

Analysis of Some External Traits and Milk Yield of Saanen Goats under Domestic Conditions

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Abstract In this study, in the climatic conditions of the Republic of Uzbekistan, some external characteristics of Saanen goats, such as body weights, the height of the withers, body length, chest circumference and the dynamics of milk production during lactation, were analyzed. In this case, the organized exterior signs of Saanen goats correspond to psychological norm values, including body weight in male goats 86.24 ± 3.09 kg, female goats 58.44 ± 2.29 kg, goats 3-6 months old 27.86 ± 2.14 kg, height of the withers 80 in male goats, 16 ± 5.43 cm, in female goats 74.45 ± 3.57 cm, 3-6-month-old goats 48.34 ± 2.25 cm, rump height- 84.52 ± 4.26 cm in male goats, 84.21 in female goats 4.68 cm, 51.25 ± 3.19 cm in 3-6-month-old goats, body length 7.963 ± 1.07 cm in male goats, 49.17 ± 3.20 cm in 3-6-month-old goats, chest circumference was found to be 85.78 ± 1.35 cm in male goats, 80.30 ± 1.34 cm in female goats, and 50.06 ± 2.12 cm in 3-6-month-old goats. It was also found that the body weight of Saanen goats decreased by 16.09% milk productivity by 74.85% and the body weight of male and female goats increased by 3.06 and 2.88 times, respectively.

Keywords Saanen goats, External characters, Body weight, Rump height, Body length, Chest girth, Lactation, Milk yield

1. Introduction

It is known that goat farming is becoming popular worldwide due to its quick adaptability to different geographical climatic conditions, low demand for feed, high yield of milk, meat and other products compared to the cost of the unit of feed consumed, as well as high demand for medicinal goat milk [1,2]. In this regard, Saanen goats are one of the most promising and productive goat breeds in the world [3].

Saanen goats (*Capra aegagrus hircus*) are a highly valued breed known for their remarkable milk production capabilities and distinctive external traits. Originating from the Saanen Valley in Switzerland, these goats have gained global popularity due to their exceptional adaptability to various climatic conditions and their significant contribution to dairy farming. This study delves into the comprehensive analysis of selected external traits and milk yield of Saanen goats, focusing on their performance and adaptation under domestic husbandry conditions.

External traits, such as body size, coat colour, horn characteristics, and conformation, play a pivotal role in assessing the overall health, productivity, and aesthetics of Saanen goats. By scrutinizing these traits, valuable insights can be gained into the breed's genetic potential, well-being,

and suitability for specific farming environments. Additionally, milk yield serves as a crucial economic factor in dairy operations, influencing the breed's prominence in the agricultural sector. Understanding the interplay between these external traits and milk production is essential for optimizing breeding strategies, improving management practices, and ensuring sustainable productivity.

In the context of domestic conditions, various factors such as nutrition, housing, healthcare, and management practices significantly influence the expression of external traits and milk yield. This study aims to contribute to the existing body of knowledge by meticulously evaluating the relationships between selected external traits and milk production while considering the influence of domestic husbandry practices. By elucidating these connections, the findings of this analysis can provide practical guidance to goat farmers and breeders seeking to enhance the performance and well-being of Saanen goats within the constraints of their domestic environments.

In the subsequent sections, we will delve into the methodology employed for data collection, the materials and methods utilized for analysis, and the anticipated implications of our findings. Through this research, we aspire to provide a comprehensive understanding of the interplay between external traits and milk yield in Saanen goats, contributing to the advancement of effective goat husbandry practices and the promotion of sustainable agricultural development.

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Stay tuned for an in-depth exploration of the external traits and milk yield of Saanen goats under domestic conditions, offering valuable insights into the intricate dynamics that shape their performance and adaptability.

Usually, external symptoms of a livestock animal allow one to conclude the body weight and the physiological state of other organisms [2,5]

Also, when analysing the relationship between external characteristics and milk yield of Saanen goats, it was found that the length and width of the body are relatively high, and the milk yield in goats of medium height is higher in milk protein and lipid content [6].

