



Results of Clinical Examination of Karakul Sheep in Navoi Region

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ARTICLE INFO

Published Online:

05 July 2022

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ABSTRACT

This article presents the results of clinical and laboratory studies on the clinical examination of sooty Karakul sheep. Karakul farming is one of the main branches of animal husbandry, and today some 6 million Karakul sheep are raised in the desert and semi-desert pastures of the Republic. The productivity of most rangelands in these areas is low, and this figure is largely dependent on atmospheric precipitation. In addition, the global problem of global warming is causing a sharp drop in atmospheric precipitation. Pasture degradation is occurring due to inappropriate use of pastures and uncontrolled grazing of livestock. These factors, in turn, have a negative impact on the rapid development of pastoralism, as well as lead to many disorders of metabolism among astrakhan herds, including the emergence of ketonuria of cattle.

KEYWORDS: metabolism, ketonuria, ketonemia, hyperketonuria, lysozyme, hypotension and atony, tachycardia, yellowing of the mucous membranes, enlargement of the liver border, pain in the liver area.

RELEVANCE OF THE TOPIC

As stated in the Resolution No. PD-4420 of the President of the Republic of Uzbekistan Sh.M.Mirziyoyev dated August 16, 2019 "Measures for the comprehensive development of the karakul industry", deepening the development of the karakul industry, economic reform and improvement of breeding quality in the country. In recent years, a series of positive measures have been taken in establishing farmland for fodder crops, improving the productivity of forage grass, and strengthening the material and technical foundation of Karakul.

At the same time, existing internal opportunities in the industry today are underutilized. In particular, the further improvement of the breeding industry, the expansion of the seed area of desert pastures, the cultivation of export-oriented astrakhan and astrakhan skins, the deep processing of products and the use of pharmaceutical raw materials do not meet today's requirements.

The resolution envisages a further increase in the number of Karakul sheep and the production of Karakul products in the country, improved breeding on a scientific basis, widespread use of Karakul products, medical raw materials and social support for industrial workers.

Metabolism is a complex physiological process that allows vital substances to enter the body, break down and re-synthesize, assimilate, and release the final products into the

environment. Disruption of this process leads to a deficiency of plastic and energy substances necessary for body tissues, disruption of the stability of the cellular and intercellular environment, resulting in irreversible changes (dystrophic, degenerative, cirrhotic, etc.). The functions of organs and systems in the body are disrupted. Metabolic disorders that have been latent for some time become a specific disease or group of diseases with obvious clinical signs.

Preliminary results show that the incidence of metabolic diseases covers an average of 60-70% of Karakul ewes, especially near-calving ewes, and the clinical form of this pathology is called "Steppe" among breeders. Weight loss, miscarriage, stillbirth, or death during childbirth are common during illness. Therefore, scientific research aimed at improving the early detection, treatment and prevention of ketonuria in sheep is relevant.

RESEARCH METHODS

Clinical and morphological, biochemical, spectrophotometric and functional tests of blood samples were used.

OBJECT AND METHODS OF RESEARCH

Dispensary researches were carried out at the fattening farm of "Istiqlol karakulchilik naslchilik" LLC in Nurata district of Navoi region and at the department of "Internal non-

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communicable diseases” of Samarkand State University of Veterinary Medicine, Livestock and Biotechnology.

RESEARCH RESULTS

The body temperature, pulse, respiratory rate, large abdominal wall movement, yellowing of the mucous membranes, enlargement of the liver border, and pain in the liver area were analyzed by seasons and calving seasons by dispensary of karakul calves. Morphological and biochemical parameters of the blood were also examined to determine the disorders of protein-carbohydrate metabolism and the functional state of the liver in the body of calves. The results of clinical examination of ewes at the dispensary are given in **Table 1**.

The table shows that although the body temperature of ewes remained within physiological limits in all seasons and

in all periods of calving, it showed a tendency to rise from winter to spring, summer and autumn, and to decrease from the first month of calving to its 4th month. According to the seasons, the highest body temperature is in summer (39.10 ± 0.03), and in the first months of the year (39.22 ± 0.09), the lowest body temperature is in winter (38.82 ± 0.02) and at 4 months of gestation (38.61 ± 0.02).

Pulse and respiration numbers did not change significantly across the seasons. With the increase in the gestation period, both indicators increased. In particular, the pulse rate averaged 71.30 ± 0.9 in the 1st month of gestation, -78.32 ± 2.05 in the last month, and the respiratory rate was 25.2 ± 0.5 and 31.5 ± 1.68 respectively.

