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STUDIES ON THE EFFECT OF CASTRATION ON GROWTH RATE IN TEDDY GOATS

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ABSTRACT

Thirty-two Teddy goat males aged from birth to 12 months were used for this study. They were divided into 4 groups of 8 animals each viz., group I (birth to 3 months), group II (3-6 months), group III (6-9 months) and group IV (9-12 months). Each group was then randomly allotted to subgroups having castrated and uncastrated animals such that each treatment in each group had 4 animals. All the experimental animals were grazed in nearly fields. Statistically, the differences between the effects of two treatments and the four age groups on weight gain were non-significant. The total weight gain was 16.50 $\pm$0.73, 14.87$\pm$0.48, 14.75$\pm$0.96 and 15 94$\pm$1.60 kg in castrated and 18.88$\pm$1.38, 18.00 $\pm$ 0.81, 15.37 $\pm$ 0.48 and 13.00 $\pm$ 0.48 and 13.00 $\pm$ 1.03 kg in uncastrated males in groups I, II, III and IV, respectively.

INTRODUCTION

Grazing the females and males together in the same field leads to certain managemental problems and affects the health of the animals. The problem is as acute in Teddy goats at the age of maturity as in several other farm animals. If a young buck is kept adjacent to the does, specially when they are in oestrus, the buck is excited and makes efforts to mount the female. It results into loss of appetite and severe arrest of growth and development of the male. Further, a female in heat is disturbed throughout the grazing period which affects her health: Therefore, importance of separation of both sexces at an early age is evident which certainly would involved extra labour. The solution lies either

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in the disposal of males at weaning age or castrating them at a proper time.

One of the reasons for castration is strong male odour present in uncastrated bucks. Ueckermann (1969) could not detect any much flavour in castrated goats. Castration may also affect growth rate and carcass composition. Owen and Norman (1977) found that castrated male Botswana goats developed larger and heavier carcasses than entire males. Louca *et al.* (1977) also observed that Damuscus kids castrated early produced heavier carcasses than intact kids. Chawla and Nath (1979) reported that liveweight at nine months was significantly affected by castration in Beetal goats and their crosses with Alpine and Seanen. The present study was, therefore, designed to see the effect, of castration on growth rate in male Teddy goats.

MATERIALS AND METHODS

Thirty-two Teddy (mini) goat males aged from birth to 12 months, kept at Livestock Production Research Institute, Bahadurnagar, Okara were used for this study for 9 months. They were divided into 4 groups of 8 animals each viz. group I (birth to 3 months), group II (3-6 months), group III (6-9 months) and group IV (9-12 months). Each group was then randomly allotted to 2 treatments (castration and control) such that each treatment in each group was given to 4 animals. All the animals in castration subgroup were castrated the same day with the Burdizzo castrator. The uncastrated males served as control. All the experimental animals were grazed in nearby fields from morning to evening on stubbles (alfalfa, lucerne, maize and sorghum), weeds and tree leaves. Fresh clean water and common salt were provided *ad lib* in the pens. The initial and fortnightly body weights of each experimental animal were recorded throughout the experimental period. The animals were weighed in the morning following an overnight period without food and water. The data on weight gain were subjected to statistical analysis using 2 x 4 factorial experimental design as described by Steel and Torrie (1980).

RESULTS AND DISCUSSION

Treatment Effect

The data on gain in weight for two types of treatments (castrated and

control in Teddy males of different age groups are given in Table 1. The total weight gains in castrated males ranged from 13.50-20.00, 14.00-16.50, 12.50-17.50 and 11.50-20.50 kg in groups I, II, III and IV, respectively. The corresponding figures for uncastrated males were 14.50-21.00, 15.50-20.00, 14.50-17.00 and 11.50-16.50 kg, respectively. The coefficient of variation for weight gains was 14.84, 6.45, 13.01 and 20.13 per cent in castrated and 14.61, 9.00, 6.24 and 15.84 per cent in uncastrated males in groups I, II, III and IV, respectively. The rate of gain in the present stndy for both the treatments was more than that reported in Barbari kids aged 4 to 6 months (56.25 gm for castrated and 59.31 gm for intact vs 23.00 to 35.00 gm per day (Sreemannarayana and Mahapatro 1982). This may be due to the difference in breed potential and/or environmental factors. The results of the present study revealed that there was no significant difference between the two treatments (Table 2). The non-significant interaction indicates that the two factors are independent. The results are in agreement with those of Calder and Dolling (1967) who reported that castration by different methods had little effect on subsequent performance of the castrated as compared to the uncastrated lambs, but uncastrated lambs exhibited slightly higher liveweight gains. However, these results do not agree with those of Owen and Norman (1977) who found that castrated male Botswana goats developed heavier carcasses than entire males, and of Chawla and Nath (1979) who reported that liveweight at nine months was significantly affected by castration.

