RESEARCH ON SEMIINTENSIVE FATTENING SYSTEM OF HYBRIDS OBTAINED BY INDUSTRIAL CROSS BREED OF PALAS MERINO WITH SPECIALIZED MEAT SHEEP BREEDS

P. G. VICOVAN [1], Daniela JITARIU[2], Maria STANCIU[1]
[1]Research and Development Institute for Sheep and Goat Breeding Palas Constanta,
[2]Ovidius University of Constanţa,
248 I.C. Bratianu Str., Constanta, Romania, 900316, E-mail: icdoc@canals.ro

Abstract: *Researches aimed the increasing and improving of the quantitative and qualitative sheep meat, the meat skills production determination of hybrids obtained by industrial cross breed of Palas Merino with breeds specialized in meat production- Texel and Suffolk. The experiments were performed at the Institute for Research and Development Institute for sheep and goat breeding Palas-Constanta and the biological material was represented by: adult sheep, 3 lots - 3 x 50 head., F1 crossbred lambs resulting from the crossing specialized meat breed rams Suffolk and Texel with Merino sheep breed, n = 2 x 25 heads; control lot consisting of young male Merino sheep breed, n = 1 x 25 head. Weighing lambs at birth was performed at 28 days and at weaning (60 days), registering growth in weight made throughout the period and per day. After weaning, young sheep was introduced to fattening, it was weighed at the beginning and the end of each phase of fattening, calculating the total gain and average daily gain per periods and per each phase separately. When fattening youth achieved average body weight of 35 kg, it was considered a complete fattening period and control slaughter were performed for each experimental variant and for the control group. Statistical parameters were calculated, Fisher test was applied. By industrial cross breed it has been obtained an improvement of growth rate, precocity and specific consumption.*

Key words: *meat, production, cross breed, sheep, fattening*

INTRODUCTION

Meat is the main product obtained from almost all species of livestock interest. Because of the biological and economical importance of this production, it looked to obtain new populations with new skills and special qualities. Thus formed new sheep populations with superior features and qualities than the old breeds that originated, that, in large part, are less productive because of their characterize belated. The special results achieved in sheep farming for meat production are possible by making the correlation between inputs and the exploitation systems. In sheep meat production must be taken into account to ensure for the fattening biological material of all nutritional requirements at an optimal level. Thus food is complete converted into growth fattening and fattening completion is achieved when these factors are in balance. The research aimed the increasing and improving meat production at sheep and the meat production, skills determination for the products obtained by industrial crossbreed between Merino and specialized breeds for meat production, Texel and Suffolk.

MATERIAL AND METHODS

The experiments were performed at the Research and Development Institute for Sheep and Goat Breeding Palas Constanta and the organizational scheme of work is given in Table 1. Sheep farming was performed for 150-160 days in stalling and 205-215 days at pasture. To ensure vital functions in sheep rations were provided 3 to 2.5 kg DM, 1.5 to 1.6 UNL, 70-75 PDIN / PDIE, 4-5 g Ca, 2.5 to 3 g P compared to 100 kg live weight. These amounts were supplemented by 15-20% during mating preparation and mating periods and with another 25-

45% during pregnancy and the first 1-3 months of lactation. Feed during stalling period was formed by leguminous hay 0.5 to 1 kg/head/ day, succulent forage- fodder beet 1.5 to 2 kg/head/day, with maize silage 1.5-2 kg/head/day, with a mixture of concentrated feed- in it's structure entered 25-30% barley, corn 50-60%, 8-12% sunflower meal or soy on average, 1% salt, 2% lime. In preparation for mating and mating periods the rams received a concentrated supplement of 0.7-0.8 kg (barley, oats, sunflower meal or soy) and carrots. For nursery rams during training were provided 2.14 kg DM, 1.9 UNL, 217g PDIN and 192 g PDIE, so consumption was of 0.89 UNL/kg DM, 101 g PDIN/kg DM, 90 g PDIE/kg DM; in the mating period were provided 2.15 kg DM, 2.06 UNL, 234 g PDIN and 213 g PDIE, so consumption was of 0.96 UNL/kg DM, 109 g PDIN/kg DM, PDIE 99 g/kg DM.