Table 1. Results of clinical examination of ewes at the dispensary

Control type	Indicators							
	Check time	Temperature, °C	Pulse, beats/minutes	Number of breaths, times/minutes	Large abdominal wall movement, times/2 minutes	Yellowing of mucous membranes, %	Enlargement of the liver border, %	Pain in the liver area, %
Seasons	Winter (January)	$38,82 \pm 0,02$	$72,05 \pm 1,5$	$26,72 \pm 1,13$	$2,46 \pm 0,16$	20	20	20
	Spring (April)	$39,0 \pm 0,04$	$73,86 \pm 2,32$	$27,10 \pm 1,63$	$2,8 \pm 0,11$	13,3	26,6	26,6
	Summer (July)	$39,1 \pm 0,03$	$73,7 \pm 2,43$	$28,6 \pm 1,25$	$2,73 \pm 0,14$	13,3	13,3	13,3
	Autumn (October)	$39,08 \pm 0,03$	$73,66 \pm 1,4$	$26,6 \pm 0,98$	$2,70 \pm 0,14$	13,3	13,3	13,3
Pregnancy cycles, months	1 (November)	$39,22 \pm 0,03$	$71,3 \pm 0,9$	$25,2 \pm 0,5$	$2,5 \pm 0,17$	13,3	6,6	6,6
	2 (December)	$39,12 \pm 0,03$	$71,9 \pm 1,0$	$25,8 \pm 0,7$	$2,4 \pm 0,16$	20	13,3	13,3
	3 (January)	$38,82 \pm 0,02$	$72,05 \pm 1,5$	$26,72 \pm 1,13$	$2,4 \pm 0,16$	20	20	20
	4 (February)	$38,61 \pm 0,02$	$75,6 \pm 0,96$	$29,10 \pm 1,48$	$2,4 \pm 0,16$	26,6	26,6	26,6
	5 (March)	$38,75 \pm 0,03$	$78,3 \pm 2,05$	$31,5 \pm 1,68$	$2,2 \pm 0,12$	33,2	33,2	26,6

Large abdominal wall motility was reported to be relatively weak in winter (2.46 ± 0.16) and active in spring (2.806 ± 0.11). With the deepening of pregnancy, this figure decreased significantly, from 2.50 ± 0.17 times in the first month to 2.20 ± 0.12 times in the fifth month.

Yellowing of mucous membranes averaged 13.3% in spring, summer and autumn and 20.0% in winter. This figure rose from 20.0% in the 1st month of pregnancy to 33.2% in the 5th month.

Enlargement of the liver border and its pain was 26.6% in the spring among the seasons of the year, and 26.6-33.2% in its 4-5 months during the calving period. In general, the number of calves with disorders of protein-carbohydrate metabolism in the body was 20% in January, 33.2% in February and 40% in March. Such disturbances were

manifested by an average pulse rate of more than 81 beats per minute, a respiratory rate of 31 beats per minute or more, large abdominal wall movements an average of 2.9 beats per minute, and pain in the liver area and signs of its enlargement.

Thus, the majority of clinical manifestations of karakul ewes are subject to specific changes in the seasons and calving periods, and these changes are especially noticeable during metabolic disorders and changes in the functional state of the liver in ewes. At the same time, the acceleration of pulse and respiration, decreased motility of the large abdominal wall, yellowing of the mucous membranes, enlargement of the liver border and its pain sensation indicate the development of disorders of protein-carbohydrate metabolism and hepatic dystrophy in the body.

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Morphological and biochemical parameters of the blood were examined to represent disorders of protein-

carbohydrate metabolism and functional status of the liver in the body of bovine spongiform encephalopathy (Table 2).

Table 2. Results of morphological and biochemical examination of sheep blood by seasons

S/n	Indicators	Seasons			
		Winter	Spring	Summer	Autumn
1.	Number of erythrocytes, mln / ml	<u>7,32+0,22</u> 26,6	<u>7,49+0,23</u> 33,4	<u>7,60+0,22</u> 26,6	<u>7,92+0,21</u> 13,3
2.	Hemoglobin, g / l	<u>90,8+3,2</u> 20	<u>93,5+3,3</u> 20	<u>94,2+2,25</u> 13,3	<u>95,7+2,2</u> 6,6
3.	Total protein, g / l	<u>54,5+1,1</u> 100	<u>56,1+0,29</u> 93,4	<u>57,2+1,81</u> 73,3	<u>57,7+0,18</u> 66,6
4.	Glucose, Mmol / l	<u>2,01+0,05</u> 100	<u>2,02+0,09</u> 73,3	<u>2,03+0,05</u> 66,6	<u>2,06+0,055</u> 66,6
5.	Ketone bodies, g / l	<u>0,044+0,02</u> 40	<u>0,027+0,004</u> 33,4	<u>0,021+0,003</u> 26,6	<u>0,017+0,002</u> 20

Note: The average figure in the picture, the percentage of animals in the den.

The table shows that the number of erythrocytes in the blood ranged from an average of 7.32 ± 0.22 (winter) to 7.92 ± 0.92 (autumn) million/ μ l during the year, and its rate of decline was 6.9 million/ μ l and below. and 13.3 percent in the fall, 26.6 percent in the winter, and 33.3 percent in the spring. In ewes, the number of erythrocytes in the blood also decreased as the calving deepened.

