RESEARCH REPORT – STAGE 2010

I. ASSESSMENT OF THE TRAITS WHICH DIRRECTLY AFFECT MEAT PRODUCTION IN SHEEP

Associated activities:

- *Assessment of specific quantitative traits*
- *Assessment of specific qualitative traits*
- *Usage of crossings in order to improve meat yield in indigenous sheep*
- *Issuance of conclusions related to the meet production aptitudes of local sheep*

1.1 SCIENTIFIC BASIS OF THE INDEXES SPECIFIC TO SHEEP MEAT PRODUCTION FLOWS

Sheep, although not the most productive species from which is obtained most outputs and include: milk, meat, wool, skins, furs and skins. For each man spoke production creating new populations specialized or enhanced skills. The results were the consequence of the application in breeding and sheep operation, the operating systems developed in accordance with the requirements of bio-economic specific. If the sheep for wool and milk production process streams are properly adapted to all requirements, and changing them can cause reduced growth of productive performance, the search for the optimal development of operating systems for sheep meat production are permanent. Give what is required for all activities that are based on modern research improvement of a meat production to be directed so to enable development of new technological flows, different from the classical total.

Analysis of all factors that have direct influence meat production will be derived from that class of individuals who will go for meat recovery. Taking into account the fact that about 75% of global meat production is achieved by exploiting young sheep is necessary to pay greater attention to technological flow characteristics. This means that meat production in sheep, youth must be given more attention during intrauterine life.

Recent studies indicate that fattening can tolerate an empty body weight of 40 kg. After this amount and ratio of Ew Ec Please register, deposit fund reductions of body weight daily, rapidly rising energy deposition based on the accumulation of excess fat tissue inter and intra-carcass. Based on these considerations, the production of lamb, complete fattening should be applied at the age of 4-6 months. These variations are dependent on the applied technology race and fattening, the purpose of fattening process itself of the moment intervening in the chemical aging of the carcass occurs.

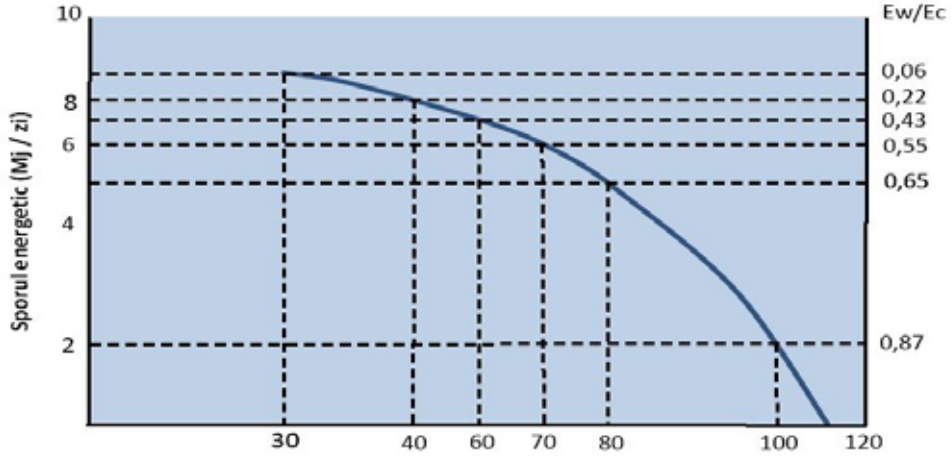


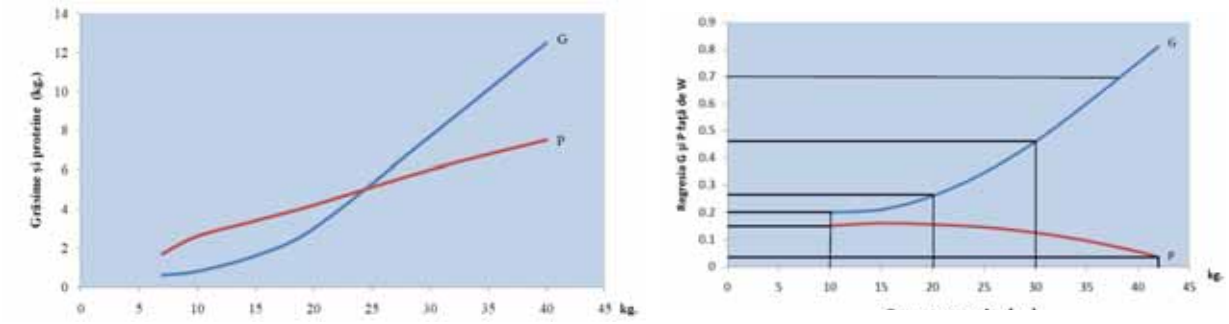
Fig. 1. The ratio of accumulated daily energy gain, live weight and empty weight ratio of energy embedded in empty living at a certain stage or age (EW) and maximum energy incorporated into adulthood (Ec)

Further fattening than is currently uneconomic to 85% of body mass accumulation of fat deposits is based on obtaining carcass and help with excess fat.

In these conditions it is easily found that young sheep meat production, based on differences in the development of a tissue can differentiate and one pre-fattening phase of fattening. In the first phase over 85% of accumulation is based on body mass and muscle tissue development and in the second phase of 85% increase is achieved by accumulation of fat deposits.

Studies have shown that the boundary between two phases, each consisting of 415 kg is accumulated g fat, 108 g protein. Same regression calculations indicate that the live weight of 10 kg recorded year pre-fattening phase values are obtained 0.18 g fat and 0.13 for protein. At the end of fattening, ie when the final average live weight is 45 kg, regressions are the same values of 0.65 for protein, which indicates a 1:7,3 ratio between protein and fat deposition.

In sheep meat production must take into account the biological material available to the fattening of all the nutritional requirements of an optimal basis is represented by a diet with a good degree of its conversion gain and fattening when completed. These factors are in balance. If lambs are fattening ration to provide the protein content of 17.5% to the average live weights range from 29 to 31 kg, facilitates a higher growth rate compared with the situations in which the protein would be only 15.5 %. The excess of live body weight exceeding 38 kg these differences are cancelled and therefore be concluded that the fattening process conversion efficiency is reduced because of increased maintenance requirements.



a. b.

Fig 2. Influence of fat and protein in live weight at different weights (a) and speed of development of tissues in relation to live weight (b)

If the protein requirement increases the maintenance requirements of fattening is recommended halting just before the time of chemical ripening of the case.

Table 1. Efficacy of protein and energy conversion, as reported to the fattening technological version

Energy or protein for:	**Age when fattening ceases**		
	100 days	200 days	300 days
- metabolisable energy for maintenance (MJ)	395	945	1475
- metabolisable energy for fattening (MJ)	943	1129	1145
Total ME(MJ),	1338	2074	2620
- deposed in carcass	485	493	501
Efficiency of energy conversion toward body mass during sheep youth fattening			
- gain from fattening metabolisable energy	0.517	0.434	0.437
- gain from total metabolisable energy	0.324	0.238	0.192
Protein for growth gain (g)	4081	4081	4081
Efficacy of protein conversion in weight gain (g)	0.615	0.420	0.325

Data analysis indicates that these averages over the fattening efficiency decreases, and fattening completion will take place just before the chemical ripening period of the case.

1.2. CHOOSE OF THE OPTIMAL MOMENT FOR CARCASS CHEMICAL MATURATION

Knowing this takes time and given a special connotation direct influence on economic efficiency in the production of meat from young sheep. To determine when the deck is held chemical aging carcass should analyze some specific dynamics, plant development in young sheep.

Thus, in early life, the lamb has a strong growth rate which allows them the age of 90-120 days to reach at least 50% by weight of adults. This rhythm is intense and allows new transis atavistic body to get through the first cold season. To achieve half the live weight of the other own new body it needs a period of about 450 days, ie 4.5 times higher. In these circumstances we can specify the body is reached maturity long before reproductive maturity.

To highlight the pace of change in the ratio of body regions in young sheep, and based on results obtained in different research, we determined the regions of slaughter weight in relation to the age of slaughter (Table 2).

Table 2. Participation of body parts, as related to slaughter age (%)

Age	Genotype and anatomic region								
	Merinos Palas			Țigaie			Țurcană		
	head	trunk	limbs	head	trunk	limbs	head	trunk	limbs
30 days	6.74	80.02	5.24	6.54	86.58	6.88	6.68	87.91	5.41
90 days	4.23	86.82	8.95	3.98	91.94	4.08	4.12	87.70	9.18
170 days	3.95	86.68	9.38	3.67	86.67	9.66	3.97	86.06	9.97

The results reveal a different pace of development of regions analyzed. In all breeds studied was found that while the head holds a share which is declining, the trunk has a fairly constant weight, and as advancing age, the period considered, there was a greater proportion of limbs. In other studies conducted in our country by Angelescu and colleagues, shows that while the age of four weeks the head weight is 6.6% at 12 weeks its weight is reduced to about 4%. In the assessments performed to determine the dynamics of the main areas cut out of the carcass development was found that the pace is about the same in all races analyzed. As advancing age Leg of mutton reduce weight and increase the regions have a report in favor of bone tissue.

Leg of mutton have a higher percentage but the extension phase of the fattening of lambs when slaughter the older ages of 150-170 days favors the growth of other regions coasts or less valuable.

Table 3. Dynamics of butchery parts proportion, as related to age

Age	Genotype and anatomic region								
	Merinos Palas			Țigaie			Țurcană		
	leg of mutton	neck and shoulder	loin. chest head and sirloin	leg of mutton	neck and shoulder	loin. chest head and sirloin	leg of mutton	neck and shoulder	loin. chest head and sirloin
30 days	33.8	31.0	35.2	33.1	28.8	38.1	32.1	28.7	39.2
90 days	37.5	26.1	36.4	35.4	28.7	35.9	36.5	26.5	37.0
170 days	30.2	27.9	41.9	27.8	30.9	41.3	26.5	26.3	47.2

Other studies indicate that the shooting early facilitate obtaining carcass with a lower percentage of muscle mass, and if the extension is obtained fattening fat and very fat carcasses that held body fat percentage is higher.

All these data confirm that the optimal time of slaughter can not be uniform for all populations of sheep. Therefore, for each breed or crossbred group, an analysis is required to complete assess when carcass reaches its optimum maturation.

International research conducted in this area indicate that there are some differences in terms of muscle development in the carcass package. Still Lush and collaborators since 1971, confirmed that Merino lambs are a group of 33 developing muscles that have gradients extending over two phases and only 55 others in development in a single phase.

1.3. POSSIBILITIES OF IMPROVEMENT IN MEAT YIELD OF YOUTH SHEEP, AS RELATED TO CERTAIN INFLUENCIAL FACTORS

Whatever the nature of livestock production, the productive potential of expressing a whole range of factors involved. Also, regardless of the type of analysis, the origin of production and population characteristics analyzed, it is generally accepted that the expression for meat production skills involved three groups of characters, namely:

- Live weight at a certain age;
- Degree of conversion of food;
- Carcass quality.

Live weight at a certain age is an unlimited nature of sex and has a heritability of 0.35, with a range between 0.10 and 0.69. It is moderate in nature and influenced by interactions non additive environmental factors.

In the fattening process, the evolution of increase the total gain value has some variations depending on race, age, fattening technology applied.

Evolution of body weight was an extremely important indicator of the research conducted since the deposition rate and intensity depend on body weight and other major indices that are used subsequently in the quantitative and qualitative evaluation of meat. In Table 4 the average weights at the beginning and end of each specific phase of growth and fattening process applied.

At the end of induction phase, the average weight carried by each group did not differ too much, given the short duration of this phase. After the fattening process is found the net differences between experimental groups, these differences while maintaining the finishing phase and at the end (the end of fattening). Statistical analysis shows that the lowest average body weight determined at the end of fattening group are made up of females belonging to the variety of white race compared with females Turcana the same race, but belonging to the black variety, makes the final weight lower by 3.38%, but which is statistically insignificant. If the two groups consisting of young male breeds Turcana best performance was achieved by those of black color variety, but the difference is not statistically significant.

