

RESEARCH ON BODY DEVELOPMENT DYNAMIC OF CARABASH LAMBS IN SUCKLING PERIOD

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Abstract

Our research conducted in the experimental farm of INCDBNA Balotești monitored the evolution of Carabash lambs body weight from lambing to weaning, with the purpose to determine the performance of this breed to produce milk lambs, compared to other sheep breeds reared in Romania. The average live weight of the lambs from simple lambing was 5.40 kg for the male lambs and 5.08 kg for the female lambs. The average live weight of the lambs from twin lambing was 4.88 kg for the male lambs and 4.65 kg for the female lambs. At the age of one month, the male lambs from simple lambing weighed in average 15.65 kg, while the male lambs from twin lambing weighed in average 12.33 kg. At the same age, the female lambs from simple lambing weighed in average 14.51 kg, while the female lambs from twin lambing weighed in average 10.94 kg. At weaning (2 months) the male lambs from simple lambing weighed in average 23.15 kg, while the male lambs from twin lambing weighed in average 18.031 kg. The female lambs from simple lambing weighed in average 22.32 kg, while the female lambs from twin lambing weighed in average 17.38 kg. The average daily weight gain was 296 g for the male lambs from simple lambing and 219 g for male lambs from twin lambing. Prolificacy of Carabash sheep was 152%. The analysed parameters recommend this breed mainly for meat production, but also for milk production.

Key words: suckling period, body weight, average daily gain, prolificacy

INTRODUCTION

Suckling lambs are produced in all the countries where sheep are used for milk production, but in some countries the income from meat production exceeds the income from milk production. The body weight of the suckling lambs is a compromise between the necessity to deliver the lamb faster so as to have more delivered milk, and the necessity to have quality lamb carcass. The major objective for the Carabash sheep population is milk production, with suckling lambs as by-product. The preference of the Romanian consumers goes to the meat of suckling lambs appreciated for their tenderness and pleasant flavour. The production of suckling lambs has been neglected due to the drastic decrease of the sheep stocks. Romania has an important tradition in this direction which should be renewed and revalued. EU requirements and the sheep stock in Romania imposed negotiations on product quality – sheep meat, context in which the improvement of the

local sheep breeds is necessary. After the accession of Romania to the EU its share in the meat production may increase by 10-15%, while in the milk production by 20%. Carabash sheep are one of the options to consider for immediate and medium term purposes. – C. Drăgănescu (1998). Research on Carabash sheep was also done by Ghiță Elena (2004) on the aptitude of Carabash lambs for meat production.

MATERIAL ȘI METHODS

Primary data were obtained by successive weighing of the newborn lambs, at the age of one month and at weaning (2 months). The lambs were weighed in the morning to get the real weight of the animals. We weighed 111 lambs as follows: 16 males from simple lambing and 41 males from twin lambing; 17 females from simple lambing and 37 females from twin lambing. The data were processed statistically determining the mean, variation, standard deviation, mean error and variability coefficient. The lambs were obtained from 73

ewes. Prolificacy was determined as the ratio of the born lambs and of the ewes which lambed.

RESULTS AND DISCUSSION

Compared to the literature data on the average daily gains of growing lambs of local breeds, the performance of Carabash lambs was higher. The data of Ghiță et al. (2002) for Carabash sheep are obtained under the conditions of an experimental station, they correspond to the field data, supporting the possibility to produce suckling lambs carcasses with proper weight at the age of one month and at weaning (two months). The female lambs from single lambing weighed 5.39 kg at lambing and 23.37 kg at weaning, while the female lambs from twin lambing weighed 4.77 kg at lambing and 20.24 kg at weaning; the male lambs from single lambing weighed 5.8 kg at lambing, while the male lambs from twin lambing weighed 5.31 kg at lambing.

At other sheep farms from Teleorman County (1998), such as Mavrodin, the lambs had an average weight of 5.3 kg at lambing and 22.5 kg at weaning, at Măldăeni, they weighed 5.7 kg at lambing and 26.0 kg at weaning, at Mănăstirea, 5.4 kg at lambing and 19.2 kg at weaning, while the lambs from Teleorman (1997) simple lambing weighed 5.59 kg at lambing and 18.3 kg at weaning and those from twin lambing weighed 5.06 kg at lambing.

In 2004, the same author evaluated the aptitude of Carabash sheep for meat production, obtaining the following weights: at lambing, 5.07 kg for males and 5.22 kg for females; at one month 13.97 kg for males and 13.32 kg for females; at 2 months 18.62 kg for males and 18.16 kg for females.

