

EFFECT OF INDUSTRIAL CROSSING ON SOME CARCASSES INDEX OF QUALITY OF YOUNG SHEEP

Elena Ilișiu¹, A. Gălățan¹, Diana-Patricia Rău¹, V.C. Ilișiu²,
Marilena-Gabi Neacșu³, H. Strasser⁴, Constanța Strasser⁴

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

²County Association of Sheep and Goat Breeding Sâncrăiana, Sâncraiu de Mureș, Romania

³Research and Development Institut for Sheep and Goat Palas-Constanța, Romania

⁴University Bioterra Bucuresti, Romania

e-mail: statiuneareghinmures@yahoo.co.uk

Abstract

Research of this paper are designed to provide important information on some indicators of quality of carcasses from young sheep of Tsigai breed and half-breed obtained by crossing between the local Tsigai breed with rams of specialized breeds for meat production Suffolk and German blackface. To this purpose, three experimental lots of the specified breeds structures were formed, which were intensively fattened for a period of 100 days. At the end of the fattening process, were chosen five heads from each lot in a randomized and slaughtered. The methods used in the determinations were standard, and statistical data processing and interpretation was based on student test. Research results have shown that lots of half-breeds achieved higher slaughter yield, compared with the pure breed batch. Compared with Tsigai breed, slaughter yield determined to hot, cold and commercial was higher with 2,43, 2,71 and 2,65 points percentage, respectively to Suffolk x Tsigai half-breeds and 1,92, 2,03 and 1,96 percentage points, respectively to German blackface x Tsigai half-breeds. Researchs provide important information on efficiency of fattening the hybrids lambs for meat production obtained from crosses between Tsigai breed, and meat specialised breed, in terms under EU standards recovery.

Key words: half-breed, carcass, slaughter yield, sheep, young

INTRODUCTION

Carcass weight is a very variable quality indicator variable, as a result of various consumer demand. Consumer preferences for carcass weight are very diverse in the world, according to a number of factors: geographical area, climate, degree of civilization, traditions.

Most countries in Western Europe, USA, Australia, New Zealand, Arab countries, prefer heavy carcasses, well dressed in muscularity and body fat evenly distributed on the surface. In countries, large producing sheep meat in Europe, carcass weight is very varied, as follows: United Kingdom -19 kg, France - 18 kg, Germany - 20 kg.

In our country, because the productive potential of local breeds is not fully exploited, carcass weight is lower, but still stands on the average European continent, is around 15 kg. Carcass weight, associated

with certain measurements used in its determination, enable quality assessment of a housing complex.

A higher carcass weight at the same body weight, leads implicitly to a substantial increase in slaughter yield. Consumer preferences across the criterion for assessing the value and quality of carcasses have evolved in different countries, in close connection with producing of carcasses economicity at certain body weight and culinary qualities of meat which may be very different, depending on the areas of production and consumption.

MATERIAL AND METHODS

The biological material that has been researched consisted of young male sheep of Tsigai breed and half-breed Suffolk x Tsigai, German blackface x Tsigai (noted in this paper GCCN x Tsigai) fattened intensively.

At the end of the fattening, five heads from each experimental batch have been chosen to achieve the control slaughtering. The chosen animals had an appropriate conformation, the differences between 35.50-38.20 kg weight at control lot (Tsigai), 39.5-41.8 kg at lot 2 (half-breed Suffolk x Tsigai) and 39.0-41.0 kg at lot 3 (half-breed German blackface x Tsigai).

The research was conducted at the Research and Development Station for Growing Sheep and Goat, in Reghin, Mureș County.

After slaughtering the animals was analyzed hot slaughter yield (reporting the carcass weight immediately after slaughtering at live weight of animals), cold slaughter yield (after 24 hours a cooling of carcass) and commercial yield (cold carcass weight + internal organs reported at animal live weight).

RESULTS AND DISCUSSION

The results obtained on carcass weight and slaughter yield are presented in table 1.

Table1

Variation of carcasses weight and slaughter yield of young sheep of different breeds

Specification	Breed/Half-breed (n = 5)	$\bar{X} \pm s\bar{x}$	s	V %
Live weight at slaughter (kg)	Țigaie	36.80 ± 0.29	0.65	1.77
	Suffolk x Țigaie	40.83 ± 0.42	0.94	2.30
	GCCN x Țigaie	39.68 ± 0.63	1.41	3.55
Hot carcass weight (kg)	Țigaie	16.95 ± 0.41	0.92	5.43
	Suffolk x Țigaie	19.80 ± 0.22	0.49	2.47
	GCCN x Țigaie	19.04 ± 0.36	0.81	4.23
Cold carcass weight (kg)	Țigaie	16.56 ± 0.44	0.99	5.98
	Suffolk x Țigaie	19.48 ± 0.27	0.60	3.08
	GCCN x Țigaie	18.66 ± 0.38	0.85	4.56
Hot slaughter yield (%)	Țigaie	46.06 ± 0.30	0.67	1.45
	Suffolk x Țigaie	48.49 ± 0.29	0.65	1.34
	GCCN x Țigaie	47.98 ± 0.22	0.49	1.02
Cold slaughter yield (%)	Țigaie	45.00 ± 0.26	0.58	1.29
	Suffolk x Țigaie	47.71 ± 0.27	0.60	1.26
	GCCN x Țigaie	47.03 ± 0.26	0.58	1.23
Commercial yield (%)	Țigaie	49.27 ± 0.28	0.63	1.28
	Suffolk x Țigaie	51.92 ± 0.29	0.65	1.25
	GCCN x Țigaie	51.23 ± 0.26	0.58	1.13