Age Effect

The gain in weight (per kg initial body weight) was more in group I, the values being 404.16 $\pm$ 23 68 in castrated and 464.32 $\pm$ 58.70 per cent in uncastrated Teddy males. It decreased gradually as the age of the animals increased resulting into 72.04 $\pm$ 11 33 in castrated vs 65.57 $\pm$ 8.81 per cent in uncastrated Teddy males of group IV (Table 1) However, there were no significant differences amongst the different age groups with respect to total weight gains (Table 2).

The results of the present study are comparable to those of Calder and Dolling (1967) who found that castration at different ages had little effect on

Table 1. *Gain in weight in castrated and uncastrated Teddy males ofdiffirent ages*

Group	Weight gain					Gain in weight per kg of initial body weight (%)
	Treatment	Initial body weight (kg)	Final body weight (kg)	Total weight gain (kg)	Daily weight gain (gm)	
I (birth to 3 months)	Castrated	4.13±0 32	20.62±1.48	16.50±0.73	59.02±4.34	404.16±23.68
	Control	4 50±0.91	23.31±2.15	18.88±1.38	69.00±5.03	464.32±58.70
II (3 to 6 months)	Castrated	8.00±0.46	22.87±0.94	14.87±0.48	54.25±1.70	187.03± 5.12
	Control	8 62±0.56	26.62±0 27	18.00±0.81	65.25±3.04	214.32± 1.62
III (6 to 9 months)	Castrated	14.87±0.77	29.62±1.26	14.75±0.96	53.50±3.61	100.14± 8.55
	Control	15.62±0.92	31.00±1.38	15.37±0.48	55.75±1.81	99.08± 3.21
IV (9 to 12 months)	Castrated	23 06±1.59	39.00±0.72	15.94±1.60	58.00±5.90	72 04±11.33
	Control	20.37±1.09	33.37±0.54	13.00±1.03	47.25±3.73	65.57± 8.81
Overall	Castrated	12.51±1.86	28.03±1.87	15.51±0.60	56.25±2.17	190.85±33.31
	Control	12.28±1.59	28.59±1.17	16.31±0.76	59.31±2.78	210.57±42.09

subsequent performance of the castrates with respect to uncastrated lambs. The results are also supported by those of Chawla and Nath (1979) who reported that liveweight was not affected by castration at the age of 5 days, or 3 or 6 months in Beetal goats and their crosses with Alpine and Saanen. The results of this study however, differ from those of Louca *et al.* (1977) who observed that Damuscus kids castrated early in life produced heavier carcasses than intact kids, bnt their observations are contradicted by the findings of Chmielnik (1968) who noted that lambs castrated at 4 months had better daily growth rate than lambs castrated at 2 months (179 vs 142 gm). This may be due to difference in breed/species and/or environmental factors. Slightly higher daily gain in weight in castrated than in intact males of group IV (58.00 ± 15.90 vs 47.25 ± 3.73 gm) observed in the present study indicates that it is beneficial to castrate comparatively older animals. In general, it may be suggested that as an aid to flock managment, castration in Teddy goats might be practised beginning from very early age through 12 months.

Table 2. *Analysis of variance of data concerning weight gain in castrated and uncastrated Teddy males of different ages*

S. O. V.	df	S. S.	M. S.	F. ratio
Age (A)	3	49.86	16.62	2.73 NS
Treatment (B)	1	5.08	5.08	0.83 NS
Interaction (AB)	3	43.77	14.59	2.39 NS
Error	24	146.10	6.08	
Total	31	244.81		

NS = Non-significant.

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