

## ТҮЙІН

Мақалада Оңтүстік Орал климаттық жағдайында асыл тұқымды симментал, қызыл дала сиырларының және олардың голштин тұқымды сиырларымен будандарының өнімділігі кейбір көрсеткіштерін зерттеу нәтижелері берілген.

## RESUME

In the article are given the results of studying some indices of the productivity of the thoroughbred cows of the Simmenthal, red steppe of species and their cross-breeds with the Holstein species under the natural climatic conditions of the South Urals.

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### THE GROWTH AND DEVELOPMENT OF LAMBS FROM DIFFERENT VARIANTS OF SELECTION OF RAMS

## Abstract

In this article describes the results of research work to study the growth and development of lambs edilbay breed aged 4-4.5 and 7.5-8 months obtained from different variants of selection of sheep. The results of the study shows examples of indicators and exterior features of the lamb at the age 4-4.5 and 7.5-8 months indicate that the lamb received from ewes inseminated with sperm rams reproductive of LLP «Birlik» outperform peers in the control group on live-weight and measurements.

**Keywords:** *edilbay breed, lambs, live weight, growth parameters, measurement, indices of physique of lambs.*

Edilbay breed is the large offspring of the Kazakh fat-tailed sheep. This breed bred by folk selection in the desert areas of western Kazakhstan, which is characterized by frequent droughts and long winters with snowstorms. Created in these harsh climatic conditions edilbay sheep have stamina, unpretentious to the conditions of the environment and adaptation to the year-round pasture content [1].

Improving of animal productivity is directly dependent on the level of conducting breeding work, also depends on conservation and efficient use of fat-tailed sheep breeds of meat and fat productivity [2].

Currently in West Kazakhstan breeding sheep breed edilbay engaged in LLP "Birlik", in LLP "Aidarkhan" and edilbay sheep bred in the farm "Aimeken".

During the study period in a farm "Aimeken" carried out works such as weaning suckling lambs from their mothers at the age of 4 month and weighing and taking measurements of lambs at the age of 4-4.5 months and 7.5-8 months, the definition of the parameters of growth and development, biometric processing of the materials.

During lambing ewes 2 groups were formed: Group 1 - lambs received from ewes inseminated with sperm rams imported from LLP "Birlik"; Group 2 - lambs received from ewes inseminated with sperm rams imported from the farm "Kurmangazy".

For the further work of these groups by random sampling were weighed and taken measurements from the 20 lambs at the age of 4-4.5 and 7.5-8 months: 10 lambs in each group (Table 1).

As seen, in Table 1 that for all age groups leading position by live weight take place the lambs Group I and exceed their peers: at the age of 4-4.5 months, respectively, on 1.3 and 1.1 kg, and at the age of 7.5-8 months on 6,7kg and 4 kg. According to data of the table 1 were calculated the absolute and average daily gain (Table 2).

Table 1 – Live weight of edilbay lambs at the age of 4-4.5 and 7.5-8 months, kg (n = 10)

| Age                        | Male     |          | Female   |          |
|----------------------------|----------|----------|----------|----------|
|                            | Group 1  | Group 2  | Group 1  | Group 2  |
| at the age of 4-4.5 months | 36,9±0,8 | 35,6±0,9 | 34,8±0,9 | 33,7±0,7 |
| at the age of 7.5-8 months | 47±1,1   | 40,3±1,1 | 42±0,5   | 38±0,4   |

According to the data of the above table (Table 1) calculated the absolute and average daily gain and the relative growth (Table 2).

Table 2 – Growth parameters edilbay lambs (n = 10)

| Group   | Gender | Types of growth        | Age, months |       |
|---------|--------|------------------------|-------------|-------|
|         |        |                        | 4-4.5       | 7.5-8 |
| Group 1 | Male   | Absolute growth, kg    | 13,5±0,5    | 10,1  |
|         |        | Average daily gain, g  | 295,6       | 136,2 |
|         |        | The relative growth, % | 156,8       | 127,4 |
|         | Female | Absolute growth, kg    | 15,5±0,5    | 4,7   |
|         |        | Average daily gain, g  | 344,4       | 105   |
|         |        | The relative growth, % | 180,3       | 113,2 |
| Group 2 | Male   | Absolute growth, kg    | 13,7±0,5    | 7,2   |
|         |        | Average daily gain, g  | 304,4       | 108,6 |
|         |        | The relative growth, % | 162,6       | 120,7 |
|         | Female | Absolute growth, kg    | 16,52±0,5   | 4,3   |
|         |        | Average daily gain, g  | 367,1       | 101,0 |
|         |        | The relative growth, % | 196,2       | 112,8 |

As seen from the table, at the age of 4 months lambs of group 2 outperform their peers by absolute growth males on 0.2 kg, females on 1.02 kg, by average daily rams on 8.8 g, females on 22.7 g and by relative growth, respectively, on 5.8% and on 15.9%, which indicates a high rate of growth and development of the lambs group 2 of after weaning. Lambs of group 2 retained the lead in 7.5-8 months of age. They were superior to their peers by absolute growth, respectively, on 2.9 kg and on 0.4 kg, by average daily gain males on 27.6 g, females on 4 g, and by the relative growth males on 6.7%, females on 0, 4%.

