

RESEARCH REGARDING THE VARIATION OF MAIN PARTS OF CARCASSES FROM YOUTH SHEEP OF DIFFERENTS BREEDS STRUCTURE

Elena Ilișiu¹, V. Rău¹, A. Gălățan¹, Diana-Patricia Rău¹,
S. Dărăban², V.C. Ilișiu³, Constanța Strasser⁴, Mariana-Daniela Marica⁴

¹Research and Development Station for Sheep and Goat Reghin, Mureș County, Romania

²University of Agricultural Sciences and Veterinary Medicine, Cluj-Napoca, Romania

³County Association of Sheep and Goat Breeding Sâncrăiana, Sâncraiu de Mureș, Romania

⁴University Bioterra Bucuresti, Romania

e-mail: statiuneareghinmures@yahoo.co.uk

Abstract

The research was done on carcasses from the slaughter of young male sheep intensively fattened belonging to the local Tsigai race of mountain ecotype and its half-breeds with Suffolk and German blackface (GCCN). The purpose of the research was to highlight the physical structure of carcasses, expressed by determining the ratio of total carcass weight of slaughter's portions in relation to quality grade. The determinations of the physical structure of carcasses was performed on the right half of carcass. The leg of mutton was separated by cutting the joints between vertebrae L5 and L6 and tibio-metatarsus joint. Separating the shoulder was made by cutting the muscles which provide the connection with the trunk. After separating the mutton's leg and shoulder, the cutlet (with the L1-L5 vertebrae bone base and D6-D13) and corresponding ribs were cut up perpendicular to their axis at a distance of 10 cm from the spine axis, distance measured with a ruler, resulting the rest of the carcass. Each butcher piece was weighed and expressed as a percentage by comparing the initial weight of the carcass. Statistical data processing and interpretation was based on student test. Research results have noted that leg of mutton share stood at around 34% to Suffolk x Tsigai half-breed, 33% to GCCN x Tsigai and 31% to Tsigai breed. Share of cutlet in carcass weight was about 16% at all races. Regarding the proportion of shoulder + arm, it stood at around 18% at groups of half-breeds, and 17% at Tsigai breed, while other cut portions, reported at the initial carcass weight have values 35% at Tsigai breed, 30% at Suffolk x Tsigai half-breed and 31% at GCCN x Tsigai half-breed. Research carried out special information on the share of meat quality of carcass weight.

Key words: leg of mutton, coutlet, shoulder, young, sheep

INTRODUCTION

The share that hold different anatomical parts of carcass weight contributes to highlight the value of carcass [4]. Reporting percentage share of the cut portions of its mass is of particular importance, since each component of the housing has value and a different usage, and selling price of sheep meat cut varies from one part to another [3].

Carcasses cutting is realised in three quality categories, the relevant in terms of quantity and quality is the first quality. Anatomical points and dissection of the carcass differ from one country to another, and even from one author to another, so it is very difficult to make comparisons between

the same piece of butcher processed by various authors. The correct procedure is to compare the data processed, using the same system of cutting.

In our country many methods of cutting are used, but scientific studies frequently compare first quality parts of slaughter, such as: leg of mutton, bone and boneless cutlet, the shoulder + arm region is considered by many authors as first quality piece of butcher, as it is very important [6].

MATERIAL AND METHOD

The research was conducted at the Research and Development Station for Sheep and Goat Reghin, Mures County, on the

carcasses from the slaughter of young male sheep intensively fattened, with a period of fattening of 100 days, belonging to the local Tsigai breed of mountain ecotype and its half-breeds with Suffolk and German blackface (GCCN). For each experimental group, at the end of the fattening process, five heads were randomly selected and slaughtered, and the quality indices of carcasses and meat were determined.

After weighing each carcass at the hot and cold (for 24 hours at 2 - 4°C temperature), the carcasses cutting was realized on the center line, resulting two halves.

We weighed the half carcasses, and from each half-carcass we cut the leg of mutton, coutlet, shoulder + arm, resulting the rest of carcass.

The leg of mutton was separated by cutting the joints between vertebrae L5 and L6 and tibio-metatarsus joint. Separating the shoulder was made by cutting the muscles

which provide the connection with the trunk. After separating the mutton's leg and shoulder, the cutlet (with the L1-L5 vertebrae bone base and D6-D13) and corresponding ribs were cut up perpendicular to their axis at a distance of 10 cm from the spine axis, measured with a ruler, resulting the rest of the carcass. Each piece of butcher was weighed and expressed as a percentage by comparing the initial weight of the carcass. Statistical data processing and interpretation was based on student test.

RESULTS AND DISCUSSIONS

Results regarding the proportion of the main parts cutting of carcasses, offers the opportunity to determine the quantity of first meat quality from carcass obtained from young sheep in the 3 groups under investigation (table 1).

