Adaptation of breeding goats for the milk purposes to climate conditions

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Abstract. This article presents valuable opinions on the importation of purebred young goats from foreign countries and its impact on various aspects of dairy goat breeding. The importation of purebred young goats plays a significant role in the establishment of farm subjects specializing in dairy goat breeding. One aspect highlighted in the article is the importance of introducing purebred young goats to improve the genetic pool of local dairy goat populations. By bringing in high-quality genetics from foreign countries, dairy goat breeders can enhance the productivity, milk yield, and overall performance of their herds. This can lead to increased milk production and improved milk quality, benefiting the dairy industry as a whole. Furthermore, the article discusses the significance of adapting imported dairy goats to the local natural climatic conditions. Importing goats from foreign countries may expose them to different climates, which can impact their health and productivity. Proper adaptation measures are essential to ensure the well-being of these animals and their successful integration into the local environment. Moreover, the article explores clinical signs and morphological characteristics of blood in mother goats during the process of adaptation to the natural climatic conditions. Monitoring and understanding these physiological changes are crucial for ensuring the well-being and health of the mother goats, as well as the successful rearing of their offspring.

Keywords. Selection, import, breeding, crossbreeding, hybrid, farm, purebred, buck, mother goat, clinical indicators.

1 Introduction

Along with the rapid growth of the world's population, their demand for food products is also increasing day by day. Today, goat breeding is a rapidly developing and promising branch of world animal husbandry. According to the UN Food and Agriculture Organization (FAO), goats are raised in more than 200 countries of the world [1, 2].

Goat breeding is considered one of the oldest branches of animal husbandry in Central Asian countries, 3,681,000 goats are raised in the Republic of Uzbekistan, 23,268,000 in the Republic of Kazakhstan, and 2,300,000 in the Republic of Turkmenistan. In these countries,

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goat breeds such as Zaanen, White Russian, Alpine, buttermilk breeds such as Nubian, Toggenburg, wool-oriented breeds such as Angora, Soviet wool breed, Tivit-oriented breeds such as Pridon, Mountain-Altai, Kashmir, Orenburg, local goat breeds, meat breeds such as damara, bursk, pafuri are being bred [3-6]. It is necessary to adapt the dairy goat breeds brought to our country from abroad to the climatic conditions of our country, to organize feeding on a balanced ration using local foods, to organize the selection and mating of breeds during breeding, to pay special attention to the use of breeding goats of the improving breed category during mating [7-10]. It is possible to breed goats that give a lot of milk in the farms of the republic by paying attention to the economic utility and selection characteristics of the breed in order to bring out the milk productivity at the level of the requirements of the breed standard of goats [11-13].

According to the 30th and 32nd goals of the "Development Strategy" approved by the Decree of the President of the Republic of Uzbekistan dated January 28, 2022 "On the Development Strategy of New Uzbekistan for 2022-2026" No. PF-60 the task of increasing the income of farmers by at least 2 times, bringing the annual growth of agriculture to at least 5%, expanding the livestock feed base and increasing the volume of production by 1.5-2 times [14].

The Decree of the President of the Republic of Uzbekistan No. PF-6198 dated April 1, 2021 establishes the tasks of creating productive genotypes of Jaidari, "Merino" sheep and "Angor" goats, maintaining and increasing the gene pool of meat and wool sheep, and the gene pool of meat and wool sheep in the Ohangaron district of Tashkent region . on the basis of the analysis determines the relevance of developing selection methods for creating productive genotypes of Jaidari sheep and "Angor" goats [15-17].

Keeping imported purebred dairy goats in the selection of dairy goats, keeping and feeding them in accordance with the technology of dairy goat breeding while adapting them to local climatic conditions, as well as taking care of them to increase milk productivity, as well as forming farms specializing in dairy goat breeding , are among the most pressing issues in the industry today [18-20].

The purpose of the study is to adapt imported Zaanen, Alpine, Anglo-Nubian, Murciano Grenada and Toggenburg goats to local climatic conditions and study of their physiological and clinical signs and morphological characteristics of blood in dairy goat breeding.