For further research, we took measurements of lambs of two groups obtained details are visible Table 3.

Table 3 – Main measurements of the experimental lambs edilbay breed at the age of 4-4.5 and 7.5-8 months (N = 10)

| Groups                     | Average measurement indicators |                          |                                    |                 |                 |                 |                      |
|----------------------------|--------------------------------|--------------------------|------------------------------------|-----------------|-----------------|-----------------|----------------------|
|                            | height at the withers, cm      | height in the sacrum, cm | the oblique length of the body, cm | chest depth, cm | chest width, cm | chest girth, cm | metacarpus girth, cm |
| At the age of 4-4.5 months |                                |                          |                                    |                 |                 |                 |                      |
| 1                          | 62,68±0,68                     | 65,62±0,79               | 53±0,68                            | 34,7±0,87       | 21±0,63         | 84,4±1,06       | 8,36±0,11            |
| 2                          | 61,7±0,83                      | 64,59±0,72               | 49,09±0,49                         | 32,19±0,45      | 18,63±0,41      | 84,95±0,77      | 8,46±0,08            |
| At the age of 7.5-8 months |                                |                          |                                    |                 |                 |                 |                      |
| 1                          | 72,95±1,0                      | 75,35±0,1                | 68,15±0,8                          | 41,95±0,7       | 23,5±0,5        | 86,55±0,9       | 8,6±0,1              |
| 2                          | 64,5±0,6                       | 66±0,5                   | 55,5±0,7                           | 34±0,3          | 21,5±0,6        | 86,1±0,5        | 8,7±0,1              |

According to the appraisal of lambs aged 4-4,5 months expressed the superiority of the lambs 1 group by all measurements, except the chest girth and metacarpus girth. Indicators of these measurements over the lambs group 2, chest circumference on 0.55 cm and metacarpus girth on 0.1 cm. Also according to the above table, it may be noted high indicator of lambs group 1 at the age of 7.5-8 months, they surpass the lambs of group 2 by height at withers to 8.45 cm, by height in the sacrum to 9.35 cm, by oblique body length to 12.65 cm, by chest depth to 7.95 cm, by chest width of 2 cm, by chest girth 0 45 cm. This indicates a high potential of productivity of lambs imported from LLP "Birlik".

The values obtained during appraisal of the lambs, statistically processed by constructing variational series.

To determine the accuracy of the difference of data, by obtained result of statistical processing of the data is calculated reliability criterion.

The result of the calculation shows that the criteria of reliability in height at the withers (1.37), by height in the sacrum (1.46) by an oblique body length (1.08), by chest width (1.73) by the chest girth (1.75) and metacarpus girth (0.29) corresponds to  $t < 2$ , probability of error-free prediction  $P < 95\%$ , this means that the difference is random. On the contrary, the reliability criterion by live weight (2.65), by chest depth (2.86)  $t \geq 2$ , which corresponds to the probability of error-free prognosis ( $P \geq 95\%$ ) and the difference should be considered reliable.

Data, which obtained by calculating the average of measurements (Table 3), then used to determine indices characterizing constitutional features and the degree of development of lambs (table 4).

Table 4 – Main indices of physique of lambs

| Age                                 | Groups | The average index figures |                       |                      |                               |                         |                     |                          |                      |
|-------------------------------------|--------|---------------------------|-----------------------|----------------------|-------------------------------|-------------------------|---------------------|--------------------------|----------------------|
|                                     |        | index of a leggy,<br>%    | index of format,<br>% | index of chest,<br>% | Index<br>of compactness,<br>% | index of overripe,<br>% | index of bony,<br>% | index of massivity,<br>% | index of meaty,<br>% |
| at the<br>age of<br>4-4.5<br>months | 1      | 44,7                      | 84,6                  | 60,6                 | 159,3                         | 104,7                   | 13,3                | 120,7                    | 30,5                 |
|                                     | 2      | 47,8                      | 79,6                  | 57,9                 | 173                           | 104,7                   | 13,7                | 122,2                    | 27,4                 |
| at the<br>age of<br>7.5-8<br>months | 1      | 42,5                      | 93,4                  | 56,02                | 127                           | 103,3                   | 11,8                | 118,6                    | 33,31                |
|                                     | 2      | 47,3                      | 86,05                 | 63,24                | 155,14                        | 102,33                  | 13,5                | 133,5                    | 33,6                 |

