

FATTENING PERFORMANCE OF CASTRATED AND INTACT CROSSERED MALE KIDS

Erdoğan TUNCEL*
Numan AKMAN**

SUMMARY

In this study Saanen x Kilis B1 crossbred kids were used. After a 3 months suckling period kids were divided into two groups of 10 individuals each. Kids in the randomly chosen group were castrated by burdizzo clamps at about 7 months of age. After a two weeks preliminary-feeding period the groups were fed ad libitum on concentrate mixture in separate pens. In addition, a limited amount of trashed alfalfa hay was given. Body weight and some body measurements were recorded fortnightly for 14 weeks as well as group feed intakes. The overall means of daily gain were 150.1 g in the males and 128.4 g. in the castrates. Feed conversion efficiency calculated as kg feed consumed per kg daily gain was 3.98 and 4.46; protein consumption was 692 and 795 g respectively. It was concluded that intact males grew faster and utilized the feed better than castrates.

ÖZET

Kastra Edilmiş ve Erkek Melez Keçilerde Besi Performansı

Araştırmada Saanen x Kilis melezi G1 oğlaklar kullanılmıştır. Üç ay süren süt içme döneminden sonra yaklaşık 7.5 aylıkken erkek oğlaklar yaşa göre ikiye ayrılmış ve rastgele seçilen bir grup burdizzo pensi ile kastra edilmiştir. Aynı bölmelere alınan ve başlangıçta 10'ar oğlaktan oluşan gruplar 15 günlük alışma döneminden sonra ad libitum kesif yem besisine alınmıştır. Bu dönemde gruplara hayvan başına 250 gr. kuru yonca kesi verilmiş ve 2 haftalık aralıklarla yem tüketimi ve canlı ağırlıkla birlikte bazı vücut ölçüleri saptanmıştır. Toplam 98 gün süren besi döneminde ortalama günlük ağırlık artışı erkeklerde 149.0 gr. kastralarda 130.6 gram bulun-

* Department of Animal Science, Faculty of Agriculture, Uludağ University
Bursa/TURKEY

** Department of Animal Science, Faculty of Agriculture, Ankara University
Ankara/TURKEY

muştur. Bu dönemde bir kg canlı ağırlık artışı için erkeklerin ortalama 3.980 kg kesif yem 692 gr SHP ve 2954 NB tükettikleri saptanmıştır. Bu değerler kastralar da sırayla 4.463 kg, 795 gr ve 3381 dir. Bu sonuçlara göre erkeklerin kastralardan daha fazla günlük ağırlık artışı sağladıkları ve yemden daha iyi yararlandıkları anlaşılmıştır.

INTRODUCTION

The effects of castration in goats are not as clear as in the other farm animals. Louca et al. (1977) stated that male Damascus kids grew faster and used feed more efficiently than castrates. This was also the view of Mc Dowell and Bove (1977). By contrast, it is written in Mackenzie's book (1970) that the growth rate of castrated Toggenburg kids is quicker than both males and females.

Having one of the largest goat populations in the world, 15.2 % of the total meat production comes from goats in Turkey. About 25 % of the people, mostly living in the rural areas, consume meat only from goats. Most of the goats slaughtered have been castrated at various ages. But there has not been any feeding trial done so far in the country to find out the biological efficiency of meat production in goats. Indeed few studies on this matter have been done worldwide. The purpose of this study was to find out the response of the castrated and intact males to intensive feeding as well as their feed conversion efficiency.

MATERIAL and METHODS

Saanen x Kilis B₁ (0.75 Saanen + 0.25 Kilis) crossbred kids were used. They were bottle fed for the first three months with approximately 100 kg of milk. Starting from the second week after birth small amounts of concentrates and alfalfa hay were given. Birth weight and weaning weight were recorded but not feed intake during this period. When they were about 7 months old, the kids were divided into two groups by taking the date of birth into account. One group was chosen at random and castrated by burdizzo clamps. The exact average ages at the time of castration were 201.6 days for the males (M) and 204.5 days for the castrates (C) and the average liveweights were 24.8 and 24.2 kg respectively. There were 10 individuals in each group.