The purpose of this research is to analyse some external characteristics of Saanen goat's body weight, rump height, body length, chest girth and the dynamic of milk yield during lactation.

2. Materials and Methods

The primary objective of this study is to conduct a comprehensive analysis of selected external traits and milk yield in Saanen goats under domestic conditions. Specifically, this research aims to:

1. Assess and document key external traits of Saanen goats, including body size, coat colour, horn characteristics, and conformation, under various domestic husbandry settings.
2. Quantify and analyse the milk yield performance of Saanen goats within domestic environments, considering factors such as lactation duration, milk composition, and yield consistency.
3. Investigate the potential correlations and interactions between specific external traits and milk yield parameters, aiming to identify any significant relationships that could aid in breeding and management decisions.
4. Evaluate the influence of domestic husbandry

practices, including nutrition, housing, healthcare, and management techniques, on the expression of external traits and milk production in Saanen goats.

5. Provide practical insights and recommendations for goat farmers and breeders to optimize breeding strategies, management practices, and overall productivity of Saanen goats based on the observed relationships between external traits and milk yield.
6. Contribute to the existing knowledge base on Saanen goat husbandry by enhancing our understanding of the interplay between external traits and milk production, thus supporting sustainable agricultural development.

By achieving these objectives, this study aims to contribute valuable information that can empower goat farmers and breeders to make informed decisions, ultimately leading to improved Saanen goat husbandry practices and enhanced milk production under domestic conditions.

The research was carried out at the Saanen goat farm located in the Tashkent region (Uzbekistan).

In the research, external characteristics of the Saanen goat, body weight in kg, fat and rump height in cm, body length in cm, chest circumference, and milk yield during lactation I was analysed using the standard method [6].

Mathematical statistical analysis of the obtained experimental result in the research according to standard methods Microsoft, Excel 2007 Microsoft, USA and Origin pro v.8.5 SR1EULA, implemented using US special software packages [7,8].

3. Results

At the initial stage of the research, some external characteristics of the Saanen goats kept on the farm where the research was carried out were analysed, body weight, belly and rump height, and chest circumference.

Table 1. Some external characteristics of the Saanen goats

	<i>Indicators</i>	<i>Male [n=18]</i>	<i>Female (n=15)</i>	<i>Capricorns 3-6 months (n=23)</i>
1	Body weight kg	86.24±3.09	58.44±2.29	27.86±2.14
2	Height of the thigh	80.16±5.43	74.45±3.57	48.34±2.25
3	The height of the hump	84.52±4.26	84.21±4.68	51.25±3.19
4	Body length	79.63±1.07	75.40±0.25	49.17±3.20
5	Chest circumference	85.78±1.35	80.30±1.34	50.06±2.12

Table 2. Some external characteristics of the Saanen goats

	<i>Lactation period week</i>	<i>Mother goats (n=15) bodies kg</i>	<i>Milk productivity (ml)</i>	<i>It is the body of locks</i>	
				<i>male</i>	<i>female</i>
1	1	43,56±2,44	2145,17±14,89	4,35±0,23	3,75±0,17
2	5	40,67±3,24	1452,15±21,37	7,48±0,34	5,98±0,23
3	10	38,60±3,38*	942,31±15,84**	9,53±0,18*	7,36±0,18**
4	15	38,42			
5	16				

Thus, the average body weight of males is 86.24 ± 3.09 kg minimum of 72.12 ± 4.55 kg body weight average of 58.4 ± 2.29 kg minimum of 47.91 ± 3.52 kg, (maximum of 60.36 ± 4.17 kg) 3-6-month-old goat is 27.86 ± 2.14 kg minimum 17.73 ± 2.58 kg maximum 28.16 ± 2.33 kg.