2 Materials and methods

The research focused on dairy purebred goats, specifically Zaanen, Alpine, Toggenburg, and Anglo-Nubian bucks, along with female goats and their offspring. These animals were chosen as the research materials due to their relevance in the dairy industry and their genetic purity [21].

The study employed a multidisciplinary approach, utilizing zootechnical, biological, and statistical methods. Zootechnical methods were used to evaluate and manage the breeding and production aspects of the goats, considering factors such as genetics, reproduction, nutrition, and health [22-24].

Biological methods were applied to analyze various biological processes within the goats, including metabolic functions, growth patterns, milk production, and overall physiological responses. Statistical methods were employed to analyze and interpret the data collected during the research, providing valuable insights into the relationships and patterns observed among the different goat breeds, their characteristics, and their offspring [25-27].

By combining these diverse methodologies, the research aimed to gain a comprehensive understanding of the performance, productivity, and overall potential of dairy purebred goats

from different breeds. The results of this study could contribute to the improvement and optimization of dairy goat breeding programs and enhance the sustainability and efficiency of dairy production systems [28].

Zaanen is a dairy goat breed that is bred in the farms of "Agro Zangiota" Yangiyol district of Tashkent region, "Alisher Khrovador" of Qibray district, "Naslli Kumush Kurka" of Sirdarya district of Syrdaryo region, "INZIM TEX" LLC, "Bakht khokkhov khrovovi" in Altinkol district of Andijan region . , was based on the data of scientific research conducted on Alpine, Toggenburg, Anglo-Nubian buck and mother goats and their offspring, as well as local goats [29, 30].

In total, 150 female goats and 3 progeny goats from farm herds, i.e. breeding goats numbered #532903, #656808 and #837122 were selected for research.

3 Results and discussion

Dairy goat breeding is a new direction in Uzbekistan, and dairy goat farms are being formed by importing dairy breeds from European countries. In the breeding of dairy goats, the use of methods of purebred breeding and crossbreeding of imported Zaanen, Alpine, Toggenburg, Anglo-Nubian goats and their offspring with high milk productivity, especially purebred breeding in breeds and the founders of the new system within the breed. The main content of selection work is scientific justification of milk productivity indicators of offspring and selection and selection of high-productivity selection groups from their offspring , creation of new system and family generations from them. Also, in the effective use of the foals of dairy breeds brought from abroad in selection work, the use of cross-breeding methods to improve the productivity of interbreeds and local goats, it makes it possible to increase the milk productivity of goats raised in local conditions.

Today, purebred breeding of Zaanen, Alpine, Toggenburg, Nubian goats imported from abroad, preservation and reproduction of their offspring as purebreds, and the use of innovative methods of care and feeding bring higher economic results than dairy goat breeding.

Effective use of imported goat breeds in selection work, raising goats as a pure breed, while maintaining their head number, obtaining many offspring, ensuring that their productivity signs are not evident, developing the scientific and practical basis of selection is important in the dairy goat industry.

Goats are attracted by landowners, farmers and farms due to their biological characteristics, i.e. quick adaptation to different natural climatic conditions, lack of choice of food, their rapid growth and early adulthood, rapid reproduction and high fertility.

In the biology of goats, the period of physiological maturity and sexual maturity of dairy goats lasts more than 48 hours. The duration of the sexual period varies from 4 to 26 days, their sexual period is on average 17-19 days . The duration of the estrous period in goats is 150 days on average . In the natural climatic conditions of Uzbekistan, dairy goats are bred, like other goats, in the autumn season, in September - November, for 30-45 days , naturally or artificially. However, in accordance with the technology of dairy goat breeding, such technological processes as the organization of regular milk production from them and the production of dairy products ready for consumption through the processing of milk products are taken into account.

