



Research Journal of Pharmaceutical, Biological and Chemical Sciences

Productive Characteristics of the Lambs to Get Of Ewe, Who Were Subject To Prenatal Shearing.

Evgeny Nikolaevich Chernobai*, Viktor Ivanovich Guzenko, and Anatoly Anatol'evich Drovorub.

Stavropol State Agrarian University, Technological Management Department, Zootehnicheskiiy lane 12, Stavropol 355017, Russia.

ABSTRACT

This article is to study the influence of prenatal shearing of ewe on the meat productivity of the lambs. For the experiment, were selected two groups of up to first lambing. The first group up to first lambing to get of ewes which are sheared after lambing in the month of May i.e. the ewes was not to stress during pregnancy, second group from ewes shorn three weeks before lambing in the month of January, i.e. subjected to stress. The meat productivity was determined by the control slaughter ewe of typical for each group of three heads, at the age of 9 months on the methodology all-Russian Institute of animal husbandry (1978). We take such parameters as: carcass weight and raw fat, slaughter yield, varietal plant breeding and morphological composition of carcasses.

Keywords: ewe, prenatal shearing, lamb, meat productivity, slaughter, carcass weight, raw fat.

**Corresponding author*

INTRODUCTION

The effect of stress on the subsequent animal productivity for scientists and practitioners livestock husbandry is of great interest. The result of studies is point to not all stressors affect positively to the increase in the productivity of animals.

In this connection, on the training and experimental farm of Stavropol State Agrarian University, we studied the productive features the lambs of ewes received from the North Caucasus meat-wool breed that have stress, of the shearing, the climate, caused by the low temperatures of winter [1].

MATERIALS AND METHODS

For the experiment, were selected two groups of up to first lambing. The first group up to first lambing to get of ewes which are sheared after lambing in the month of May i.e. the ewes was not to stress during pregnancy, second group from ewes shorn three weeks before lambing in the month of January, i.e. subjected to stress.

The live weight of the experimental animals was determined by weighing the individual - birth up to 0.1 kg, and in the 4 months up to 0.5 kg.

The meat productivity was determined by the control slaughter ewe of typical for each group of three heads, at the age of 9 months on the methodology all-Russian Institute of animal husbandry (1978). We take such parameters as: carcass weight and raw fat, slaughter yield, varietal plant breeding and morphological composition of carcasses [2].

Varietal plant breeding and morphological composition of carcasses was conducted in accordingly with GOST 7596-81.

The chemical composition, biological and energy value of meat were determined by the average of the flashy parts of meat carcasses and long muscles of the back on the methodology all-Russian Institute of animal husbandry (1978) [3].

The experimental animals were kept in the same conditions of feeding and stabling, so the difference in the change of body weight we associate with more intensive metabolism after shearing female, and after the takeout in the age of four months animals of second group are more easy to adapt to the new conditions (Table 1). They manifest more resistance to the stress, which is reflected in the indicators of productivity.

Table 1: Dynamics of carcass weight of the experimental ewe

The age	Group	
	I	II
at the birth, kg	4,17±0,01	4,30±0,01
at the takeout, kg	24,9±0,57	26,4±0,41*
at 7 months, kg	29,0±0,64	31,7±0,57*
at 9 months, kg	37,0±0,74	41,2±0,93**

Footnote: *P<0,05; **P<0,01

The data of the table 1 to reflects to at the birth was remark a slight overbalance the animals of second group II by 3.1 %, in the age of 4 months overbalance is 5,8% (P <0,05), in the age of 7 months overbalance is 9,3% (P <0,05). We can explain the shearing up to first lambing in to during of pregnant to forces them to eat more food to warm his body during the winter, which in turn contributed to a greater assimilation of nutrients feed.

RESULTS AND DISCUSSION

The study of the meat productivity experimental animals it was found the ewes second group up to slaughter quality first group (Table 2).

Table 2: Key indicators of meat productivity is bright

The indicators	Group	
	I	II
Live weight before the starving stabling, kg	37,0±0,74	41,2±0,93**
Pre-slaughter live weight, kg	35,7±0,60	39,6±0,45**
Carcass weight, kg	14,7±0,19	16,8±0,47**
The weight of internal fat, kg	0,60±0,05	0,65±0,05
Slaughter weight, kg	15,30±0,14	17,45±0,48**
Slaughter yield,%	42,9±0,75	44,1±0,82
Weight of chilled carcass, kg	14,4±0,19	16,6±0,5**

Footnote: *P<0,05; **P<0,01

So, live weight before the starving stabling of ewes second group up to first group and is 11,4% (P <0,01); pre-slaughter live weight – 10,9% (P <0,01); carcass weight – 14,3% (P <0,01); weight of internal fat – 8.3%; slaughter weight – 14,1% (P <0,01); chilled carcass weight – 15,3% (P <0,01).

For a more complete of meat quality experimental animals to made sort meat cutting and boning carcasses after cooling (Table 3).

Table 3: The parts of sort and morphological composition of ewe’s carcasses

Group	The yield, %		Coefficient of the fleshy	The yield the parts of sort, %	
	The flesh	The bones		first	second
I	75,6	24,4	3,09	88,3	11,7
II	76,4	23,6	3,23	89,0	11,0

The data of the Table 3 reflects the yield of fleshy second group up to first group more than 1.1 % and fewer bones about 3.27 %. Coefficient of the fleshy and the yield of bones are up to of first group too. Hence, all of parameters are a higher experimental animals then animals of control.