Sheep feed consumption per day during training mating, mating and early gestation, in the first 3 months of pregnancy periods during the grazing provided 2.32 kg DM, 1.98 UNL, 247 g PDIN, 206 g PDIE so, with consumption of 0.85 UNL/kg DM, 106 g PDIN/ kg DM and 89 g PDIE/kg DM; in stalling period it was ensure a ratio of 2.76 kg DM, 2.15 UNL, 182 g PDIN and 209 g PDIE, with a consumption of 0.78 UNL/kg DM, 66 g PDIN/kg DM and 76 g PDIE/kg DM. For sheep in the last two months of pregnancy and in the first two months of lactation, during the stalls, it was ensure a ratio of 2.94 kg DM, 2.39 UNL, 246 g PDIN and 253 g PDIE, realizing a consumption of 0,81 UNL/kg DM, 84 g PDIN/kg DM and 80 g PDIE/kg DM. During the grazing period the ration was of 2.41 kg DM, 2.1 UNL, 279 g PDIN and 228 g PDIE, with a consumption of 0.87 UNL/kg DM, 116 g PDIN/kg DM and 95 g PDIE/kg DM. Youth feeding was performed starting from the age of 8-10 days, when were guaranteed good quality hay and concentrated feed (consisting of 50% corn, 40% oats and 10% peas or oil meals) for lambs, administered into ad-libidum. This type of feeding was continued until lambs weaning, after which it was performed the lamb's semi-intensive fattening system on a period of 180 days, by alternating the maintenance system pasture 105 days and 75 days in stables (Table 2). In the first period of stabling lambs were fed with a forage ration with 0.662 kg DM, 0.663 UNC, 62.20 g PDIN and 63.8 g PDIE in the accommodation phase and with 0.803 kg DM, 0.752 UNC, 72.3 g PDIN and 73.7 g PDIE during growth and fattening period. In grazing period during the accommodation phase lambs were fed with forage ration of 1.028 kg DM, 0.912 UNC, 112.2 g PDIN and 104.1 g PDIE and 1.495 kg DM, 1.30 UNC, 143 g PDIN and 130 g PDIE during growth and fattening period. In the second period of stable lambs were fed with mixed fodder, whose physical structure is shown in Table 3. In the second period of stable lambs were fed with a forage ration of 1.30 kg DM, 0.749 UNC, 92.6 g PDIN and 100.6 g PDIE in the accommodation phase and of 1.59 kg DM, 1072 UNC, 130.3 g PDIN and 137.3 g PDIE in the finishing phase.

Before slaughter lambs were weighed and after slaughter warm carcasses, internal organs, head, gastrointestinal table (filled and emptied of content) were weighed and determined individual empty live weight (by the difference between live weight and digestive content weight). After weighing the cooled carcasses (for 24 hours at 2-4°C) was determined slaughter yield by dividing the weight cooled carcass to live weight (R1) and the weight cooled carcass to live empty weight (R2).

RESULTS AND DISCUSSIONS

During grazing the young sheep fattening consisted of green mass from cultivated pasture, with the feed mixture shown in Table 4: 70-75% graminaceae (*Dactylis glomerata*, *Festuca Pratensis*, *Lolium perene*) and 25% perennial leguminous (*Medicago sativa*, *Trifolium repens*). Is shown the decreased percentage of graminaceae, from 81.2% in the first cycle of

vegetation, to 63.4% in the last cycle of vegetation (cycle VII). The leguminous that is in proportion of 15.63% in the first cycle, increased to 31.90% at the last cycle and the consumption grade is highest in the first cycle- 94.13%.

It was performed the individually weighing of each lamb; it was recorded the birth weight of lambs by sex and type of birth and the data are presented in Table 5. At birth Merino lambs had an average weight of 4.44±0.09 kg for simple males, 3.79±0.09 kg single females, 3.35±0.06 kg double males and 3.15±0.07 kg double females. At birth Suffolk x Merino crossbred lambs was of 4.52±0.09 kg simple males, 3.93±0.11 kg single females, 3.82±0.08 kg twin males and 3.39±0.06 kg twin females. Merino crossbred Texel X lambs at birth were 4.66 ± 0.11 kg male simple, single females 4.21 ± 0.09 kg and 4.23 lambs double males and females ± 0.09 kg ± 3.77 double 0.11 kg. After lambs births and weighing registering, the main indices of reproduction were (Table 6). Following services, the fecundity index corresponds to normal growth conditions of sheep. We consider that the differences between experimental groups were determined by mother's-sheep age. The fecundity index of the entire flock of sheep was of 91.30%. Fecundity index was mainly influenced by the preparation for service of Merino ewes, by the organization and management of mating in general. Fecundity indices correspond to Merino breed characteristic. The results on body weight and daily weight gain of lambs from birth to weaning, which was performed at 60 days, are shown in tables 7 and 8. Analyzing the table 7data is found that there are significant differences between groups of sheep in terms of birth weight, weight at 28 days and at weaning. Thus, we observe a higher weaning weight in F1 crossbred Texel x Merino lambs, of 17.76±0.37 kg males and of 16.75±0.35 kg females; the birth weight was of 4.54±0.08 kg males, 3.99±0.08 kg females, and at 28 days the weight was of 11.01±0.16 kg males and 10.23±0.16 kg females.

