INTEGRATED USE OF FEED ADDITIVES IN THE FATTENING OF RAMS OF THE KARAKUL BREED

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Annotation: The organization of full-fledged feeding is the main factor in the realization of the genetic potential of farm animals. In this regard, the use of effective feed additives in feeding animals can increase the energy and biological value of diets. The main advantage of using complex ingredients is the "effect of supplementing each other with nutrients", based on the biological laws of growth, development and general metabolism of the animal organism. The effect is explained by the fact that the increase in digestibility, digestibility or improvement of metabolic processes is affected by the presence in the diets by nature of different substances, i.e. synergy, which represent energy, mineral or biologically active substances, products of synthetic or microbial synthesis.

This article presents the results of fattening of 6-month-old Karakul rams using feed additives in the complex: 1) bentonite as a source of minerals; 2) probiotic "Baktovit" for fodder purposes as a natural bio stimulant; 3) carbamide as a source of nitrogen and increasing the protein nutritional value of diets for ruminants, 4) chlorella algae suspension as a source of biologically active substances. The results are presented by the data of the obtained weight gain of experimental animals, feed consumption per unit of weight gain, control slaughter and deboning of carcasses.

Keywords: karakul rams, fattening, bentonite, carbamide, probiotic, chlorella, control slaughter.

Abbreviations: synthetic nitrogen-containing substances - SNCS; Energy feed unit - EFU; digestible protein - DP; meat coefficient - MK.

Introduction. Sheep breeding is one of the main branches of agriculture, which is characterized by high profitability of production due to the efficient use of natural pasture resources with low production costs. In the conditions of Uzbekistan, this industry is based on 20.6 million hectares of natural desert and semi-desert pastures, of which 17.5 million hectares are directly allocated to Karakul sheep breeding with a population of more than 6 million heads. The natural pasture conditions of this territory are the main source of formation of the forage base of the industry.

It should be noted that the yields of natural pastures in these regions have low yields and largely depend on precipitation. Because of such anthropogenic factors associated with the global problem of climate warming, it leads to a sharp decrease in precipitation, as a result of irrational use and without control grazing of pasture animals, pasture degradation is expanding. In turn, these factors negatively affect the intensive development of desert-pasture animal husbandry. In this regard, there is a need for a radical revision of this problem, which can be solved by science-based agricultural production technologies, such as the development

and use of feed additives enriched with mineral and biological active substances;
improvement of animal housing technologies with efficient use of land and pasture resources.
In the organization of animal feeding, the complex use of feed additives can be of scientific and practical importance, allowing increasing the nutritional value of not only one nutrient element or the overall nutritional value, but comprehensively improving the biological value of diets. The following types can be considered as such means.

Scientific and technological progress in the fundamental sciences, research in the field of biotechnology has received a new direction in the study of the role of probiotics as a feed additive. For example, the probiotic "Baktovit" developed by the Institute of Microbiology of the Academy of Sciences of the Republic of Uzbekistan contains bacteria of the genera: Lactobacillus, Bifidobacterium, Propionibacterium spore-forming bacteria - Bacillis subtilis, which are probiotics. Conducted experiments on feeding and analysis of studies showed a positive effect of the probiotic on the morphological and immunobiological composition of the blood, the activation of defense systems and the improvement of the immune properties of animals, growth rates, increased digestibility of nutrients, which leads to feed savings by 20% [4, c.346- 349].

Currently, in many countries of the world, microalgae and some photoautotrophic unicellular algae are widely used in various fields of human activity. They are very rich in protein, trace elements, vitamins and other biologically active substances. Due to their biochemical properties in animal husbandry, they are used as biologically active feed additives in animal feeding.

[2, c.43] note in their article that microalgae are used to prevent and treat various diseases, increase feed intake, regulate metabolism and increase the productivity of animals and poultry. Unicellular photosynthetic microalgae play a certain role in solving the protein problem, and to a greater extent, as non-traditional sources of biologically active substances. Green and blue-green algae of the genus Chlorella, Spirulina, Scenedesmus and others are more suitable for mass cultivation. The cultivation process is carried out for 8-10 days until the optical density of the suspension is reached, which can be soldered to animals without loss in the environment of all nutrients, vitamins and other bioactive substances - antibiotics, enzymes, sterols, phytohormones.

In the conditions of astrakhan farms, suspensions of algae can be soldered to animals without loss of all nutrients to sheep that are fed. These are old-aged sheeep of dental and age marriage, accounting for 16-17% of the total number of ewes every year, rams of the current year of birth and 1.5-year-old heaps, as well as sick and emaciated animals that are in veterinary-inpatient care. The fattening of this contingent occurs mainly in the warm autumn months of September and October, when it is possible to obtain good harvests of algae in the conditions of Central Asia.

