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Lamb Body Weight Evolution in Suckling Period Feeding Ewes-Mothers with Alfalfa Semi-Silage

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Abstract: *The purpose of the study is to determine the effect of alfalfa semi-silage administered to sheep mothers in the lactating period on the growth performances of suckling lambs from two genotype: Tsigai breed – rusty variety and their contemporaries crossbred lambs Suffolk (50%) x German Blackface (37.5%) x Tsigai (12.5%). The lamb were born in 2023 (98 crossbred lambs and 50 Tsigai lambs). The fodder administered to the ewes-mothers had provided a nutritional value of 198 g DP and 14.75 MJ NEM and was consisting of alfalfa semi-silage, hill hay and concentrates (50% grain corn; 50% grain barley). Weaning occurred at around 65 days. During the suckling phase, the lamb diet was tailored to achieve a growth potential of 300 g/head/day, adhering to NRC (2007) guidelines (135 g DP and 10.89 MJ NE). Altough the crossbred lambs recorded superior value of growth performances compared to lambs from Tsigai breed, alfalfa semi-silage had no significant influenced (p>0.05) the growth rate between the two genotype: 13.08 kg vs. 12.82 kg weight at the end of first month of life; weaning weight – 20.89 kg vs. 19.79 kg, total gain birth-weaning – 16.43 kg vs 15.47 kg and average daily gain 255.21 g vs. 240.13 g.*

• Introduction

In recent years, the interest in the production of alfalfa bales for the purpose of obtaining semi-hay, semi-silage, or silage has increased a lot.
The objective of the study is to determine the effect of alfalfa semi-silage administered to sheep mothers in the lactating period on the growth performances of suckling lambs from two genotype: Tsigai breed – rusty variety and their contemporaries crossbred lambs Suffolk (50%) x German Blackface (37.5%) x Tsigai (12.5%).

Material and method

The biological material on which the experiments were carried out was constituted of adult sheep and their sucking lambs from Tsigai -rusty variety (50 lambs – Figure 1) and cross-bred lambs Suffolk (50%) x German Blackface (37.5%) x Tsigai (12.5%) (SxTixBF - 98 lambs – Figure 2). Lambs were born between January and March at Experimental Base Reghin of Research Institute for Sheep and Goat Palas Constanta, Mures County. Ewes and their lambs were maintained together in identical management conditions for a duration of two months post-lambing. Weaning occurred at around 65 days. During the suckling phase, the lamb diet was tailored to achieve a growth potential of 300 g/head/day, adhering to NRC (2007) guidelines (135 g DP and 10.89 MJ NE).

Figure 1 – Lambs from Tsigai breed (photo: Mare D. R.)

The structure of concentrated fodder administered to lambs up to weaning was: 30% corn flour, 30% barley flour, 25% corn grain, 11.25%, sunflower groats, 2.25% calcium, and 1.5% salt.
The feeding of ewes was constituted of concentrated, hill hay and alfalfa semi-silage (introduced in the diet three weeks before starting to lamb).
The structure of fodder is presented in Table 1.

Table 1. The structure of fodder used to feed ewes in the suckling period

Characteristics	Value
Hill hay (%)	33.31
Alfalfa semi-silage (%)	33.31
Corn grain (%)	16.66
Barley grain (%)	16.66
Calcium (%)	0.03
Salt (%)	0.03
Dry matter intake /day (kg)	2.09
Digestible protein g/day	198
NEM MJ/day	14.75

The computed composition was determined using tabular values derived from the ingredient composition of the experimental diet, as outlined in the NRC (2007) guidelines.

Birth weight (BW), weaning weight (WW), weaning age, initial total gain from birth up to weaning, average daily gain (ADG), and milk production of sheep in the lactating period were determined.

• Results and discussions

The body weight evolution of lambs are presented in Table 2.

Table 2. Mean (±SE) for body weight evolution of lambs from birth up to weaning

Specification	Genotype		P_{tukey}
	Crossbreed (n = 98)	Tsigai (n = 50)	
Birth weight (kg)	4.46 ± 0.08	4.32 ± 0.11	0.230
Weight at first life month (kg)	13.08 ± 0.32	12.82 ± 0.44	0.640
Weaning weight (kg)	20.89 ± 0.41	19.79 ± 0.57	0.117
Weaning age (days)	64.58 ± 0.81	64.84 ± 1.14	0.854
Total gain in the first life month (kg)	8.61 ± 0.28	8.50 ± 0.39	0.808
Total gain birth-weaning (kg)	16.43 ± 0.37	15.47 ± 0.52	0.133
ADG in first life month (g)	276.78 ± 10.87	269.41 ± 15.25	0.625
ADG birth-weaning (g)	255.21 ± 5.11	240.13 ± 7.16	0.089
Production of suckled milk birth-weaning (kg)	73.94 ± 1.67	69.59 ± 2.35	0.133

The weights of lambs at birth, in the first life month, and at weaning were higher to crossbred lambs compared to Tsigai breed, but without significant differences (p>0.05). No significant differences (p>0.05) were found between the two breed structures concerning total gain in the first life month and birth-weaning period.
The same situation is maintaining with regard at ADG of lambs and milk production in the suckling period of sheep. The lambs from Tsigai breed recorded a ADG very close from them of crossbred lambs, the differences being not significant (p>0.05).

• Conclusions

Introduction of alfalfa semi-silage in the sheep's diet influence positively the milk production in the suckling period to the sheep from Tsigai breed, wich is spread over the body weight evolution of l ambs,total gain, and average daily gain (ADG) from birth until weaning.

Figure 2 – Lambs from SxBFxTIRU (photo: Ilișiu E.)

Further, research is needed to highlight the best combinations of diets that can contribute to improving the performance of sheep and lambs during the lactation period.

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