F1 crossbred lambs Suffolk x Merino weaning weight was of 17.01±0.22 kg at males and 16.13±0.41 kg at females; lambs birth weight were of 4.17±0.09 kg males and 3.87±0.08 kg females and at 28 days of 10.49±0.25 kg males and 9.77±0.34 kg females. Merino lambs birth weight were of 3.89±0.11 kg males and 3.47±0.09 kg females; at 28 days were of 9.57±0.23 kg males and 9.04±0.25 kg females; weaning weight were of 15.91±0.29 kg for males and 15.34±0.27 kg at females. Analyzing the Table 8 data in where were determined the average daily weight gains on genotype, it stands during lactation a higher weight increase at F1half-breeds, compared to the native race. Thus, Merino breed male lambs achieved an average weight increase of 203±7 g during 0-28 day's period, 198±7 g during 28 days-weaning period and 200±7 g on the total period. The females have achieved an average gain of 199±6 g during 0-28 day's period, 197±6 g in 28 days-weaning period and 197±6 g during total period.

F1 crossbred Suffolk x Merino male lambs achieved an average weight increase of 226±8 g during 0-28 days period, 201±7 g in 28 days-weaning period and 214±7g during total period. Females made an average weight increase of 211±7 g during 0-28 day's period, 199±7 g in 28 days-weaning period and 204±6g on total period. F1 crossbred Texel x Merino male lambs achieved an average weight increase of 231±6 g during 0-28 days period, 211±7 g in 28 days-weaning period and 220±7g on total period. Females made an average weight increase of 223±7 g during 0-28 day's period, 204±6g in 28 days-weaning period and 212±8 g on total period. Average daily weight gains made by the F1half-breeds has a value that is regarded as very good, especially because the heterosis phenomenon produced from crossing two breeds and also because the paternal breeds skills for meat production. By calculation was found that differences between genotypes are significant (Fisher test, $P < 0.05$).

Experimental groups were formed by randomly chosen after lambs weaning, 25 heads per lot: Texel x Merino, Suffolk x Merino and a control lot with Merino lambs. Semi-intensive

fattening system was performed in 180 days, according to nutritional standards and rations above. Fattening control was performed by periodic individual weightings, expressed as total weight gain and average daily weight gain, according to Table 9.

The analysis of table 9 data shows that F1 Suffolk x Merino crossbred lambs were of 17.01±0.22 kg weight at the beginning of fattening and of 33.96±0.71 kg at the end of fattening period. F1 Texel x Merino crossbred lambs was of 17.76±0.37 kg weight at the beginning of fattening and of 32.16±0.44 kg at the end of fattening period. Merino lambs at the beginning of the fattening period were of 15.91±0.29 kg weight at the end of period of 35.30±0.52 kg weighing. Average daily weight gains recorded by F1 half-breeds were: F1 Suffolk x Merino crossbred lambs have achieved a weight increase of 94±5 g/day; F1 Texel x Merino crossbred lambs a weight increase of 80±4 g/day; at the beginning of fattening period Merino lambs had a weight increase of 107±4 g/day. Average daily weight gains made by F1 crossbred lambs were low, especially for half-breeds F1 Texel x Merino and F1 Suffolk x Merino, showing a less accommodation to the grazing system. Merino bred lambs, producing the largest weight gain increase, demonstrated the adaptability of these breed to grazing. At all lambs it was noted an increase in animal body resistance, manifested in a very good health of F1 crossbreeds.

