

Lifetime estimation of meat qualities in selection of sheep curds

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Abstract. Creation of types, lines and families within the breed, which differ from each other by the degree of expression of the most important breeding traits, in sheep breeding allows to evaluate meat qualities. From a practical point of view it is very important to identify animals of desirable type at an earlier age. Body weight at birth is an important trait of sheep and is largely determined by heredity. As a rule, breeding evaluation of sheep is carried out at 1.5 - 1 year of age. In those farms, where part of the young stock is sold for meat at the age of up to a year, animals valuable in breeding respect can be slaughtered. In this connection, in this paper the meat qualities of turkey sheep are evaluated, the relationship of measurements with live and slaughter weight, carcass weight, and correlation coefficients are calculated.

1 Introduction

At the present stage of livestock breeding development, selection based on the knowledge of regularities of heredity and variability of economically useful traits is of decisive importance. Classics of zootechnical science [1-3] attached great importance to the role of genetic principles in breeding work.

The efficiency of mass selection in sheep breeding is still low and, therefore, almost all breeding stock is used for reproduction. Hence, it follows that lower requirements to the breeding stock should be compensated by more rigid selection of rams-producers [4]. They usually represent only a small part of the whole population, but regulate the rate of genetic effect of the marketable flock by producing a large number of offspring [5].

The variety of exterior forms observed in the population of sheep sheep, complicates the selection and correct lifetime assessment of meat qualities of animals due to the lack of scientifically based criteria for lifetime assessment of the level of meat productivity of sheep sheep sheep by the degree of expression of external forms, the development of critical selection techniques for their meatiness is currently difficult.

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In sheep breeding practice, when estimating the speed of sheep maturity, the live weight and the study of individual articles are usually used.

Besides, at existing methods of check rams on quality of offspring the first judgment about breeding value can be made only after estimation of litter in 1,5 - year-old age, when checked rams reach already 3,5 - year-old age that considerably reduces term of their breeding use.

From this point of view in sheep breeding in the selection of rams for breeding for breeding often leave those lambs that have the highest body weight at birth. In this case, it is considered that large-born lambs will be larger in the following age periods.

2 Materials and methods of research

The experimental part of the work was carried out in the farm "Tagai-Tilek" of Suzak district of Jalal-Abad region.

Assessment of constitution and exterior in meat sheep breeding is especially important, because on the basis of this assessment it is necessary to make a presumptive forecast of meat productivity of animals. In this regard, the evaluation of animals by the combination of their meat productivity and exterior evaluation deserves attention.

In this connection, results of researches of interrelation of measurements with live and slaughter weight, carcass weight of turkey sheep depending on age are actual, have practical value, as only constitutionally strong animals, without exterior defects, with high resistance to conditions of keeping, are capable to give more production and to provide profitability of branch.

The object of the study was 10 rams aged 1.5 years, for various reasons recognized unsuitable for breeding, characterized by typical for the herd exterior-constitutional features.

3 Research results

In our research it was revealed that the average daily gains of lambs before they are weaned from their mothers characterize their meat productivity to a great extent. The correlation coefficients between the average daily gains before weaning and carcass weight of 18-month-old lambs are equal to $+0,68 \pm 0,17$, and between meat weight $+0,71 \pm 0,19$.

In order to find out the relationship of measurements with live and slaughter weight, carcass weight, the correlation coefficients between these indicators were calculated according to the generally accepted zootechnical methods of research.

The results are given in the Table 1, and the diagram shows their general picture.

Table 1. Correlation of measurements with body weight of lambs.

Correlating features	Body weight	Slaughter weight	Carcass weight
	r±m2	r±m2	r±m2
Withers height	-0.48±0.19	-0.47±0.18	-0.25±0.20
Height at sacrum	-0.17±0.18	-0.10±0.19	-0.12±0.19
Oblique torso length	+0.11±0.19	+0.04±0.20	+0.17±0.20
Chest depth	+0.67±0.15	+0.64±0.21	+0.49±0.19
Breast width	+0.19±0.02	+0.20±0.23	+0.12±0.20
Breast circumference	+0.56±0.19	+0.55±0.24	+0.65±0.15
Length of kurd	+0.39±0.18	+0.75±0.14	+0.52±0.17
Breast width	+0.63±0.15	+0.59±0.16	+0.38±0.20
Curve circumference	+0.32±0.20	+0.16±0.21	+0.21±0.20

The Table 1 shows that the analysis of the nature and degree of relationships between the values of linear dimensions of individual body parts, live and slaughter indices depending on sex and age differences in turkey sheep shows that the height at the withers and the length of the torso of animals is not a determinant of their live weight (correlation coefficients between these indicators range from 0.04 to 0.12). The value of the latter is closely related to the development of the breast in width and depth, as well as to the width of the torso in inclines, as the correlation coefficients between these indicators range from 0.20 to 0.67.

A clearer positive correlation between the value of body measurements of animals was noted with slaughter weight. High slaughter weight is due to greater breast width (0.64). Carcass weight of the mothers was positively related to the value of oblique trunk length, width, depth and breast girth. The correlation coefficients between these indices in them ranges from 0.04 to 0.17.

The value of fat deposition in the rump of 1.5 - year old rams is closely related to the length, width and girth of the rump. According to our data, the correlation coefficients between these indicators ranges from 0.21 to 0.75.

In general, the degree of correlation between the values of body measurements and carcass weight in adult animals is much weaker than between live and slaughter weight and measurements.

