

NEWS

OF THE NATIONAL ACADEMY OF SCIENCES OF THE REPUBLIC OF KAZAKHSTAN

SERIES OF AGRICULTURAL SCIENCES

ISSN 2224-526X

Volume 6, Number 48 (2018), 87 – 91

<https://doi.org/10.32014/2018.2224-526X.24>

UDC 636.084.1

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**PECULIARITIES OF GROWTH AND DEVELOPMENT
OF KARAKUL LAMBS DEPENDING ON THE METHODS
OF THEIR CULTIVATION DURING THE DAIRY PERIOD**

Abstract. Summarizing the experiments on lamb raising allows us to conclude that in the sheep breeding of our country and abroad there were 4 ways of growing lambs in the milking period, characterized by the conditions of feeding and keeping, as well as the growth and development of lambs in the milking period sucking method in the joint grazing of queens with the chipping of young animals at 4 months age; cochlear-base method with separate grazing of queens during the daytime with weaning them also at the age of 4 months; early weaning lambs from queens at the age of 2-2.5 months; artificial lamb growing on the substitutes for sheep milk (SSM) in the after molleous period.

Key words: karakul ewe, milkiness of ewes, lambs, methods of growing, lambing, substitute for sheep's milk, lambs' safety, growth and development.

At present, after a sevenfold decrease in the number of Karakul sheep, and the loss of the market for the sale of bums at international auctions, tasks are set for accelerated reproduction of the herd, the production of conditioned lamb and other products of this unique breed of desert livestock. At the same time, special attention is paid to directed growth of young animals, ensuring its complete safety and high productivity in the age-related state.

Actuality of scientific research work. The research carried out by us during the flourishing period of the Kazakh astrakhan industry established that the growth and development of Karakul lambs up to the age of 20 days largely depends on the milkiness of the queens. The coefficient of correlation between the growth of lambs and the amount of milk used is -0.9. Each kilogram of milk consumed by lambs in excess of the average gives an additional increase of about 250 g, and further dependence of lamb growth on milk is weakened [1].

V. A. Mallitsky writes that in early spring lambing in desert conditions; it is advisable to conduct separate grazing of queens from the 25-day age of lambs. At the same time, the average daily increase in lambs was 208 g, and with a joint 183 g [2].

Physiological and biochemical studies on the functional development of the gastrointestinal tract of lambs indicated the possibility of early weaning of young animals from queens. In practice, with satisfactory pasture conditions, early-deprived lambs can do without additional feeding. Artificial cultivation on substitutes of sheep's milk (SSM) is firmly included in the tactics of sheep breeding in many European countries.

In our country, it is carried out under compelled circumstances, when lambs are raised from multiple litters, lambs-orphans, with a lack of milk from mothers and uterine defects.

In recipes SSM D. Walker, D. Phillips recommends the use of natural or taken cow's milk with the addition of animal fat and sunflower oil. At the same time, protein flour, sunflower meal and cake with obligatory enrichment of SSM with antibiotics, vitamins and mineral additives of fat emulsifiers during the milk period are recommended as protein sources [3, 4].

The generalization of experiments on the cultivation of lambs allows us to conclude that in the sheep breeding of our country and abroad the following ways of growing lambs in the milking period are distinguished, which are characterized by the conditions of feeding and keeping:

- the suckling (traditional) method of growing lambs in a joint grazing of queens with the chipping of young animals at the age of 4 months;
- a cochlear-base method with a separate grazing of the queens during the daytime, with the lambs allowed in the night and their final weaning also at the age of 4 months;
- early weaning of lambs from queens at the age of 2-2,5 months;
- artificial cultivation of lambs on the substitutes of sheep's milk after the colostrums.

In karakul breeding there are very few works devoted to the needs of karakul lambs in energy and nutrients. Therefore, the development of a full-fledged feeding system for young animals under various cultivation technologies, aimed at the full preservation of the young and obtaining well-developed animals, acquire particular urgency.

The aim of the study is to ensure the safety of Karakul lambs during the milking period, based on their normal and balanced feeding, taking into account the prevailing natural and climatic conditions, which affect the milking of the queens and the choice of methods for growing the litter.

1. Results of the study to clarify the optimal time for early weaning of the Karakul lambs.

Taking into account the peculiarities of the technology of cultivation of the Karakul lambs, we conducted scientific and economic and physiological experiments to clarify the period of early weaning of young animals. In this case, the period of early lambing was specified by the determination of the specific weight of nutrient intake due to mother's milk and the pasture fodder eaten by the lambs. In this case, the initial term for weaning lambs is the moment when mother's milk ceases to be the main source of nutrition.

Experimental data showed that during 120 days of lactation, the milkiness primary constituents consisted of 70, 2 kg, the middle-aged -90 and 5-year-olds -115, 8 kg. The queens of all ages of the highest peak of milkiness reached the 18-20 day period of lactation. In the queens of the 1 group, it had a day-1320g, II-1880, III-2066g.