Then the groups were put into two different pens of similar area and fed *ad libitum* on a concentrate mixture containing 89.9 % dry matter and composed of 17.3 % crude protein, 1.9 % ether extract, 8.8 % crude fiber, 57.1 % N-free extract, 4.8 % ash, 0.25 % Ca and 1.19 % P. In addition, about 250 g trashed alfalfa hay were given daily per animal. They had free access to fresh water. After a two week acclimatisation period, the records of group feed intake and individual body weight and some body measurements such as height at withers, body length and chest girth were recorded fortnightly. During the feeding period one male and one castrated kid died due to urinary calculi and their records were discarded.

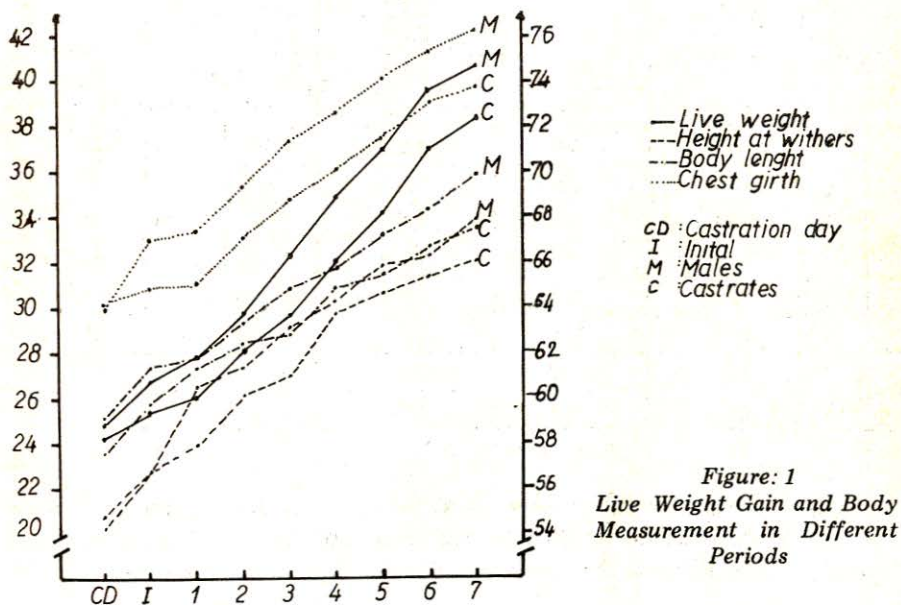
RESULTS

Daily gain

Body weights and daily gains in the different periods are tabulated in Table 1. The changes in the live weight and the body measurements are shown diagrammatically in Figure 1.

Table: 1
Average Live Weight and Daily Gain in Males (M) and Castrates (C)

Period	Live Weight (kg)		Daily Gain (g)	
	M	C	M	C
	mean ± SE	mean ± SE	mean ± SE	mean ± SE
Initial	26.7 ± 1.41	25.4 ± 1.20	135.0 ± 23.69	82.1 ± 21.39
1	27.8 ± 1.42	26.0 ± 1.38	79.4 ± 18.60	46.3 ± 20.09
2	29.7 ± 1.50	28.1 ± 1.56	136.7 ± 18.96	149.3 ± 30.75
3	32.3 ± 1.60	29.7 ± 1.77	184.0 ± 26.94	115.0 ± 24.06
4	34.8 ± 1.66	32.0 ± 1.78	160.1 ± 18.21	144.1 ± 24.30
5	36.9 ± 1.75	34.2 ± 2.02	170.4 ± 12.33	180.1 ± 33.30
6	39.5 ± 1.92	37.0 ± 2.45	250.0 ± 21.45	212.7 ± 25.31
7	40.7 ± 1.72	38.4 ± 2.39	89.3 ± 23.47	103.2 ± 17.68
Mean	—	—	150.1 ± 9.19	128.4 ± 10.56



The daily gain was comparatively low at the first two periods and especially in group (C) there were some individual weight losses most probably due to stress caused by castration. After about six weeks recovery castrated kids started growing normally. In any case liveweight gain was lower in the castrates than it was in the intact males. Daily gain slowed down after the 6th period in both groups. The overall means of the daily gains were 150.1 g in males and 128.4 g in castrates. Although daily gain is 17 % more in the males the difference is not statistically significant.