Productive qualities of animals are closely linked with the development of the internal organs. Weight of internal organs was determined of the age of 9 months ewes during the control of slaughter (tab. 4). The result of measurement the internal organs to shows that ewes of up to first lambing with take the stress in during pregnant second group has more better indicators.

Table 4: Weight of internal organs of the age of 9 months ewes

The indicators	Group	
	I	II
Heart, kg	0,27±0,01	0,30±0,01
Lungs, kg	0,39±0,02	0,49±0,02*
Liver, kg	0,46±0,01	0,57±0,04*
Kidney, kg	0,11±0,01	0,14±0,01
Weight of blood, kg	1,28±0,2	1,47±0,07*
Stomach with the contents kg	3,70±0,51	3,75±0,46
The intestines with contents, kg	4,37±0,48	4,77±0,78

The best development of the internal organs of animals are characterized the animals second group. The weight of hearts of ewes second group to has overbalance – 11.1 %, the lungs with the trachea – about 25,6 % (P <0,05), the kidneys – 27.2 %, liver – by 23,9 % (P <0.05), the weight of blood – by 14.8 %.

CONCLUSION

So, then to sum up, an experienced lamb in to compare with the control has obvious advantage of the internal organs, which probably contributed to a better a productive qualities.

After a control slaughter of animals, are determined the weigh and dimension of sheepskin dm² (Table 5).

Table 5: The weigh and dimension of sheepskin of the age of 9 months ewes

roup	Pre-slaughter live weight, kg	The weight of sheepskin, kg	Dimension of sheepskin, dm ²
I	35,73±0,60	5,4±0,10	72,4±0,74
II	39,64±0,45	5,6±0,06	74,7±1,44

Weight sheepskins of animals' second group are more than first group by 3.7 %, and the dimension of sheepskins – by 3.2 %.

The results to influence shearing in during of prenatal ewes on development of muscle of lambs are shown in the table 6.

Table 6: Microstructural analysis of the meat of the age of 9 months ewes

Group	Показатель				
	The number of muscle fibers per 1 mm ² PCs	The diameter of muscle fibers, micron	Evaluation of a «marbling», score	The content of collagen tissue	The area of the eye muscle, cm ²
I	405,63±6,76	31,12±0,13	30,25±0,71	10,80±0,61	16,6±0,28
II	392,85±7,69	34,06±0,84*	32,98±1,51	10,53±0,58	18,37±0,53*

Footnote: *P<0,05

The data of table 5 are shows on an inverse relationship between the number of muscle fibers of 1 mm² and a diameter greater than the muscle fibers, the smaller their diameter. So, ewes first group has more the number of muscle fibers per 1 mm² – 3.3 %, and has less the diameter of the muscle fibers (9,4 %) to animals second group. The taste characteristics of meat depend on the diameter of the muscle fiber area and muscles' eye than they are, the higher the score of «marbling» the meat. The second group has more muscles' eye area (10,7 %) and «marbling» by 2.73. The contents of collagen tissue in animals of second group is less first group by 2.5 %.

The experimental group ewes have moisture lower by 4.59 %, which indicates a higher quality meat. According to indicators such as protein and raw fat, experienced group of ewes significantly superior to the control group to 2.92 % and 0.38 % that is why calorie meat 126.7 kcal.

Table: 7 Chemical composition of meat of the age of 9 months ewes

The indicators	Group	
	I	II
The moisture, %	68,10±0,81	63,51±2,40
The hygroscopic moisture, %	7,27±0,45	7,96±0,44
Total moisture, %	70,39±0,61	66,41±2,15
Dry substance, %	29,61±0,61	33,59±2,15
Protein, %	21,68±0,58	24,60±0,28*
Raw fat, %	6,07±0,06	6,45±0,13*
Ashes, %	0,98±0,08	1,14±0,05
Ca, %	2,85±0,42	3,47±0,16
P, %	0,27±0,01	0,27±0,02
Calorie content, kcal	2217,6	2344,3

Footnote: *P<0,05

So, then to sum up, shearing in during prenatal ewes breeds' local North Caucasian, contributes to the obtaining lamb with the best carcass and meat qualities.

REFERENCES

- [1] Vladimir Vsevolodovich Sadovoy, Sergei Nikolayevich Shlykov, Ruslan Saferbegovich Omarov, and Tatiana Viktorovna Shchedrina. Res J Pharm Biol Chem Sci 2014;5(5):1530-1537.
- [2] Vladimir Ivanovich Trukhachev, Vladimir Vsevolodovich Sadovoy, Sergei Nikolayevich Shlykov, and Ruslan Saferbegovich Omarov. Res J Pharm Biol Chem Sci 2015;6(2):1347-1352.
- [3] Shaliko Zhorayevich Gabriyelyan, Igor Nikolaevich Vorotnikov, Maxim Alekseevich Mastepanenko, Ruslan Saferbegovich Omarov, and Sergei Nikolayevich Shlykov. Res J Pharm Biol Chem Sci;6(3):1345-1350.