Effective use of female goats in the production of dairy goats is of great importance. At least 75% of female goats and adult female goats in herds are fathered in the first and second ten days of the breeding season. Goats usually give birth to one or two, rarely triplets or quadruplets, or 1-3% of goats in the herd give birth to twins. The duration of use of goats in

farm production depends on the conditions of economic development of the farm, and the duration of use of dairy goats is 7-8 years on average. Goats with certain genetic traits have high productivity and a strong constitution, and use them for 8-10 years in farm conditions.

Adaptation of dairy goats imported from Europe to the natural climatic conditions of Uzbekistan, as well as the rational use of highly productive goats and female goats in selection work, forming a dairy goat breeding network is one of the urgent tasks in the network.

Goats are widely distributed all over the globe due to their fast and good adaptability to different climatic conditions. Goats are kept and bred in all regions of the world, even from countries located in northern latitudes to countries and islands located in southern latitudes [1, 2]; It is emphasized by [3, 4, 6-8, 16, 17]. Of the total number of goats in the world, 60.4% of goats are raised in Asia and 33.7% in Africa. In the wide spread of goats, their adaptation to different natural climatic conditions and the effective use of methods of selection and selection in the direction of productivity are of great importance in the development of the field.

The appearance of the external structure of dairy goats, i.e., the exterior, has a large size, the structure of their jaws and teeth changes with age, the length of life, the period of pregnancy, the period of throttling and throwing, the lactation period, the skin-wool cover and other dairy characteristics from goats of other breeds and Differences in breeds with their own positive biological characteristics are felt.

Villagers, landowners, peasants and farms have been raising goats for many centuries for various productivity purposes. However, scientific selection methods were not used in breeding goats, and the number of goats and productivity directions were regularly increased depending on the adaptation and viability of the goats in a natural way.

No separate statistical information on their productivity was recorded, but information on the number of sheep and goats and production indicators was regularly recorded. About 2.0 percent of the milk and 12 percent of the meat produced in Uzbekistan is attributed to the goat industry.

On average, 180-200 kg of milk, 13-15 kg of meat, 2.0 kg of skin, and up to 1.0 tons of organic fertilizer are obtained from goats reared in local conditions and are widely used in agriculture and industry. Textiles from goat wool and tweed are widely used in light industry. Leather products and other valuable leather raw materials are made from goat skin. By-products obtained from slaughtering goats - blood, bones, horns, wool, etc. are used for industrial purposes. Also, goat litter and manure waste are widely used in greenhouses as organic fertilizers to increase land productivity in agriculture and mining.

Goat's milk has been widely used by humans as a medicinal dietary food since ancient times. In folk medicine, the healing properties of goat's milk have been tested by various experiments, it improves the functioning of the stomach and stomach, i.e. it helps to relieve constipation, cough, spitting up blood, headache and upset stomach, temptation and memory loss, swelling of the tonsils, sores in the throat and bladder, rickets, liver, and pulmonary tuberculosis. , excessive weight loss, allergies, eczema, itching, asthma patients, joint pain relief, gallbladder stones, and goat's milk is consumed only in boiled form, because Bursceles disease can be transmitted to humans.

The smell and taste properties of goat milk are related to the conditions of keeping and feeding the dairy goat. The types of fodder given to goats are inextricably linked with the quality of coarse hay, silage, hay, cottonseed meal, grain fodder and the quality of the ingredients in the fodder.

Goats have a well-developed digestive system, the stomach consists of 64% connective tissue, which allows for good digestion of ingested feed [5, 9, 10, 11, 17, 19]. Goat's milk is sweet and delicious. Yoghurt, suzma, wormwood, cheese, yogurt and other dairy products

are made from its milk, and suzma whey is used for liver disease and its prevention. Goat's milk mixed with sugar cleanses and beautifies the complexion. In different nations, various food products and dishes are prepared from goat's milk and meat.

Goat's milk contains nicotinic acid, which is useful for cardiovascular and nervous diseases. According to the chemical composition of goats' milk, it is closer to women's milk [12-16, 19, 20]. Goat's milk contains protein 3 g or 12 kcal, fat 4.2 g or 38 kcal and carbohydrates 4.5 g or 18 kcal, or their ratio in milk is 18%; 57% and 27% respectively. The energy of 100 g of goat's milk is equal to 66.7 kcal.