Table 4. Dynamics of lambs body weight, as related to gender and fattening degree

Stage/length (days)	Group	Gender	n	Average weight at the beginning of stage (kg)	Average weight at the end of stage (kg)
				$\overline{X} \pm s_{\overline{X}}$	$\overline{X} \pm s_{\overline{X}}$
Acclimatization (10 days)	Țigaie	males	25	11.700 ± 0.124	12.6 22± 0.258
		females	25	10.500 ± 0.145	11.400 ± 0.237
	Țurcană black variety	males	25	12.615 ± 0.267	13.412 ± 0.216
		females	25	11.100 ± 0.201	11.9 ±02 0.224
	Țurcană white variety	males	25	12.312 ± 0.183	13.118 ± 0.208
		females	25	10.801 ± 0.284	11.551 ± 0.215
Growth and fattening (135 days)	Țigaie	males	25	12.622 ± 0.258	31.466 ± 0.214
		females	25	11.411 ± 0.237	28.110 ± 0.182
	Țurcană black variety	males	25	13.444 ± 0.216	29.612 ± 0.196
		females	25	11.909 ± 0.224	27.009 ± 0.284
	Țurcană varietatea white	males	25	13.113 ± 0.208	28.836 ± 0.384
		females	25	11.587 ± 0.215	26.123 ± 0.286
Finishing (30 days)	Țigaie	males	25	31.422 ± 0.214	35.902 ± 0.286
		females	25	28.125 ± 0.182	32.221 ± 0.244
	Țurcană black variety	males	25	29.665 ± 0.196	33.632 ± 0.212
		females	25	27.008/ ± 0.284	30.715 ± 0.208
	Țurcană white variety	males	25	28.822 ± 0.384	32.636 ± 0.192
		females	25	26.112 ± 0.286	29.708 ± 0.184

Table 5. Weight difference between groups (kg), observed at the fattening end and its significance

Tukey test	L1	L2	L3	L4	L5	L6
L6	6,194**	2,513**	3,924**	1,007 n.s.	2,928**	-
L5	3,266**	0,415 n.s.	0,996 n.s.	1,921**	-	-
L4	5,187**	1,506*	2,917**	-	-	-
L3	2,270**	1,411*	-	-	-	-
L2	3,681**	-	-	-	-	-
L1	-	-	-	-	-	-

Notice: L1- Males Ţigaie; L2 Females Ţigaie; L3 Males Black Ţurcana; L4 Females Black Ţurcana; L5 Males White Ţurcana; L6 Females White Ţurcana
**Significant at the 0.05 level (ω = 1.017)*
***Significant at the 0.01 level (ω = 1.740)*
n.s: non significant

All these findings confirm that the variety of color is not an important factor able to influence the production of meat. Comparing the final results obtained in fattening Tzigai race robe that highlights the same conditions of service, the same diet and under the influence of microclimate same group of females achieved with lower body weights 3.681 kg. The existence of these differences with a high degree of statistical significance (Table 5) demonstrate that sex products is an important factor influencing the fattening headacity of which must be taken into account when organizing the production of sheep meat.

Average daily gain is a very important indicator to be taken into account in the production of meat regardless of species or applied technology. In presenting the results in Table 5 and 6 can be seen that in phase pre-fattening average daily gains were very small. This is understandable since the lots have been created immediately after weaning of lambs, to which add the influence of stress due to transport and other factors.

In phase two, between groups, there are already obvious differences, and average daily gain in the experimental groups ranged from 108.5 ± 9.8 g in the group of females breed variety Turcana Brumaire and 139.0 ± 11.8 g in group male of Tigaie breed. For other plots average daily growth rate had accumulated intermediates.

The third phase was the finish and was characterized by reducing the volume of feed in the diet and increasing the proportion of concentrates in the ration structure. Regarding the daily average gain registered during this period, the hierarchy of the lots has not changed, but it should be noted that this index has superior value for all lots, compared with earlier stages of the fattening technology used. If we look at either the average daily gain absolutely be recorded throughout the fattening period, we find that the order of performance was the same as for technological steps and ranged from 140.0 ± 8.7 g and 108 ± 7.3 g rams Tzigai race in the group of women belonging to racial Turcana, white variety. From data presented it can find lots of both sexes of superiority Tzigai race compared to the groups of two varieties of the breed Turcana, proving once again that it has better skills for meat production. Overall data on the dynamic evolution of plant and average daily gain recorded in all experimental work shows very clearly that success depends on meat production and quality requirements of biological material which he enjoyed during lactation, whereas the rate of development products is dependent on their genetic headacity, which combines the early life of the sheep milk production and its instinct to protect and care.

Another aspect to be taken into account in fattening lambs, the rate of increase since it differs greatly from one race to another. In general, large format lamb breeds (Lincoln, Berrichon du Cher, Ile de France, Suffolk) have a higher growth rate compared with the small size breeds. In the present research, the data points obtained for all groups, not too intense pace of growth characteristic appearance semitardive races. In this situation we recommend that these breeds are used in hybrid crosses to produce meat. This recommendation is justified by the fact that the practice has shown that crossing of races can improve growth rate, but the success of this activity depends on the ability of breeders to find the most successful combinations.

Table 6 Dynamics of weight gain per technological stages and at the fattening end

Group	Gender	Period							
		Habituation		Fattening		Finishing		Overall	
		absolute (kg)	A.D.G. (g)	absolute (kg)	A.D.G. (g)	absolute (kg)	A.D.G. (g)	absolute (kg)	A.D.G. (g)
Țigaie	males	0.90	86.0 ±7.4	18.8	139.0 ± 11.8	4.5	150.1 ± 13.6	24.5	140 ± 8.7
	females	0.80	80.2 ± 6.5	16.7	124.4 ± 11.2	4.1	138.5 ± 12.6	21.6	123 ± 7.6
Țurcană black variety	males	0.81	81.2 ± 5.4	16.2	120.0 ± 10.4	4.0	135.3 ± 11.3	21.9	125 ± 7.9
	females	0.78	78.3 ± 5.8	15.1	112.2 ± 11.1	3.7	123.5 ± 12.1	19.6	112 ± 7.1
Țurcană white variety	males	0.77	77.0 ± 7.5	15.7	116.2 ± 9.3	3.8	128.3 ± 11.6	20.3	116 ± 6.1
	females	0.74	74.1 ± 6.2	14.6	108.1 ± 9.8	3.6	121.1 ± 10.5	18.9	108 ± 7.3

Slaughter ratio efficiency. To highlight the influence of this indicator in the production of meat from each experimental group were sacrificed individuals of both sexes, and the carcasses were weighed immediately after slaughter, the results obtained are shown in Table 7. It should be noted that in weighing the carcasses was present and tallow stick. Highest average values were recorded for measurements performed on carcasses from the slaughter of fattening young sheep bred male lambs belonging skillet yield had values of 44.40% followed very close (44.1%) of group belonging to the variety of black males Turcana race.

Table 7. Slaughter yield efficacy

Group	Gender	n	Weight prior to slaughter (kg)	Carcass weight (kg)	Yield efficacy (%)
			$\overline{X} \pm s_{\overline{X}}$	$\overline{X} \pm s_{\overline{X}}$	$\overline{X} \pm s_{\overline{X}}$
Țigaie	males	6	35.184 ± 0.111	15.600 ± 0.180	44.331 ± 0.207
	females	6	30.033 ± 0.214	13.260 ± 0.151	44.150 ± 0.113
Țurcană black	males	6	32.725 ± 0.212	14.430 ± 0.122	44.130 ± 0.125
	females	6	30.000 ± 0.208	12.153 ± 0.134	40.094 ± 0.351
Țurcană white	males	6	32.121 ± 0.023	13.618 ± 0.224	42.395 ± 0.482
	females	6	29.131 ± 0.213	11.497 ± 0.261	39.466 ± 0.531

Table 8 Carcasses ranking, in accordance with the European Union standard (%)

Class	Breed					
	Țigaie		Black Țurcana		White Țurcana	
	Males	Females	Males	Females	Males	Females
On confromation						
S	-	-	-	-	-	-
E	-	-	-	-	-	-
U	4	3	4	2	3	2
R	6	5	5	2	3	2
O	68	71	70	68	74	71
P	22	21	21	28	20	25
On fattening rank						
1	-	-	-	-	-	-
2	11	5	4	3	4	3
3	52	47	45	27	43	40
4	35	35	42	48	48	45
5	6	13	9	22	5	12

Table 9 Structure of carcass trenched parts, as related to quality class

Notice	Proportion from whole carcass weight (%)					
	Țigaie		Țurcană black variety		Țurcană white variety	
	males	females	males	females	males	females
	$\overline{X} \pm s_{\overline{X}}$	$\overline{X} \pm s_{\overline{X}}$	$\overline{X} \pm s_{\overline{X}}$	$\overline{X} \pm s_{\overline{X}}$	$\overline{X} \pm s_{\overline{X}}$	$\overline{X} \pm s_{\overline{X}}$
1st quality	9.81 ± 0.21	7.92 ± 0.11	8.71 ± 0.12	7.11 ± 0.31	8.11 ± 0.31	6.81 ± 0.12
2nd quality	3.20 ± 0.13	2.90 ± 0.14	3.11 ± 0.09	2.81 ± 0.03	3.00 ± 0.13	2.62 ± 0.16
3rd quality	2.61 ± 0.32	2.44 ± 0.19	2.61 ± 0.31	2.23 ± 0.19	2.50 ± 0.8	2.06 ± 0.02

It is interesting to note that although the two lots, before slaughter, there was a significant weight difference at p> 0.05 yield at slaughter is very close values. Among the groups of females best results were obtained in the order of Tigaie with a yield of 43.90%, black variety Turcana white variety that yields had values of 40.50% and 39.50% respectively. And in this case may indicate that the same treatment from the same feed and fattening technology, although live weights before slaughter differences between groups of females were significant at p> 0.05 and p> 0.01 at slaughter yield values are close in value. The situation was similar as in the case of assessments which made for lots of males. This highlights the fact that although race is a slower Turcana deposition of body mass throughout the period of fattening it has a slaughter yield better results are close in value to others cited in the literature of Romania to the races question.

Studies and research have shown a low degree of development of the carcasses.T he analysis conducted to determine the quality of carcasses, in accordance with the methodology adopted in the European Union show reduced differences between local races. Thus, the race Tzigai largest share of the total number of cases studied met the specific requirements of classification in Class A, only about 68% and 10% of them have met the requirements for R and U. In that race Turcana have found that , for both sexes, an increasing share accounted for all cases assigned in class O.

Feed consumption. Feeding of fattening lambs was given a single-feeding ad libitum, and by weighing the feed prior to administration and the remaining unused in daily consumption was measured daily and all time. Based on data obtained was established by the UN and specific consumption and PBD / kg gain, per phase and total period of growth and fattening, and the data obtained are shown in Table 10.

Table 10. Feed conversion ratio

Notice	Gender	Period							
		Habituation		Fattening		Finishing		Total	
		U.N.	P.B.D.	U.N.	P.B.D.	U.N.	P.B.D.	U.N.	P.B..
Țigaie	males	7.1	934.8	6.9	692.0	6.5	774.4	6.9	815.2
	females	7.4	971.5	6.9	719.3	6.8	809.7	7.1	839.4
Țurcană black	males	7.7	1012.5	7.1	739.8	7.5	893.0	7.4	875.1
	females	8.1	1065.1	8.0	833.6	8.8	1047.2	8.3	981.3
Țurcană white	males	8.6	1131.1	8.1	844.0	9.5	1131.1	8.2	969.5
	females	8.7	1144.0	8.4	875.3	9.9	1178.7	8.5	1005

The data presented in the table above shows that white females in the race Turcana variety showed the highest specific consumption during the whole fattening necessary to deliver a 8.5 kg gain A followed in order by the variety of black males and females of the same breed, and the lowest specific fuel consumption was recorded for the two batches of race Tigaie.

1.4. ISSUANCE OF CONCLUSIONS ON THE MEAT YIELD APPTITUDES OF YOUTH SHEEP FROM INDIGENOUS BREEDS

Overall, research shows that small breeds have aptitude for meat production. Also, the data obtained shows that in terms of applying the same technology of fattening, meat production is influenced by various factors among which the most strongly manifests its influence race and gender. Reduced muscle mass through a high-quality, low yield at slaughter, but also the results of carcass classification in accordance with European legislation earlier assertion is supported by other data obtained at the end of the research.

If race Tzigai recommendation would be that it is used limited race to produce clean meat, use cross lambs to obtain hybrids which exploit the full effect of heterosis, is more appropriate, cheaper and more beneficial to farmers.

Turcana race as it was formed and adapted in the mountains, now occupies an area extremely varied microclimate that is often unsuitable for other races. Under these conditions the surplus semi fattening lambs, conducted throughout the grazing period, may represent an optimal solution for obtaining the quantities of meat by exploiting natural alpine pasture.

Their use in clean-bred sheep meat production is not a viable solution because the accumulation of body mass development and carcass quality does not meet quality requirements manifested consumer markets.

1.5. RESEARCHES ON THE IMPROVEMENT OF QUALITY IN ADULT CULLED SHEEP CARCASSES

Annually, in each part of the adult sheep flock no longer meet production requirements and therefore recommended the removal of productive and reproductive cycle. Currently most of the reforms sheep aged 6-7 years but can be removed and the lower age, but only when they become unfit for breeding, they acquire defects in mammary gland, become ill and untreatable, dentition etc. prematurely or lose. Given that reform proposals are issued in spring, turning them this season is not appropriate because, after slaughter, carcasses obtained do not fully meet the quality requirements. To avoid such situations it is recommended that adult sheep to be reformed through a process of fattening, the total duration being dependent on the initial state of maintenance. The role is a major refurbishment reformed sheep, whereas during this process is done both a biological recovery of muscle mass and body shall be filed and certain quantities of fat that affects the quality of meat obtained after slaughter. Finally, cases have resulted from rebuilding adults and organoleptic characteristics and superior physical properties, justifying this activity.

