іріктеудің маңызды селекциялық белгілері болып табылады. Тірі салмақ бойынша іріктеу жүргізу, нарықтық сұранысты ескере отырып, етке қошқарларды сату кезінде орташа 7-8айлық кезінде немесе 18 айлық кезінде екі мерзім уақытта өткізу ұсынылатыны анықталды.

***Кілт сөздер:*** селекция, аталық қошқар, қошқар, қой, қылшық жүн, көбею қабілеті.

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## УЛУЧШЕНИЕ ГЕНЕТИЧЕСКОГО ПОТЕНЦИАЛА ПРОДУКТИВНОСТИ И ВОСПРОИЗВОДИТЕЛЬНЫХ ШЕРСТНЫХ КАЧЕСТВ МЯСО-САЛЬНЫХ ОВЕЦ

***Аннотация***

В Казахстане овцеводство является ведущей отраслью сельского хозяйства. Это обусловлено своеобразными природно-экономическими и климатическими условиями, связанными с характером рельефа территории, а также многовековыми традициями. Издревле, почти повсеместно в Казахстане овцеводство базировалось на использовании обширных пастбищных угодий. Овцы эдильбаевской породы, разводимые в стаде КХ «Ержан» характеризуются высокой мясо-сальной продуктивностью, скороспелостью и хорошей приспособленностью к природно-климатическим и кормовым условиям юго-востока Казахстана. Средняя масса баранов производителей селекционной группы составляет 105 – 110кг, настриг шерсти – 3,2 – 3,5 кг, маток соответственно 73-76 и 2,2–2,4 кг. Среднесуточный прирост массы у баранчиков за период от рождения до отбивки составляет 290 – 296г, у ярочек 260–270 граммов. Живая масса и классность шерсти являются важными селекционными признаками отбора и подбора для эдильбаевских овец КХ «Ержан» при совершенствование продуктивных и племенных качеств овец стада. Установлено, что при проведение отбора по живой массе, реализацию баранчиков на мясо с учетом рыночного спроса рекомендуется производить два срока, в возрасте 7-8 и 18 месяцев.

***Ключевые слова:*** селекция, баран-производитель, баранчик, овцематка, грубая шерсть, воспроизводительная способность, мясность.

**IRSTI 68.39.31** **DOI** https://doi.org/10.37884/1-2025/05

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## INCREASING THE PRODUCTIVE QUALITIES OF KAZAKH FAT-FAT SHEEP AT DIFFERENT LEVELS AND NATURE OF FEEDING

*Abstract*

The article indicates that for the first time comprehensive studies are being conducted on the rational use of distant pastures and increasing the productivity of natural grasslands by rational grazing of farm animals in a specific project area, as well as the main feeds of the southeast of

Kazakhstan containing different amounts of protein fractions that are split and not split in the rumen. Are most intensively split in the rumen of sheep. Proteins of semi-desert pastures, alfalfa hay meal, soybean grains are broken down within 60-65%, proteins of hay, straw, corn grains, soybean meal, corn on the cob within 31.8-55.3%.

Vegetable feeds, including coarse ones, contain a lot of hard-to-digest fiber. Due to the absence of digestive glands in the rumen, the digestion of dry matter occurs without the participation of digestive enzymes. The breakdown of fiber and other feed substances is facilitated by enzymes secreted by microorganisms contained in the pancreas. Protozoa and bacteria develop mainly in the scar. The rumen, the largest chamber of the complex stomach of ruminants, uses 70-85% of the digested dry matter of the diet, which emphasizes its importance. The scar can be considered as a large fermentation chamber providing a suitable environment for the continuous development of a population of microorganisms. The creation of normal conditions in the rumen for the optimal course of microbiological processes plays an important role.

***Keywords:*** *sheep, protein, feed, diet, hay proteins, straw, corn grains.*

***Introduction***

Full-fledged feeding is one of the priority tasks of zootechnical science, which can be solved by increasing the level of nutrition and the usefulness of diets. First of all, this is standardized feeding, in which animals meet the nutritional and biologically active substances needs of their organisms in accordance with their productivity, physiological state and economic use [1]. On the basis of proper feeding of sheep, taking into account the chemical composition and nutritional value of coarse, juicy and concentrated feeds, the number of high-quality animals, wool shearing will increase, mutton production. Therefore, based on the natural and climatic conditions of Kazakhstan, coarse, juicy and concentrated feeds are usually prepared in advance for the winter [2]. At the same time, care for the effective use of animal feed begins from harvesting, storing and preparing them for feeding. The main indicator of the usefulness of the diet is considered to be its balance in accordance with the energy needs of animals in minerals and other biologically active substances [3].