There were no cases of disease in lots of lambs, not lost during the whole fattening period, contrasting with the lactation period where there have been loss (lambs weaned percentage were of 92.42% for Merino breed, 94.54% for F1 Suffolk x Merino half-breeds, 93.10% for F1Texel x Merino). Although average daily weight gains of lambs were quite small and the final weights did not reach the values obtained in the case of intensive fattening system, this semi-intensive fattening system was achieved with a much lower cost. Specific consumption was calculated for the entire semi-intensive fattening period- for 180 days- at F1 Texel x Merino crossbred lambs, F1 Suffolk x Merino and at Merino breed, data that are presented in Table 10. It is noted that to make one kilogram of weight gain increase lambs consumed in semi-intensive fattening system a high specific consumption; especially F1 Suffolk x Merino half-breeds consumed 11.61 UNC, compared to 10.15 UNC consumption at Merino lambs; F1 Texel x Merino half-breeds lambs consumed 13.67 UNC (the largest UNC consumption), 26% more than Merino lambs. Also, half-breeds consumed to achieve a kg weight gain, more digestible protein from feed: F1 Suffolk x Merino half-breeds consumed 1302.1 g PDIN/ kg gain and 1193.8 g PDIE/kg gain, compared to 1140.1 g PDIN/kg gain and 1043.6 g PDIE/kg gain achieved by Merino lambs, more than 13% for PDIN and PDIE; F1 Texel x Merino half-breed lambs PDIN consumed 1532.6 g PDIN/kg gain and 1405.2 g PDIE/kg gain, 26% more than Merino lambs for PDIN and PDIE. When fattening young sheep achieved an average body weight of 35 kg, it was considered completed the fattening period and it were performed the control slaughter for each experimental and control lots. After lambs slaughtering slaughter yield were determined (Tables 11-12). From Table 11 data it is observed that slaughter yield 1 at F1 Suffolk x Merino half-breeds was 48.37%, more than 4.66 percentage points from Merino, which was 43.71% yield. Slaughter yield 2 had a value of 55.17% at the F1 Suffolk x Merino half-breeds, compared to 51.41% at Merino lambs, more than 3.76 percentage points from Merino. From Table 12 data it is observed that slaughter yield 1 to F1 Texel x Merino half-breeds was 49.93%, up 6.62 percentage points from Merino, which was 43.71% yield. Slaughter yield 2 had a value of 55.89% at F1 Texel x Merino half-breed, compared to 51.41% at Merino lambs, up 4.48 percentage points from Merino. To see if there are significant differences in slaughter yield performances depending on genotype, Fisher test was applied. In Table 13 data is presented the slaughter yield differentiation based on

genotype. There are differences in both R1 and R2 F1 for crossbreds compared to Merino native breed. The calculated differences are significant ($p < 0.05$).

CONCLUSIONS

1. The sheep genetic improvement for meat production, the most efficient direction of economic exploitation, can be achieved by simple industrial crossbreeding of local breeds and improved breeds populations (Texel, Suffolk). Using simple industrial crossbreeding is a fast way to enhance and improve meat production, allowing improved products performances by associating the qualities of two breeds and benefiting from the effect of complementarily and heterosis.
2. Fattening young sheep under semi-intensive system, 180 days, using good nutrition which promotes expression of the productive potential of animals, it provides an efficient exploitation of these animals.
3. The average daily weight gains made by the half-breeds F1, between 2-8 months period, were: F1Suffolk x Merino crossbred lambs have achieved an increase of 94±5 g/day; F1 Texel x Merino crossbred lambs achieved an increase of 80±4 g/day; Merino lambs at the beginning of the fattening period had a weight increase of 107±4 g/day.
4. To achieve one kilogram of weight gain increase, lambs consumed in semi-intensive fattening system a high specific consumption; especially F1 Suffolk x Merino half-breeds consumed 11.61 UNC, compared to 10.15 UNC consumed by Merino lambs, as more than 13%; F1 Texel x Merino half-breeds lambs consumed 13.67 UNC (the largest UNC consumption), 26% more than Merino lambs.
5. Half-breeds lambs were consumed to achieve a kg weight gain more digestible protein from feed: F1 Suffolk x Merino half-breeds consumed 1302.1 g PDIN/kg weight gain and 1193.8 g PDIE/kg weight gain, compared with 1140.1 g PDIN/kg weight gain and 1046.6 g PDIE/kg weight gain as Merino lambs consumed, more than 13% for PDIN and PDIE; F1 Texel x Merino half-breeds lambs consumed 1532.6 g PDIN/kg weight gain and 1405.2 g PDIE/kg weight gain, 26% more than Merino lambs for PDIN and PDIE.
6. By hybridization indigenous breeds with breeds specialized for meat production increased slaughter yield:
- slaughter yield 1 for F1 Suffolk x Merino half-breeds was 48.37%, up 4.66 percentage points from Merino, which was 43.71% yield; slaughter yield 2 had the value of 52.37% for F1 Suffolk x Merino half-breeds, compared to 51.41% at Merino lambs;
- slaughter yield 1 for F1 Texel x Merino half-breeds was 49.93%, up 6.62 percentage points from Merino, which was 43.71% yield; slaughter yield 2 had the value of 55.89% at F1 Suffolk x Merino half-breeds, compared to 51.41% on the Merino lambs;
7. We recommend using the industrial crossing method of local sheep with breeds specialized for meat production, for obtaining crossbreeds which capitalizes food better, made greater weight gains and is achieved of better carcasses quality.
8. We recommend for industrial crossing Texel and Suffolk breeds specialized for meat production.