Biological material used was the adult sheep in 2009 and reformed in the spring of Palas Merino breed belonged, Tigaie and Turcana. Cases have fot reform following: exaggerated blunting or missing teeth, reduced milk production and wool and older than 6 years of Palas Merino sheep and over eight years to the Tigaie and Turcan.

Rebuilding took place in two different technological and calves on pasture and had a total duration of 65 days. Provided conditions were similar for all groups. In the variant used indoors to breed sheep were grouped and feeding was ad libitum intake structure using the hay and corn silage grown concentrates. To determine the specific consumption of feed were weighed daily before dosing and Unused. If pasture restoration variant has been a compact fold, food being provided by grass pasture consumed and additional morning and received a quantity of 300 g / head / day feed concentrates.

At the final slaughter control was carried out based on the results obtained carcass weight and yield was determined at slaughter. To establish the effect due to refurbishment, the quality and quantity of meat, and an assessment was made of carcasses applying EU rules

Evolution of body weight during refurbishment of adult sheep. The constitution was intended as the start of lots of weight and age differences between the sheep to be minimal and the data are inconclusive because the number of sheep in each breed and each variant was 25 ends. When rebuilding the application version on the pasture, the sheep were kept the same conditions, the same pasture and received the same amount of concentrated supplements.

In the case of Palas Merino breed, the refurbishing variant total accumulated pasture growth was reduced by 19.51% compared with the total average increase resulted in group maintained indoors. Where the two technological alternatives between the two groups is maintained and performance differences when considering the total accumulated gain, carcass weight and average yield at slaughter. Analysis of data obtained after sacrifice shows that the effect is more noticeable indoors refurbishment. Thus, if the sheep

pasture restoration variant had a higher initial average weight of 6.05% at the end of the average difference remains significant but is reduced to 3.17%. Even with the existence of absolute differences between average weights 1.88 kg final variant favorable pasture lot makeover in calves produced with 1.044 kg heavier carcasses. The effectiveness is confirmed refurbishment indoors and best values for assessing the performance obtained at slaughter (table 11). In the case of studies by Zamfir ZC et all., for the same breed were heavier carcasses obtained with 3.71% all the conditions for calves, but restoration took 90 days.

In the fattening period, given that sheep had a different state of repair and did not belong to the same breed, have reacted differently in terms of body weight (Table 11)

Table 11. Dynamics of body weight, throughout adult sheep refurbishing

Lots	Statistics	Body weight dynamics(kg)			Slaughter taits	
		Initial weight	Final weight	Total accumulated gain	Carcass weight (kg)	Yield efficacy at slaughter (%)
Merinos of Palas		**Refurbishment on pasture (n = 25)**				
	$\overline{X} \pm s_{\overline{X}}$	53.650 ± 0.115	59.300 ± 0.198	5.650 ± 0.058	26.676 ± 0.115	46.55 ± 0.22
	V%	11.09	12.02	9.18	9.55	8.36
	Limits	48.00 – 55.00	50.250 – 58.500	-	20.80-29.50	42.55 – 48.98
		Refurbishment in stabulation (n = 25)				
	$\overline{X} \pm s_{\overline{X}}$	50.400 ± 0.315	57.420 ± 0.211	7.020 ± 0.095	27.700 ± 0.174	48.24 ± 0.80
	V%	8.71	9.44	14.20	9.18	12.54
	Limits	40.300 - 51.500	47.200 - 61.400	-	23.75-28.25	44.57-51.25
Tigaie		**Refurbishment on pasture (n = 25)**				
	$\overline{X} \pm s_{\overline{X}}$	37.315 ± 0.228	42.115 ± 0.302	4.800 ± 0.074	16.450 ± 0.024	40.00 ± 0.70
	V%	10.25	7.89	12.33	12.33	12.05
	Limits	35.500 - 39.500	35.500 - 43.400	-	14.50 – 17.50	38.50- 41.00
		Refurbishment in stabulation (n = 25)				
	$\overline{X} \pm s_{\overline{X}}$	35.533 ± 0.431	41.833 ± 0.443	6.300 ± 0.074	17.840 ± 0.024	42.66 ± 0.70
	V%	9.39	7.89	11.51	12.41	11.07
	Limits	31.000 - 36.500	35.500 - 43.400		16.5 – 20.80	41.25 – 45.15
Turcana		**Refurbishment on pasture**				
	$\overline{X} \pm s_{\overline{X}}$	34.800 ± 0.143	38.150 ± 0.105	3.350 ± 0.022	14.706 ± 1.64	38.55 ± 0.084
	V%	9.19	10.92	10.15	10.15	11.65
	Limits	33.500 - 35.500	36.500 - 38.000	-	13.22 – 15.84	36.58 – 39.12
		Refurbishment in stabulation (n = 25)				
	$\overline{X} \pm s_{\overline{X}}$	33.008 ± 0.543	39.698 ± 0.247	4.592 ± 0.038	15.72 ± 0.161	39.60 ± 1.64
	V%	7.89	11.07	9.23	9.23	10.13
	Limits	30.500 - 34.500	37.600 - 43.600	-	14.20 – 16.00	37.55 – 40.95

Making the same evaluation and if Turcana race I found that, although the group had renewed pasture with a higher initial weight 5.17% carried version of the adult sheep in lairage have accumulated in the 65 days for a total increase of 27% higher. Also, these sheep have produced and with 1.014 kg heavier carcasses and slaughter had a yield 2.65% in May. Buncu reported differences between groups in the two variants are refurbished and are provided superior of statistical terms statistical thresholds of 1% and 5% (Table 12).

All these values confirms that although there are differences between races and between groups, average weights accumulated by the interval of 65 days creates the likelihood that the carcasses after slaughter to have superior qualities.

Conformation and carcass quality assessment was conducted in accordance with European legislation. Class after being judged by the size of carcass conformation and after profiles held on the train back, ribs and shoulder. Findings refurbishment effect was based on objective determination of fat at the level of the 3rd lumbar vertebra, cases are classified as Class 1 to 5 (table 13).

Table 12. Differences between groups and their significance

Technological version	Whole gain			Carcass weight			Yield efficacy at slaughter		
	Absolute (kg)	Relative (%)	s.d.	Absolute (kg)	Relative (%)	s.d.	Absolute (kg)	Relative (%)	s.d.
Merinos of Palas									
V1 – V2	1.37	19.51	**	1.04	1.92	*	1.65	3.42	**
Tigaie									
V1 – V2	1.50	23.80	**	1.39	7.79	**	2.66	6.23	**
Turcana									
V1 – V2	1.24	27.04	**	1.01	6.48	*	1.05	2.65	*

Notice: V1 – Refurbishment at pasture
V2 – Refurbishment in stabulation
*Significant at the 0.05 level
**Significant at the 0.01 level

For all batches, restoring biological recovery indoors better facilitates an adult sheep carcasses and therefore have a better conformation. Out of Palas Merino carcasses of 88.33% have met the requirements for U and R grades, 66.67% from Tigaie were placed in R and O and the Turcana 50% of cases were classified as class P. Conformation

Table 13. Carcasses ranking in accordance with EU criteria (%)

Category	Merinos of Palas (n=8)		Țigaie (n = 8)		Turcana (n = 8)	
	V1	V2	V1	V2	V1	V2
On conformation						
S (superior)		-	-	-	-	-
E (excellent)		-	-	-	-	-
U (very good)		50.00		-	-	
R (good)	66.66	33.33	50.00	16.67	-	16.77
O (moderate)	33.33	16.67	50.00	50.00	50.00	33.33
P (poor)	16.77	-	-	33.33	50.00	50.00
On fattening rank						
1 (low)		-		-	-	-
2 (light)	33.33	-	16.77	-	33.33	-
3 (moderate)	50.00	33.33	66.66	33.33	50.00	66.66
4 (fat)	16.77	16.67	33.33	50.00	16.67	33.33
5 (very fat)	-	50.00	-	16.67	-	16.67

Notice: V1 – Refurbishment at pasture
V2 – Refurbishment in stabulation

Evaluating the effect of fattening on restoring muscle mass and fat deposits confirms that once again allow for refurbishment of carcass indoors with better organoleptic and nutritional qualities due to deposition of fat between the muscle and packages between muscle fibers. Carcasses placed in classes 4 and 5 are highly sought Middle East markets, where Romania exports 70% of the annual production of sheep meat.

In terms of phenotypic differences between groups were evident, the Palas Merino ewes were heavier, well-conformed, was compact and cylindrical body features. This is extremely important for improving

production of meat as between weight and quality of carcass is a positive correlation with real growth trends that live weight at slaughter is a positive.

The specific consumption is an indicator for evaluating the work done in obtaining the animal production. In the case of research, evaluation specific consumption analysis shows different values between groups and between technological alternatives. In variant restoration of permanent stalls lowest specific fuel consumption was 5.83 and was done at UNC Merinos of Palas. In comparison with calculated values for the other two groups, made specifically for this race consumption was higher by about 15% of their consumption of sheep Tzigai and 21.53% compared to the group consisting of sheep Turcana (Table 14) . The presence of these differences can be made based on the influence of several factors, but primarily due to differences in the degree of precocity of their races and different skills for meat production.

Table 14. Assessment of feed conversion, across the adult sheep refurbishing

Genotype	intake/kg gain							
	Refurbishment at pasture				Refurbishment in stabulation			
	Brut (kg)	UNC	PBDIN (g)	PDIE (g)	Brut (kg)	UNC	PBDIN (g)	PDIE (g)
Merinos of Palas	7.15	6.97	675.6	605.5	6.81	5.83	660.6	478.8
Tigaie	9.02	7.95	827.3	615.3	8.22	6.83	797.3	480.3
Turcană	9.65	8.54	912.1	755.4	8.95	7.43	868.2	629.4

The specific consumption with higher values due to the fact that adult sheep were examined on the growth process has been completed, are the accumulation of body mass is obtained with larger amounts of food and higher specific fuel consumption per kg gain accrued .

1.5.1. CONCLUSIONS

1. Research shows that adult sheep after major refurbishment of technical indicators have been analyzed have higher values for both variants, but higher for all groups in the variant based on calves.
2. The fact that the most difficult cases (27.676 kg) were obtained from the Palas Merino breed shows that there are differences between races and different headacities to produce meat.
3. Between variants and between batches, the total gain absolute difference highest value was recorded in Merinos of Palas (7.02kg), and if the relative expression Turcana (27.04%).
4. The race version of reconditioning Tigaie the paddock sheep gained weight during the entire period an average of only 23.80% higher, the difference recorded as statistically significant threshold of 5%.
5. Return to the killing with higher values of Palas Merino breed (48.20%) and lower intermediate to Turcana Tzigai by 42.66% and 39.60%, highlights the differences between races is not only the bodyweight, but different qualities and headabilities of producing meat.
6. When assessing conformation carcasses after it was found that the best data is obtained when the refurbishment is reformed adult sheep to calves, except the race Tigaie made from carcasses which were assigned in equal proportion in classes A and A for those from Pasini reconditioned the sheep.
7. Evaluation of carcasses after the fattening degree distribution indicates a high positive and all of Palas Merino breed because 66.67% of total group had features specified in version 4 and 5 at the paddock of 66.77% for 3 and 4 to the version that was rebuilding made to the pasture.
8. In both versions share most of carcasses obtained from Tigaie and Turcana were included in Class 2, 3 and 4, cases with a thicker layer of fat allowed in class 5 classification was recorded only version Reconditioning held in calves.
9. The existence of differences in specific consumption analysis conducted by the groups confirmed differences between races, but has a higher value and because the adult sheep is about the process of growth and consumption per unit of finished product usually recorded higher values.

1.6. ROLE AND IMPORTANCE OF CROSSING IN SHEEP MEAT PRODUCTION

Animals breeding basis, regardless of species, breeding is the selection or choice and suitability of judicious mating, all conducted in conjunction with the growth of youth and ensuring optimal living

conditions. The main means of anticipating and preset their valuable traits of progeny are represented primarily by improving knowledge of the breeding value and fit within their judicious mating rates.

Currently, in most countries with developed agriculture, sheep farming is much diminished but that activity at existing herds are specialized for various productions. The problem of increasing economic efficiency in sheep is discussed and analyzed one more time to headitalize and sheep, four solutions should be resolved in order to increase the competitiveness of production derived from sheep, namely:

* - Increasing specialization by conducting races technologies to improve yields significant improvement in only one, or two but not many that are not complementary;

* - Performance enhancing genetic potential for breeding, increase of weight gain, increased productivity and superior headitalization levels of forage resources;

* - Reducing the area of sheep growth only in areas unsuitable for other species or those unsuitable for other uses;

* - Sheep development refers to development of technology intensive type of service, up to fully exclude uncontrolled grazing and raising massive productive and reproductive potential of the species.

