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Original Research Article

Additional Feeding and Its Influence on the Change in the Metabolic Processes of the Body of Pregnant Queens

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ABSTRACT:
The article presents the materials obtained in the study of the effect of additional feeding of Karakul queens in the second half of their pregnancy. It has been established that the inclusion of additional feeding in the pasture diet, composed of rough and concentrated feed, having a nutritional value of 0.85 k.u., 11.0 mJ of metabolic energy, 78-80 g of digestible protein of pregnant queens, fully meets the needs of their body for nutrients in the second half pregnancy, increases the amount of feed consumed, increases their digestibility, improves the course of metabolic processes and ensures the production of the intended products.

Keywords: Karakul Sheep, Pregnant Uterus, Mountain And Arid Pastures, Productivity, Biological Values, Nutrients, Need, Provision of The Body, Quantity, Consumed substances, Feed, Digestibility, Use And Their Effect on The Metabolic Processes of The Sheep's Body.

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INTRODUCTION

Karakul breeding is the most socially significant branch of sheep breeding in Uzbekistan, which ensures the preservation of the traditional way of life of many national residents of the country. Often, native breeds of sheep are classified as low-productive breeds, and the production of products based on them is not economically efficient. It remains only to improve their productive performance by improving the organization of additional feeding during the pregnancy period of sheep (Aliev, 1997; Bagmut, 2006; Buryakov, 2006; Ryadchikov, 2015).

Since, Uzbekistan occupied one of the leading places among the post-Soviet states in terms of the size of its pasture resources. Pasture land is 189.0 million hectares, historically being the driving force in the country's economy, as a source of fodder resources for the development of animal husbandry (Bagmut, 2006; Isaeva, 2016).

According to the Ministry of Agriculture of the Republic of Uzbekistan, there are 27.1 million hectares of pastures that have been knocked down to a medium and strong degree. In the

zonal aspect, the destruction of pasture ecosystems is more observed in the flat part, where more than 95 % of all pastures are located, including desert, semi-desert and arid zones – 16,1 million hectares or 60 % of their area (Karynbaev, 2009). Killed (downed) pastures are the main consequence of changing environmental conditions and unsustainable human activities. It manifests itself in the loss of valuable fodder plant species from the herbage and their replacement by weed; non- eaten fodder species (Taubaev, 2011).

Basically, the failure of these pastures occurred due to the greater concentration of animals in a limited area, violation of the principle of seasonality of the plots used, non-compliance with the grazing load, the terms of land use. In almost all livestock farms, this issue is especially relevant, because the growth in the number of livestock (animals grazing on pastures) per 1 ha of used fodder area is far ahead of the growth in the gross fodder stock of pastures. Such a disproportion has led, in a number of cases, to the difficulty of environmental and economic regulation in the pasture economy (Isaeva, 2017).

In recent years, practically no one has dealt with issues of feeding, maintenance, mechanization and automation in Uzbekistan. As you know, in order to achieve high productivity rates, animals must daily receive the required amount of nutrients established in the norms of feeding sheep in connection with the physiological state and have a rich genetic potential. However, in many livestock farms, breeding work on selection and selection during insemination of queens is released into a scooter. In addition, the issues of feeding Karakul sheep with year-round grazing during the period of pregnancy remains little studied.

In connection with this, we organized a comprehensive study to determine the yield of natural pastures and the nutritional value of edible fodder for the seasons of the year. Determine the provision of the body of sheep with nutrients, determine the missing amount of feed ration, with year-round grazing and organize additional feeding in order to replenish the missing part of the diet. At the same time, to study the effect of feeding top dressing on metabolic processes, morpho-biochemical parameters of blood, productivity, resistance of the sheep's body and on the number and viability of the resulting offspring.

The purpose of our study was to determine the productivity of the natural pastures used, the provision of the sheep with nutrients during the period of pregnancy and organize additional feeding in order to replenish the missing parts of the diet.

