	68,93 ± 0,50	69,61 ± 0,41
Breathing movements, times/minute	32,00 ± 0,30	33,00 ± 0,29	31,91 ± 6,61	31,89 ± 0,57
Autumn (21 months old)				
Body temperature, S	38,51 ± 0,02	38,61 ± 0,03	38,64 ± 0,04	38,40 ± 0,02
Heartbeat, times/per minute	71,11 ± 0,61	69,81 ± 0,02	70,71 ± 0,41	69,87 ± 0,02
Breathing movements, times/minute	29,90 ± 0,04	30,41 ± 0,03	29,89 ± 0,02	30,04 ± 0,02

Our data were collected in various eco-territorial conditions of our republic, U. Nosirov (1974), Z. Torakulov (1985), M.E. Ashirov (1994), I. Maksudov (1994), P. Sobirov (2001), A. Kakharov and others. (2005) data.

It is known that the composition of blood is different in animals of different production lines and constitution types. This substance is related to the diversity of the exchange process. Blood nourishes all organs and tissues in the body and removes unnecessary substances from the body. Most importantly, it provides the body with oxygen and removes carbon dioxide.

Hormones of various endocrine glands affect the body through the blood. Here it plays the role of the environment, i.e. it distributes heat, therefore, depending on its shape elements and biochemical indicators, the characteristics and productivity of cattle are considered, and the extent to which the supplied feed meets the needs of the organism is controlled.

The number of erythrocytes in the blood of 6-month-old I-group calves in Table 2 is 8.9 million. is much more than their peers in other groups. In general, it was observed that not only erythrocyte, but also leukocyte and haemoglobin content was slightly higher. In the next period of the experiment, that is, in 12-month-old bulls (winter), the amount of erythrocytes was high (8.5 and 8.6 million) and the bodies were 0.1 (1.9%), 0.9 million (11.8%) and 0. 2 (2.3%) left behind 1.0 million (13.2%) ($P>0.05$ - $P<0.05$). The amount of haemoglobin in the blood of the bulls also increased. According to this indicator, sexual dimorphism was 0.6 (5.1%) and 0.8 g% (6.8%).

In terms of haemoglobin content, the Swiss bulls left the bodies behind by 0.6 g% (4.6%) ($P<0.05$), this difference was 1.5 g% ($P<0.001$) or 10.5% in the Black-Ola breed. . It should be noted that during the 12 months of the experiment, the growth rate of young animals was relatively slow (651-711 g), as a result, the composition of their blood elements, including haemoglobin, decreased (11.7-12.5 g%). When the average daily growth was 682-762 g (18-21 months), the haemoglobin content increased by 12.4-13.9 g%, the difference was 0.7-1.4 g% ($P<0.05$ - $P<0, 01$) or 6.0-11.2%. In terms of blood form elements, Swiss breed cattle were slightly superior to Black-Ola breed cattle. Intergroup differences were also found in erythrocyte sedimentation reaction, which are reliable.

In general, the opinion that the number of erythrocytes and the amount of haemoglobin in the blood of large-bodied or fast-growing beef cattle is high (U. Nosirov, 1974, 2002; P. Sobirov et al. 2003) was once again confirmed in our experience.

In our experiment, we studied the amount of total protein in the blood serum of animals and their albumin, globulin fractions (Table 3). From the data in the table, it can be concluded that the amount of total protein was high in the blood of the Swiss-group I and black bulls of the III group. In addition, this indicator is also related to age, and it was observed that it increased with age. In the 6th month of the experiment (summer), the total protein in the blood of animals of group I was 7.41 g%, compared to group II, 1.2 ($P>0.05$), III compared to 0.9 ($P>0.05$), and IV compared to 2.8% ($P>0.05$). This difference was equal to 2.1 ($P>0.05$), 0.8 ($P>0.05$) and 2.9 ($P<0.05$) percent at the end of the experiment, that is, at 21 months. A similar difference was observed in albumin content, say 21-month-old bulls of group I had serum albumin of 3.68 g%, II 3.44 g%, a difference of 6.9 percent ($P<0.01$) in III 3.63 g % difference was 1.4 percent ($P>0.05$), and 3.34 g % difference in IV was 10.2 percent ($P<0.01$). The difference between Kara-ola bulls (group III) and carcasses of the same breed (group IV) was equal to 8.7 percent ($P<0.01$) in favor of bulls. The data obtained by D. Levantin (1969, 2000), E. N. Dorotyuk (1996), A. B. Korakulov (1996), U. Nosirov (2001, 2003) show that the blood of cattle with a high growth rate is rich in protein, especially albumin. consistent with the conclusions. Because albumins are considered as a source for the formation of body tissues and cause rapid growth of the body.