Experimental data indicate that lambs of the 1st group up to 65 days of age consumed more nutrients due to mother's milk, and later with pasture grass. For the lambs of the second group, this boundary lies within up to 70 days, and the third within 75 days.

It should be emphasized that the prevalence in the consumption of nutrients due to pasture grass is not only due to the decrease in the milk content of the queens, but also due to an increase in the amount of grass eaten. Young animals till 50 days ate 1, 3-1, 36 kg of grass at a humidity of 64%, and in 75 days-1, 78 kg. This circumstance indicates that early lambing should be done taking into account the age of the queens. In particular, early lambing from lambs should be performed on the 65th day of life. By this time, the lambs had a mass of 20, 0 to 24, 6 kg and were quite capable of using pasture forage [5, 6].

2. Growing karakul lambs on the substitutes of sheep's milk. As indicated above, the cultivation of lambs on milk substitutes in karakul breeding is used exclusively in unfavorable years with the aim of keeping young animals in the absence of milk from mothers born after heavy wintering, as well as growing lambs-orphans.

For the experiments, the uterus, who were engulfed in the second five-day period, were singled out in separate groups according to the method of analogues. A total of 50 queens with single lambs were selected for the experiment. After their three-day joint maintenance, 25 lambs were beaten back for growing on the SSM. And the other half of the young were kept on the sump until they were 4 months old. The dry mixture of the recipe for the milk replacer was prepared in table 1.

For the preparation of SSM, the dry mixture was diluted 1: 4 by boiling and cooled to 30 °C with water. Soldering of the SSM was performed 3 hours after weaning lambs from the teaspoon drinking bowls.

Lambs from the week of age, were released on green pasture, accustomed to eating dry concentrate mixtures with nutritional value, exchange energy -11, 4 and 11, 2 MJ, digestible protein 130 and 135g. Beverage with milk substitutes was performed for 35 days.

The live weight of lambs-artificial animals at two months of age was 33, 88% less than in the case of suckling and in 16, 37% in four. The greatest convergence of live weight of lambs in experimental groups occurred at 6 months of age with a difference of 2, 75% [6].

Table 1 – A recipe for a dry mix of sheep's milk substitute

Components	Unitmeasurement	Quantity
DrySkimmedMilk	%	68
Animalfat	%	28
Lecithin	%	2
Fishfat	%	1
Biovit-80	mg	100
Trivit (A, D, E)	mg	1,5
Cobaltchloride	mg	1,2
Sulfuricacidcopper	mg	3
Tablesalt, iodinated	g	19
Theycontain: fat	%	30
Protein	%	24,5

It should be noted that in connection with the decrease in the milkiness of the queens, from the third month of lactation, the average daily gain of lambs from the control group decreases from 360g to 65g. This circumstance is also due to the onset of hot weather, when young animals graze badly. At this time, continuing to receive fertilizing, artificial lambs are in more favorable fodder conditions and at the age of three months they have the same average daily growth in lambs, and in four it is 2,4 times more than in control ones.

3. Efficiency of different methods of growing lambs in the milking period. Experiments on early weaning of lambs at the age of 2,5 months and growing of young animals on sheep milk substitutes will expand the possibilities of applying this or that technology to karakul breeding depending on the prevailing climatic conditions and other circumstances.

We selected 100 heads of three-year-old queens with lambs, which were divided into 4 groups to conduct scientific and economic experiments on the comparative study of the effectiveness of various methods of growing Karakul lambs. In this case, the I control group of lambs was grown in the traditional way under the uterus until the age of 4 months, the young from the second test group by the cochlear-base method with separate grazing of the queens and the allowance of the lambs at night with the final weaning of them also at 4 months of age. Lambs for the third group experience were beaten at the age of 70 days, and from the IV experiment they were grown on sheep milk substitutes.

Depending on the methods of growing the young, there were differences in the dynamics of the live weight of the growth and cutting of the wool.

Table 2 – Indicators of the weight of the body of lambs and the cutting of wool

Indicators	Testgroups			
	I control	II test	III test	IV test
Live weight, kg: at birth	4,43+-0,08	4,56+-0,06	4,41+-0,07	4,50+-0,08
35 days	13,02+-0,24	12,90+-0,18	12,85+-0,26	8,66+-0,12
70days	19,44+-0,46	20,09+-0,59	19,48+-0,46	15,24+-0,42
95days	23,112+-0,36	23,84+-0,40	23,42+-0,44	20,07+-0,46
120days	26,20+-0,48	27,76+-0,49	27,97+-0,53	23,35+-0,96
Total gain obtained, kg	21,77	23,21	23,56	19,35
In% of the control group	100,0	106,0	108,2	86,8
Scissoring wool from the head, g	920	970	976	719
In % of the control group	100	105,4	106,1	78,2

A significant difference in the live weight (2, 35 kg) has lambs, grown on substitutes for sheep's milk. The total increase in the weight of the body of lambs of artificial persons for 4 months of cultivation was 11, 2% less than for suckling.