Discussion and elucidate both the aspirations and the most effective ways to improve the sheep is very complex, but certainly should be considered part of their applied and developed for each type of operation for each direction and each pool productive growth closely related to their specific tradition.

In the short term, will focus on achieving improvement objectives of sheep production traits by identifying, training and strengthening of lines that have characteristics desired. Mainly these characteristics relate to achieving high yields in diverse conditions and a large number of animals so that they can be made a continuous supply of sheep meat market.

In the long run, the targets aimed at not only improving existing breeds but also the formation of new breeds that meet the changing requirements of market, national and global economy, knowing always that the export of breeding material was more profitable than export products derived from animals. This explains the fact that English or French races are the most popular and widely used in different paternal crosses industrial schemes to improve meat production in sheep.

Assessing the potential of local breeds results do not offer solutions for improving production of meat by growing pure-bred. With this conviction, and from the fact that many farmers want to raise sheep for meat production, the research team experimented with several variants of crosses between females charged local breeds and rams of other races regarded as the main indicators specific ameliorative meat production .

1.6.1. QUALITY OF THE CARCASSES ISSUED FROM F1 CROSSES BETWEEN ILE DE FRANCE RAMS AND INDIGENOUS SHEEP

The purpose of this research was to check the level and quality of meat production practiced obtained as a result of crosses between Ile de France rams of the breed of sheep belonging to the main races of Romania, respectively, Turcana and Tigaie. We have also had regard combinability verification of these breeds and to formulate future crossing schemes to improve performance depending on meat production, while reducing the total duration of fattening young cross.

Biological material under investigation was the young male and female sheep this year, local breeds and Turcana Tzigai, half-breeds and the first generation produced by crossing these breeds native to the Ile de France rams.

Weaning young sheep was performed at age 80 days, and in order to compare results and determine the effect on the ability breeder meat production in F1 individuals were organized experimental groups consisting of pure-bred and crossbred lambs.

Fattening technology of intensive type was applied with three phases (induction, growing and finishing) and a total duration of 85 days, ensuring the same conditions of service and type of food. To avoid calculation errors caused by gastrointestinal contents of individuals killed were not fed cu12 hours before slaughter. During fattening each batch consisted of 26 individuals including 13 females and 13 males, and at the end of each group were randomly chosen by 6 individuals (3 females and 3 males) who were killed.

Objective assessment of carcasses was done by determining the following elements: carcasses weight, slaughter yield, determine the physical structure of the carcass, carcasses classification CALS quality according to the methods applied in the European Union and the establishment of cut portions of the carcass

according to quality. After assessments in the carcasses were cut into parts, butchers, were then boned for determining the bone / meat set for the total carcass and cut for each region.

Data processing was performed using the procedure REML (Restricted Maximum likelihood - the restricted maximum likelihood) that is guaranteed to yield the parameters estimated in normal space.

Results were analyzed based on performance evaluation as a result of carrying out killings of control. The objectives considered were those concerning the development of weight you during fattening, carcass quality, yield at slaughter to determine and compare results.

The weight of all individuals was determined by weighing at the end of 85 days of intensive fattening. Data analysis included in Table 1 shows that the intensity of growth and fattening ability was different in the four groups formed. According to the results obtained before slaughter lambs group composed of individuals belonging to F1 had the highest weight. Thus, groups composed of individuals resulting from crosses rams Ile de France ewes bred Turcana Tzigai and had a higher body weight with 15.54% and 20.15% compared to the groups consist of individuals belonging to the two local races. From this point of view carried weight development during fattening, so lots cross confirmed their hybrid vigor and how fattening that this type of mating can be a way to increase the quantity of sheep meat. Weight differences between groups when determining the results of live weight before slaughter were significantly distinct for p> 0.01. The results are higher than specific values, however, many other crossbred groups, but closer to those determined by other research Pascal C obtained through the use of crossbred rams bred Texel breeds with the same mother.

Carcass weight is an important indicator in assessing the recovered animals for meat production. In general, this indicator is strongly influenced by a number of factors among which the most important are: sex, liveweight, the fattening condition, age, etc. applied fattening technology.

In the investigations it was found the most difficult cases resulting from living animals with the largest weight. Between groups differences were noted in the statistically significant threshold was p> 0.01, except the difference statistically non significant at p <0.05 between carcass weights recorded lots obtained from L1 and L2 (Table 15).

Table 15. Body weight at the end of fattening, carcass weight and slaughter yield

Notice	Statistics	Genotype			
		Tigaie (L 1)	IF x Ti (L 2)	Turcana (L 3)	IF x Tu (L 4)
Live weight (kg)	$\overline{X} \pm s_{\overline{X}}$	32.750 ± 0.378	38.780 ± 0.637	27.250 ± 0.925	34.130 ± 0.885
	s				
	minim	29.50	35.00	20.50	30.00
	maxim	34.00	42.00	26.00	38.00
Carcass weight (kg)	$\overline{X} \pm s_{\overline{X}}$	15.380 ± 0.271	19.203 ± 0.020	12.519 ± 0.461	15.110 ± 0.443
	s				
	minim	13.75	18.00	10.00	15.50
	maxim	16.25	21.80	13.00	19.55
Yield efficacy (%)	$\overline{X} \pm s_{\overline{X}}$	49.977 ± 0.803	55.527 ± 0.705	45.942 ± 1.647	52.274 ± 0.429
	s				
	minim	43.57	52.25	41.90	49.85
	maxim	51.25	58.15	48.15	53.50

Table 16 Statistical significance of the difference for slaughter weight and carcass weight (kg)

	Tukey Test	L1	L2	L3	L4	
Live weight	L 4	1.38**	4.48**	6.78**		Carcass weight
	L 3	5.50**	11.53**		2.59**	
	L 2	6.03**		6.68**	4.09**	
	L 1		3,82**	2,86**	0,27 n.s	

Live weight	Carcass weight
*Significant at the 0.05 level (w = 1.01)	*Significant at the 0.05 level (w = 0.976)
**Significant at the 0.01 level (w = 1.19)	**Significant at the 0.01 level (w = 1.960)
n.s: not significant	n.s: not significant

It was also found and that in terms of phenotypic differences between groups were evident in the sense that individuals were better conformed crossbred, and the layout was compact and cylindrical body, like meat

breeds. This is extremely important for improving production of meat as between weight and quality of carcass is a positive correlation with real growth trends along with advancing age. This finding is supported by some results published in literature which shows that while the correlation between weight and carcass quality phenotypic calculated at 120 days is r = + 52 at the age of 170 days, the degree of correlation increases to r = + 70 (Pascal C). These values show that the optimal timing of slaughter lambs fattened carcasses makes a lot of quality achieved.

Return to slaughter was determined based on the values obtained by specifying that the currently weighing on carcass and tallow was adherent. Highest average values were recorded for measurements performed on carcasses from the slaughter of fattening young sheep belonging crossed lots. Thus while the average L1 slaughter yield was 49.977% at L2 cross value of this indicator increased to 55.527%. The same sense of the average values obtained are reported and when we look up lots Turcana using local race. In this case the expression difference is over 6 percentage points for all the Cross group L3.

Structure carcasses. Analysis of carcass composition and structure are very important criteria commonly used in the work of improvement, because they involve both physical and tissue analysis of carcass composition and meat chemical composition (Taft V, 1979, Padeanu 2001, Pascal C, 2008). In terms of physical structure carcass macrostructure according to general commercial cutting, includes the following parts: neck and shoulder, chest and head sirloin, chops and Leg of mutton. The values of these components are dependent on many factors among which the most important are: race, age, sex and state of fattening. Tissue structure is the ratio of meat, fat and bone and meat quality of a direct value (Taft, V., 1983). The muscle masses to participate more carcass weight, or cut areas, the commercial value are higher.

Table 17. Physical structure of the carcass and cut parts proportion

Notice	U.M.	Tigaie	IF x Ti	Turcana	IF X Tu
		$\overline{X} \pm s_{\overline{x}}$	$\overline{X} \pm s_{\overline{x}}$	$\overline{X} \pm s_{\overline{x}}$	$\overline{X} \pm s_{\overline{x}}$
Meat in carcass	kg	11.108 ± 0.124	13.339 ± 0.252	7.223 ± 0.480	10.960 ± 0.435
Bones in carcass	kg.	3.147 ± 0.105	3.350 ± 0.105	1.970 ± 0.105	2.840 ± 0.081
Fat in carcass	kg.	1.125 ± 0.045	2.514 ± 0.084	2.326 ± 0.019	1.310 ± 0.017
Fatless carcass	kg.	14.255 ± 0.211	16.689 ± 0.034	10.193 ± 0.595	13.800 ± 0.394
Ratio bones / meat	-	1 : 3.52	1 : 4.29	1 : 3.715	1 : 3.85
Neck and shoulder	kg	4.270 ± 0.069	4.530 ± 0.088	2.665 ± 0.165	3.701 ± 0.086
-meat	kg	3.263 ± 0.041	3.622 ± 0.066	2.021 ± 0.133	2.890 ± 0.102
-bones	kg	1.007 ± 0.032	0.908 ± 0.29	0.644 ± 0.031	0.811 ± 0.021
ratio bones / meat	-	1 : 3.24	1 : 3.98	1 : 3.13	1 : 3.56
-participation in carcass	%	29.95	27.18	26.14	26.81
Head of chest and loin	kg	3.732 ± 0.054	4.433 ± 0.077	3.039 ± 0.188	3.558 ± 0.105
-meat	kg	3.010 ± 0.041	3.556 ± 0.059	2.444 ± 0.134	2.814 ± 0.089
-bones	kg	0.722 ± 0.025	0.877 ± 0.024	0.595 ± 0.025	0.744 ± 0.016
-ratio bones / meat	-	1 : 4.16	1 : 4.05	1 : 4.10	1 : 3.78
-participation in carcass	%	26.18	26.60	29.81	25.80
Chop		2.186 ± 0.049	2.645 ± 0.047	1.816 ± 0.095	2.675 ± 0.086
-meat		1.698 ± 0.037	2.131 ± 0.050	1.436 ± 0.059	2.200 ± 0.765
-bones		0.488 ± 0.029	0.514 ± 0.018	0.380 ± 0.005	0.475 ± 0.013
-ratio bones / meat	-	1 : 3.47	4.14	1 : 3.77	1 : 4.63
-participation in carcass	_	15.34	15.87	17.46	19.38
Leg of mutton	kg	4.067 ± 0.070	5.081 ± 0.118	2.673 ± 0.135	3.866 ± 0.129
-meat	kg	3.137 ± 0.069	4.030 ± 0.079	2.062 ± 0.176	3.056 ± 0.102
-bones	kg	0.930 ± 0.034	1.051 ± 0.037	0.611 ± 0.023	0.810± 0.028
-ratio bones / meat	-	1 : 3.37	1 : 3.83	1 : 3.37	1 : 3.77
-participation in carcass	%	28.53	30.35	26.22	28.01

Notice: IFxTI = Ile de France x Tigaie; IFx Tu = Ile de France x Turcana

As the physical structure and the tissue is dependent on the same factors, but according to some authors state makes fattening in tissue greater than race report (Calatoiu A., quoted Ionescu 1994). In young sheep fattening is found that subcutaneous fat deposits are often higher, while the adult sheep and the reconditioned ones very good state of repair, the most substantial deposits are arranged in the form of deposits, called fat deposition points.

The research was based on assessment of carcass quality assessment based on the weight of tissue that make up the physical case, namely the amount of muscle mass, the quantity of bone and adipose tissue, measurements were made both for and cover all the main parts cut.

Analysis performed on carcasses integrity highlights different values of the main tissues. Obviously the weight of muscle mass is higher in heavier carcasses as seen from those obtained from the slaughter of crossbred F1 resulting from crossing the Ile de France rams x Tigaie. If their muscle mass is 70.5% of carcass weight and the ratio of meat and bone is 1 to 4.29.

But the same analysis performed in group L 4 consisting of cross animals Ile de France x Turcana us that the average weight of the total muscle mass exceeding 70% of total carcass and the fact that the ratio of meat and bone is 1-3, 8 is a considerable improvement in the quality records carcasses crossed populations.

Statistical analysis confirmed the existence of differences with high p> 0.01 for the characters represented by carcass weight and muscle mass quantity in the whole carcass (Table 18).

Table 18. Statistical significance of the difference between carcass without adherent fat and meat proportion in carcass (kg)

Carcass weight without fat	Tukey Test	L1	L2	L3	L4	Meat weight in carcass
	L 4	0.45 n.s.	2.89**	3.60**		
	L 3	4.06**	6.49**		3.73**	
	L 2	2.43**		6.11**	2.37**	
	L 1		2.23**	3.88**	0.14 n.s	

Carcass weight without fat	Meat weight in carcass
*Significant at the 0.05 level (w = 1.060)	*Significant at the 0.05 level (w = 0.078)
**Significant at the 0.01 level (w = 1.860)	**Significant at the 0.01 level (w = 0.091)
n.s: not significant	n.s: not significant

Neck and shoulder regions analyzed as butchers cut from carcasses, highlights that in terms of percentage participation in total carcass weight of crossbred muscle mass and therefore the values are higher and meat and bone report has good values. Compared with groups consisting of lambs from both breeds crossbred maternal muscle mass in this region increased by over 11% in L2 and by about 30% at L 4.