To achieve the goal, the following specific tasks were set:

- to determine the productivity of pastures by the seasons of the year and the chemical composition of the consumed feed;
- determine the amount of pasture feed consumed and the provision of the body of ewes with nutrients;
- organize additional feeding in order to replenish the insufficient part of the pasture diet of pregnant ewes and study the course of metabolic processes during lactation
- to study the processes of digestion and the biochemical composition of blood in lactating queens who received additional subcortex during pregnancy.

MATERIALS AND METHODS

To achieve the set goals, scientific and production experiments were organized to study the effect of additional feeding to the pasture diet of queens during pregnancy. For the experiments, 2 groups of animals (control and experimental) were formed, 20 animals each, according to the VIZh method (Ovsyannikov, 1976). The experiments were carried out according to the methods of groups-periods for 30 days, of which 20-23 days of preliminary and 7-10 days of accounting periods (Viktorov, Menkin, 1991). Tduring the preliminary periods, the animals were accustomed to the consumption of the studied diet, while keeping records of the food eaten and the remains of the feed, which determined the feed actually eaten by the sheep. And during the accounting period, balance experiments were carried out on 3 queens and the actually consumed feed and excreted feces were determined, and this made it possible to calculate the amount of digested nutrients and the digestibility coefficients of

individual nutrients in the diet. All received digital materials were statistically processed according to the method of (Merkuryeva, 1984).

RESULTS AND DISCUSSION

According to the materials of experimental experiments, we found that the need of the body of ewes for nutrients is provided, respectively, in spring %, in summer - %, in autumn - % and in winter - %.

During the experiment, i.e., during the second half of pregnancy, the amount of feed consumed and the digestibility of their nutrients by pregnant queens were studied. And based on these materials, we consider the most difficult period in the life of Karakul sheep is the gestational periods of the year, when offspring develop in their body and pastures in this period have the lowest yield, and the vegetation is low in nutrients. In the second half of pregnancy, 3 physiological experiments were carried out (from January 15 to January 25, from February 15 to February 25, and from March 15 to March 25).

By the beginning of the second half of pregnancy (87-90 days), the ewes ate sagebrush twigs that had begun vegetation and partially dry last year's twigs with a low content of nutrients.

In this regard, in order to study the effect of additional feeding during the period of pregnancy of the uterus, on the metabolic processes of their body, scientific and production experiments were organized and they were carried out according to the following scheme (Table 1):

Table 1: Experience Scheme

Groups	**Number of heads**	**The composition of the diet**
Control	15	Pasture grass, no top dressing
Experienced	15	Pasture grass + 0.400 g of concentrates, forbs hay and cotton husk 0.5 kg per head of queens

The norms of additional dressings were calculated taking into account the amount of pasture grasses consumed and included feed supplementing the missing parts of the norm indicated in the detailed norms developed by VIZh and recommended in the reference book by A.P. Kalashnikov and others (Kalashnikov, 2003). According to the norms, ewes per day per head should have received 0.85 k.u., 11,0 mJ of metabolic energy and 78 g of digestible protein.

For the experiment, two groups were selected, in which the sheep were analogues in age, live weight, class and color. The control group was kept on the pasture for the entire experimental period, and the experimental group was kept up to 2.5 months, pregnant, without feeding, and from January 1, the uterus received separately 0.5 kg of hay forbs and cotton husks, as well as 400 g of barley turf per day. As mentioned above from the pasture of the uterus, mainly shoots of wormwood and keireuk of the last year of vegetation (rags) with a low content of nutrients were obtained, which were poorly eaten by sheep. There were no ephemera and forbs.

The amounts and nutrients of supplementary feeding included in the diet of ewes are shown in Table 2.