Studies have been conducted on other sheep breeds from Romania monitoring their body weight and average weight gain. In Palas Merino, the lambs weighed at lambing 4.12 kg, males, and 3.75 kg females; the average daily gain for 0-60 days was 214 g. The lambs of Palas meat line weighed at lambing 4.65 kg, males and 4.02 kg, females, with an average daily weight gain of 239 g. The Tsigai lambs weighed at lambing 3.87 kg, males and 3.61 kg, females, with an

average daily weight gain of 239 g. The Tsurcana lambs weighed at lambing 3.44 kg, males and 3.07 kg, females, with an average daily weight gain for 0-60 days of 183 g Pascal C. (2007). The lambs weighing more at lambing have higher daily gains during their growth because their consumption capacity is 3-5 times higher than that of the poorly developed lambs.

During the first months of life a positive correlation was noticed between lamb growth and the milk production of the ewes ($r = 0.8$), the data showing an average milk consumption of 5-6 litres for 1 kg body weight in the lambs fed exclusively on milk. The conversion of the milk into weight gain is directly related to the growth aptitudes of the lambs and their sex, therefore. Thus, 1 kg of gain can be achieved with 3.3 – 5 l milk by the males and with 4.3 – 6.3 l milk by the females (Folman et al. 1966 cited by Stoica 1997).

The statistical analysis of the data showed that the average value of the body weight from lambs of simple lambing was higher than that of the lambs from twin lambing throughout the suckling period. During the suckling period, the body weight of the lambs is strongly influenced by the nursing capacity of the ewes. The average live weight of the male lambs from simple lambing was 5.40 kg and 5.08 kg for the female lambs. The male lambs from twin lambing had in average 4.88 kg at lambing and the females 4.65 kg. At the age of one month, the male lambs from simple lambing weighed in average 15.56 kg and those from twin lambing weighed in average 12.33 kg. At the same age, the female lambs from simple lambing weighed in average 14.51 kg and those from twin lambing weighed in average 10.94 kg. At weaning (2 months) the male lambs from simple lambing weighed in average 23.15 kg and those from twin lambing weighed in average 18.031 kg. The female lambs from simple lambing weighed in average 22.32 kg and those from twin lambing weighed in average 17.38 kg. Tables 1 and 2 and Figures 1 and 2 show these values.

Table nr. 1
 Body weight evolution of male Carabash lambs during the suckling period

Age	Lamb weight, simple lambing (Kg)		Lamb weight, twin lambing (Kg)	
	X ± s _x	v %	X ± s _x	v%
Lambing	5.406±0.245	18.141	4.887±0.123	16.227
1 month	15.562±0.623	16.037	12.334±0.393	20.437
2 months (weaning)	23.150±0.748	12.930	18.031±0.457	16.235

The average value of the body weight of the female lambs from simple lambing has been constantly higher than that of the female lambs from twin lambing.

Table nr. 2
 Body weight evolution of female Carabash lambs during the suckling period

Age	Lamb weight, simple lambing (Kg)		Lamb weight, twin lambing (Kg)	
	X ± s _x	v %	X ± s _x	v%
Lambing	5.082±0.173	14.055	4.655±0.103	13.491
1 month	14.517±0.670	19.053	10.943±1.967	17.97
2 months (weaning)	22.329±0.827	15.288	17.381±0.569	19.92

The weight gain of the male lambs from simple lambing throughout the suckling period was 25.96% higher than that of the male lambs from twin lambing, as shown in Table 3 and Figure 3. The weight gain of the female lambs from simple lambing throughout the suckling period was 26.23% higher than that of the female lambs from twin lambing, as shown in Table 4 and Figure 4.

The data show that the average growth rate was good. The average daily gain of the males was higher than that of the females. The highest average daily weight gain was obtained by the males from simple lambing, 339 g for the period 0-30 days and 296 g for the suckling period (0-6- days). The average daily weight gain of the males from twin lambing was 248 and 219 g, respectively (Table 3 and Figure 5).

Table nr. 3
 Daily weight gain of Carabash male lambs during the suckling period

Period (days)	Weight gain (kg) Simple lambing		Average daily gain (kg) Simple lambing		Weight gain (kg) Twin lambing		Average daily gain (kg) Twin lambing	
	X ± s _x	v %	X ± s _x	v %	X ± s _x	v %	X ± s _x	v %
0-30	10.156±0.655	25.81	0.339±0.022	25.81	7.446±0.351	30.26	0.248±0.012	30.26
0-60	17.743±0.739	16.67	0.296±0.012	16.67	13.143±0.480	23.412	0.219±0.008	23.412

The average daily weight gain of the female lambs from simple lambing displayed the same trend, with higher values than those of the female lambs from twin lambing, from lambing to weaning. The average daily gain during the first month was 315 g in the female lambs from simple lambing and 210 g in the female lambs from twin lambing.