Table 1

Variation of main parts of carcasses from young ovine of different breeds

Specification	Breed/Half-breed (n = 5)	$\bar{X} \pm s\bar{x}$	%	s	V %
Cold carcass weight (kg)	Țigaie	16.56 ± 0.44	100	0.99	5.98
	Suffolk x Țigaie	19.48 ± 0.27	100	0.60	3.08
	GCCN x Țigaie	18.66 ± 0.38	100	0.85	4.56
Leg of mutton (kg)	Țigaie	5.16 ± 0.25	31.15	0.56	10.85
	Suffolk x Țigaie	6.65 ± 0.09	34.14	0.20	3.01
	GCCN x Țigaie	6.29 ± 0.22	33.71	0.49	7.79
Cutlet (kg)	Țigaie	2.72 ± 0.09	16.43	0.20	7.35
	Suffolk x Țigaie	3.26 ± 0.06	16.74	0.13	3.99
	GCCN x Țigaie	3.08 ± 0.03	16.51	0.07	2.27
Shoulder + arm (kg)	Țigaie	2.94 ± 0.13	17.75	0.29	9.86
	Suffolk x Țigaie	3.55 ± 0.04	18.22	0.10	2.82
	GCCN x Țigaie	3.43 ± 0.12	18.38	0.27	7.87
Carcass rest (kg)	Țigaie	5.74 ± 0.15	34.66	0.34	5.92
	Suffolk x Țigaie	6.02 ± 0.06	30.90	0.13	2.16
	GCCN x Țigaie	5.86 ± 0.08	31.40	0.18	3.07

The data table 1 shows that the leg of mutton proportion of carcass weight is higher with 2,99 percentage point to Suffolk x Tsigai, and 2,56 percentage point to GCCN x Tsigai, compared with Tsigai breed.

The difference of 1,49 kg (table 2) in favor of the half-breeds Suffolk x Tsigai, indicate very significant differences ($P < 0.001$). The difference of 1,13 kg of the half-breeds GCCN x Tsigai, compared with Tsigai breed, led to distinct significant differences ($P < 0.01$).

Tabel 2

The significance of differences depending on genotype animals

Specification	Breed/Half-breed (n = 5)	$\bar{X} \pm s\bar{x}$	$\pm d$	t	Significance of difference
Cold carcass weight (kg)	Țigaie	16.56 ± 0.44	-	-	-
	Suffolk x Țigaie	19.48 ± 0.27	2.920	5.035	**
	GCCN x Țigaie	18.66 ± 0.38	2.100	3.621	**
Leg of mutton (kg)	Țigaie	5.16 ± 0.25	-	-	-
	Suffolk x Țigaie	6.65 ± 0.09	1.490	5.731	***
	GCCN x Țigaie	6.29 ± 0.22	1.130	3.424	**
Cutlet (kg)	Țigaie	2.72 ± 0.09	-	-	-
	Suffolk x Țigaie	3.26 ± 0.06	0.540	4.909	**
	GCCN x Țigaie	3.08 ± 0.03	0.360	3.600	**
Shoulder + arm (kg)	Țigaie	2.94 ± 0.13	-	-	-
	Suffolk x Țigaie	3.55 ± 0.04	0.610	4.692	**
	GCCN x Țigaie	3.43 ± 0.12	0.490	2.722	*
Carcass rest (kg)	Țigaie	5.74 ± 0.15	-	-	-
	Suffolk x Țigaie	6.02 ± 0.06	0.280	1.750	ns
	GCCN x Țigaie	5.86 ± 0.08	0.120	0.706	ns

test "t"; ns = P > 0.05; * = P < 0.05; ** = P < 0.01; *** = P < 0.001;
GCCN – German blackface breed;

Proportion of the leg of mutton in carcass weight (17,50 kg) to young ovine of Tsigai breed intensively fattened reported of [5] were 34.07%, and 36,41% to half-breeds GCCN x Tsigai, at a carcass weight of 24.51 kg.

In the present experiment, we have seen that the proportion of cutlet's carcass weight is higher with 0.31 percentage point to half-breeds Suffolk x Tsigai, and only 0.08 percentage point to GCCN x Tsigai half-breed, compared with Tsigai breed.

For the cutlet, the differences recorded are distinct significant (P < 0.01) between the control group and groups of half-breeds, between lots of half-breeds a significant difference is highlighted (P < 0.05), for the half-breeds Suffolk x Tsigai.

The value regarding the proportion of the shoulder+arm, is higher with 0.47 percentage point to Suffolk x Tsigai half-breed, and 0.63 percentage point to GCCN x Tsigai, compared with Tsigai breed.

The highest value to shoulder and arm is recorded to Suffolk x Tsigai half-breed, being 0.61 kg higher than the control group, indicating distinct significant difference (P < 0.01). Between GCCN x Tsigai half-breeds and Tsigai breed, the differences to 0.49 kg is significant (P < 0.05).

The shoulder + arm proportion, was studied to Tsigai breed [2], [1], reported data showing

a proportion according to the batch and feed given, to variations between 18.00-19.39%, and 16.98 – 17.41% respectively, based on years of experiments (2004 – 2005).

Regarding the carcass rest, observed as although Suffolk x Tsigai half-breeds having the highest brute value 6.02 kg, expressed as a percentage of carcass weight, we have seen that Tsigai breed have the highest percentage value, with 3.76 percentage point over Suffolk x Tsigai half-breeds and 3.26 percentage point over GCCN x Tsigai half-breeds. The differences recorded between the three experimental batches is insignificant (P > 0.05).

CONCLUSIONS

1. Comparative analysis between the main parts of carcasses obtained from three lots of sheep studied, revealed that the half-breeds have the highest proportion of first meat quality.

2. Suffolk x Tsigai half-breed have the highest proportion of the leg of mutton in carcass weight, while in GCCN x Tsigai recorded the highest shoulder and arm proportion.

3. The cutlet proportion of carcass of the 3 lots was approximately the same, while the rest of carcasses had the highest value for Tsigai breed.

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