One of the non-traditional feed additives is bentonite clay, which has the ability to adsorb poisons, bacteria and toxins, envelop the inflammatory mucous membranes of the digestive tract, and at the same time are a source of macro- and microelements. Under the conditions of Uzbekistan, bentonite of Azkamar origin received a recommendation for use as a mineral supplement. Domestic scientists have developed and approved the specifications for this clay used as mineral additives in the diets of farm animals [4, p. 2-5, 7, 7-15]. Given the large reserves of this raw material, low cost, practicality in use, evidence-based recommendations

for use in animal nutrition, the use of bentonite as a mineral supplement does not lose its relevance.

The main sources of feed in karakul sheep breeding are pasture feed, which has a low energy value, the cause of which is the protein deficiency of natural forage lands. In the practice of animal husbandry, to increase the protein nutritional value of diets, SNCSare used in the form of carbamide (urea), ammonium bicarbonate, ammonium sulfate, diaphonium phosphate, and others. It should be noted that SNCScan only be used in feeding ruminants, which are able to use non-protein nitrogen for the synthesis of their own body by ruminant microorganisms. This biological mechanism of the gastrointestinal tract of ruminants and the vital activity of the symbiotic microflora make it possible to satisfy the need of the ruminant organism for amino acids, especially critical ones (lysine, methionine, tryptophan), B vitamins, vitamin K, etc. [6, p. 33-40]. In the practice of sheep breeding, urea is widely used to increase the protein nutritional value of diets. When using it, it is necessary to adhere to strict recommendations for their use, which makes it possible to provide protein nutrition in the diets of ruminants for 25-30% of its total requirement [9, p. 130-132, 10, p. 1550-1553, 11. p. 127-131].

Considering the scientific basis of the above references, it can be concluded that the complex use of feed additives in the stall fattening of karakul sheep of the current year of birth will allow the enrichment of the nutritional value of diets with the effect of influencing their meat productivity.

Materials and methods. The experimental part of the research was carried out in the fattening farm "Istiklol Karakul Naslchilik" of the Navoi region of the Nurata district. For the experiments, 6-month-old rams of the Karakul breed were selected. By the method of analogue groups, 3 three groups of 25 animals each were formed, where the first group I received the conditional name control, II and III experimental. Rams fattening was carried out on the basis of the diet established on the farm with the use of local feed, in the form of coarse stalked feed (mixed grass hay, wheat straw), concentrated feed (wheat bran, barley turf) and salt. Feeding norms, composition and nutritional value of diets were determined on the basis of reference data [3, 228-231]. The experimental animals were kept in the same zoo hygienic conditions. The difference in feeding between the control and experimental groups was that in the experimental group, additional feed additives were used in the form of bentonite from the Azkamar field, the probiotic "Baktovit" developed by the Institute of Microbiology of the Academy of Sciences of Uzbekistan, grade B carbamide with a mass fraction of nitrogen of at least 46.2% and a suspension of algae chlorella strain 76-15 for watering animals.for the II-experimental group included: bentonite and carbamide, for the III-experimental group: bentonite, carbamide, probiotic and suspension of chlorella algae. Feed additives were included in the following amounts (per head per day): bentonite - 1 g per 1 kg of live weight; carbamide 8-10 g; probiotic - 0.1% of the weight of the diet, chlorella suspension was used for feeding animals and its amount was not limited. Lams fattening continued for 60 days. At the end of the experiment, to assess the meat productivity of sheep, a control slaughter was carried out after 24 hours of starvation according to the method [5, 45-48]. For the control slaughter from each group, 5 heads of the most typical groups were selected.The date material was processed by the biometric method according to [1, -253 p.].

Results and discussions. When studying the dynamics of changes in the live weight of animals, the following results were obtained (table 1).

Table 1 - Dynamics of change in live weight and average daily

increments, (n=25), X±Sx

Animal groups	Weight at the beginning of fattening, kg		Weight at the end of fattening, kg		Absolute weight gain, kg		Average daily gain, kg	
	X±Sx	Cv%	X±Sx	Cv%	X±Sx	Cv%	X±Sx	Cv%
I	25,6±0,20	3,84	35,7±0,37	5,05	10,1±0,39	18,74	168,5±6,45	18,74
II	25,8±0,21	4,01	37,7±0,41	5,28	11,9±0,43	17,69	198,4±7,16	17,69
III	26,1±0,22	4,12	38,6±0,44	5,53	12,5±0,46	18,19	208,3±7,74	18,19

It was found that in the experimental groups, the absolute weight gain and the average daily weight gain were higher than in the control groups. Thus, in the II-experimental group, the absolute weight gain exceeded this indicator of the control group by 1.8 kg or 17.8% and in the III-group by 2.4 kg or 23.8%, respectively. The average daily gain in the II experimental group was 198.4 g, which is more than in the control by 29.9 or 17.7%, in the III experimental group this figure was 208.3 g, which exceeded the control by 40 g or 23 .0%. It should be noted that the highest growth results were obtained in the III-experimental group, while the reliability of the difference between the indicators of the control group has a high level - p>0.01-0.001.