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Table 1

Technical and methodological plan

Stage	Objectives	Researches	Biological material
	The increase of total meat production	- The crossing of Merino rams with Merino sheep - The crossing of Suffolk rams with Merino sheep	- 3 lots of Merino sheep (1 x 63 heads; 1 x 55 heads, 1 x 57 heads); - 2 Texel rams; - 2 Suffolk rams
II	- Increase of total meat production	- Lambs dynamic growth from birth to 6 months - The intensive lambs fattening- 100 days	- 3 groups of crossbred lambs, resulting from the crossing of Texel and Suffolk rams with Merino sheep breed (2 x 25 heads) - 1 control group of Merino lambs (1 x 25 heads)
III	Improved quality of sheep meat	Lambs fattened carcass quality assessment;	- 2 groups of crossbred lambs, resulting from the crossing of Texel and Suffolk rams with Merino sheep breed - 1 control group of Merino lambs (1 x 20 heads)

Table 2

The growth and fattening young sheep in semi-intensive exploitation system diagram

Maintenance system	Fattening phase	Duration (days)	Forage ration					
			Forage	kg	SU	UNC	PDINg	PDIEg
Stable	Accommodation	15	Alfalfa hay	0.2	0.178	0.098	15	13
			Maize silo	0.5	0.13	0.100	6.5	8.5
			Maize	0.2	0.176	0.274	11.60	22
			Barley grains	0.1	0.088	0.12	6.5	8.7
			Sunflower oil meal	0.1	0.09	0.071	22.60	11.60
			Total		0.662	0.663	62.20	63.8
	Growth and fattening	15	Alfalfa hay	0.3	0.267	0.147	22.5	19.5
			Maize silo	0.7	0.182	0.140	9.1	11.9
			Maize	0.2	0.176	0.274	11.60	22
			Barley grains	0.1	0.088	0.12	6.5	8.7
			Sunflower oil meal	0.1	0.09	0.071	22.60	11.60
			Total		0.803	0.752	72.3	73.7
Grazing	Accommodation	15	Alfalfa hay	0.2	0.178	0.098	15	13
			Compound feed	0.2	0.16	0.214	31.168	31.168
			Green forage	3	0.69	0.60	66	60
			Total		1.028	0.912	112.1	104.1
	Growth and fattening	90	Green forage	6.5	1.495	1.30	143	130
			Total		1.495	1.30	143	130
Stable	Accommodation	10	Alfalfa hay	0.5	0.44	0.245	37.5	32.5
			Barley straw	0.5	0.44	0.09	11	20
			Maize silo	1.0	0.26	0.20	13	17
			Compound feed	0.2	0.16	0.214	31.1	31.1
			Total		1.30	0.749	92.6	100.6
	Finishing	35	Alfalfa hay	0.5	0.44	0.245	37.5	32.5
			Barley straw	0.5	0.44	0.09	11	20
			Maize silo	1.5	0.39	0.30	19.5	22.5
			Compound feed	0.4	0.32	0.428	62.3	62.3
			Total		1.59	1.072	130.3	137.3