Meeting these requirements ensures an increase in the productivity potential of sheep farming aimed at increasing meat productivity and improving the quality of homogeneous wool. Determining the animal's need for nutrients and developing methods of standardized feeding [4]. Due to the peculiarities of digestion and digestion physiology, sheep effectively use plant resources of natural pastures and fields. The basis of their diet is hay and green grass of natural and artificial hayfields [5].

The farmer is required to especially carefully compose the diet in winter when keeping them in stalls. It is important to provide animals with everything they need so that they do not reduce productivity and do not get sick [6].

Recommendations on the standards of need obtained under stall conditions cannot be used without critical analysis when developing a system of full-fledged pasture feeding of sheep, since due to the specific features of keeping on pastures (active multi-kilometer movement, additional muscle work to collect grass, insolation, etc, sheep lose a significant amount of energy. All this does not allow us to fully judge the adequacy of pasture feeding [7].

The annual nutritional needs of sheep are met in summer by using pastures, and in winter by coarse, juicy and concentrated feeds. In the summer, pastures, flocks, and crop residues after harvesting grain and fodder crops are fully used. During the burning of pastures and before mating of sheep, additional feeding with concentrated feeds is necessary. The size of the top dressing (200-400 g) is determined by the characteristics of the pasture stand, age, fatness and breeding qualities of the ewes. In order to save concentrated feed and the rational use of coarse feed, as well as to mechanize feed preparation and distribution, complete feed mixtures in loose, granular or bracketed form are prepared in individual farms. Recipes for complete feed mixtures are developed taking into account the local characteristics of feed production; they are enriched with vitamin herbal flour and mineral salts, while they increase the usefulness of the diet and contribute to high productivity of animals.

The studies were conducted within the framework of the PCF IRN BR21882201 "Improving the meat productivity of fat-tailed sheep using new methods of selection, genetics and biotechnology"

In this regard, the need to organize full-fledged feeding of sheep puts forward the study of the feed characteristics of pastures, the level of provision of sheep with energy, nutrients on seasonal pastures and the adjustment of their feeding among the urgent tasks. [8].

The aim of the study is to develop systems of complete and rational feeding for year-round pasture and winter stall maintenance, as well as for fattening on an industrial basis, and to study the effect of feed rations with different ratios of protein fractions in the diet on the productivity and physiological processes of rams of the meat-fat Kazakh fat-tailed coarse-wool breed.

***Materials and research methods***

The research was conducted in flocks of sheep of the Kazakh coarse-haired breed in the Yerzhan farm in the Almaty region.

***Results of the discussion***

The implementation of research results in practice will ensure the completeness of the diet and thereby reliably increase the productivity of animals, improve the quality of their products and reduce feed costs per unit of output. During the period of preparation and mating (2-4 mountings per day), the diet of stud rams with a live weight of 100-110 kg consisted of 1.2 kg of a mixture of concentrated feeds (crushed barley, oats, cottonseed meal), 2 kg of fodder beet. The nutritional value of the diet was 2.0 feed units and 360 g of digestible protein. The diet contained slightly more calcium, phosphorus and carotene (10-40%) than in the feeding standards. During the stall period, the diet of stud rams contained 1.7-1.9 feed units and 190-210 g of digestible protein. The ewes were kept on pasture for 270-300 days and in stalls for 90-60 days (december 20 to february 10 - march 1). During the mating period, they received 0.2 kg of concentrated feed in addition to the pasture feed, and in the first half of pregnancy - 0.3 kg.

In general, taking into account the nutritional value and productivity of pastures (1 kg of pasture hay contains 0.2-0.25 feed units), according to our calculations, during the specified periods, ewes received 1.4 feed units - 184 g, 1.5 feed units - 240 g, respectively, according to the nutritional value of the diet and digestible protein.

Intensive feeding conditions were created for stud rams and ewes, ensuring the animals' need to produce sheep products throughout the year [9]. During the period of rearing young animals, preparing and inseminating ewes, they were grazed on natural foothill and foothill-steppe pastures and, in addition to pasture feed, were given additional feeding in the form of concentrates in the amount of 0.3 kg, which amounted to 0.33 feed units and 34 g of digestible protein. During the artificial insemination period, the stud rams had a load of 2-3 mounts per day and were fed according to the following ration: alfalfa hay - 2.0 kg, fodder beet - 0.5 kg, concentrated feed - 1.0 kg, chicken egg - 1 pc., which amounted to 2.7 feed units and 306 g of digestible protein. In addition, the ewes were fed with salt licks. The stud rams were driven out daily for exercise for 3-4 hours during the day and at night [10]. During the stall period, ewes and pregnant ewes were kept in an open pen near the sheepfold during the day, and in the sheepfold at night, with a floor area of about 1-1.5 m2 per animal [11]. The stall period began on december 15-20 and ended on march 10-15 each year, during which stud rams and pregnant ewes received a certain ration (Table 1). At the same time, the need of pregnant ewes for nutrients was not satisfied at the standard level, which was replenished in pastures. To increase the feed intake and better absorption of the nutrients contained in them, farms organized additional feeding of livestock with granulated feed.