In the production of livestock products, determining the consumption for feed by weight gain is an important indicator that determines the level of profitability. Table 2 shows data on the consumption of feed for the gains of experimental animals.

Table 2 - Feed consumption per 1 kg of growth

Animal groups	Growth, kg	Actual feed consumption		Costs per 1 kg of growth		In % to the control group	
		EFU, MDj	DP, kg	EFU, MDj	DP, kg	EFU, %	DP, %
I	10,1	99,64	8057	9,87	798	100	100
II	11,9	100,74	8138	8,47	684	85,81	85,73
III	12,5	102,25	8261	8,18	661	82,92	82,84

During fattening, the accounting of the actual feed consumption in the groups was different. Taking into account the gains obtained in the control group, 9.87 EFU and 798 g of DP were consumed per 1 kg of gain. If the data in the control group on feed consumption per unit of growth is taken as 100%, then in the II experimental group these figures were 85.81 and 85.73% and in the III experimental group 82.92 and 82.884%, respectively. Analyzing these data, we can conclude that the lowest rates were obtained in the III-experimental group, where all types of feed additives were used in combination, this allowed saving EFU by 17.8 and DP-17.6%.

Table 3 - Results of control slaughter, (n=5)

Animal groups	The pre-slaughter live weight, kg	Carcass weight, kg	Fat total (tail+internal)	Slaughter weight	Slaughter indicator, %

	X±Sx	Cv%	X±Sx	Cv%	X±Sx	Cv%	X±Sx	Cv%	
I	33,85±0,21	1,22	14,28±0,16	2,23	3,01±0,06	4,10	17,29±0,21	2,44	51,11
II	35,46±0,26	1,46	15,45±0,19	2,51	3,52±0,07	3,99	18,97±0,20	2,10	53,51
III	36,13±0,28	1,58	15,90±0,23	2,84	3,67±0,05	2,73	19,58±0,20	1,99	54,19

The control slaughter of experimental animals after the 24th starvation showed that in the experimental groups the main indicators exceeded the control indicators, while the highest indicators were obtained in the III-experimental group. In this group, the pre-slaughter live weight was higher than in the control group by 2.28; carcass weight by 1.62; total fat obtained by 0.66 and slaughter weight by 2.29 kg with high levels of significance of the difference (p>0.01).

Table 4 shows the results of carcass deboning.

Table 4 - Results of carcass deboning, kg (n=5)

Animal groups	Weight of chilled carcass, kg		Pulp		Bones		Tendons and technical losses		MK
	X±Sx	Cv%	X±Sx	%	X±Sx	%	X±Sx	%	
I	14,13±0,13	2,26	10,58±0,18	74,83	3,22±0,05	22,76	0,34±0,04	2,41	2,98
II	15,31±0,20	2,57	11,61±0,19	75,85	3,35±0,10	21,90	0,34±0,03	2,25	3,15
III	15,75±0,23	2,87	12,00±0,22	76,16	3,38±0,09	21,48	0,37±0,05	2,35	3,20

The main indicator in these studies is the yield of the fleshy part of the carcass, this indicator in the experimental groups also exceeded the control, i.e. in the II experimental group by 1.03 kg (p>0.02) and in the III experimental group by 1.42 kg (p>0.01). When assessing the meat productivity of animals, the MK indicator is also not an unimportant indicator, this indicator in the II experimental group was 3.15 in the III experimental group 3.20 units, this exceeds the control by 0.17 and 0.22 units, respectively, at the same time, the best results in carcass deboning were obtained in the III-experimental group.

Conclusion. Making a conclusion based on the results of fattening Karakul rams 6 months of age, we can conclude that the best results in terms of live weight gain, slaughter yields and main indicators of meat productivity were obtained in the III experimental group where all types of feed additives were used in the complex. This can be explained by the fact that the use of feed additives in the form of probiotics, microalgae, bentonite clays and carbomide in the feeding of experimental animals contributed to the increase in the biological value of diets due to the components contained in these additives, including nutrients, minerals and biologically active substances.

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