Table 3

Mixed fodder physical structure

Technical specifications		Growth lambs
Meat energy	(UNC/kg)	1.07
Digestible crude protein	(g/kg)	155.84
Crude protein	(%)	15.81
Ether extract	(%)	2.45
Crude fibre	(%)	7.18
Ash	(%)	6.81
Calcium	(%)	1.09
Total phosphorus	(%)	0.45
Total chlorides	(%)	0.02
A Vitamin; D3 Vitamin	(UI/kg)	9647.05; 2193.75
E Vitamin	(mg/kg)	19.67
Copper	(mg/kg)	13.69
Iodine	(mg/kg)	0.74
Iron; Manganese	(mg/kg)	58.75; 49.42
Selenium; Zinc	(mg/kg)	0.37; 305.11

Table 4

Floristic composition dynamic on grazing cycles

Cycle of vegetation	Graminaceae %	Leguminous %	Other plants %	Consumption grade %
I	81.2	15.63	3.15	94.13
II	78.5	15.80	5.70	92.68
III	70.0	21.60	8.40	92.16
IV	71.2	30.60	8.20	90.16
V	63.6	38.70	7.70	89.41
VI	69.3	24.70	6.00	93.41
VII	63.4	31.90	4.70	91.69

Table 5

Lambs weight at birth, by sex

Breeds/ Crossbreeds	Simple lambs				Twin lambs			
		Males		Females		Males		Females
	n	$\overline{X} \pm s_{\overline{X}}$ V%	n	$\overline{X} \pm s_{\overline{X}}$ V%	n	$\overline{X} \pm s_{\overline{X}}$ V%	n	$\overline{X} \pm s_{\overline{X}}$ V%
Merinos	25	4.44±0.09 10.13	27	3.79±0.09 12.33	9	3.35±0.06 5.37	5	3.15±0.07 4.96
SuffolkX Merinos	25	4.52±0.09 9.95	20	3.93±0.11 12.51	4	3.82±0.08 4.18	6	3.39±0.06 4.33
Texel X Merinos	25	4.66±0.11 11.80	25	4.21±0.09 10.68	4	4.23±0.09 4.25	4	3.77±0.11 5.83

Note: Differences between genotypes are significant (Fisher Test, P>0.05).

Table 6

The main reproduction indices of sheep

Lot of sheep	Mounted sheep	Lambing sheep	Obtained lambs	Fecundity (%)	Prolificity (%)
Lot I	63	58	66	92.06	113.79
Lot II	55	49	55	89.09	112.24
Lot III	55	51	58	92.72	113.72
The average	173	158	179	91.32	113.29

Table 7

Evolution of lamb's body weight for Merino and crossbred

Weight (kg)	Breed/crossbreed		
	Merino	F1 Suffolk x Merino	F1 Texel x Merino
Birth weight Masculi (n) Femele (n)	$\overline{X} \pm s_{\overline{X}}$ V%	$\overline{X} \pm s_{\overline{X}}$ V%	$\overline{X} \pm s_{\overline{X}}$ V%
	(34) 3.89± 0.11 16.48	(29) 4.17±0.09 11.62	(29) 4.54±0.08 9.48
	(32) 3.47 ± 0.09 14.67	(26) 3.87±0.08 10.54	(29) 3.99± 0.08 10.79
Weight at 28 days Masculi (n) Femele (n)	(32) 9.57 ± 0.23 13.59	(28) 10.49±0.25 12.61	(27) 11.01±0.16 7.55
	(29) 9.04 ± 0.25 14.89	(24) 9.77±0.34 17.04	(27) 10.23± 0.16 8.12
Weaning weight (60 days) Males (n) Females (n)	(32) 15.91±0.29 10.31	(28) 17.01±0.22 6.84	(27)17.76±0.37 10.82
	(29) 15.34±0.27 9.47	(24)16.13±0.41 12.45	(27)16.75±0.35 10.85

Note: Differences between genotypes are significant (Fisher Test, P>0.05).

