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DAIRY PRODUCTIVITY OF SHEEP OF DIFFERENT GENOTYPES

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Abstract:

The article examines the milk productivity of local dam and Karakul breed by periods of lactation under pasture conditions.

Keywords: Colostrum, average daily milk production, lactation period, local and karakul sheep.

RELEVANCE.

In the recent past, all selection and breeding work in sheep breeding in general was aimed at increasing wool shearing, karakul and sheepskin manufacture, as sheep's wool and karakul were in demand and well valued.

Under current conditions, it is characteristic that the focus of sheep breeding has shifted from wool productivity to meat and milk productivity. This is due to the fact that currently the economically important product in sheep farming is meat - lamb, whose share in the gross income from the sale of all products derived from sheep exceeds 70%. The mutton production level is closely linked to the milk yield of their mothers. Therefore, the dairy performance study of sheep, both as a product and source of animal nutrition, is relevant.

In the 19th and 20th centuries, sheep were raised in many parts of the world, mainly for wool, karakul and mutton. However, the rapid development of the chemical industry and the intensive displacement of natural fibers by synthetic fibers has led to significant changes in the global sheep breed structure. The increase in sheep numbers from 1 billion 60 million in 2000 to 1 billion 200 million in 2017, according to FAO, was due to sheep meat and dairy sheep numbers increasing by 11.0% and 26.3% respectively, while the number of wool sheep decreased by 15%.These structural changes have determined a positive increase in mutton production by 15% and sheep milk by 24.5%.

In recent decades, the global trend in sheep breeding has been towards dairy farming. It should be noted that out of the 187 sheep producing countries in the world, more than half are breeding dairy sheep [2]. Africa and Asia have seen particularly large increases in milk production of sheep today compared to 2000 - 153.8% and 133.8% respectively [1,3].

Uzbekistan, with its long and renowned history of karakul and dairy sheep farming is not, in fact, a new trend. The usage of sheep for the production of sheep's milk and making cheese from it has been sporadic. During the Great Patriotic War, for instance, sheep milking and brinsen cheese production were established on karakul sheep raising system. However, in the postwar years, due to the mass application of this direction in carcass breeding was curtailed.

In many countries around the world, sheep dairy production is economically superior to lamb and wool production. In countries such as Greece, Spain, France, Portugal, sheep's milk accounts for at least 15% of total milk production, and in Spain it is as high as 30% [4]. In France, 17-20 kg of sheep's milk are produced per resident. China produces more than 1m tonnes of sheep's milk a year. It is notable that Greece with its mountainous and foothill landscape, has more than 11 million sheep for a population of 10 million, making it one of the world's leading consumers of lamb and sheep's milk products [4].

Sheep's milk is used to produce elite cheeses, brinsen cheese, the most popular and well-known of which are Spanish Manchego and Cabrales, French Roquefort, Bulgarian brinsen cheese, Romanian Halloumi, Italian Pecorino and Caccaval[4].

The predominant use of sheep's milk in cheese-making is due to its unique properties. The acidity of fresh sheep milk is 24-27^{0}T, which is 6-10^0 higher than cow's milk.Sheep's milk is highly buffered and therefore clots at a higher acidity (120-140^{0}T) than cow's milk (60-70^{0}T). It also curdles much more slowly (by 30-50%) when exposed to rennet, so the resulting clot is less elastic, which affects the physical properties of curd, brinzen and cheese. Another feature of sheep's milk is its resistance to low temperatures. Deep-frozen milk does not change its taste and retains its properties when thawed, which can be used successfully to supply the cheese industry with raw milk during the whole year [5].

Sheep's milk fat is softer and whiter than cow's milk, with a melting point of 35.5-36°C and a hardening point of 24.5-25°C. The fat globules, which make up the milk fat are much finer in sheep than in cows (sheep milk has 6 billion fat globules in 1 mm^2, compared with 4 billion in cow milk),i.e. the milk fat in sheep is in a finely dispersed state, so milk is homogeneous, easy to digest and does not change its state in the raw clot, ensuring a high percentage of cheese yield. Sheep's milk protein is more complete, being 99.1% digestible in the human body, whereas cow's milk is only 91.7%, and sheep's milk contains higher amounts of casein, with an almost equal ratio of alpha and beta forms.

RESEARCH METHODS AND MATERIAL.

Milk productivity of sheep was studied on black, grey and severe karakul sheep and local sows in the farm "Nurobod wide field" of Nurobod district of Samarkand region. For this reason, 10 sheep-mothers were selected according to the analogy principle. Sheep were kept traditionally on pasture during the lactation period. The sows of the Karakul sheep breed were selected from among those whose lambs were slaughtered to produce karakul. Their milking capacity was established after the first ten days of milking and thereafter once a month (mid-month) by hand milking in the morning and evening.

Local ewes lambed one lamb at a time. On check-milking days, lambs were weaned from dams a day in advance.

After counting the milk yielded during the day, the lambs were reintroduced to the mothers, and the milk yielded, after counting the quantity and taking samples for analysis, was hand-fed to the lambs.

RESEARCH RESULTS.

Analysis of the data in Table 1 shows that the milk yield of ewes of different genotypes is different. It depends on both breed and milking period. It should be noted that during the first ten days of milking, the milk, i.e. colostrum, was thick and received somewhat less than normal milk. Local sheep outperformed karakul sheep in terms of colostrum production by 106.0 grams, 110.0 grams and 138.0 grams respectively.

It is known that sheep's milk in the first week of the lactation period is a different quality than normal milk, this is due to the biological characteristics of the animals and their purpose.After lambing, the lamb breathes and its digestive and other systems begin to function. When the digestive system is weak and nutritional requirements are high, the body has special requirements for feed. The food must be easily digestible and nutritious.The colostrum, a concentrate of essential nutrients, serves as this feed.