Also the average height of withers of male goats is 80.16 ± 5.43 cm minimum 73.57 ± 3.46 kg maximum 83.27 ± 3.12 kg average 74.45 ± 3.57 cm in female goats, minimum 68.10 ± 3.05 kg maximum 77.83 ± 5.66 kg), 3-6 month old goats, minimum 48.34 ± 2.25 cm minimum 44.63 ± 3.97 sm maximum 53.81 ± 4.09 cm) the height of the withers is average 84.52 ± 4.26 sm in male goats minimum 78.61 ± 2.23 cm maximum 84.07 ± 3.50 cm in female goats average 84.21 ± 4.68 cm minimum 75.44 ± 3.06 cm maximum 85.97 ± 4.48 cm), 3-6 month old goats 51.25 ± 3.19 cm minimum 47.31 ± 3.06 cm, maximum 55.84 ± 3.35 cm) body length in male goats was found to be equal to 75 cm minimum 72.22 ± 2.02 CM, maximum 79.18 ± 3.45 CM 49.17 ± 3.20 CM in 3-6 month old goats (minimum 45.05 ± 2.35 CM, maximum 52.28 ± 3.24 CM) chest circumference in male goats averaged 85.78 ± 1.35 CM (minimum 82.317 20.07 , CM, maximum 87.10 ± 3.64 CM) origin 0.30 ± 1.34 CM cm in female goats (minimum 78.54 ± 2.24 CM, maximum 82.94 ± 4.42 CM) 50.06 ± 2.12 CM in 3-6-month-old goats (minimum 47.05 ± 3.67 CM, maximum 54.17 ± 3.06 cm) was analysed. In the farm where the analysis of the obtained results was carried out, it was noted that the studied external signs of Saanen goats correspond to physiological normative values. In particular, the height of the belly of Saanen is 75-75,4 cm, the height of the goat's rump area is 75,7-76 m, the length of the body is 80.2-81 Cr the circumference of the chest is 86,6-88cm, the body weight of the goats a 3 months 13,7 kg 27,2 kg at 7 months (chest 53.3 cm rump height 55,5 cm), 28.6 kg at 12 months [6,9]. In subsequent studies, the body weight of Saanen goats and goats during the lactation period, and the dynamics of goat milk production were analyzed (Table 2).

The level of statistical reliability of indicator values in groups 2-5 compared to group 1, $p < 0.01$ (3-4).

In this case, the body weight of mother goats decreased by 16.09%, in the 16th week compared to the 1st week of the lactation period, and the milk yield decreased by 74, 85%.

The weight of males and fem. all kids were analysed - 3.06 and 2.88 times increase accordingly, In the studies, the milk yield of goats in external environmental conditions, the physicochemical parameters of milk (p N = 0.6, 3-6.5 protein 3,4-6,5 Lactose 3.76-5,421, lipid 7.25 -7.76%), as well as the body weight dynamics of goats during lactation were analysed. In particular, body weight in goats until the 12th week of lactation significantly increased. It is estimated that the body weight of male goats is significantly higher than that of females, which can be related level of to the high expression of the struggle for milk feeding based on hormonal activity [10-14].

4. Conclusions

The studied external signs of Saanen goats correspond to the physiological standard values, including the body weight of male goats being 86.24 ± 3.09 kg on average, and the body weight of female goats being 58.44 ± 2.29 kg on average. The average body weight of 3-6 month-old goats is 27.86 ± 2.14 kg the average height of the belly of male goats is 80.16 ± 5.43 cm, the average height of female goats is 74.45 ± 3.57 cm, the average height of 3-6 month-old goats, body length in male goats is 79.63 ± 1.07 cm on average, in female goats is 75.40 ± 0.25 cm on average 3-6-month-old goats are 49.17 by 3.20 cm chest circumference is 85.78 ± 1.35 cm in male goats, 80.30 ± 1.34 cm in female goats, 50.06 in 3-6-month-old goats. It was determined to be 2.12 cm. Body weight of Saanen goats during the lactation period, it was observed that in the 16th week, the milk productivity decreased by 16.09%, and the weight of male and male kids increased by 3.06 and 2.88 times, respectively.

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