Goat's milk contains valuable macro and microelements such as calcium, magnesium, iron, manganese, potassium. Also, goat's milk is rich in fat and proteins. Goat's milk is quickly and easily digested by the human body, and the fat grains of its milk are twice as small as the fat grains of cow's milk. That's why goat's milk is used as a dietary food for young babies and elderly people. When comparing the composition of goat's milk with the composition of cow's milk, the superiority of substances in goat's milk is observed. Table 1 below shows the ratio of substances in cow's and goat's milk.

Table 1. Chemical composition of cow and goat milk, %.

Indicators	Cow's milk	Goat's milk
Dry matter	12.7	13.7
Milk fat	3.8	4.4
Milk protein	3.5	4.1
sh.j: casein	2.8	3.3
Milk sugar	4.7	4.4
Milk minerals, mg	0.7	0.8

According to the data presented above, dry matter in the milk of dairy goats is 1.0% higher than cow's milk, milk fat and milk protein are 0.6%, including casein is 0.5% higher than cow's milk. Although goat's milk fat is 0.6% superior to cow's milk fat, it has been proven in medical science that the fat content of goat's milk is quickly digested by the human body due to the smallness of the granular particles.

When importing dairy breeds, it is important to compare their adaptation to the natural climatic conditions of Uzbekistan with the natural climatic conditions of European countries, as well as to take into account the production at the level of the demand of the breed standard, as well as to analyze the biological and physiological characteristics of dairy goat breeds in depth and to study their viability in a new environment. knowing the result is one of the most important signs in keeping goats in farms.

The import of young goats for wool and milk from foreign countries to Uzbekistan began in 2015. The total number of goats imported to the republic from European countries in 2015-2020 was 8,659, including the Republic of Karakalpakstan 706, Andijan region 690, Bukhara region 103, Jizzakh region 520, Kashkadarya region 1065, Navoi region 773, Namangan region 921 head and Tashkent region imported 198 head of young goats. Business entrepreneurs continue to import purebred goats. In 2020 alone, 3,983 Zaanen, Murcia, Grenada, Toggenburg, Anglo-Nubian, Orlov, Angora goats were imported from Germany, Spain, Russia, Kyrgyzstan, and Tajikistan. indicates that he is waking up.

When observing the situation of adaptation of imported dairy goats to different natural climatic conditions of Uzbekistan, it was observed that it was a little difficult to adapt to the conditions of keeping and feeding them. Because there is a significant difference between the humid climate of European countries and the dry hot climate of Uzbekistan. In order to

solve these problems, clinical conditions and morphological characteristics of blood in goats brought from abroad were observed during morning, afternoon and evening.

During the study, clinical changes in the growth and development of goats during the change of seasons in hot climates were monitored. Information about this is presented in Table 2.

Table 2. Clinical indicators of breeding foals by season.

Groups	In the morning			During the day			In the evening		
	Body temperature, ºC	Heart beat (minutes)	Breathing (minutes)	Body temperature, ºC	Heart beat (minutes)	Breathing (minutes)	Body temperature, ºC	Heart beat (minutes)	Breathing (minutes)
	M ± m	M ± m	M ± m	M ± m	M ± m	M ± m	M ± m	M ± m	M ± m
In winter									
#532903	38.2	62.6	27.4	38.7	63.3	29.2	39.0	63.1	28.5
#656808	38.4	62.5	27.5	38.5	63.5	29.4	39.1	63.1	28.4
#837122	38.5	62.7	27.5	38.0	63.7	29.3	39.0	63.3	28.6
In the spring									
#532903	38.4	62.8	27.5	38.8	63.6	29.4	38.7	63.3	28.6
#656808	38.6	62.7	27.4	38.6	63.7	29.6	38.6	63.2	28.6
#837122	38.6	62.9	27.6	38.4	63.9	29.5	38.8	63.5	28.7
In summer									
#532903	39.1	63.0	31.3	39.4	63.4	32.8	39.1	63.5	31.8
#656808	39.3	62.7	30.7	39.5	63.3	32.5	39.2	63.3	31.2
#837122	39.4	63.0	30.8	39.5	63.5	32.6	39.3	63.6	31.2
In autumn									
#532903	39.1	63.0	31.3	39.4	63.4	32.8	39.1	63.5	31.8
#656808	39.3	62.7	30.7	39.5	63.3	32.5	39.2	63.3	31.2
#837122	39.4	63.0	30.8	39.5	63.5	32.6	39.3	63.6	31.2