Head chest and sirloin chops, butchers regions is higher, the meat can attend between 60% and 80% of the total (Taffeta, V., 1983, Pascxal C 1997). Analyzing participation in total carcass weight of the head and chest Meatloaf reveals that compared to lots maternal crossbred these regions have about 26%. In similar research Pascal C (1997) determined a 28% and 29% but the Taft V plots obtained from mating crossbred Texel breed with females of the same local population in Romania. The chops should be noted that while the tests carried out on crossbred lamb carcasses obtained by sacrificing the ratio of meat and bone has values of 1 to 4.14 to L2 and from 1 to 4.63 at L 4 in groups of maternal values obtained are lower. .

Leg of mutton from the point of view, is the region most highly valued of all butchers of sheep carcass. Share Participation The weight of this region in total carcass particularly affects the overall value and contributed to enhancing the quality of carcass in terms of trade. Related to this issue in France are considered inappropriate in cases in which the weight of the carcass weight posterior half (leg of mutton + thread) with up to 38%, ideally over 48% proportion (Oltofth, JC, 1991, quoted by Sandu Gh, 1993). Also, Frederiskhen JN, quoted by Pascal C, 2008, shows that the share of participation Leg of mutton Texel lambs in carcass weight often exceeds 36% for intensive fattening youth.

In other research conducted by Pascal C in 1997 and 2004 found that the share of participation in Leg of mutton total carcass weight was different for different batches belonging to a certain race or a certain group of crosses, and total carcass weight. Value, the share of participation in Leg of mutton total carcass weight, ranged from 31.65% to half-breeds of Texel x Merino breed Palas and 26.37% Turcana. Other studies by Taffeta V et al.(1979) show that young, local strain of male fattening, after cutting the carcasses from the slaughter of young bred Merinos of Palas leg of mutton weigh 4.85 kg, representing 78.55% of the meat, bones 21 45% report bone / meat 1: 3.66; in young race cut Tzigai same region which weighed 4.78 kg 77.82% 22.18% were muscle and bone mass, resulting in a report to the bone / meat 1: 3.5.

In the study conducted by removing the carcass, Leg of mutton was found that significant differences between groups for statistical thresholds are taken into account except the difference between L 4 and L1 groups was not significant. The same situation also applies to determinations made for total leg of mutton meat (Table 19).

Table 19. Statistical significance of the differences found between leg of mutton weight and its meat content (kg)

Leg of mutton weight	Tukey Test	L1	L2	L3	L4	Weight of meat from leg of mutton
	L 4	0.20 n.s.	1.21**	1.19**		
	L 3	1.39**	2.40**		0.38*	
	L 2	1.01**		0.99**	0.97**	
	L 1		0.84**	1.07**	0.08 n.s	

Leg of mutton weight
*Significant at the 0.05 level (w = 0.35
**Significant at the 0.01 level (w = 0.41)
n.s: not significant

Weight of meat in leg of mutton
*Significant at the 0.05 level (w = 0.34)
**Significant at the 0.01 level (w = 0.40)
n.s: not significant

Conformation and carcass quality assessment was conducted in accordance with European law: The evaluation took into account the degree of fattening and carcass conformation found. Compared with other data cited in the literature for other local populations Pivoda Ana C. (1999) demonstrates the results of the limited possibilities of the two races in Romania to produce high quality carcasses. In the two control groups comprised of local breeds have not been made specific requirements for conformation first three classes. At half-breeds produced by Tzigai most cases (50%) were classified as grade R conformation, and at the junctions obtained by using the race Turcana appreciated over 80% of cases have met the requirements specified for Class U, O and R .

Table 20. Carcasses ranking in accordance with EU criteria (%)

Category	Genotype			
	Tigaie	IF X TI	Turcana	IF x Tu
On conformation				
S	-	-	-	
E	-	16.67	-	-
U		33.33	-	16.67
R	50.00	50.00	33.33	33.33
O	33.33	-	50.00	33.33
P	16.67	-	16.77	16.67
On fattening degree				
1	-	-	-	-
2	-	33.33	-	16.67
3	50.00	33.33	16.67	33.33
4	33.33	16.67	66.66	33.33
5	16.67	16.67	16.67	16.67

After fattening degree distribution on the carcasses of five categories as is shown in Table 6. Regarding fat distribution on the external surface of the carcass was found that while local breeds tesutuul fat was thicker in the back and practically absent in the earlier, the crossbred carcasses obtained by sacrificing individuals to register a layer of fat and smoothing total coverage of the case with this tissue.

Fitting of carcasses into quality classes according to the standard applied in the European Union show that by using industrial crossings has been a considerable improvement in both skills and conformation char the meat and the degree of weight gain in sheep youth cross. Regarding the effect of hybridization on carcass quality are given similar results in other studies conducted in Europe (Borys B, Janicke B. (2001), Dawson L and associates (2002), MANN T.J.L. (1994), Hanekamp, W.J.A. (1994), Mireşan, E. (1989), Murat L. (1995).

1.6.2. CONCLUSIONS

1. Higher body weight carried by the two groups both cross vigor confirmed their hybrid and the fact that in both cases using Ile de France rams of the breed can be a practical and effective way to increase the quantity of mutton, which is proven by the weight higher carcasses obtained.

2. Slaughter yield considerably improved the conditions under which the lots crossed determinations confirm values are around 50% and in groups composed of native sheep breeds averages, this indicator is close to 42%.

3. The muscle mass that is over 70% of total carcass and the fact that the ratio of meat and bone has values close to 1-4 at half-breeds can say that there is a considerable improvement in the quality of carcasses.

4. Cutting carcasses in hybrids acknowledge that there is a growing share of regions with butcher-quality muscle mass, weight Leg of mutton increase by about 2% in both types of mating.

5. The analysis results confirmed that while the use of race in Ile de France sheep Tzigai mating induces an increase in leg of mutton meat by about 28% at half-breeds with muscle Turcana hold a higher average weight of 16.64% compared to values calculated for maternal race.

6. Improve the quality of carcasses obtained from crossbred Ile de France recommended to cross breed the two races industrial Romania when it comes to a rapid increase in quantity and include an outline of this breed in meat production when hybrids has and to improve the quality of meat production.

1.6.3. QUALITY OF THE CARCASSES ISSUED FROM F1 CROSSES BETWEEN TEXEL RAMS AND INDIGENOUS SHEEP

In the research conducted, the biological material was represented by F1 crossbred rams resulted from crosses with the Texel sheep breeds that belonged to her mother more prevalent in Romania, the Merinos of Palas, Tigaie and Turcana. The main objective of our investigation was to determine how and whether the father can influence the use of race to improve meat production in young fattening.

Research started in 2008 and after birth lambs were kept together with sheep mothers throughout the 65 days how long breastfeeding. After weaning, lambs were divided into groups and were subjected to a controlled process of intensive fattening.

Fattening technology applied has had a total duration of 85 days and included the following phases: adaptation (10 days), fattening itself (60 days) and finishing (15 days). During the fattening period all groups received identical conditions as regards accommodation, food and micro-climate.

Evolution of body weight was determined on the basis of weighing results due to carry out control. The data presented in table 21 can be seen that at the beginning of fattening lambs in weight groups formed was different.

Table 21. Body weight and feed conversion dynamics, throughout fattening

Genotype	n	Live weight(kg)				Average daily gain(g)		Feed conversion (UN)	
		initial		final					
		$\bar{x} \pm s_{\bar{x}}$	V%	$\bar{x} \pm s_{\bar{x}}$	V%	$\bar{x} \pm s_{\bar{x}}$	V%	UN	PBD
Merinos of Palas	15	16.15 ± 1.44	9.3	34.47 ± 2.70	7.8	214.9 ± 0.11	8.4	5.89	824.1
Tigaie	15	17.85 ± 2.14	8.6	33.00 ± 2.55	7.6	178.0 ± 0.08	7.9	6.05	864.5
Turcana	15	12.51 ± 1.51	12	26.78 ± 1.98	7.4	167.8 ± 0.06	11	7.42	1038
Texel x M. Palas	15	19.08 ± 1.08	5.6	43.25 ± 9.52	6.7	291.4 ± 0.07	8.9	5.37	751.3
Texel x Tigaie	15	21.93 ± 1.12	6.7	41.51 ± 1.89	4.1	230.0 ± 0.03	8.2	5.87	821.2
Texel x Turcana	15	17.85 ± 2.13	13	37.49 ± 2.47	6.6	231.1 ± 0.05	7.3	6.24	872.9

Initial live weight was higher in Texel x cross debut Tigaie which weighed 21.920 kg, 18.56% higher compared with the values determined for the group consisting of pure-bred lambs Tigaie. Finally, the difference between the same groups expressed relative value was increased to 20.50%.

Half-breeds trained Texel rams on a cross-bred Merino sheep of Palas had a higher weaning weight by 15.35% compared to the group consisting of the Palas Merino lambs. Between the end of fattening same plots the difference in body weight increased to 20.30%.

The same point was found in the case of sheep crossing Turcana Texel rams. At the beginning of fattening cross group had a higher body weight by about 30% at the end of fattening it keeps difference is around the same values. By analyzing all these data may indicate that the Texel breed has a breeder on improving growth rate in all groups consisting of crossbred lambs.

Also improved considerably in crossbred and accumulated average daily gain and specific energy consumption per unit of product.

Evaluation of quantitative and meat quality. After completion of the fattening up of each group were randomly selected and then slaughtered by six individuals. The data obtained were used to assess the quality and quantity of meat production in young sheep fattening.

Return to slaughter significantly improved in all groups of crossbred, once again confirming that the effect of breed Texel breeder in cross exercises with local sheep. The biggest difference was found between lambs that breeds half-breeds Turcana and Texel rams.

Table 22. Carcasses weight and slaughter yield

Genotype	n	Initial body weight (kg)		Carcass weight (kg)		Yield efficacy at slaughter (%)	
		$\bar{x} \pm s_{\bar{x}}$	V%	$\bar{x} \pm s_{\bar{x}}$	V%	$\bar{x} \pm s_{\bar{x}}$	V%
Merinos of Palas	8	34.420 ± 2.704	3.88	16.850 ± 0.283	5.71	48.934 ± 0.873	6.55
Tigaie	8	33.004 ± 2.555	3.85	16.040 ± 0.771	4.80	48.606 ± 0.873	3.92
Turcana	8	26.780 ± 1.980	8.60	10.444 ± 1.614	6.56	38.984 ± 1.347	8.41
Texel x M. Palas	8	43.850 ± 2.520	4.34	23.430 ± 1.205	5.14	53.430 ± 0.566	6.04
Texel x Tigaie	8	41.510 ± 1.825	8.22	21.370 ± 1.020	6.01	51.481 ± 0.705	6.34
Texel x Turcana	8	37.490 ± 2.470	8.61	18.170 ± 0.828	8.55	48.460 ± 0.788	8.54

The quality of the carcasses was determined from the analysis of parts cut from the carcass. The dissection was observed Palic methodology in our country, then cut the weight of each portion was analyzed for this indicator. Table 23 is cut into portions according to the situation of their quality. Data analysis indicates that the share of the carcass portions with the participation of high quality muscle mass or half-breeds seen in F1 resulting from crossing over Tigaie Texel (72.75%), then if the Palas Texel x Merino (71.12 %) and Texel x Turcana (70.72%).

Report established between bone and meat is good muscle mass in all cases. However groups up of individuals from hybrids this report is more than 1-4 for the lots produced by maternal use of Palas Merino breed and Tigaie.

Regarding the share of participation in mass carcass, butchers cut all regions and in their muscle mass, the quantity of fat, the ratio bone / meat, and among other attributes tracked in the research, there were differences significant (P> 5%) and very significant (P> 1%).

Loin muscle area. The cases analyzed, eye muscle area was determined at the level of ribs 5-6 and between the last and penultimate coast. No statistically significant differences between planimetric method, polish method and measured by using graduated scale.

Determinations made between ribs 5 and 6, the highest values were found to be half-breeds Texel x Tigaie (Table 24), the lowest values being recorded in the groups originating from Romania (from 6.07 cm2 respectively Turcan Tzigai 6.41 cm2).

The lot of lamb breeds skillet, eye muscle area determined at the level of the last and penultimate coast was 12.64 cm2, a value lower than that recorded in group cross Texel x Tigaie with 19.23%.