If compare 2 groups on the leggy index, in lambs from group 2 it is higher by 3.8% than that of the lambs from group 1, by the index of compactness on 13.7%, by the index of bony on 0.4% and by the index massiveness by 1.5% than that of the lambs group1. Also when comparing the index of the format, it is noticeable that by this indicator the lambs from group1 exceed the lambs from group 2 on 5%, by the index of chest on 2.7%. By the index of overripe indicators of the lambs of two group equal. According to the index of meaty the indicators of lambs from group1 is higher than the indicators of the lambs of group 2 by 3.1%.

This case is repeated at the age of 7.5-8 months, thus indicators of lambs of group 1 exceed the indicators of lambs in group 2, by the index of format on 7.35%, by the index of overripe on 0.97%.

Results of the study indicators of measurements and exterior features of the lambs at the age of 4-4.5 b 7.5-8 months, indicate that the lambs of group 1, imported from LLP "Birlik" outperform peers in Group 2 by live weight and by the all measurements.

#### REFERENCES

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### **ТҮЙІН**

Еділбай тұқымы қазақтың құйрықты қойларының ең ірі тармағы болып табылады. Бұл мақалада әртүрлі жұп таңдау әдісі арқылы алынған еділбай тұқымының 4-4,5 және 7,5-8 айлық төлдерінің өсу мен даму көрсеткіштері келтірілген. Жас төлдердің дене өлшемдерін зерттеу нәтижесінде «Бірлік» ЖШС әкелінген өндіргіш-қошқарлардың ұрығымен ұрықтандырылған саулықтардан алынған төлдер өз құрдастарын тірі салмағы мен дене өлшемдері бойынша басып озды.

### **РЕЗЮМЕ**

Едилбайская порода является самым крупным отродьем казахских курдючных овец. В этой статье дается описание результатам изучения роста и развития ягнят едилбайских овец в возрасте 4-4,5 и 7,5-8 мес., полученных от различных вариантов подбора баранов. Результаты изучения показателей промеров телосложения и экстерьерных особенностей ягнят в возрасте 4-4,5 и 7,5-8 мес. свидетельствуют, что ягнята, полученные от овцематок, осемененных спермами баранов-производителей репродуктора ТОО «Бирлик», превосходят сверстников и сверстниц контрольной группы по живой массе и по промерам.

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### **ECONOMIC-USEFUL TRAITS KAZAKH WHITE-HEADED BREED CATTLE'S DEPENDING ON THEIR GENOTYPE OF TRANSFERRIN LOCUS**

#### **Abstract**

Selection marker is the use of markers for marking quantitative trait genes. In this article presents materials of the study of connection of economic-useful traits of cows and heifers of Kazakh white-headed breed genotype of transferrin locus.

**Keywords:** *economic-useful traits, Kazakh white-headed breed, transferrin locus, genotype, dynamics of heifers growth rate, average daily gain, measurements of cows.*

Over the years, breeders determine the genetic potential of beef cattle in its phenotypic data: on terms of growth, on live weight, on a milk yield and average phenotypic indicators of offspring. It was impossible to determine, which genes are inherited from parents, as phenotypic indicators a reaction genotype of the animal to the very changeable environmental conditions.

Since all of these economic-useful traits are quantitative traits, their inheritance is subject to the law of additive inheritance of traits and levels of animal performance depends on the proportion of groups of genes increase (enhancers) and lowering (suppressor) the manifestation of a particular trait.

According to A.K. Kadiyev [1] and other researchers another direction selection based on the use of biochemical polymorphism - a search for markers of individual economic-useful traits, i.e. the study of the links between genotype, which are easily identified by electrophoretic methods and by the degree of manifestation trait on phenotypic. Certain variants of proteins allelomorphic can serve as markers of any trait (morphological index, resistance and susceptibility to disease, stress, a single trait of productivity, etc.

L.I. Zhebrovski and V.E. Mityutko [2] studied the phenotypic variants of transferrin, and concluded that there are only 55 transferrins. But because of their frequency of occurrence is some species diverge, and in some species absent set of transferring variants. Each type their number very limited.