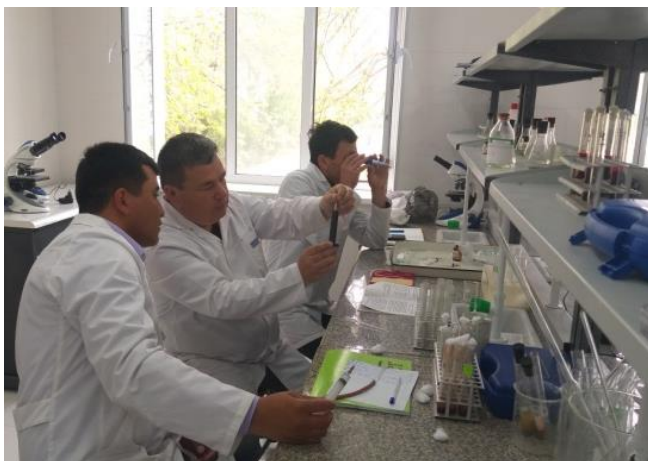
The average amount of hemoglobin in the blood during the year was in the range of 90.8 ± 3.2 (winter) and 95.7 ± 22 (autumn) g/l, and its rate of decline (78 g/l and below) was 6.6 in autumn and 13.3, in summer, 20% in winter and spring.

The total amount of protein in the blood averaged 54.5 ± 1.1 g/l in winter, 56.1 ± 0.24 , 57.2 ± 1.81 and 57.7 ± 0.18 g/l in spring, summer and autumn, respectively.

Hypoproteinemia (64 g/l and below) was observed in 100% of animals in winter, 93.3% in spring, 73.3% in summer, and 66.6% in autumn.

Blood glucose levels averaged 2.01 ± 0.05 (winter) and 2.06 ± 0.05 (fall) Mmol/l. Hypoglycemia (2.21 mmol/l and below) was observed in 66.6% of animals in summer and autumn, 73.3% in spring, and 100% in winter.

The total amount of ketone bodies in the blood averaged 0.017 ± 0.002 (autumn) and 0.044 ± 0.02 (winter) g/l during the year. Ketonemia (above 0.03 g/l) was observed in 20% of animals in autumn, 26.6% in summer, 33.3% in spring, and 40% in winter. This figure has also increased with the deepening of calving in the sovliks.



Photographs from the experimental process

CONCLUSION

1. The results of the dispensary showed that metabolic disorders in the astrakhan herds occur mainly in winter and spring. Among such disorders, mainly protein-carbohydrate

metabolism disorders are predominant, and such disorders become more pronounced with the deepening of the disorder.

2. Weight loss, tachycardia, shortness of breath, hypo- and atony of the gastrointestinal tract, lizards, jaundice of the mucous membranes, enlargement and pain in the liver,

hypoproteinemia, hypoglycemia, acidosis, hypoglycemia, hypoglycemia symptoms characteristic of functional disorders appear.

3. The development of such symptoms is mainly latent in the fall, and in the winter and spring, especially from the second half of the calving season, their clinical manifestations are observed.

REFERENCES

1. Mirziyoyev Sh.M. O‘zbekiston Respublikasi Prezidentining 2019-yil 16-avgustdagi “Qorako‘lchilik tarmog‘ini kompleks rivojlantirish chora-tadbirlari to‘g‘riida” gi PQ-4420-sonli qarori.
2. HZ Ibragimov, KN Norboev, BB Bakirov. On the prevention of violations of protein and mineral metabolism during feeding // Ovtsevodstvo. - Moscow, 1984. - No. 9. - S. 17-18.
3. IP Kondrakhin, NV Kurilov, AG Malakhov and others. Clinical Laboratory Diagnostics in Veterinary Medicine. - M.: Agropromizdat, 1985. - 287 p.
4. Norboev KN, Bakirov BB, Berdiyarov AS, Razikulov NB Recommendations for the diagnosis, treatment and prevention of oxy-carbohydrate metabolism in the throat cavities. - Tashkent: State Department of Veterinary Medicine of the Republic of Uzbekistan, 2010. - 16 p.
5. Berdiyarov AS, Bakirov BB Disorders of protein-carbohydrate metabolism in bone caracul sheep and their diagnosis / “Problems of ecology, health, pharmacy and parasitology”: Scientific works - Moscow, Moscow Medical Academy named after IM Sechenova, 2006. - 24-2
6. Workshop on Internal Animal Diseases / General. ed. GG Sherbakova, AV Yashina, AP Kurdeko, K. Murzagulova: Textbook. - SPb.: Lan Publishing House, 2016. - 544 p.
7. Ruzikulov Nuriddin. Main Causes and Development Mechanisms of Karakol Sheep Ketonuria // Asian Journal of Multidimensional Research (AJMR). India. Vol 10, Issue 3, 2021. S. 556-559.
8. Yaxyayev B.S., Yusupov S.Yu. Qorako‘l qo‘ylarni bo‘rdoqilashda qo‘shimcha ozuqalardan foydalanish samaradorligi // Chorvachilik va naslchilik ishi. – Toshkent, 2022. - № 2. – B. 26-28.
9. Sattle and sheep medicine. Philip R Scott. Manson publishing. London, 2010. - P. 240.
10. Bradford P.Smith, David C. Van Metre, Nicola Pusterla. Large Animal Internal Medicine. Sixth Edition. ELSEVIER. Printed in the United States of America, 2020 by. – R. 1874.