The body temperature, heart rate, and breathing parameters of the research horses were studied according to the seasons of the year. In the winter, spring, summer and autumn months of the year, the body temperature in the soles was 0.4-0.7 ºC higher than the morning temperature , and it was observed that the temperature decreased again in the evening. In the summer, the body temperature of takas reached an average of 39.2 º C in groups, while in spring this indicator reached an average of 38.8 º C, while in winter and autumn the body temperature of takas was 39.3 ºC or air temperature. As it decreased, a partial decrease in the body temperature of the takas was also observed.

During the study, the analysis of the clinical condition of the horses showed that the change in weather temperature in the seasons also affected their heart rate. In the summer, the heart rate of the bucks was on average 63.3-63.5 beats per group, while this indicator was on average 63.3-63.9 beats in the spring, and 63.3-63.4 beats in the winter and autumn months.

Although there were differences in the breathing of horses due to the seasons and their age, it was at the level of physiological norm, i.e., the breathing rate of horses was on average 31.3 min. min./hour, 31.7 min. in winter and autumn months. organized. This situation indicates that with the continuation of growth processes in takas, significant changes in physiological conditions were observed.

Thus, it can be concluded from the data of the research carried out on the seasons in the conditions of Uzbekistan that the change of seasons does not have a negative effect on the growth of takas imported from abroad, the physiological state of the organism is at the standard level.

When the body temperature of female goats was studied according to the seasons, in the summer months, the daytime temperature was 0.4-0.7 ºC higher than the morning temperature, and as the air temperature decreased again in the evening, a decrease in the body temperature of goats was observed. The body temperature of female goats was 39.2 º C on average by group in summer and 38.8 º C in spring , or with the increase in air temperature, an increase and decrease in body temperature was also observed (Table 3).

Table 3. Clinical performance of female goats, (p = 5).

Group	in the morning			during the day			in the evening		
	Body temperature, º C	Heart beat (minutes)	Breathing (minutes)	Body temperature, º C	Heart beat (minutes)	Breathing (minutes)	Body temperature, º C	Heart beat (minutes)	Breathing (minutes)
	M ± m	M ± m	M ± m	M ± m	M ± m	M ± m	M ± m	M ± m	M ± m
In winter									
I-	38.7 ±0.04	69.36 ±0.05	28.53± 0.02	39.43 ±0.05	78.53 ±0.02	32.33 ±0.09	38.53 ±0.02	71.73 ±0.02	31.63 ±0.06
II	38.63 ±0.02	69.06± 0.02	28.46± 0.06	39.6 ±0.04	78.4 ±0.06	32.4 ±0.07	38.5 ±0.05	71.53± 0.06	31.3± 0.27
III	38.6 ±0.04	69.16± 0.02	28.33± 0.02	39.36 ±0.02	78.3± 0.02	32.2± 0.04	38.46 ±0.02	71.53 ± 0.02	31.5± 0.04
In the spring									
I	38.7 ±0.04	69.36 ±0.05	28.53± 0.02	39.43 ±0.05	78.53 ±0.02	32.33 ±0.09	38.53 ±0.02	71.73 ±0.02	31.63 ±0.06
II	38.63 ±0.02	69.06± 0.02	28.46± 0.06	39.6 ±0.04	78.4 ±0.06	32.4 ±0.07	38.5 ±0.05	71.53± 0.06	31.3± 0.27
III	38.6 ±0.04	69.16± 0.02	28.33± 0.02	39.36 ±0.02	78.3± 0.02	32.2± 0.04	38.46 ±0.02	71.53 ±0.02	31.5± 0.04
In summer									
I	38.8± 0.04	69.46± 0.05	28.63 ± 0.02	39.43 ±0.02	78.60 ±0.04	32.40 ±0.07	38.56± 0.02	72.43 ±0.28	31.66 ±0.06