**Table 1**- Feeding ration for stud rams and ewes during the stall period

| Name of feed | Nutritional value of the diet | | | | | |
|---|---|---|---|---|---|---|
| | quantity in stern, kg | feed unit, kg | digestible protein, g | Ca, g | P, g | carotene, mg |
| Breeding rams | | | | | | |
| Hay | 0,5 | 0,21 | 47 | 6,6 | 0,8 | 17 |
| Haystack | 1,0 | 0,35 | 34 | 8,0 | 1,0 | 39 |
| Concentrates | 0,5 | 0,51 | 46 | 1,8 | 1,3 | - |

| | | | | | | |
|---|---|---|---|---|---|---|
| Salt | 0,015 | - | - | - | - | - |
| Total | - | 1,07 | 127 | 16,4 | 3,1 | 56,0 |
| Requirements for the standard | | 1,5-1,8 | 135-165 | 8-9 | 5,0-5,5 | 18-27 |
| Sheep breeding (Ist half of pregnancy) | | | | | | |
| Hay | 0,5 | 0,21 | 47 | 6,6 | 0,8 | 17,0 |
| Haystack | 1,0 | 0,35 | 34 | 8,0 | 1,0 | 39,0 |
| Salt | 0,012 | - | - | - | - | - |
| Total | - | 0,56 | 81 | 14,6 | 1,8 | 56,0 |
| Requirements for the standard | | 0,9-1,0 | 75-90 | 4,2-5,1 | 2,5-3,1 | 18,4 |
| Ewes (II nd half of pregnancy) | | | | | | |
| Hay | 1,0 | 0,43 | 95 | 13,2 | 1,7 | 34 |
| Haystack | 0,2 | 0,20 | 18,2 | 0,7 | 0,5 | - |
| Salt | 0,012 | - | - | - | - | - |
| Total | - | 0,63 | 113,2 | 13,9 | 2,2 | 34 |
| Requirements for the standard | | 1,2-1,4 | 105-125 | 7,5-8,5 | 3,5-4,5 | 15-20 |

It has been established that for every 100 g of daily live weight gain, an average of about 500 g of milk is consumed, and to produce this amount of milk, 0.3 feed units, 33 g of digestible protein, 1.8 g of calcium and 1.2 g of phosphorus are needed. Consequently, during the lactation period, sows experience the most intense metabolism, so the need for feed increases sharply (approximately 2 times compared to idle sows).

The differences in the diet during the suckling period from the diet of pregnant sows in the second half of pregnancy are greater because they again include haylage in their diet, which was excluded. It is known that during the suckling period, the need for drinking water in sows usually increases, since it is consumed with milk, and haylage has a beneficial effect on milk secretion. It should also be noted that suckling ewes with two lambs had a diet that was 25% more nutritious than the diet of suckling ewes with one lamb, since the milk production of ewes nursing twins is, on average, 30-40% higher than the milk production of ewes with single lambs.

**Table 2-** Diet of ewes during the suckling period

| Feed name | Nutritional value of the diet | | | | | |
|---|---|---|---|---|---|---|
| | quantity in stern, kg | feed unit, kg | digestible protein, g | Ca, g | P, g | carotene, mg |
| Suckling ewes with one lamb | | | | | | |
| Hay | 1,0 | 0,43 | 95 | 13,2 | 1,7 | 34,0 |
| Haystack | 1,0 | 0,35 | 31 | 0,8 | 1,0 | 9,0 |
| Concentrate | 0,6 | 0,30 | 27 | 1,0 | 0,8 | - |
| Salt | 0,015 | - | - | - | - | - |
| Total | - | 1,08 | 153 | 15,0 | 3,5 | 43,0 |
| Required by the standard | - | 1,8-2,1 | 180-210 | 8,4-9,6 | 5,2-6,2 | 15-20 |

Recommendations for increasing the biological value of rations and improving the feeding of sheep in complexes and mechanized feedlots are also of practical value. Balancing the ration of sheep in the winter stall period for protein, phosphorus and sulfur increases their productivity by 10-15% compared to rations deficient in these substances.

The results and conclusions obtained in the work can be used to draw up recommendations for standardizing protein nutrition for ruminants.

In winter diets of breeding rams from local feeds, the degree of degradable protein in the rumen is 70-75% and does not ensure high productivity of animals. A decrease in the level of protein

***Conclusion***

The studies showed that the soil moisture content in the 0-10 cm layer was: 26.4% in the spring use area, 26.2% in the summer area, and 24.1% in the autumn area. At a depth of 40-50 cm, these figures range from 21.4 to 23.0%. In the summer and autumn periods, the soil moisture content in all variants is sharply reduced due to its use by plants for their growth and development, as well as due

to an increase in air and soil temperature. The live weight gain of ewes in the experimental group was 59.120 kg/head, and that of current year lambs was 38.800 kg/head, while in the control variant of the experiment they were slightly less – 55.000 and 31.950 kg/head.