Feed conversion efficiency

The mean values for individual daily consumption of concentrate mixture and feed conversion efficiency in different periods are presented in Table 2. DM intake proportional to the liveweight is also included.

Table: 2
Feed Consumption and Conversion Efficiency

Period		Concentrate Consumption Per head g/day	Total DM Consumption Per head g/day	Total DM Consumption Proportional to live weight (%)	Consumption for 1 kg live weight			
					Concentrate (kg)	Total DM (kg)	DCP (g)	SE
1	M	540	708	2.60	6.807	6.345	1178	5028
	C	504	676	2.63	10.846	9.978	1914	8145
2	M	433	612	2.13	3.170	3.074	585	2476
	C	421	602	2.22	2.823	2.762	526	2221
3	M	564	730	2.36	3.062	2.977	523	2239
	C	487	661	2.29	4.236	4.033	754	3208
4	M	473	648	1.03	2.963	2.888	533	2262
	C	415	596	1.91	2.887	2.820	541	2281
5	M	548	716	2.00	3.209	3.109	553	2362
	C	492	665	2.01	2.731	2.679	485	2063
6	M	634	793	2.08	2.536	2.504	421	1809
	C	579	743	2.09	2.722	2.671	461	1978
7	M	553	720	1.80	6.200	5.799	1065	4554
	C	500	672	1.78	4.865	4.599	860	3660
Mean	M	533	702	2.13	3.980	3.803	692	2954
	C	484	658	2.14	4.463	4.238	795	3381

As can be seen from the Table, feed was better utilized by the intact males compared to the castrates. At the beginning of the trial daily feed intake was higher especially in the castrates. Furthermore DM consumption proportional to the live

weight was higher in the first period and steadily went down later on and in any case it was lower than optimal DM intake values reported by Devendra (1971).

DISCUSSION

Intact male kids grew faster and utilized feed better than those castrated during intensive feeding similar to the results found by Louca et al. 1977. However daily gain was better than those of the Damascus goats in the above study in phase 3 which were the same age as the material of the present study. But the daily gain of the Damascus goats was higher in phase 2 of the same study probably due to their younger age. The result of a study on the intensively fed German Improved Fawn males and castrates was in the same direction but daily gain was somewhat higher (Nitter 1975). In any case feed utilisation is better in Saanen x Kilis crossbred B₁ kids than in Damascus goats (Louca et al. 1977). Devendra (1966) pointed out that feed is better utilised by crossbred goats than native one. We could not find a chance to compare the goats with sheep in this work, but most of the studies on the intensive feeding of both native and crossbred lambs in the country show that lambs consume more energy for 1 kg of live weight gain even at the younger ages in view of our findings with the kids (Güneş et al. 1974; Okuyan et al. 1974; Eliçin et al. 1976; Akı, 1977). This point was also stated by Devendra and Burns (1970), Mackenzie (1970) and Morand-Fehr (1981). This does not mean that kids are economically better than lambs at the same age with respect to meat production. Due to the slower rate of daily gain in kids it takes longer time to reach a certain slaughter weight compared to lambs. On the other hand, meat from the kids commands a lower price in the market than lamb. Another point is that Ca and P should be carefully balanced in the diet to prevent suffering from the urinary calculi as was also emphasized by Morand-Fehr (1981). Furthermore it would be better if the castration could be done earlier in the life as suggested by Devendra and Burns (1970) and Mackenzie, (1970).

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