II	38.73± 0.02	69.2± 0.20	28.50± 0.07	39.63 ±0.02	78.6 ±0.07	32.46 ±0.06	38.6± 0.05	71.66 ±0.05	31.36 ±0.29
III	38.7± 0.04	69.3± 0.04	28.40± 0.04	39.4 ±0.07	78.4± 0.04	32.26± 0.05	38.50 ±0.04	71.66± 0.02	31.5± 0.02
In autumn									
I	38.53± 0.02	69.46 ±0.02	28.60± 0.04	39.43 ±0.02	78.50 ±0.04	32.36 ±0.10	38.43± 0.05	72.33 ±0.28	31.60 ±0.04
II	38.73 ±0.06	69.43± 0.05	28.60± 0.04	39.4± 0.04	78.5 ±0.04	32.46 ±0.10	38.56 ±0.02	72.40 ±0.23	31.63 ±0.02
III	38.7 ±0.04	69.3± 0.04	28.40± 0.04	39.46 ±0.06	78.4± 0.04	32.26± 0.05	38.50 ±0.04	71.56 ± 0.02	31.56± 0.02

During the study, in the analysis of the clinical condition of the mother goats, changes in the weather also affected their heart rate.

Female goats had an average heart rate of 78.3-78.5 in winter and spring. In the summer, the heart rate was on average 78.4-78.6 beats per group, and respiration also increased, but it was at the level of physiological norm in goats, that is, the breathing rate of mother goats was on average 32.2-78, respectively, on the group in summer. It was 6 min./time, and in winter, spring and autumn, this indicator was 32.3-32.46 min./time.

When the body temperature of young female goats was monitored in winter, spring, summer and autumn, it was observed that the daytime temperature was 0.4-0.7 ° C higher than the morning temperature in the summer months, and the air temperature decreased again in the evening. Body temperature of young females averaged 39.2 ° C in summer , 38.8 ° C in spring, 38.9 ° C in autumn, and 39.0 ° C in winter organized, or with an increase in air temperature, an increase in body temperature of goats was also observed (Table 4).

Table 4. Clinical parameters of young female goats (p = 5).

Groups	**in the morning**			**during the day**			**in the evening**		
	Body temperature, ° C	**Heart beat (minutes)**	**Breathing (minutes)**	**Body temperature, ° C**	**Heart beat (minutes)**	**Breathing (minutes)**	**Body temperature, ° C**	**Heart beat (minutes)**	**Breathing (minutes)**
	M ± m	M ± m	M ± m	M ± m	M ± m	M ± m	M ± m	M ± m	M ± m
In winter									
I	38.6 ±0.04	69.1 ±0.05	28.33± 0.02	39.3 ±0.07	78.33 ±0.02	32.2 ±0.04	38.46 ±0.02	71.53 ±0.02	31.50 ±0.04
II	38.46 ±0.02	68.93± 0.2	28.20± 0.06	39.4 ±0.04	78.3 ±0.04	31.86 ±0.22	38.36 ±0.05	71.36± 0.05	31.1± 0.27
III	38.63 ±0.02	69.23± 0.06	28.30± 0.02	39.3 ±0.07	78.36± 0.02	32.20 ±0.04	38.46 ±0.02	71.53 ± 0.02	31.53± 0.02
In the spring									
I	38.6 ±0.04	69.1 ±0.05	28.33± 0.02	39.3 ±0.07	78.33 ±0.02	32.2 ±0.04	38.46 ±0.02	71.53 ±0.02	31.50 ±0.04
II	38.46 ±0.02	68.93± 0.2	28.20± 0.06	39.4 ±0.04	78.3 ±0.04	31.86 ±0.22	38.36 ±0.05	71.36± 0.05	31.1± 0.27