Calculations of economic efficiency showed that the proposed development, i.e. the use of seasonal use of natural pastures for grazing livestock is effective and profitable compared to unsystematic grazing of livestock. The practical significance of the work lies in the localization and subsequent cessation of pasture degradation, restoration of forage biodiversity lost due to overgrazing, sustainable provision of grazing animals with feed during the grazing period, and an increase in the output of livestock products by the end of the project activities.

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**ҚАЗАҚТЫҢ ҚҰЙРЫҚТЫ ҚОЙЛАРЫН ӘРТҮРЛІ ДЕҢГЕЙДЕГІ ЖӘНЕ АЗЫҚТАДЫРУ СИПАТЫНДАҒЫ ӨНІМДІЛІК САПАСЫН АРТТЫРУ**

***Аңдатпа***

Мақалада алғаш рет нақты жобалық аумақта ауылшаруашылық жануарларын ұтымды жаю арқылы шалғайдағы жайылымдық жерлерді ұтымды пайдалану және табиғи шабындықтардың өнімділігін арттыру бойынша кешенді зерттеулер жүргізіліп жатқаны, сондай-ақ Қазақстанның оңтүстік-шығысындағы негізгі жемшөп түрлері көрсетілген. Қазақстанда әр түрлі мөлшердегі белок фракциялары бар, олар қарында бөлінген және бөлінбейтін Жартылай шөлейт жайылымдардың белоктары, жоңышқа шөп ұны, соя дәндері 60-65%, пішен, сабан, жүгері дәндері, соя ұнтағы, жүгері жүгері 31,8-55,3% аралығында ыдырайды.

Өсімдік тағамдары, соның ішінде дөрекі тағамдарда сіңуі қиын талшықтар көп. Мес қарын ас қорыту бездерінің болмауына байланысты құрғақ заттың қорытылуы ас қорыту ферменттерінің қатысуынсыз жүреді. Талшықтың және басқа да жем заттарының ыдырауына қарыншадағы микроорганизмдер шығаратын ферменттер ықпал етеді. Негізінен тыртықта қарапайымдылар мен бактериялар дамиды. Мес қарын-күйіс қайыратын жануарлардың күрделі асқазанының ең үлкен камерасы, диетаның сіңімді құрғақ затының 70-85% - ы қолданылады, бұл оның маңыздылығын көрсетеді. Мес қарында микроорганизмдер популяциясының үздіксіз дамуы үшін қолайлы ортаны қамтамасыз ететін үлкен ашыту камерасы ретінде қарастыруға болады. Микробиологиялық процестердің оңтайлы жүруі үшін мес қарын қалыпты жағдай жасау маңызды рөл атқарады.

***Кілт сөздер:*** қой, ақуыз, жем, рацион, шөп ақуыздары, сабан, жүгері дәндері.

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**ПОВЫШЕНИЕ ПРОДУКТИВНЫЕ КАЧЕСТВА КАЗАХСКИХ КУРДЮЧНЫХ ОВЕЦ ПРИ РАЗНОМ УРОВНЕ И ХАРАКТЕРЕ КОРМЛЕНИЯ**

***Аннотация***

В статье указаны, что комплексно проводятся исследования по рациональному использованию отгонных пастбищ и повышения продуктивности естественных травостоев

путем проведения рационального выпаса сельскохозяйственных животных на конкретной проектной территории, а так же основные корма юго-востока Казахстана содержащее разное количество расщепляемых и не расщепляемых в рубце фракций протеина. Протеины полупустынных пастбищ, люцерновой сенной муки, зерна сои расщепляются в пределах 60-65%, протеины сена, соломы, зерна кукурузы, соевого жмыха, кукурузы с початками в пределах 31,8-55,3%. Растительные корма, в том числе грубые, содержат много трудноперевариморой клетчатки. В связи с отсутствием пищеварительных желез в рубце переваривание сухого вещества происходит без участия пищеварительных ферментов. Расщеплению клетчатки и других веществ корма способствуют ферменты, выделяемые микроорганизмами, содержащимися в преджелудке. В основном в рубце развиваются простейшие и бактерии. В рубце – самой большой камере сложного желудка жвачных, используется 70-85 % переваримого сухого вещества рациона, что подчеркивает его важность. Рубец можно рассматривать как большую бродильную камеру, обеспечивающую подходящую среду для непрерывного развития популяции микроорганизмов. Важную роль приобретает создание в рубце нормальных условий для оптимального протекания микробиологических процессов.

***Ключевые слова:*** овцы, белок, корма, рацион, протеины сена, соломы, зерна кукурузы.