The phosphoric acid and calcium in the colostrum helps to quickly strengthen the bones and tendons of the growing lamb, and magnesium salts clear the intestines of the primiparousfaeces. The immune substances in the colostrum inoculate the lamb against passive immunity against infection with B. Coli bacteria.

Average daily milk yield of experimental sheep

Table 1

Indicators	Karakul breed			
	Black	Gray	Light brown	Local
In the first ten days	788,9±58,8	784,0±32,5	755,9±59,2	894,0±58,9
On average 1 month gr.	1019,1±47,4	984,7±50,6	935,7±64,8	1076,8±60,1
On average of 2 months gr.	1052,5±32,2	1025,3±36,5	974,6±53,2	1200,6±58,2
On average of 3 months gr.	664,0±40,3	606,0±50,9	593,6±42,5	613,2±58,4
On average of 4 months gr.	413,6±42,3	404,2±34,9	390,6±11,9	420,1±59,9
On average per lactation gr.	733,5	757,3	726,2	832,8
Total milk yield per lactation, kg.	95,3	98,4	94,3	108,2

The milk period lasts for up to a week. The animals then produce regular milk, on the quantity and quality of which the further growth of the lamb depends.

Among karakul sheep, black and grey colored ewes had higher milk production rates. Black sheep, for instance, had roughly equal numbers to grey sheep and outperformed sour sheep by about 33 grams per day.

All groups of ewes had the highest average daily milk production in the second month of lactation. Here, too, local sheep had the highest rates (1200,0±58,2).

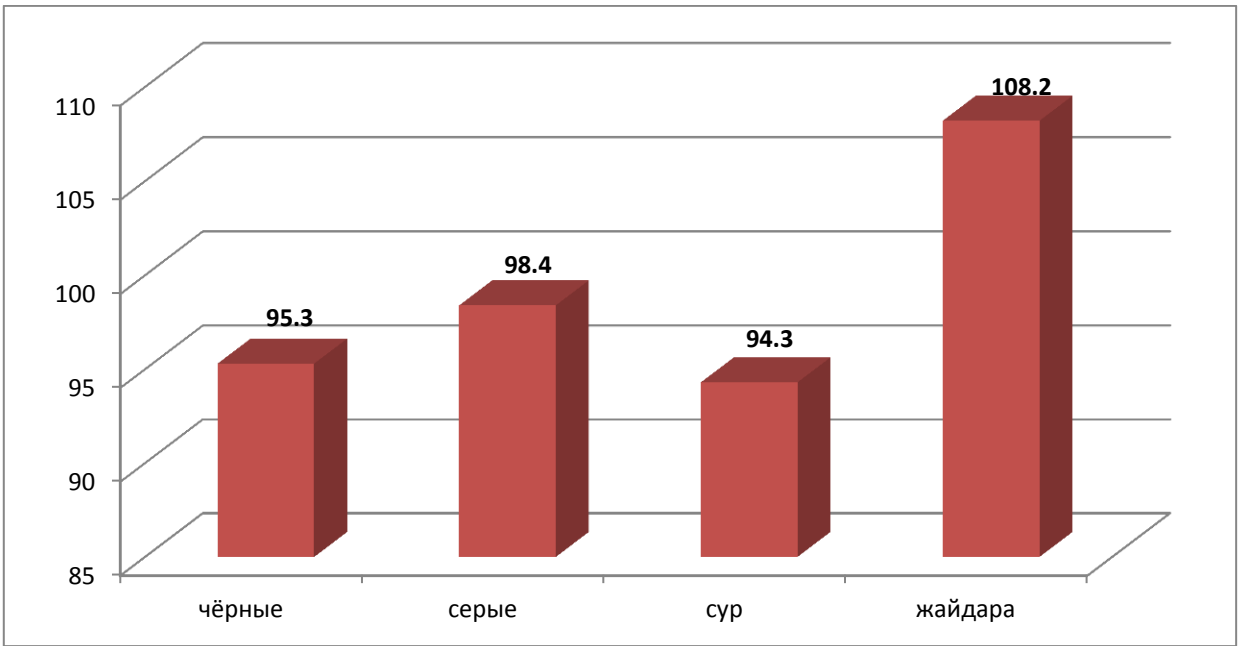
Among karakul sheep, a high performance was recorded for the black lamb group (1052,5±32,2) and gray coloring(1025,3±36,5), lower milk yields are recorded for ewes of harsh coloring–(974,6±53,2).

In the third month of the lactation period, the pasture vegetation (ephemera, ephemeroids) usually withers and its numbers decrease sharply and this has an immediate impact on the dairy performance of sheep.

For instance, the average daily milk yield of black, grey and severe Karakul sheep decreased by 388.5 per month, respectively; 419.3 grams and 381.0 grams, for the local sheep group this difference was 587.4 grams.

In July, pasture yields drop even further, the vegetation dries out and this affects the dairy performance of the dams.

The lowest average daily milk yields were recorded in the fourth month of lactation. At the same time, milk yield decreased by a factor of 2.2-2.4 compared to the first and second months of lactation.



Dairy productivity of wombs during the lactation period

During the whole lactation period, total milk production was uneven. For instance, the highest milk yields were recorded in local sows -108.2. Among karakul sheep, the best results were seen in grey and black sheep -98.4kg and 95.3kg.

CONCLUSIONS

Thus, the results of the research and observations carried out allow us to conclude that the milk productivity of sheep depends on both breed and pasture yield. The quality and quantity of sheep's milk production can be influenced by adjusting the sheep's nutritional levels. The best milking performance amongst karakul sheep, has been recorded in black-colored sows.

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