III	38.63 ±0.02	69.0 ±0.06	28.30± 0.02	39.3 ±0.07	78.36± 0.02	32.20 ±0.04	38.46 ±0.02	71.53 ± 0.02	31.53± 0.02
In summer									
I	38.63± 0.02	69.23± 0.6	28.36 ± 0.05	39.36 ±0.10	78.4 ±0.04	32.3 ±0.04	38.56± 0.05	71.70 ±0.04	31.56 ±0.05
II	38.53± 0.02	69.03± 0.2	28.33± 0.09	39.43 ±0.02	78.3 ±0.04	31.93 ±0.22	38.40± 0.04	71.43 ±0.02	31.13 ±0.28
III	38.6± 0.04	69.26± 0.9	28.36± 0.02	39.4 ±0.07	78.43 ±0.05	32.23 ±0.02	38.5 ±0.04	71.66± 0.05	31.53± 0.02
In autumn									
I	38.56± 0.02	69.26 ±0.2	28.33± 0.05	39.4 ±0.08	78.40 ±0.08	32.33 ±0.02	38.53± 0.02	71.60 ±0.04	31.50 ±0.04
II	38.5 ±0.04	68.96± 0.2	28.33± 0.05	39.26± 0.06	78.2 ±0.04	31.9 ±0.23	38.56 ±0.02	72.40 ±0.23	31.63 ±0.02
III	38.53 ±0.02	68.9± 0.19	28.26± 0.02	39.36 ±0.11	78.33 ±0.05	32.13 ±0.02	38.50 ±0.04	71.56 ± 0.02	31.56± 0.02

The clinical status of young goats during the study are presented in Table 4. Seasonal changes in weather also affected their heart rate. The average heart rate of goats in winter and spring was 69.8 - 69.9 beats. Heart rate in summer was 78.4 beats per group and 70.1 beats in autumn. In goats, the breathing rate in summer also increased, but in young goats it was at the level of physiological norm, i.e., the breathing rate of mother goats was 32.3 min. respectively, averaged 31.6 -31.5 - 31.6 min./time.

The body temperature of young goats is observed to increase during lunch compared to the morning and evening temperatures in summer, but no negative effects on the body were observed.

Goats, like other agricultural animals, adapt their beneficial economic traits to the technological factors introduced in regions with natural climatic conditions, and it is important to study the ratio of elements in the blood during growth and development. The composition of the blood of goats varies inextricably with age, sex, breed, seasons, technology of preservation, care and feeding, as well as the physiological state of the body. Blood performs many complex tasks in the body, namely, it supplies the tissues of the body with nutrients, controls the metabolism, and maintains the water balance in the body. It carries out thermo-regulation and transportation of substances in the body . Therefore, it is important to study the blood of research goats and its composition.

The results obtained in the study showed that in the winter and spring seasons, the blood parameters of the researched goats and female goats remained within the physiological norm. Table 5 below shows the morphological composition of the blood of the founders of the system as progenitors of dairy zaanen foals.

Table 5. Chemical composition of the blood of thoroughbred stallions.

Systems	**Hemoglobin, g/%**	**Erythrocyte, ml/mm^3**	**leukocyte, '000/mm^3**
# 532903	9.73	8.83	8.70
#656808	9.67	8.20	8.50
#837122	9.69	8.44	8.60

When the hematological parameters of the blood of horses were studied in the spring months, their age, changes in summer and autumn seasons, and feeding standards were taken into account and their correlation was observed. The average amount of hemoglobin in the blood of the research horses was equal to 9.67-9.73 g/%.