Table 23. Carcass structure, as influenced by the cut parts quality (kg)

Genotype	Meat		Bones		Fat		Ratio bones/meat
	$\bar{X} \pm s_{\bar{X}}$	V%	$\bar{X} \pm s_{\bar{X}}$	V%	$\bar{X} \pm s_{\bar{X}}$	V%	
Merinos of Palas	12.440 ± 0.131	7.08	3.220 ± 0.096	6.45	1.190 ± 0.116	5.47	1/3.86
Tigaie	11.710 ± 0.364	5.10	3.010 ± 0.295	9.79	1..320 ± 0.155	11.08	1/3.89
Turcana	6.930 ± 1.180	13.5	2.370 ± 0.310	14.9	1.140 ± 0.119	12.71	1/2.92
Texel x M. Palas	16.800 ± 0.234	5.12	3.900 ± 0.243	5.97	2.720 ± 0.211	7.62	1/4.30
Texel x Tigaie	15.170 ± 0.790	5.33	3.675 ± 0.295	8.40	2.523 ± 0.184	8.89	1/4.15

Texel x Turcana	12.350 ± 0.803	6.25	3.380 ± 0.075	6.04	2.440 ± 0.123	7.12	1/3.65

Table 24. Average value and variability for muscle loin (cm^2)

Loturile	n	Muscle lean surface			
		Between ribs 5 - 6		Last rib area	
		$\overline{X} \pm s_{\overline{X}}$	V %	$\overline{X} \pm s_{\overline{X}}$	V %
Merinos of Palas	14	8.040 ± 0.290	7.22	14.560 ± 0.599	8.23
Țigaie	14	6.410 ± 0.220	6.87	12.440 ± 0.398	6.41
Țurcană	14	6.070 ± 0.259	8.55	12.050 ± 0.550	9.13
Texel x M. Palas	14	8.120 ± 0.400	9.87	14.580 ± 0.596	9.52
Texel x Țigaie	14	8.660 ± 0.320	7.41	15.650 ± 0.609	8.04
Texel x Țurcană	14	7.870 ± 0.375	9.53	13.130 ± 0.639	9.89

Determination of **loin muscle area** is particularly important in the assessment of carcass muscle mass, knowing that between this trait and the total quantity of meat from the carcass to be set correlations are high and positive. This was confirmed by our research and the data presented above it has been observed that in quantitative terms, muscle masses were higher in half-breeds who had an eye muscle area larger. Between the ribs 5 and 6 and between the last and penultimate coast, eye muscle area determined on samples from lamb carcasses Turcana, was 6.07 cm2 and 12.05 cm2 respectively, both values were lower than those determined from the carcasses x Texel crossbred lambs slaughtered Turcana.

Muscle fiber fineness. In the investigations it was found that the diameter of muscle fibers determined on samples taken from longissimus dorsi muscle had different values depending on the breed and crossbred group (Table 25).

Table 25. Average value and variability of the muscular fibers diameter in the Longissimus dorsi samples (μ)

	Muscular fibers diameter	
Groups	$\overline{X} \pm s_{\overline{X}}$	V %
Merinos of Palas	32.850 ± 0.520	11.21
Țigaie	32.440 ± 0.657	14.33
Țurcană	33.650 ± 0.517	10.87
Texel x Merinos of Palas	31.140 ± 0.557	12.65
Texel x Țigaie	30.950 ± 0.441	10.95
Texel x Țurcană	31.550 ± 0.492	11.04

In the control groups determined values are as follows: The Palas Merino breed values determined were 32.85 μ, the Tigaie at 32.14 μ and 33.65 μ samples from carcasses of lambs bred Turcana. If tests carried out on samples taken from carcasses belonging crossed lots, it appears that in all cases there is a reduction in muscle fiber diameter compared with that measured in lambs in the control groups. The analysis results shows that the most significant reductions in muscle fiber diameter compared with the values determined for control groups were recorded in group Texel x Turcana cross.

1.6.3.1. CONCLUSIONS

1. Following the slaughter of individuals crossbred Texel x Tigaie, resulting carcasses of 19.8% heavier than those obtained from the skillet clean race.
2. In case if you compare the difference Turcana race recorded and expressed in absolute values, carcass weight (9.680 kg), notes that this represents approximately 65.7% of carcass weight x Texel crossbred lambs Turcana.
3. Texel x Tzigai half-breeds were slaughtered yield 5.15% higher than those determined in sample of pure-bred lambs Tzigai.
4. Analyzing the average values of tissue structure shows that higher proportions of muscle mass and hence a report bones / meat with higher values were recorded at half-breeds Texel x Turcana

5. If the assessments made in order to establish eye muscle area, the highest values determined between ribs 5 and 6 were recorded at half-breeds Texel x skillet over the eye muscle was 8.66 cm2, the lowest was 6 , 07 cm2 and 6.41 cm2 and control groups belonged to the Tigaie, that Turcana.
6. The lowest values were recorded from samples of crossbred lamb carcasses obtained by using the industrial crossbreeding indigenous breeds of sheep and rams of the Texel breed. Thus, the batch of crossbred Texel x Tzigai muscle fiber diameter was 30.95 μ in the Palas Texel x Merino and 31.55 to 31.14 μ Texel x Turcana half-breeds.

1.7. INFLUENCE OF REPRODUCTIVE ACTIVITY ON THE IMPROVEMENT OF SHEEP PRODUCTIVE PERFORMANCES

Biological and economic efficiency on which sheep, particularly for meat production, mainly depends on how work is coordinated and carried out in individual breeding populations of sheep. From this breeding grounds must intensivised function, but thought, and applied according to the specificities of each population, since the success of this activity is directly influenced by the amount of breeding characters [7].Among the ways and practical solutions that do not involve the allocation of greater financial and material resources, which can be intensivised reproduction in sheep include: induction of puberty for use in breeding of ewes from the first autumn and natural to use the influence of heat induction and synchronization in sheep adult.

In order to determine how and meaning of the factors mentioned above can be used to intensivsation local sheep reproductive function, were triggered research that included sheep breeds and growing populations in the north – east country.

MATERIAL AND METHOD

Biological material has been subject of research was the female youth and adult sheep breeds have belonged to Palas Merino, Karakul of Botosani and Turcana - white variety.

Research has aimed to identify practical means and economic opportunities that may be a function intensivisation breeding, focusing on two major ways namely:

- Induction of puberty and ewes use for breeding from the first autumn;
- The role and influence of natural factors, represented mainly by the duration of light, triggering ovulatory heats in sheep.

In order to artificially induce puberty, with all lots of research, have been secured, the optimal parameters, both maintenance and microclimate conditions and nutritional requirements necessary to ensure further development of the body, the first part of life, not affected. Also, to induce artificial puberty, about 40 days before mating, the female youth been clipped and the sheep breeding rams were introduced.

To increase data precision fence, and results on the influence of natural factors in the onset of heat from adult sheep, or research conducted in the same calendar periods in two consecutive years. Working methods were most suitable for this kind of determination and to establish the value of each parameter was used proper technique.

Data were collected centrally and processed statistically, and to determine differences and their significance been applied Fisher and Tukey test.

ACHIEVED RESULTS

Regarding the influence and role of natural factors in triggering the ovulatory heats in sheep is known that in tropical and subtropical areas, where vegetation is abundant, estrus (heat) can occur in sheep and goats throughout the year. Not the same thing happens in temperate regions, as is the case in our country, where breeding activity is divided into two seasons dependent mainly during the day light. A first season considered is mainly the autumn, when light decreases until reaching a 1:1 ratio between light and darkness, and placed second season in the spring when the light grows in time to reach the same report .

Seasonality reproduction is a feature of inherited forms of wild species, so are of genetic origin, demonstrating the lack of completion of the domestication process in a useful direction for increasing [4]. In current conditions, global, place an emphasis on identifying opportunities to expand the breeding season in sheep and goats for a longer period over a year.

Cycle germinating, the sexual cycles during gestation in sheep would allow the organization of two births per year, provided by practicing lactation anestrus eliminate artificial growth of lambs. But in this species, usually after giving birth to install a long anestrus, lack of heat, which is attributed to maternal factors (anestrus lactation) and climatic factors (anestrus seasonal). Role of both groups is one major factor that depends on bio-economic efficiency of sheep, but their use in the desired direction and the intensity increasing, is a difficult practice in many periods of time because their effects may overlap.

Artificial induction of puberty and heat in young sheep. Regarding the optimal age and weight for the first time use of young sheep breeding, there is great variation between and inter races. Thus, the age, from research and Haresing Dyrmundson complex, quoted by C. Pascal [6] specifies a range for most races 6-8 months but may be delayed up to 18 months, but also mentions cases in which some lamb, from calving late, can still conceive of the first autumn, ie at the age of 4-6 months. In their works and Haresings Dyrmundson, cited by Sandu Gh [8] indicates that reproduction can be carried out without further negative repercussions when the young, strong body development of at least 60-70% of the adult specific to sheep Merino and 50-60% and most prolific breeds of British meat. Other research shows that females from twin births tend to reach puberty at an older age and lower body weight [7].

Determination of body ewes development of research subject groups was based on analysis of body weight recorded at the time when mating and calving (Table 26).On mating, when all batches studied, average body weight exceeded 70% of the adult sheep specific thus fulfilling one of the requirements for early use in reproduction of female youth.

As regards weight and mating were differences between all groups, but they were significant at p> 0.01 between group represented only Palas Merino and Karakul of Botosani and age differences recorded for the breeding and calving were not significant between all groups p> 0.01. The presence of these differences which have a certain degree of statistical significance thresholds considered shows that, in terms of weight at mating, there are differences both intra-and inter-breed races. In view of observations on the influence of pregnancy on the rate of development of young sheep pregnant body or weight measurements performed at birth. Based on the results obtained, we found that the overall average increases, changes in body weight is not affected youth. The greatest increase in body mass was found to be constituted by the youth group of Palas Merino breed belonging to the mass of living has evolved from 41.965 ± 0.931 kg on 49.305 ± 0.474 kg placed on calving date. Evolution of body weight on mating-parturition interval, and if others found in two groups demonstrates that, from this point of view, there should be no reluctance to use the mating ewes since their first year of life.

Table 26. Age and weight of youth females during mating and at birth

Group	Flock (head)		Statistics	Body weight (kg)		Age of ewes (days)	
	For mating	Mated		During mating	At birth	During mating	La birth
Merinos of Palas	45	14	$\overline{X} \pm s_{\overline{X}}$ s V% minim maxim h^2	41.965 ± 0.931 2.6547 7.3104 37 49 0.259 ± 0.033	49.305 ± 0.474 2.321 5.544 45 55	278.855 ± 1.91 11.844 9.652 268 312	427.085 ± 9.456 34. 256 13.514 411 465
Karakul of Botoşani	44	9	$\overline{X} \pm s_{\overline{X}}$ s V% minim maxim h^2	35.398 ± 0.425 3.455 6.322 32 45 0.244 ± 0.125	42.051± 0.333 3.455 5.154 37 51	298.440 ± 1.333 11.878 11.545 275 325	439.530 ± 3.119 25.131 7.331 410 466
White Ţurcana	45	11	$\overline{X} \pm s_{\overline{X}}$ s V% minim maxim h^2	37.644 ± 0.763 2.441 5.358 33 48 0.251 ± 0.531	44.021 ± 0.322 2.541 4.522 38 54	283.541 ± 3.714 14.854 12.874 278 311	434. 207 ± 9.533 45.855 6.787 430 461

Study difficulties they had on female mating, breeding and the results obtained after intra-argues that race is a major subject, namely: body weight, which apparently has a much greater influence than age in installation of sexual maturity.

Analyzing ewes share, which showed oestrus and were assembled from the first autumn, we find different values depending on race. Thus, the Palas Merino breed, the total number of young sheep that has constituted the research group, showed oestrus and were mounted a total of 15 females, representing 31.11%. Performing the same analysis to the two other groups find that females who experienced heat proportion were mounted since their first autumn is 20.45% Karakul of Botosani breed and 24.44% respectively from a variety of white racial belonging ewes Turcana(Figure 1).

Based on data obtained in May found that to use in breeding age is different according to race. Thus, while young female breeds of Palas Merino stud was on the lowest average age (278.855 ± 1.91 days), the group consisting of Karakul of Botosani female age at first breeding had the highest average value (298.440 ± 1.333 days) and ewes Turcana breeds had intermediate value of 283.541 ± 3.714 days. Reported differences between races demonstrates that differences exist between precocity. Because research data collected on the range allowed to determine the age of first estrus statistics could not determine, for those populations, the heritability coefficients. With all that in the case of Palas Merino breed belonging ewes determined the highest value for h2 (0.259 ± 0.033) can say that age is a determining genetic matings first small, and this situation is very clear that the major role in the expression of precocity external factors you have sex.

Also, differences between races were seen in terms of total duration of the pregnancy. This was the lowest during the youth breeds Karakul of Botosani, which was total gestation of about 141 days, being reduced by approximately 7 days compared to the group of Palas Merino represented the youth and 9 days than the total duration The average gestation white variety found in females belonging to the race Turcana.

