SLAUGHTER RESULTS AND EVALUATION OF CARCASS QUALITY OF MEAT-TYPE BREED LAMBS IN LATVIA

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INTRODUCTION

More than 15 breeds of sheep are grown in Latvia and part of them are meat-type breeds. In larger numbers, they include sheep from Ile-de-France, Charollais, Dorper and Texel breed. The purpose of the study is to analyze the slaughtering results of lambs of meat-type sheep breeds grown in Latvia.

MATERIALS AND METHODS

Figure 1. **”Klimpas” ram testing station of the Latvian Sheep Breeders Association (57°50'58.4"N 25°19'38.5"E) – place where study was conducted.**

A study conducted from 2020 to 2023 in Latvia. Feed control was conducted on 99 lambs (table1). Lambs were fed unrestrictedly with commercially produced compound feed and grass hay prepared at the station. Lambs were slaughtered in a certified slaughterhouse, preceded by a 12-hour fasting period. After slaughter, carcasses were weighed, measured, and evaluated for quality according to the EUROP (respectively 1 to 5 points) classification system. Results were analyzed in software “R” using unpaired t-test, $p<0.05$.

Table 1 **Lambs used in study**

Breed	Number of lambs
Ile de France (IF)	36
Charollais (SA)	21
Texel (TEX)	21
Dorper (DOR)	21

Figure 2. **Measurement of hindquarter perimeter**.

Photo by V.Leska

RESULTS

Table 2 **Lamb fattening results**

Breed	Fattening duration, days	Live weight gain during fattening, kg	Daily live weight gain, g	At the end of fattening	
				Age, days	Live weight, kg
IF	44.7±0.48[c]	19.36±0.54[b]	434.7±12.51[a]	130.5±1.83[c]	47.30±0.45[a]
SA	49.5±2.81[b]	18.93±0.99[b]	392.8±16.01[ab]	139.6±1.64[b]	48.24±1.04[a]
DOR	60.6±1.52[a]	22.69±0.54[a]	377.4±9.94[b]	147.0±2.16[a]	46.49±0.51[a]
TEX	65.7±2.58[a]	19.76±0.61[b]	306.9±10.37[c]	145.8±2.72[a]	46.16±0.75[a]
Average	**53.7±1.21**	**20.10±0.36**	**386.0±7.83**	**139.4±1.23**	**47.83±0.39**

[a, b, c] - $p < 0.05$

The study found that significantly younger slaughtered lambs of the Ile-de-France breed were 130.5±1.83 days old with an average live weight of 47.30±0.45 kg. Significantly older lambs were of the Dorper breed, 147.0±2.16 days, a difference of 16.5 days ($p<0.05$), with a pre-slaughter average live weight of 46.49±0.51 kg (table 2).

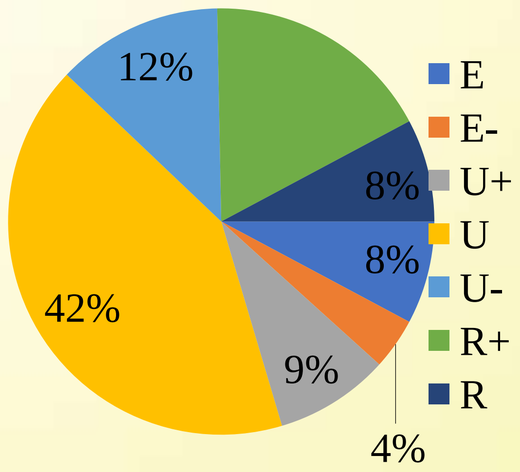

Figure 3. **Total muscle conformation ratio**.

The highest carcass yield was obtained from Charollais and Dorper breed rams, at 47.7±0.43% and 47.5±0.40%, respectively. The best muscle grading was for Texel (1.9±0.07 points) and Charollais (2.0±0.14 points) breed lambs, while the least fat cover were Charollais and Texel breed lamb carcasses, in average 2.2±0.14 and 2.2±0.15 points, respectively. Quality assessment of Ile-de-France and Dorper breed lamb carcasses was equal, with muscle conformation at 2.4±0.09 points, but fat cover at 2.8±0.05 points and 2.8±0.09 points, respectively. (table 3)

Table 3 **Lamb carcass measurements and grades**

Breed	Cold carcass weight, kg	Dressing, %	Carcass measurements, cm		Carcass grades, points	
			Carcass length (G)	Hindquarter perimeter (A)	Muscle conformation	Fat cover
IF	21.74±0.32	46.3±0.32[b]	69.8±0.40[a]	70.4±0.59[ab]	2.4±0.09[a]	2.8±0.05[a]
SA	22.03±0.57	47.7±0.43[a]	70.8±0.47[a]	72.5±0.75[a]	2.0±0.14[b]	2.2±0.14[b]
DOR	21.66±0.45	47.5±0.40[a]	67.6±0.55[b]	69.0±0.57[b]	2.4±0.09[a]	2.8±0.09[a]
TEX	21.04±0.39	47.0±0.47[ab]	66.9±0.59[b]	71.0±0.67[ab]	1.9±0.07[b]	2.2±0.15[b]
Average	**21.63±0.21**	**47.0±0.20**	**68.9±0.29**	**70.6±0.34**	**2.1±0.05**	**2.5±0.05**

[a, b] - $p < 0.05$

CONCLUSION

The highest growth rate was found for lambs of the Ile de France breed (434.7±12.51 g/day), while the best muscle confirmation was found for lambs of the Texel breed (1.9±0.07 points).

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