Thus, there is a positive relationship between the living weight of a rapidly growing organism and the amount of total protein and albumin in its blood. Globulin in the blood serum is one of the indicators important for the vital activity of the cattle organism. Globulins bring antibodies to the body and perform a protective function. That is why an organism with sufficient globulins is resistant to any environmental conditions, adapts quickly and easily, is more productive compared to other animals, and is less susceptible to diseases. The difference in globulin content of experimental animals was significant (Table 2). For example, during the initial growth period of experimental young animals, i.e. at the age of 6 months (summer), the blood of calves of group I had an average of 4.20 g% globulin (29.8% alpha, 30.0% beta and 40.2% gamma globulin), II -group this indicator is 4.14 g%, difference 1.4 percent ($P>0.05$) in III 4.17 g%, difference 0.7 percent ($P>0.05$) and IV 4.12 g%, the difference is 1.9 percent ($P<0.05$). In the later stages of the experiment, almost the same amount of intergroup difference was preserved. But at the end of the experiment, globulin in the blood of the bulls slightly increased. According to this indicator, the difference between groups I-II is 3.0 percent ($P>0.05$), in groups III-IV it is 4.0 percent ($P<0.05$) and in groups I-IV it is 4.6 percent ($P< 0.05$). 21-month-old animal globules were 38.5, respectively, by group; 37.6; Gamma globulins accounted for 30.9 and 28.6 percent. It should also be noted that the amount of globulins varied slightly depending on the age of the animals. Information about globulins S.Z. Jalilov (1969), D.L. Levantin (1969), U. Nosirov (1974), A. Kakharov (1994), Z. Torakulov et al. (1996) data.

Table 2 Changes in shape elements in the blood of experimental animals
$\left(\overline{X} \pm S\,\overline{x}\right)$

Indicators	Groups			
	I-Swiss bulls	II-Swiss bodies	III-black bulls	IV-black bodies
Summer (6 months)				
Amount of erythrocytes, 1 mm3 / mln	8,9 ± 0,02	8,7 ± 0,01	8,5 ± 0,03	8,6 ± 0,02
The number of leukocytes, 1mm3 /thousand	10,6 ± 0,04	10,1 ± 0,02	9,5 ± 0,03	9,5 ± 0,03
Hemoglobin, g %	11,9 ± 0,02	11,3 ± 0,02	11,9 ± 0,02	10,9 ± 0,02
Erythrocyte sedimentation reaction (EChR), mm/h	1,81 ± 0,02	1,69 ± 0,02	1,80 ± 0,01	1,76 ± 0,01
Winter (12 months)				
Amount of erythrocytes, 1 mm3 / mln	8,5 ± 0,01	8,4 ± 0,01	8,6 ± 0,01	7,6 ± 0,02
The number of leukocytes, 1mm3 /thousand	10,3 ± 0,04	9,4 ± 0,03	10,5 ± 0,03	9,9 ± 0,01
Hemoglobin, g %	12,4 ± 0,01	11,8 ± 0,02	12,5 ± 0,02	11,7 ± 0,02
Erythrocyte sedimentation reaction (EChR), mm/h	1,79 ± 0,01	1,78 ± 0,01	1,80 ± 0,01	1,59 ± 0,02
Spring (15 months)				
Amount of erythrocytes, 1 mm3 / mln	6,9 ± 0,01	6,7 ± 0,01	6,8 ± 0,01	6,5 ± 0,01
The number of leukocytes, 1mm3 /thousand	9,0 ± 0,01	8,8 ± 0,01	9,1 ± 0,01	7,9 ± 0,01
Hemoglobin, g %	13,5 ± 0,01	12,9 ± 0,01	13,7 ± 0,02	11,9 ± 0,01
Erythrocyte sedimentation reaction (EChR), mm/h	1,79 ± 0,01	1,76 ± 0,01	1,81 ± 0,01	1,71 ± 0,02
Autumn (21 months old)				
Amount of erythrocytes, 1 mm3 / mln	7,1 ± 0,01	7,4 ± 0,01	7,7 ± 0,01	6,9 ± 0,01
The number of leukocytes, 1mm3 /thousand	7,3 ± 0,02	7,8 ± 0,02	8,4 ± 0,01	7,6 ± 0,02
Hemoglobin, g %	13,7 ± 0,01	13,1 ± 0,01	13,9 ± 0,02	12,4 ± 0,02
Erythrocyte sedimentation reaction (EChR), mm/h	1,70 ± 0,01	1,68 ± 0,01	1,72 ± 0,01	1,69 ± 0,01