From table 1 it is noted that hot slaughter yield was higher by 2.43 percentage points to Suffolk x Tsigai and 1.92 percentage points to GCCN x Tsigai half-breeds, compared with Tsigai breed. Also, cold slaughter yield was higher by 2.71 percentage points to Suffolk x Tsigai half-breeds and 2.03 percentage points to GCCN x GCCN half-breeds. Commercial yield was also in favour of lots of half-breeds.

Two batches of young F1 Targee x Hampshire, fed differently in finishing stage - with concentrates and good quality pasture, [1] obtained a slaughter yield of 57.7% in lot with concentrates finished and 54% in lot on pasture finished, at a weight of animals between 57.6 - 60.9 kg.

The F1 half-breeds Dorper x Columbia and Suffolk x Columbia, and Columbia pure

breed, at the weights of carcasses between 30.2 - 32.5 kg, slaughter yield obtained was 53.4% for pure breed Columbia, 52.9% for F1 Dorper and 53.5% for F1 Suffolk [2].

Research conducted on Dorper and Damara breeds in South Africa in condition of improved pasture have led to the establishment of high slaughter yield, by 62.86% on Dorper breed and to 59.86% on Damara breed, the weights of the carcasses of 21.55 kg, respectively 18.65 kg [3].

Hot carcass weight (table 2) with 2.85 kg less than control batch, compared with lot 2 indicates a very significant difference ($P < 0.001$), and 2.09 kg compared to lot 3 ($P < 0.01$), the difference being distinct significant.

Tabelul 2

The significance of differences according on animals genotype

Specification	Genotyp	\bar{X}	$\pm d$	t	Significance of differences
Live weight at slaughter (kg)	Ti	36.80 \pm 0.29	-	-	-
	S x Ti	40.83 \pm 0.42	4.030	7.902	***
	GCCN x Ti	39.68 \pm 0.63	2.880	4.174	**
Hot carcass weight (kg)	Ti	16.95 \pm 0.41	-	-	-
	S x Ti	19.80 \pm 0.22	2.850	6.786	***
	GCCN x Ti	19.04 \pm 0.36	2.090	4.976	**
Cold carcass weight (kg)	Ti	16.56 \pm 0.44	-	-	-
	S x Ti	19.48 \pm 0.27	2.920	5.035	**
	GCCN x Ti	18.66 \pm 0.38	2.100	3.621	**
Hot slaughter yield (%)	Ti	46.06 \pm 0.30	-	-	-
	S x Ti	48.49 \pm 0.29	2.430	5.786	***
	GCCN x Ti	47.98 \pm 0.22	1.920	5.189	***
Cold slaughter yield (%)	Ti	45.00 \pm 0.26	-	-	-
	S x Ti	47.71 \pm 0.27	2.710	7.324	***
	GCCN x Ti	47.03 \pm 0.26	2.030	5.487	***
Commercial yield (%)	Ti	49.27 \pm 0.28	-	-	-
	S x Ti	51.92 \pm 0.29	2.650	6.625	***
	GCCN x Ti	51.23 \pm 0.26	1.960	5.158	***

test "t"; ** = P < 0.01; *** = P < 0.001;

Ti-Tsigai, S x Ti – Suffolk x Tsigai, GCCN x Ti- German blackface x Tsigai.

In the cold carcass weight were significant differences were recorded (P < 0.01), both in comparison of lot 1 with lot 2, and in comparison of lot 1 with lot 3. Very significant differences occurred between the control batch and lot 2, and the control batch and lot 3, about on hot, cold and commercial slaughter yield.

CONCLUSIONS

1. Carcasses weight and were slaughtered yield were higher in half-breeds batches, compared with control lot.

2. Slaughter yield has a significant technological and economical importance in assessment of meat production, which is why the differences between the 3 batches included in the control indicate one of the advantages of crossing, to seize the top

quality of sheep meat production of Tsigai population.

BIBLIOGRAPHY

Journal articles

- [1] Borton R. J., Loerch S.C., McClure K. E., Wulf D.M.. (2005). Comparison of characteristics of lambs feed concentrate or grayed on ryegrass to traditional or slaughter weights. I. Production, carcass, and organoleptic characteristics. *J. Anim. Sci.*, 2005, 83:679-685.
- [2] Snowden G.D., Duckett S.K.: Evaluation of the South African Dorper as a terminal sire breed for growth, carcass, and palatability characteristics. *J. Anim. Sci.* 2003, 81: 368-375.
- [3] Tsabalala P.A., Strydom P.E., Webb E.C., De Kock H.L.: Meat quality of designated South African indigenous goat and sheep breeds. *Meat Science*, 2003, p.565-570.