Table 2: The amounts and nutrients of supplementary feeding

Indicators	Grass hay.	barley turd	Cotton husk	Total
Contained in the diet, kg	0.5	0.4	0.5	1.4
Energy feed. units	0.22	0.46	0.14	0.82
Exchange energy, mJ	3.35	4.2	3.4	10.95
Dry matter, kg	0.420	0.340	0.440	1.200
Digestible protein, g	28.0	34.0	9.0	71.0
Ca, g	4.2	0.8	0.5	5.5
P, g	1.0	1.56	0.4	3.0
Table salt, g	-	-	-	6.0
Carotene, mg	7.5	0.2	2	10.0

According to the chemical composition, the new shoots contained 7.68 % of crude protein and 1.23 % of easily soluble carbohydrates. In such conditions, the uterus did not gain enough food, and therefore, their fatness decreased.

Table 3: The amount of nutrients actually consumed by the queens

Indicators	Groups	
	Control	Experienced
Dry matter eaten, kg	0.935	1.237
Pasture grass	0.935	0.490
Additional feeding:		
Grass hay, kg	-	0.319
Cotton husk, kg	-	0.447
Barley turd, kg	-	0.400
The diet contains:		
Exchange energy, mJ	6.6	8.3
feed units	0.56	0.81
Crude protein, g	80.76	123.62
Digestible protein, g	42.0	78.0
Crude fat, g	23.19	33.19
Crude fiber, g	377.65	338.9
BEV. g	352.6	444.14
Calcium, g	16.3	17.3
Phosphorus, g	4.3	2.01
Carotene, mg	2.14	24.0

According to the actually consumed feed, the uterus of the two groups received different amounts of nutrients (Tables 3 and 5). In the control group, 24.4% less dry matter was consumed, this is exclusively pasture forage. The intake of metabolic energy compared with the experimental group was less by 20.49%, they received energy feed units by 30.87%, digestible protein by 46.16% less than the experimental queens. Based on the data of exchange experiments, the coefficients of digestibility of nutrients by the uterus were calculated (Table 4).

Table 4: Digestibility coefficients of nutrients by experimental queens

Indicators	**Groups**	
	Control	**Experienced**
Dry matter	51.2±1.44	60.9±1.71
organic matter	52.1±1.81	62.9±1.72
Protein	52.0±0.90	63.4±1.26
Fat	57.3±1.71	60.1±1.46
Cellulose	64.1±1.12	59.7±1.4
BEV	59.1±1.19	70.7±1.61

As can be seen from Table 4, the digestibility of nutrients was higher in animals of the experimental group: in terms of dry matter - by 9.7 %, organic matter - 10.8%, protein - 11.4, fat - 2.8 and BEV - by 11.6 %, but the digestibility of fiber in the control group was higher by 4.4%.

Such differences in the digestibility of nutrients are apparently due to the fact that in the diet of the sheep of the experimental group, there was a sufficient amount of nutrients and especially roughage, on which the queens chose the softer and more easily digestible part of the feed.

Table 5: Digestibility coefficients of nutrients by experimental queens

Indicators	**Groups**	
	Control	**Experienced**
Dry matter	478.7	753.3
organic matter	434.5	590.8
Protein	42.0	78.0
Fat	13.49	19.94
Cellulose	242.07	202.32
BEV	208.4	314.8

As can be seen from the data in Table 5, compared to the control group, the animals of the experimental group actually digested dry matter - by 57.4%, organic matter - by 35.9%, protein - by 85% and BEV - by 50.7% more, and the amount of digested fiber was - 16.4% less.

Animals of both groups had a positive balance of nitrogen and sulfur. However, animals of the experimental group utilized nitrogen and sulfur better.

CONCLUSIONS

The obtained materials give grounds to believe that the inclusion of additional feeding in the pasture diet in the winter season, consisting of rough and concentrated feed and having in its composition 0.85 k.u., 11.0 mJ of metabolic energy, 78-80g of digestible protein of pregnant queens fully provides the needs of their body for nutrients in the second half of pregnancy and ensure the receipt of the intended products.

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