Conclusion.

1. Milkiness of the sheep under identical conditions of pastoral feeding depends on the age of the wet nurse and is 4 months lactation in the primary – 70, 2 kg, middle-aged - 90, 5-year-old -115, 8 kg. In this case, the lambs of the primary sources up to the age of 65 days consume the nutrients mainly at the expense of the mother's milk, and in the future with pasture grass. These indicators in lambs of middle-aged and 5-year-old queens are within the limits of 70-75 days, respectively. These data can be taken for the initial timing of the lambing of the lambs from the queens.

2. Watering of lambs from low-milk uteruses and lamb-orphan as substitutes for sheep's milk with the nutrition of the concentrate mixture 11, 2 – 11, 4 MJ and digestible protein 130-135g per head ensured complete safety of the lambs. However, they were inferior to live weight of lambs, grown on suction by 4-month age by 16, 6%.

3. Widowed lambs from the queens at the age of 2- 2, 5 months by the time of the traditional period of pounding (120 days) had the largest body weight – 27, 97 ± 0, 53 kg, which is higher than the rates of young animals, grown by the sowing method by 8, 2% by coarse-base 6, 6% and sheep milk substitutes – 19, 4% due to a greater consumption of pasture vegetation.

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ОСОБЕННОСТИ РОСТА И РАЗВИТИЯ КАРАКУЛЬСКИХ ЯГНЯТ В ЗАВИСИМОСТИ ОТ МЕТОДОВ ВЫРАЩИВАНИЯ ИХ В МОЛОЧНЫЙ ПЕРИОД

Обобщение опытов по выращиванию ягнят позволяет сделать заключение в том, что в овцеводстве нашей страны и зарубежом сложились 4 способов выращивания ягнят в молочный период, отличающиеся условиями кормления и содержания, а также ростом и развитием ягнят в молочный период.

В статье описываются результаты научно-хозяйственных и физиологических экспериментов по уточнению сроков раннего отъема ягнят от маток.

В статье приводятся опытные данные по выращиванию молодняка, в случаях отсутствия молока в вымени маток вследствие перенесённой тяжелой зимовки, а также при выращивании ягнят-сирот.

Результаты исследований по сравнительному изучению роста и развития ягнят от маток в 4 и 2-2,5 месячных возрастах, а также ягнят сирот на заменителя овечьего молока. При этом предпочтение отдавалось рано отнятым ягнятам, в 2-2,5 возрасте.

Ключевые слова: каракульские овцематки, молочность овцематок, ягнята, методы выращивания, отбивка ягнят, заменитель овечьего молока, сохранность ягнят, рост и развитие.

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**ҚАРАКӨЛ ҚОЗЫЛАРЫНЫҢ СҮТПЕН ҚОРЕКТЕНУ КЕЗІНДЕГІ
ӨСІРУ ӘДІСТЕРІНЕ БАЙЛАНЫСТЫ ЖЕКЕ ДАМУЫНЫҢ ЕРЕКШЕЛІКТЕРІ**

Аннотация. Қазіргі таңда 1990 жылдан бастап, қаракөл қойларының саны жеті есе азайып, елтірі өндіру тоқырауға тап болған жағдайда, бірінші кезекте мал басын көбейтіп, сапалы қой етін т.б. өнімдерді арттыру мақсаты алға қойылып отыр. Осыған байланысты төл алу науқанына аса мән беріп, туылған қозыларды шығынға ұшыратпау үшін, әр аймақтардағы табиғи климаттық жағдайдың ерекшеліктерін ескере отырып, Қазақстанда және шет елдегі тәжірибелерге сүйеніп, қозыларды өлім-жітімге ұшыратпайтын технология қалыптасып келеді. Шаруашылыққа көбінесе өлім-жітімге душар болатын қозылар ақсыз туған саулықтардан және жетім қалған төлдер ішінен көптеп кездеседі. Оларды аман сақтап қалу үшін жасанды сүтпен асырауға тура келеді. Мақалада жасанды сүттің рецепттері келтіріліп, күтіп бағу әдістері баяндалады.

Олардың ішінде қозыларды енесімен бірге жайып, оларды 4 айлығында ажырату және қозыларды күндіз бөлек жайып, кешке енесіне табыстыру әдістерінен басқа-қозыларды енесімен бірге бағып 2-2,5 айлығында ажырату және қиын қыстаудан кейін ақсыз туған саулықтардың қозыларын, жетімектерді жасанды сүтпен асырау әдістері қолданылып келеді.

Түйін сөздер: қаракөл саулықтары, саулықтардың сүттілігі, қозыларды өсіру әдістері, қозыларды ажырату, жасанды сүт, қозылардың өсіп дамуы.

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