Table 8

The lamb's daily weight gain achieved during lactation

Genotyp	Sex	Daily weight gain (g/zi)					
		0-28 days		28-60 days		0-60 days	
		n	$\overline{X} \pm s_{\overline{X}}$ V%	n	$\overline{X} \pm s_{\overline{X}}$ V%	n	$\overline{X} \pm s_{\overline{X}}$ V%
Merinos	Males	32	203±7 19.50	32	198±7 19.99	32	200±7 19.79
	Females	28	199 ±6 15.95	28	197±6 16.11	28	197±6 16.11
F1 Suffolk x Merino	Males	28	226±8 18.73	28	201±7 18.42	28	214±7 17.31
	Females	24	211±7 16.25	24	199±7 17.23	24	204±6 14.40
F1 Texel x Merino	Males	27	231±6 13.49	27	211±7 17.23	27	220±7 16.53
	Females	27	223±7 16.31	27	204±6 15.28	27	212±8 19.60

Note: Differences between genotypes are significant (Fisher Test, P>0.05).

Table 9

Grought dynamic in semiintensive fattening period (180 days)

Genotyp	n	Weight at the benning of fattening period	Weight at the end of fattening period	Daily weight gain (g/day)
		$\overline{X} \pm s_{\overline{X}}$ V%	$\overline{X} \pm s_{\overline{X}}$ V%	$\overline{X} \pm s_{\overline{X}}$ V%
F1 Suffolk x Merino	25	17.01 ± 0.22 6.46	33.96 ± 0.71 10.45	94 ± 5 26.59
F1Texel x Merino	25	17.76 ± 0.37 10.41	32.16 ± 0.44 6.84	80 ± 4 25.00
Merinos	25	15.91 ± 0.29 9.11	35.30 ± 0.52 7.36	107 ± 4 18.69

Note: Differences between genotypes are significant (Fisher Test, P>0.05).

Table 10

Feed specific consumption for semi-intensive fattening system

Genotyp	Total weight increase (kg)	Total UNC consumption	Average UNC consumption /kg gain	Total consumption PDIN g	Average PDIN consumption g/kg gain	Total consumption PDIE g	Average PDIE onsumption g/kg gain

F1 Suffolk x Merinos	16.95	196.91	11.61	22070.5	1302.1	20235.5	1193.8
F1 Texel x Merinos	14.40	196.91	13.67	22070.5	1532.6	20235.5	1405.2
Merinos	19.39	196.91	10.15	22070.5	1140.1	20235.5	1043.6

Table 11

The F1 Suffolk x Merino half-breeds slaughter yield compared to maternal breed

Specification	UM	Genotyp		Percentage points difference ± to maternal race
		F1 Suffolk x Merino (n=6)	Merino (n=6)	
		$\overline{X} \pm s_{\overline{X}}$ V%	$\overline{X} \pm s_{\overline{X}}$ V%	
Body weight	g	33966.7±712.6 5.13	35300±529.2 3.67	-
Empty body weight	g	29766.71±589.7 4.85	30000±550.8 4.49	-
Cooled carcass weight	g	16426.7±447.1 6.66	15428.3±442.4 7.02	-
Slaughter yield 1	%	48.37±1.01 5.11	43.71±1.04 5.82	+ 4.66
Slaughter yield 2	%	55.17±0.68 3.01	51.41±0.65 3.09	+ 3.76

Table 12

The F1 Texel x Merinos half-breeds slaughter yield compared to maternal breed

Specificare	UM	Genotyp		Percentage points difference ± to maternal race
		F1 Texel x Merino (n=6)	Merino (n=6)	
		$\overline{X} \pm s_{\overline{X}}$ V%	$\overline{X} \pm s_{\overline{X}}$ V%	
Body weight	g	32166.7±440.95 3.35	35300±529.2 3.67	-
Empty body weight	g	28733.3±581.2 4.95	30000±550.8 4.49	-
Cooled carcass weight	g	16068.3±604.6 9.21	15428.3±442.4 7.02	-
Slaughter yield 1	%	49.93±1.33 5.11	43.71±1.04 5.82	+ 6.22
Slaughter yield 2	%	55.89±0.68 1.00	51.41±0.65 3.09	+ 4.48

Table 13

The slaughter yield differentiation in according to genotype

Specification	Diferențe între hibrizi și Merinos			
	Percentage points difference ±		The differences significance	
	R1	R2	R1	R2
F1 Suffolk x Merino, compare with Merino	+ 4.66	+3.76	$p < 0.05$ significant	$p < 0.05$ significant
F1 Texel x Merino, compare with Merino	+6.22	+4.48	$p < 0.05$ significant	$p < 0.05$ significant