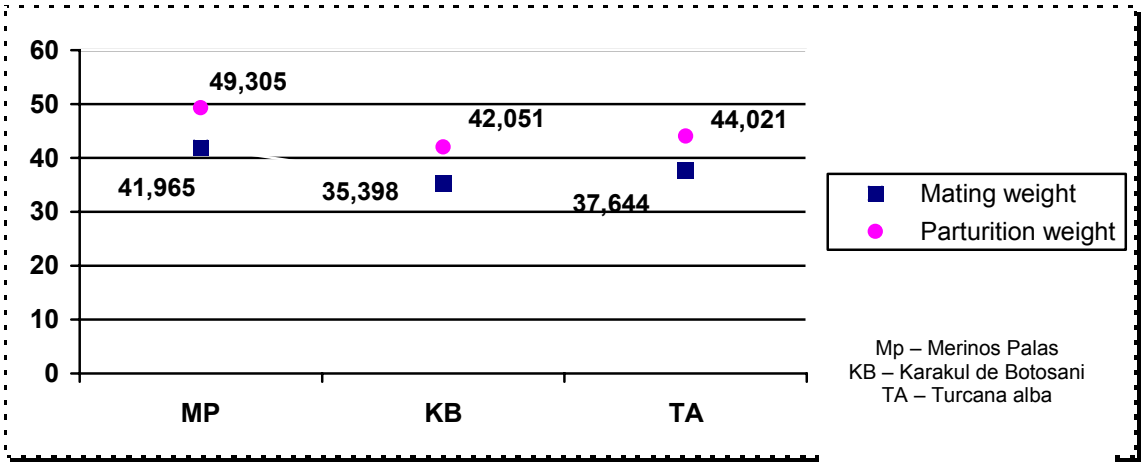


Fig. 1. Evolution of body weight during pregnancy in groups analyzed (kg)

How traditional age for obtaining a first product is 550-730 days, reducing it by 20-30% when increasing concerns in justifying the effort to induce puberty, even with only a small number of females can be used effectively Breeding since their first year of life with remarkable economic consequences but also due to the beneficial influences accelerate improvement by increasing the number of products in each batch of breeding female component and shortening the interval between generations.

Photoperiodicity influence the function of sheep breeding. In this species, as is and goat breeding is determined by the interaction of genotype / environment (day length response-that is represented mainly by light during daytime, plus the influence of other factors such as diet, temperature, humidity , social factors etc..

Information photoperiod (light or dark) is received by the sheep in the eye through the retina and is transmitted by nerve to the pineal gland (epiphysis) which secrete the hormone melatonin. By the hypothalamus and pituitary, the duration of melatonin secretion and thus the amount secreted in relation to the actual duration of night sex hormones influence the production of FSH and LH [1, 2,3]. Based on the findings and scientific arguments, the experimental protocol for induction of heat during the season included the following steps:

- Simulating long days, in this case was considered the long day with more than 12 hours of light, corresponding to late spring-summer months;

- Simulation of short days, in which case it was considered short-day period in which sheep were kept in light for more than 12 hours a day for the month of winter - early spring.

From this point of view, in order to establish differences between races were subjected to the same rhythm of Photoperiodicity and the study was placed in each of those two years, from June 10 to July 20, ie when the ratio between light and dark is very close to or greater than 1 / 1, and the possibilities that the races of late, and semiprecoceous and semibelated manifest sexual cycles are minimal.

At the beginning of a period of 14 days the sheep were kept on pasture throughout the day, in which case the world during a single day total was almost 16 hours, then gradually reduced the duration of light was such that after another 8 days all groups of sheep were kept at full light only 11 hours and 30 minutes. Further, while the other 18 days remaining groups were subjected to the same daily light schedule of 11 hours and 30 minutes and finally, lots of breeding rams were introduced.

Further, research has focused on continuous observations of lots of sheep already noting the first manifestation of sexual cycles in some of them. The first seven days interval showed oestrus females in group 19 consisting of the Palas Merino breed sheep, which represented 54.28% of the initial nucleus. And the other two groups can be considered good results given that, the group consisting of adult females bred Karakul of Botosani, the overall percentage of ewes mounted after the first cycle was 37.14% and the Turcana was 45, 71% (Table 26).

Higher values obtained for the Palas Merino sheep may be due to higher degree of precocity that characterize this breed. Also, this race fecundity in the two years was higher than two other local races. Thus, while in 2005 the total number of sheep that showed heat, were installed and became pregnant a fecundity of 19 females representing 94.73% in the second year the same index value was 94 breeding , 44%. In both cases, specific fertility values determined when overtaken breeding season can be considered as normal conditions in which various authors [7, 8] gives, for the same race, similar data.

Table 27. Ewes heats onset

Breed	Total ewes (n)	2008				2009			
		Total ewes mated in 1st cycle		Fecundity		Total ewes mated in 1st cycle		Fecundity	
		n	%	head	%	n	%	n	%
Merinos Palas	65	19	54.28	18	94.73	18	51.42	17	94.44
Karakul of Botoşani	65	13	37.14	11	84.61	14	40.00	10	71.42
White Ţurcana	65	16	45.71	13	81.25	15	42.85	13	86.66

The group consists of Karakul sheep bred Botosani, in 2005, after completing the program of light required, heat was found that they were mounted show 37.14% of the total and in 2006 their share rose to 40%. In comparison with these data we found that the percentage of fertility was a reverse trend in that state cup in 2005 was higher value compared to that determined in the following year.

The group consists of adult sheep breeds Turcana was found in 2005 that showed oestrus and were fitted 45.71% of the total, the remaining 81.25% pregnant and gave birth. The following year, while the proportion of sheep that have indicated below influence of photoperiodicity heat was reduced to 42.85% fecundity rate increased to 86.66%.

All data obtained confirm that breeding sheep is directly subject to the influence of natural factors, and from this point of view, to record the performance improvement process and biological and economic efficiency should be paid attention to all opportunities that may serve to intensivisation reproductive activity of our native breeds.

In our country were carried out research that focused on progressive maintenance of sheep stalls in a cool, especially the organization and maintenance of grazing sheep in the night during the hot summer days on the shady places. The results showed that after applying this methodology came in heat, between July 25 to August 30, a share of 35.10% [4].

Of course, the response to these treatments is variable depending on race. For these reasons, researches have focused more races have been subjected to the same light regime and, based on the results, we concluded that seasonal estrus is related inversely with duration of daily brightness. This process is due to

physiological activity of thyroid function which is subject to the influence of high temperatures and high brightness as a direct consequence of reduced secretion of thyroxine [1]. But for fall, with the changes in temperature and light intensity on climate, these physiological processes is recovering, and in this case, the majority of sheep breeds, sex is placed early in the season, naturally decrease during the day, from July to September-October. Optimal light regime, which favors increasing the content of pituitary gonadotrophic hormones, and thus activate the process of ovulation and estrus, determined eel is considered a light-day length of 12 hours [4].

1.7.1. CONCLUSIONS

1. In circumstances where it was found that showed heat since their first year of life a percentage between 20 and 31% of ewes components of the three groups, without affecting the subsequent body development, is justified in terms of bio-economic artificial induction of puberty in young sheep and heat.
2. Although at the time of mating, weight differences between groups were statistically significant we found that the evolution of body weight during pregnancy in young females was not affected which demonstrates that from this point of view, should not. There is no reluctance to use the mating ewes since their first year of life.
3. Provided the value of the heritability coefficient determined for usage in breeding age (h2 (0.259 ± 0.033) is reduced can be said that the age of first matings has a small genetic determination, and this situation is very clear that the major role in the expression of precocity external factors you have sex.
4. With the traditional age for obtaining a first product is 550-730 days, reducing it by 20-30% with increasing concerns in justifying the effort to induce puberty and has remarkable economic consequences and beneficial influence due to accelerate improvement produced by increasing the number of each batch of breeding female component and shortening the interval between generations.
5. Research conducted under the same conditions show that local populations are characterized by a lower degree of precocity in the two years showed similar values of Palas Merino breed in terms of season fecundity (84.61% and 71.42% at Turcana 81.25 and 86.66% respectively at the Karakul) justifying inexpensive heat induction in ovulatory season.
6. Based on the results we conclude that the reduction for 20 days during the day light to create conditions that favor increased levels of pituitary gonadotrophic hormones, and thus activate the process of ovulation and estrus implicitly.
7. High variability between races on the duration and location during a calendar year, length of breeding season confirms that breeding season is a hereditary character under control.

II. ASSESSMENT OF THE GENETIC PARAMETERS WITH IMPLICATIONS IN THE MEAT PRODUCTION

Associated activities:

The determination and estimation of the principal genetic parameters (heritability, correlations, repeatability)
Statistic calculations and results interpretation
The issuance of recommendations related to the improvement of the meet production at the sheep from the North-East part of the country

5.1. THE HETEROSIS AND ITS ROLE IN ANIMAL PRODUCTIONS INCREASING

Superior results that are obtained by crosses are mainly based on the favorable effects of genes that dominate the adverse effects, because the phenomenon of dominance between two heterozygous alleles suppress or inhibit the expression of recessive allele. Heterosis effect in this regard is an exalted expression of traits in heterozygous genotypes in the first generation, after which they return to future generations to events typical Mendelian genetic determinism.

In sheep, the use of crosses between different races is common practice in all corners of the world since ancient times and continues today. Industrial crossings are commonly practiced today for the improvement of all production of this species-specific but most are used to increase the quantity and quality of meat production. Aside from Britain and France are widely applied in countries like South Africa, Argentina, USA, Australia, New Zealand, Canada, Russian Federation and others. Many crossings are currently practiced achieve the main goal of heterosis, hybrid vigor based on crossbred products, knowing that genetic modification of the population crossing the restructuring of parental genotypes in the offspring, so that the largest share of their heterozygous genotypes are represented.

Improving cross lies in the phenotypic effects resulting from the application of mating between individuals, populations or lines, differentiated in relation to genotype. Thus, the main consequence of mating unrelated conditions is the increased frequency or extent of heterozygotes in descending generation, while decreasing the degree of homozygous, therefore the opposite mating system related. Similarly, if produced by homozygous inbreeding depression determines the phenotypic effects of inbreeding, heterozygous phenotype causes an effect opposite effect of heterosis (NEGRUTIU E et al. 1975).

When a character is controlled by additive genes, productive performance descendants who will come will be placed between the intermediate and maximum thresholds made by parents.

$$P_{AB} = \frac{(P_A + P_B)}{2}$$

In F2 hybrids created by random mating of F1 hybrids between them, in the absence epistasys will show half of the observed effect of heterosis in F1. In this situation it is expected that overall, F2 hybrids are inferior to those of F1 and return to the original media can be seen as a depression created by the increase inbreeding as individuals in F1 matings actually lead to increasing the progeny of homozygousthem. For all types of crosses in the animal world may complicate the presence of maternal factor appeared degree of heterosis observed in F1 and F2. In sheep for meat production heterosis effect occurs around its average value is externalized.

Worldwide research on the phenomenon of heterosis have been and are currently very intense, the themes are extremely varied and includes all production derived from this species. In Europe, presently, there is intense concern in the United Kingdom, France, Spain and the Scandinavian countries. In our country research conducted to identify the effect of heterosis in sheep were more intense during the decade of the century six seven. XX and focused particularly wool production both quantitatively and qualitatively.

Regardless of the purpose and production proceeded for heterosis-related assessments to be at their fair value, it is absolutely necessary to establish a point of origin or deemed to be reference values and to allow comparison with the value of hybrid progeny of the same character .

Given these considerations, many authors have attempted to establish a benchmark for comparison of heterosis. Thus, in 1961 Schnell, appreciating the fact that heterosis itself is a heterogeneous effect of crossings, proposed for use as a benchmark or standard trait mean that theoretically would have a value of homozygous diploid gametes the parents in the state, under conditions uniform environment. This standard is nothing less than the average of homozygous genitors. In animals using this standard is more difficult and less used because parents can not discuss or populations homozygous for any of the characters of interest in livestock.

Additivity. Many authors attribute a major role in the manifestation of heterosis effect, but it is scientifically proven that this occurs and contributes to this effect only if the dominant alleles with different actions accumulate their effect on a character. This is called heteromery and will be even greater since the hybrid will have more favorable dominant alleles but under different loci.

In order to avoid confusion with the phenomenon of transgressive causing all the additives and to clarify or specify the concept of heterosis, it must be said that while the positive additive transgressive phenotypic superiority refers to only certain genotypes, and is offset by the value of transgressive genotypes negative in the offspring generation, heterosis is manifested in the vast majority of hybrid progeny is offset value.

If heterosis, the descendants of excess positive or negative media openness to parental forms. Regarding the meaning and value of heterosis should be noted that a lot of data and observations are converging towards a unanimous conclusion that the effect of heterosis should be considered present when the average hybrid offspring than the average parent in a negative or positive depending on the meaning of the expression of heterosis (H> (P1 + P2) / 2 or H <(P1 + P2) / 2). When the descendants of hybrids exceed the performance achieved by the parental forms, but not those made by the population from which they come, the phenomenon is called cisheterozis, and if they are exceeded, the phenomenon is called transheterozis.