3-table Moles in the experiment are total protein in blood serum and its fractions.
$\left(\overline{X} \pm S\,\overline{x}\right)$

Groups	General protein g %	Protein fractions			
		albumin g %	$\alpha -$ globulin g % (alpha)	$\beta -$ globulin g % (beta)	$\gamma -$ globulin g % (gamma)
Summer (6 months)					
I-Swiss bodies	7,41 ± 0,14	3,21 ± 0,03	1,25 ± 0,01	1,26 ± 0,01	1,69 ± 0,03
II-Swiss bodies	7,33 ± 0,01	3,19 ± 0,04	1,19 ± 0,01	1,24 ± 0,04	1,71 ± 0,03
III-black bulls	7,39 ± 0,14	3,22 ± 0,02	1,23 ± 0,02	1,27 ± 0,02	1,67 ± 0,02
IV-black bodies	7,32 ± 0,12	3,20 ± 0,01	1,24 ± 0,02	1,21 ± 0,01	1,67 ± 0,01
Winter (12 months)					
I-Swiss bulls	7,44 ± 0,15	3,33 ± 0,04	1,27 ± 0,01	1,19 ± 0,02	1,65 ± 0,04
II-Swiss bodies	7,29 ± 0,14	3,22 ± 0,03	1,30 ± 0,01	1,24 ± 0,05	1,53 ± 0,02
III-black bulls	7,37 ± 0,11	3,35 ± 0,01	1,28 ± 0,02	1,21 ± 0,04	1,53 ± 0,02
IV-black bodies	7,21 ± 0,14	3,30 ± 0,02	1,26 ± 0,01	1,19 ± 0,01	1,51 ± 0,01
Spring (15 months)					
I-Swiss bulls	7,51 ± 0,14	3,41 ± 0,01	1,33 ± 0,02	1,25 ± 0,04	1,51 ± 0,03
II-Swiss bodies	7,33 ± 0,11	3,36 ± 0,02	1,29 ± 0,03	1,19 ± 0,01	1,49 ± 0,04
III-black bulls	7,47 ± 0,14	3,50 ± 0,03	1,31 ± 0,0[illegible]	1,18 ± 0,03	1,48 ± 0,03
IV-black bodies	7,33 ± 0,1[illegible]	3,26 ± 0,04	1,40 ± 0,02	1,29 ± 0,01	1,38 ± 0,01
Autumn (21 months old)					
I-shwitz bulls	7,63 ± 0,10	3,68 ± 0,04	1,28 ± 0,01	1,15 ± 0,01	1,52 ± 0,01
II-schwitz bodies	7,52 ± 0,14	3,44 ± 0,05	1,34 ± 0,04	1,21 ± 0,01	1,53 ± 0,04
III-black bulls	7,59 ± 0,16	3,63 ± 0,04	1,40 ± 0,03	1,30 ± 0,03	1,28 ± 0,03
IV-black bodies	7,46 ± 0,18	3,34 ± 0,02	1,42 ± 0,04	1,26 ± 0,02	1,44 ± 0,04

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