The indicators of the increase in air temperature and the effect of the organism on the external environment were as follows. The number of erythrocytes in the case No. 532903 increased to 8.83 ml/mm^3 , in the case No. 656808 it was 8.20 ml/mm^3 , and in the case No. 837122 it was 8.44. was ml/mm ^{3} . On the other hand, the number of leukocytes in the blood in the spring and autumn seasons was 8.70-8.71 thousand/mm^3 in the group #-532903 , and 8.50-8.52 thousand/mm^3 in the experimental group #-656808 and #-837122 It was 8.60-8.61 thousand/mm^3. The results obtained in the study showed that all blood parameters were within physiological limits in winter and spring.

When the hematological indicators of the blood of mother goats were studied in the spring months, their age, changes in summer and autumn seasons, and feeding norms were taken into account and their correlation was observed. The morphological composition of the blood of mother goats is presented in Table 6 below.

Table 6. Chemical indicators of the blood of female goats, (p = 5).

K - indicators	**Hemoglobin, g/%**		**Erythrocyte, ml/mm^3**		**leukocyte, thousand/mm^3**	
	M±m	**Sv, %**	**M±m**	**Sv, %**	**M±m**	**Sv, %**
	Group I		Group II		Group III	
In winter, +26 °C						
Erythrocyte, ml/mm ^{3}	12.63±0.09	0.2	12.7±0.04	0.1	12.61±0.04	0.01
Letscocite, thousand/mm^3	9.02±0.00	0.02	9.05±0.00	0.01	9.04±0.00	0.01
Hemoglobin, g/%,	9.83 ±0.06	0.15	9.91±0.00	0.02	9.86±0.04	0.09
In spring, +26℃						
Erythrocyte, ml/mm ^{3}	12.63±0.09	0.2	1 2 .7±0.04	0.1	12.62±0.04	0.01
Letscocite, thousand/mm ^{3}	9.02±0.00	0.02	9.05±0.00	0.01	8.04±0.00	0.01
Hemoglobin, g/%,	9.83 ±0.06	0.15	9.91±0.00	0.02	9.86 ±0.04	0.09
In summer, +39.6						
Erythrocyte, ml/mm ^{3}	12.63±0.13	0.30	12.76±0.06	0.15	12.66±0.05	0.11
Letscocite, thousand/mm ^{3}	9.02±0.06	0.01	9.05±0.00	0.01	10.04±0.00	0.00
Hemoglobin, g/%,	9.85±0.06	0.14	9.92 ±0.00	0.02	10.6 7±0.04	0.08
In autumn, +36.6						
Erythrocyte, ml/mm ^{3}	12.6±0.01	0.2	12.7±0.08	0.2	12.7±0.04	0.1
Letscocite, thousand/mm ^{3}	9.03±0.00	0.00	9.05±0.00	0.01	10.05±0.00	0.01
Hemoglobin, g/%,	9.84 ±0.06	0.13	9.92 ±0.00	0.01	10.87±0.04	0.04

In the analysis of hematological parameters of the blood of mother goats, it was observed that the amount of hemoglobin was the same between the groups.

It determines the increase or increase in air temperature and the increase of the body's influence on the external environment. No differences were observed between groups in spring and autumn. The number of erythrocytes was 12.6-12.63 ml/mm^3 in the groups. The number of leukocytes in the body of female goats was 12.76-9.04 thousand/mm^3, hemoglobin content was 9.84-10.87 g/percent.

4 Conclusions

The amount of elements in the morphological composition of the blood mentioned above is maintained at the same rate in all seasons and does not affect the body.

In the research, the clinical and morphological indicators of the body of bucks and female goats in the spring and autumn seasons are controlled and compared, and the change of seasons in the conditions of Uzbekistan does not have a negative effect on the body of bucks and female goats.

The change of seasons in the natural climatic conditions of Uzbekistan for goats imported from abroad does not have a negative effect on the organism of breeding bucks, mother goats and young goats, and their physiological condition is maintained at a normal level.

In order to effectively use imported breeds in breeding, first of all, to preserve them, to preserve and feed young goats in accordance with the technologies used in dairy goat farming, to properly organize milking in dairy goats, and to ensure compliance with the technologies of keeping goats separately from their mothers, will serve the rise of dairy goat farms.

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