It is known that the main morphological elements of animal carcass are muscle, fat and bone tissues. Therefore, the analysis of the dependence of the mass of kurdle fat on the degree of development of individual body parts reveals that in kurdle sheep after weaning from mothers, the accumulation of abundant fat deposits in the kurdle under normal pasture

keeping, apparently, is very difficult with simultaneous intensive growth in height and length.

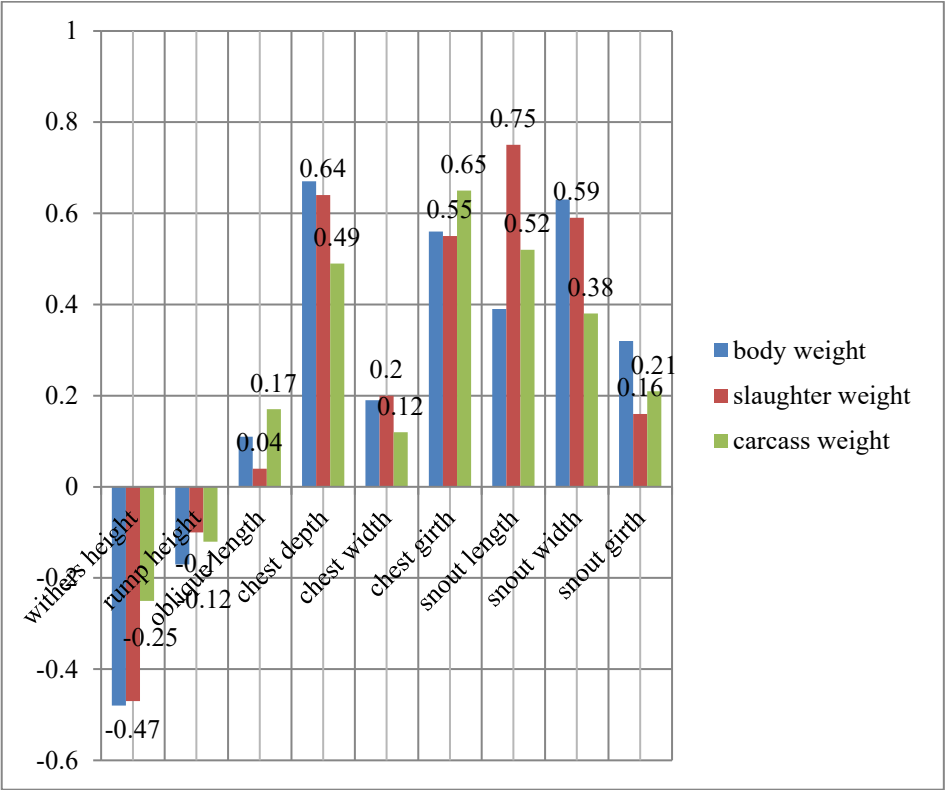


Fig. 1. Correlation of measurements with body weight of lambs.

Thus, the data on phenotypic dependence between live weight, slaughter weight, carcass weight and individual body measurements indicate that meat productivity has a positive relationship with the type of body build of animals (Figure 1) and these indicators can be used as a test in predicting the future meat and tallow productivity of sheep.

Based on the analysis of data on breeding of fat sheep, it can be concluded that the genetic potential of sheep is not yet fully utilized and the improvement of breeding and productive qualities is very slow. This indicates that there are huge reserves for increasing the meat and wool productivity of sheep.

4 Discussion

Studies of a number of scientists on farm animals of different species have established a certain relationship between external forms and their meat qualities. Recently, almost in all regions of sheep breeding the use of Hissar, Tajik rams, bred in breeding farms of Tajikistan to improve meat qualities is quite widely carried out [6].

Sh.T.Rakhimov (1984), notes that within each breed or flock there are sheep of desirable type, which are characterized by similar constitution, but significantly differ among themselves by the degree of development of individual traits and properties. Such

diversity will create prerequisites for breeders to conduct effective selection work on individual traits within the group of animals of desirable type.

As a result of purposeful breeding work it is possible to significantly increase the productivity of sheep, and this in turn will serve as a lever to increase the efficiency of the industry.

5 Conclusions

Thus, according to the results of studying the relationship of measurements with live and slaughter weight, carcass weight, it can be judged that in sheep breeding, selection and breeding should be carried out on selection and reproduction of animals with large growth and large live weight, strong constitution, with better expressed meat forms, large and correct shape of the curd, a higher rate of maturity and fertility. In selection work on increase of meat productivity of sheep is effective selection of rams-producers, steadily transmitting on inheritance signs of meatiness, wide introduction of modern technological methods in sheep breeding will allow to accelerate rates of development of branch.

Curd sheep are characterized by high meat-sal qualities, so lifetime assessment of meat qualities in the future will play a big role in replenishment of meat resources.

References

1. E. A. Bogdanov, Body types of farm animals and humans and their significance (Gosizdat, Moscow, 1923)
2. P. N. Kuleshov, Meat - wool sheep breeding (Gosizdat, Moscow, 1933)
3. M. F. Ivanov, Sheep breeding (Selkhozgiz, Moscow, 1935)
4. A. I. Erokhin, Perfection of meat and wool breeds of sheep (Rosselkhozizdat, Moscow, 1981)
5. K. U. Medeubekov, Meat-sal sheep breeding - dynamic development. Sheep Breeding **3**, 18-23 (1985)
6. S. I. Farsykhanov, Changes in the meat-sal productivity of Hissar sheep with age. Proc. of the Tajik Research Institute of Sheep Breeding **1**, 214-270 (1957)