Throughout the suckling period (0-60 days) the average daily gain was 287 g in the female lambs from simple lambing and 212 g in the female lambs from twin lambing (Table 4 and Figure 6).

The calculated prolificacy of the Carabash sheep was 152%, the highest among the sheep breeds in Romania.

Table nr. 4
 Daily weight gain of Carabash female lambs during the suckling period

Period (days)	Weight gain (kg) Simple lambing		Average daily gain (kg) Simple lambing		Weight gain (kg) Twin lambing		Average daily gain (kg) Twin lambing	
	X ± s _x	v %	X ± s _x	v %	X ± s _x	v %	X ± s _x	v %
0-30	9.435±0.668	29.21	0.315±0.022	29.21	6.286±0.311	30.13	0.210±0.010	30.13
0-60	17.247±0.927	22.17	0.287±0.015	22.17	12.724±0.552	26.39	0.212±0.009	26.39

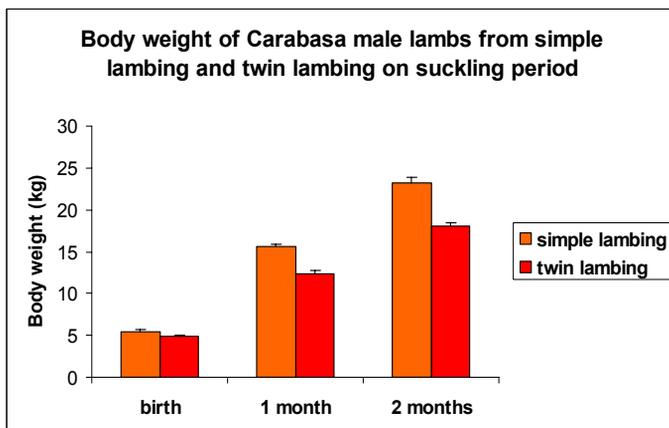


Figure 1

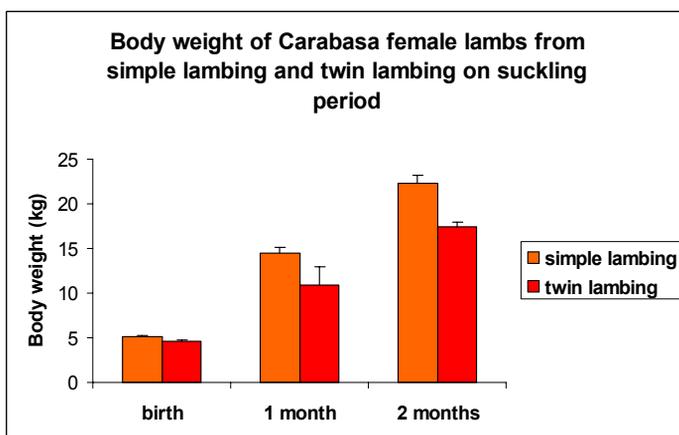


Figure 2

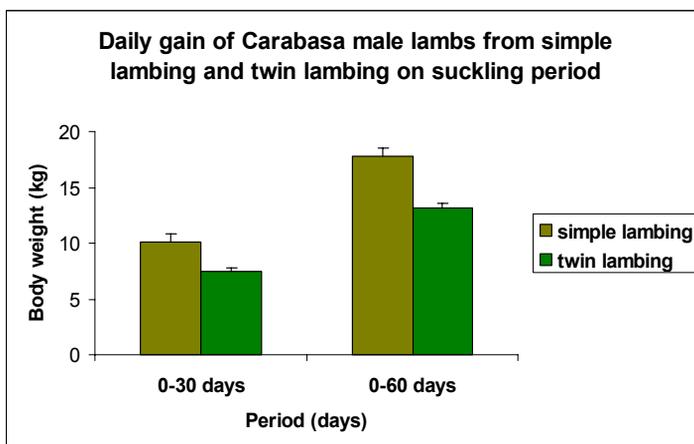


Figure 3

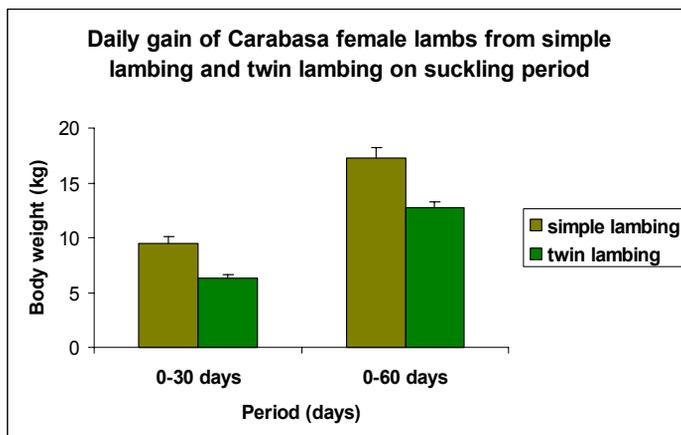


Figure 4

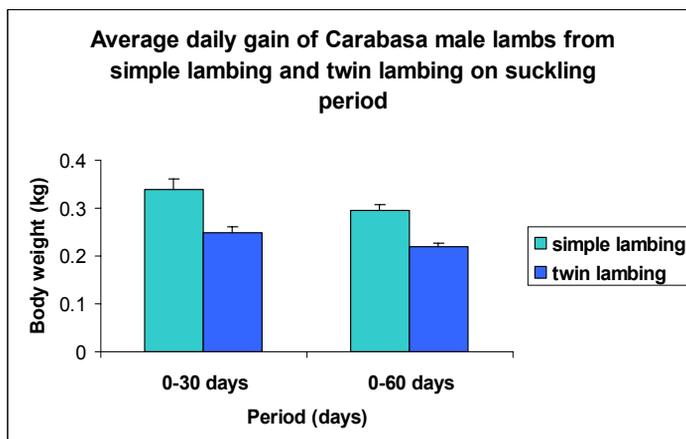


Figure 5

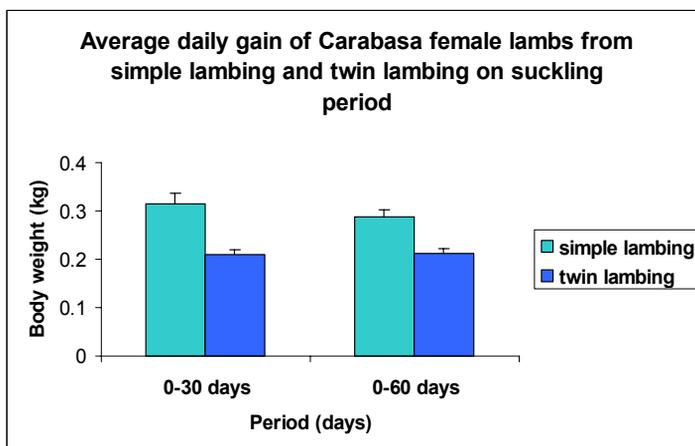


Figure 6

CONCLUSIONS

During the suckling period, the body weight of the Carabash lambs is strongly influenced by the nursing capacity of the ewes and of the lambing weight of the lambs which has a positive contribution to a clearly higher weight gain compared to other sheep breed in Romania.

-The average body weight of the lambs from simple lambing has been higher than that of the lambs from twin lambing throughout the suckling period;

-The average body weight of the male lambs from simple lambing has been 25.96 % higher than that of the male lambs from twin lambing throughout the suckling period;

- The average body weight of the female lambs from simple lambing has been 26.23 % higher than that of the female lambs from twin lambing throughout the suckling period;

- The average daily gain during early nursing (0-30 days) was 12.69 % higher in the male lambs from simple lambing compared to the value for the entire suckling period (0-60 days);

- The average daily gain during early nursing was 11.7 % higher in the male lambs from twin lambing compared to the value for the entire suckling period;

- The average daily gain of the female lambs displayed the same trend, with higher values for the female lambs from simple lambing throughout the suckling period. The average daily gain of the female lambs during early nursing was 33.33 % higher in the female lambs from simple lambing than in the female lambs from twin lambing;

-Throughout the entire suckling period (0-60 days) the average daily gain of the female lambs from simple lambing was 26/14% higher than in the female lambs from twin lambing;

- The average daily gain of the male lambs was higher than that of the female lambs.

-The average weight gain was higher during early nursing period, decreasing in the second nursing period, both for the male and for the female lambs;

- The results confirm the remarkable potential of this breed for the production of suckling lambs and implicitly for meat production, due to the clearly higher prolificacy and due to a good conversion of the milk production into lamb weigh gain.

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