The growth and exploitation of animals is just a desire of the keeper, but a positive deviation below the average even the best parent heterosis is increasing, but not all scenarios of economic production, preference is most often if possible extension of the operation the best parent.

5.2. TRAITS AFFECTED BY HETEROSIS

As a result of allele heterozygous state, the phenomenon of heterosis is the opposite of inbreeding depression, as well as having it in the population and the effects of certain features more or less obvious. Also, it appears that traits affected by inbreeding manifested significantly more pronounced effect of heterosis.

Characters with strong hereditary transmission and heritability coefficient of which has higher values are less affected by heterosis. From this point of view is widely accepted that heritability is a valuable indicator that can be used when trying to predict heterosis value, except to reflect the actual properties of the population. Therefore it is desirable to establish in advance the direction of improvement of animal populations, to know first of all real properties that will work with populations and to determine variations for each character and sources sought.

Phenotypic effects of heterosis in general depend on the nature of character, its own population genetic structure, line or group of animals involved in the crosses. From this point of view, maximum differences between the frequencies of genes involved in combining the genetic make greater phenotypic effects of heterosis. Crosses of inbred lines populations of the same or different from each other causes the strongest effect of heterosis in progeny.

Although industrial crossbreeding in sheep is common practice in breeding sheep in the literature there is little published evidence to show the extent to which the half-breeds show effects produced heterosis for specific traits and characters of sheep meat production.

Elucidating on experimental basis the frequency and intensity of the phenomenon involves the application of a comprehensive and precise experimental techniques that will take into account all the defining elements.

According to existing data currently in the literature are found more frequently and more intensely manifested heterosis effect, particularly fertility traits expressing animals (fecundity and prolificacy), body

weight, increase growth, production quantity of milk, wool quantitative traits, viability and vitality, because their variability is largely determined not additive cases.

5.3. HERITABILITY OF THE MAIN QUANTITATIVE TRAITS

Particularly important role in the value of the coefficient of heritability is the additive genetic variance and that neaditivă can be determined using this indicator, because its value is actually the key element which can be estimated as the total variance of traits in a animal population is undergoing a process of improvement is due to genetically determined and how environmental biases. In accordance with the above, the research conducted in 1997 and a large number of individuals, an estimated value of the coefficient of heritability for several quantitative characters specific growth and fattening young sheep.

Heritability for body weight. In general and especially sheep meat breeds, birth weight and weaning heritability is very low (Table 28). All of these values reveals that additive genetic factors exert a great influence on externalizing the character, less pointed in this regard in the analysis of body weights determined for the period of lactation. This implies that for meat production, sheep selection is necessary for mothers and quantitative milk production, higher body weights printing such offspring to weaning.

Table 28. Estimated heritability coefficient for the body weight recorded at certain ages of sheep youth

Trait	h^2	Values assessed by other authors	
		h^2	Authors and year:
Body weight at birth	**0.25**	0.19 - 0.35	YOUNG. 1963
Body weight at 30 days	0.17	0.20	GJEDREN. 1967
Body weight at 65 days	0.15	0.20	PURSER. 1966
Body weight at 75 days	**0.28**	0.27	GJEDREN. 1967
Body weight at 135 days	0.27	0.25- 0.50	BROADBENT. 1967
Body weight at 150 days	**0.36**	0.22 - 0.40	WATSON. 1967

Heritability for yield at slaughter and carcass characteristics of the tissue. Determinations concerning the heritability coefficients for the tissue characteristics of carcasses, the estimated values of different authors are generally low, ranging between 0.21 for the amount of fat in the carcass and 0.28 for the total weight of the chassis. For the quantity of meat from the carcass C. Pascal (Table 6) estimated an average heritability coefficient of 0.37 which indicates that this character was strongly influenced by additive genetic variance compared with the other characters examined.

Table 29. Estimated heritability coefficient for slaughter yield and certain carcasses traits

Trait	h^2	Values assessed by other authors	
		h^2	Authors and year:
Yield efficacy	**0.34**	0. 35	WANG et al. 1989
Carcass weight	**0.28**	0.31	WANG et al. 1989
Bones in carcass	0.23	-	-
Fat in carcass	0.21	0.28	WANG et al. 1989
Meat in carcass	**0.37**	0.33	WANG et al. 1989
Ratio bones / meat in carcass	0.22	-	-

Values determined for the other characters are between h^2 = 0.21 for the amount of carcass fat and muscle masses h^2 = 0.37 for the carcass. For carcass weight (h^2 = 0.28) and the ratio bone / meat from the carcass (h^2 = 0.22), estimated values are intermediate.

Heritability of characters on which the physical structure of the carcass. Values estimated by the heritability coefficients present specific characteristics that determine the physical structure of the carcasses, indicating a relatively low influence of additive genetic variance. This is confirmed by the results obtained in these investigations, and the heritability coefficient values determined for some characters to which the tissue structure of the carcass are shown in Table 7.

For regions butcher cut the carcass, the physical structure and report their bones / meat, the heritability coefficient values are presented in Table 9. The data presented should be noted that all the characters analyzed, the heritability coefficient values are generally low, ranging between 0.17 and 0.38.

Heritability for size of the carcasses. Carcass quality depends very much on its size.

The practical way for sheep meat production is to achieve some cases but not too long range and globular, with perimeter carcass and Leg of mutton bigger values. All the aforementioned characteristics induce a part of the carcass compactness, and a conformation and a special appearance.

Table 30. Estimated heritability coefficient for carcasses physical composition traits

Trait	h^2	Values assessed by other authors	
		h^2	Author and year
Neck and shoulder	0.38	-	-
Meat form neck and shoulder	0.29	-	-
Bones at neck and shoulder	0.25	-	-
Ratio bones / meat at neck and shoulder	0.25	-	-
Head of chest and loin	0.24	-	-
Meat la head of chest and loin	0.19	-	-
Bones la head of chest and loin	0.22	-	-
Ratio bones / meat la head of chest and loin	0.23	-	-
Chop	0.21	-	-
Meat in chop	0.19	-	-
Bones in chop	0.17	-	-
Ratio bones / meat in Chop	0.25	-	-
Leg of mutton	0.25	0.22 - 0.54	WASMMOUTH. 1972
Meat in leg of mutton	0.28	0.25	WASMMOUTH. 1972
Bones in leg of mutton	0.24	0.25 - 0.33	WASMMOUTH. 1972
Ratio bones / meat in leg of mutton	0.21	-	-

Table 31. Estimated heritability coefficient for certain carcasses traits

Trait	Valoarea determinată pentru h^2
Great length of carcass	**0.36**
Small length of carcass	0.24
Great length of leg of mutton	**0.42**
Large perimeter of leg of mutton	**0.41**
Small perimeter of leg of mutton	0.24
Width of carcass at leg of mutton	0.33
Width of carcass at thorax	0.31
Depth of carcass at thorax	0.34
Depth of carcass at pelvic bones	0.20

Particularly important is the fact that the estimated values for the coefficients of size-specific heritability analysis, it highlights a good homogeneity of the values of h2 for these characters, where you can draw the conclusion that their expression is manifested similar additive genetic influences.

5.4. PHENOTYPIC CORRELATIONS BETWEEN DIFFERENT GROUPS OF TRAITS, SPECIFIC TO BODY GROWTH AND DEVELOPMENT PERIOD IN YOUTH SHEEP

At the level of an individual's body was found that many of his characters are developed in conjunction with one another. When changing the value of a character entails changing the value of another character, the same body, says that these two characters covariate (Vintilă, I., 1988). The direction and amount, the concomitant changes occur two correlative characters can be measured by the coefficient of correlation and regression. Correlations between different characters may be of genotypic (rG) or caused by environmental (rE), but together give phenotypic correlations (r).

The value of correlation and regression coefficients suggests both the intensity of correlative relationship between two characters and the sense and as one of the characters change when the other increases or decreases by one. Value, correlation coefficients range from 0-1 and from 0 to -1 and are indicative of the degree of correlation between two characters. When the correlation coefficient value will stay very close to 1 means that the two characters are considered a very strong positive correlation is also called

functional correlation. When the correlation coefficient has values from 0 to -1, then the two characters is a negative correlation.

The correlation coefficient can be defined as the ratio between the amount of common variation of two characters x and y (covariance) and the geometric mean of the two variances. Correlation and variance is examining ways to structure the variance of the two characters relate to each other.

In the situation where two characters are great economic interest in their evolution determined by the same group of genes, so they are in close genetic correlation, then selection for both characters is absoluteely useful, but only one, because one positive change in entails the desired modification of the other character. Data will reflect the existence of positive correlations between the different groups and intense characters and qualities. However, there were situations in which between different pairs of traits and negative correlations are established.

In Table 31 are the values that determine the correlation coefficients between body weight at birth and determined at different ages and between birth weight and average daily weight gain.

Table 31. Phenotypic correlation coefficients between weight at birth and body weight at certain ages

Traits :	**Correlations value**	
Body weight at birth	r_{xy}	$\pm s_r$
Body weight at 30 days	0.6223	0.0849
Body weight at 65 days	0.5714	0.0890
Body weight at 75 days	0.5248	0.0923
Body weight at 135 days	0.5630	0.0896
Body weight at 150 days	0.5602	0.0898

Phenotypic correlations established among the birth weight and average daily gain determined for various periods, and their value are shown in Table 11.

Table 32. Phenotypic correlation coefficients between weight at birth and average daily weight gain

Traits:	**Correlations value**	
Body weight at birth	r_{xy}	$\pm s_r$
Average daily gain at 30 days	0.4713	0.0957
Average daily gain at 65 days	0.4862	0.0948
Average daily gain at 75 days	0.2760	0.1043
Average daily gain at 135 days	0.3459	0.1018
Sporul mediu zilnic realizat la îngraşare	0.3433	0.1019
Sporul mediu zilnic total (150 days)	0.4542	0.0966

Between birth weight and average daily gain, the correlations are to be set lower value. However, the highest value was determined between birth weight and average daily gain achieved during lactation, and the smallest average daily gain achieved during the first 75 days of life were 0.486 and 0.276 respectively.

VI. CONCLUSIONS

1. In order to achieve all the goals and success of young sheep fattening process in the investigations we have complied with all conditions specified in the technical plan with respect to initial weight, reception, isolation, food, etc.
2. Intensive fattening technologies is recommended to be applied especially in areas of cereals, which contribute to a better use of by-products from crop production.
3. The studies found a higher degree of recovery of the feed belonging to batches of crossbred lambs.
   3.1. In the habituation phase, the lower specific consumption values were made by lambs belonging to the Palas Merino control group which conducted a consumer of 5.05 UN/kg body weight gain, followed by lots of hybrids of meat.
   3.2. As between the group composed of the Palas Merino lambs and Tigaie was recorded a lower specific fuel consumption by about 4.75%, one can say that the first race has a better degree of recovery of the food.

3.3. In case of analysis to evaluate specific consumption between groups consisting of pure-bred lambs and crossbred lambs, the biggest difference was recorded between 14.25% and Texel x (BFL x MP) and the Palas Merinos.

4. Determination of heritability for live weight estimated at different ages indicates that if the weight at birth is found that the populations studied h2 was 0.25. Heritability value for liveweight at 30 days and 65 days is reduced to values of 0, 17 and 0.15 respectively.

4.1. Those values indicate that the selection applied on the basis of live weight due to these age groups will be ineffective.

4.2. Instead the selection applied to 150 days after the live weight (h2 = 0.36) gives us more information on the dynamics of development of individual body fattening.

4.3. These findings allow us to say that to produce lambs for fattening sheep selection requires that mothers are to be made after the production quantity of milk, thus facilitating their offspring have higher body weights at weaning.

4.4. As for the quantity of meat from a carcass has been estimated average heritability coefficient of 0.37 can be said that this character is strongly influenced by additive genetic variance compared to other characters.

4.5. Heritability analysis determined the butchers cut from carcass areas, but also the physical structure and the ratio bone / meat, indicates that it is assigned to the low Herita group.

4.6. Determination of heritability for the main dimensions of the carcass indicates that Leg of mutton dimensions are influenced more by additive genetic variance.

5. Between birth weight and weight at different ages, but also between the first data and determined the average daily gains at different intervals of growth are established heterogeneous phenotypic correlation values.

5.1. Between birth weight and body weight determined at 30 days, it was a phenotypic correlation of r = 0.622, and between birth weight and determined before slaughter reduces the amount of correlation r = 0.560.

5.2. Between birth weight and average daily gain to be set correlations are lower value (rxy = 0.2760 between weight after parturition and achieved average daily gain during the first 75 days and that rxy = 0.3433 between birth weight and average accumulated during fattening.

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Written by,

Prof. univ. Constantin PASCAL, PhD