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INFLUENCE OF RAM ON BODY WEIGHT EVOLUTION OF
LAMBS FROM TSIGAI BREED - RUSTY VARIETY IN THE PERIOD FROM BIRTH UP TO 7 MONTHS

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Abstract: The present study was conducted to determine the effect of ram and sex on growth performances of Tsigai lambs – rusty variety from birth to 7 months. The birth weight, weight at 28 days, weaning weight and weight at 7 months were observed on 98 female and 88 male lambs coming from 10 rams' groups. The overall highest mean weight of lambs at 7 months was 37.29 kg and the smaller 30.15 kg, and between sex, the highest mean weight was 41.50 kg recorded by male lambs from Tsigai breed, while to female was 29.09 kg. No statistical differences were found ($p > 0.05$) between the offspring of the rams' groups with regard at body weight at 7 months, but the total average gain and daily average gain was significantly affected by sex and ram ($p < 0.001$).

• Introduction

To improve a breed into being a more productive breed, several methods are used to achieve a faster improvement. A method used to test rams by offsprings is the establishment of ram families, which consists of forming 4-5 groups in which a ram is introduced together with the selected females; it is important to note that the number of females must be equal in each group, so that the testing is representative. This component (respectively, the equal number of females/ram) contributes to increasing the accuracy regarding the establishment of the genetic value of the rams and, at the same time, makes the comparison between offsprings as correct as possible. The aim of this study was to determine the influence of ram and sex on growth performance of Tsigai lambs.

• Material and method

In autumn 2023, 10 female lots (L1-L10) were mated with 10 different males. The body weight evolution of the lambs obtained from these lambings were studied from birth up to 7 months of life. A total of 181 Tsigai pure breed lambs (93 females and 88 males) were used as biological material for this study. Lambs were born between January and March and were identified and weighed (to the nearest 0.1 kg) within the first 24 hours, during which ear tags were applied. Throughout the experiment, they were provided with blocks of mineral and vitamin supplements. The concentrated fodder provided to lambs until and after weaning consisted of 55% corn flour, 30% barley flour, 12% sunflower groats, 2% calcium, and 1% salt. This concentrated fodder, along with hay, water, and salt, was made available ad libitum. The traits studied were divided into pre-weaning and post-weaning growth traits. Pre-weaning growth traits included birth weight (BW), weight at 28 days (W28), weaning weight (WW) and weaning age (WA). Post-weaning growth traits included weight at 7 months (W7). For both periods, average daily gain (ADG) and total gain (TG) were studied.



Figure 1- Ram and ewe mating (photo:Ilisiu C.V)

Table 1. The body weight evolution of lambs during birth-weaning period based on ram groups ($X \pm s_x$)

Lot	Ram number	N	BW (kg)	N	W28 (kg)	N	WW (kg)	N	WA (days)
1	R01602228604	31	4.15 $\pm$ 0.12	23	10.07 $\pm$ 0.38 ^A	23	17.20 $\pm$ 0.64	23	61.22 $\pm$ 1.96
2	R01612351621	31	4.14 $\pm$ 0.12	26	10.87 $\pm$ 0.36	26	17.46 $\pm$ 0.60	26	59.53 $\pm$ 1.84
3	R01612351697	34	3.99 $\pm$ 0.12	28	11.61 $\pm$ 0.35	28	18.05 $\pm$ 0.58	28	60.75 $\pm$ 1.78
4	R01612351698	30	3.68 $\pm$ 0.12	24	10.10 $\pm$ 0.38 ^B	24	16.50 $\pm$ 0.62	24	58.79 $\pm$ 1.92
5	R01612351739	36	3.90 $\pm$ 0.11	32	10.69 $\pm$ 0.33	32	18.25 $\pm$ 0.54	32	59.25 $\pm$ 1.66
6	R01619770107	24	4.03 $\pm$ 0.14	21	11.10 $\pm$ 0.40	21	17.19 $\pm$ 0.67	21	51.95 $\pm$ 2.05
7	R01619770131	20	3.95 $\pm$ 0.15	17	10.12 $\pm$ 0.45	17	16.97 $\pm$ 0.74	17	63.47 $\pm$ 2.28
8	R01619770283	36	3.98 $\pm$ 0.11	30	11.03 $\pm$ 0.34	30	17.48 $\pm$ 0.56	30	57.67 $\pm$ 1.72
9	R01619964184	19	3.82 $\pm$ 0.16	11	13.09 $\pm$ 0.55 ^{AB}	11	21.18 $\pm$ 0.92	11	60.82 $\pm$ 2.83
10	R01619964288	16	3.58 $\pm$ 0.17	10	9.70 $\pm$ 0.58	10	15.85 $\pm$ 0.97	10	60.50 $\pm$ 2.97

^{A, B, C} - Means with the same superscript in each column indicate very significant differences ($p < 0.001$);

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• Results and discussions

Table 2. The evolution of total gain and average daily gain in the 0-7 months period for youth sheep ($X \pm s_x$)

Lot	Ram number	N	TG (kg)	ADG (g) in the period birth - 7 months
1	R01602228604	18	26.64 $\pm$ 1.55	123.30 $\pm$ 7.35 ^A
2	R01612351621	24	31.95 $\pm$ 1.35	149.02 $\pm$ 6.37
3	R01612351697	23	29.93 $\pm$ 1.37	141.23 $\pm$ 6.51
4	R01612351698	21	26.93 $\pm$ 1.44	131.07 $\pm$ 6.81
5	R01612351739	27	32.15 $\pm$ 1.27	152.20 $\pm$ 6.01
6	R01619770107	18	27.60 $\pm$ 1.55	136.38 $\pm$ 7.35
7	R01619770131	15	29.27 $\pm$ 1.70	136.68 $\pm$ 8.06
8	R01619770283	26	29.03 $\pm$ 1.29	144.29 $\pm$ 6.12
9	R01619964184	7	33.27 $\pm$ 2.49	184.16 $\pm$ 11.79 ^B
10	R01619964288	7	27.23 $\pm$ 2.49	141.64 $\pm$ 11.79

^{A, B} - Means with the different superscript in each column indicate very significant differences ($p < 0.001$);

From the data presented in table 1, very significant differences ($p < 0.001$) are highlighted between L9 and L1, L7 and L10 regarding the average daily gain during the birth-weaning period. Following the analysis of the gains achieved by the Tsigai lambs during the birth-weaning period on the breeding groups, it is found that the growth potential of the lambs is very variable. The highest average daily gain in the period 0-7 months was recorded in L9 where the ADG was 184.16 g, at the opposite pole was L1, where the average daily gain was 123.30 g, the differences recorded between the two lots being significant ($p < 0.001$). With regard at average daily gain up to weaning, our finding are superior to those obtained from Ilisiu et al., (2021), when following the impact of ram on body weight evolution of offspring coming from 10 groups of rams, the ADG was comprised between 185.78 – 272.79 g.

• Conclusions

The results of the study highlighted the fact that the growth performance of the lambs is influenced by the paternal ancestry, on the one hand, and by the gender of the lambs, on the other hand. In order to improve the productive performance of their own sheep flocks, the recommendation for sheep breeders of Tsigai breed – rusty variety is to purchase rams tested by descending, which obviously leads to the improvement of the economic performances of the farms.

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