



Effective Performance of age of Castration on growth achievement of Konkani Kanyal goats.

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ABSTRACT

Experiment was carried on twenty Konkani Kanyal male kids. The Burdizoo's castrator was used for castrating the kids whereas the spermatic cords an inch above the testicles. The male kids were randomly divided into 5 treatments (4 kids each) having treatment T₀ was control that the kids were intact (Non-castrated), treatment T₁ that is the kids of this group were castrated at the age of 1 month, treatment T₂ that is the kids of this group were castrated at the age of 2 months, treatment T₃ that is kids of this group were castrated at the age of 3 months and treatment T₄ that is the kids of this group were castrated at the age of 4 months. Resulted that growth of Konkani Kanyal kids were good in castration of male kids at the age of 1 month significantly growth achievement i.e. significant increase in body weight.

Keywords: - Age of castration, growth, Konkani Kanyal

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INTRODUCTION

The goat is multipurpose animal to provide meat, hide, hair and manure for soil. The contribution of goats in supplying meat is high and it has significant role in rural economy and nutrition. Now in rural areas goat rearing plays vital role in solving the problem of unemployment. The economic returns from goat keeping are high as compared to other farming enterprises. Goat farming can be profitable occupation of farmer and can fit into mixed farming system.

Goat meat is correlated with the presence of branch-chain fatty acids [17]. Specific fatty acids which contribute to the odour of the buck have been identified. The source of odour in goat meat comes from activity of testosterone, which can be produced from both, adrenal gland and testis and cholesterol is the precursor for production of testosterone in adrenal gland and active in the dihydrotestosterone form [8]. Castration can reduce goat odour as the meat from castrated males has less 'goaty smell' or tainted odour than meat from un-castrated goats [11].

Castration in goat rearing is done to prevent breeding of related individuals (inbreeding) that can result in genetic defects, poor growth rate, and other problems, avoid unwanted pregnancies and the mating of young females before they are of adequate size and age for pregnancy and parturition, to enhance on-farm safety for animals, producers and employees. Castrated animals are usually less aggressive and easier to manage. [5] They reported that the advantage of castration has better growth performance and meat quality than intact males. Carcass composition, weight development and more fat tissue are the main effects of castration. Moreover, castration of bucks improves meat juiciness and tenderness scores and resulted in a relatively higher flavour score. Castration of male goats also results in higher fat deposition and higher dressing percentage than the intact male goats.

MATERIAL AND METHODS

Selection of experimental animals

Twenty healthy Konkani Kanyal male kids of similar age and average body weights were selected randomly from the goat unit of Livestock Research Station, Nileli, Kudal, District- Sindhudurg to conduct the experiment. This experiment was conducted in semi-intensive system so there was no special feeding

plan but we made sure the fulfillment of the nutritional needs of animals. The kid's upto 1 months of age was supplied with their respective does milk and then up to weaning age (3 months) they were supplied with green easily digestible leaves as per their requirements with their does milk to meet the nutritional needs of kids.

After weaning, the feeding schedule of bucks was three to four hours of grazing at morning per day. In concentrates, goat pellets was offered to the each buck at 2 per cent of their body weights to meet their growing nutritional needs.

Castration of experimental goats

The experiment was divided into 5 treatments (T₀, T₁, T₂, T₃ and T₄) each treatment had 4 replications. The Burdizoo's castrator crushes the spermatic cords an inch above the testicles. An anti-infectant was applied after castration at the castrated part of testicles up to 5 days regularly to avoid any viral infection among the goats by the help of Veterinary Doctor. The twenty male kids were randomly divided into 5 treatments (4 kids per treatment). Treatment details were mentioned as below.

T₀- Un-castrated male goats.

T₁- Male goats castrated at the age of 1 month.

T₂- Male goats castrated at the age of 2 months.

T₃- Male goats castrated at the age of 3 months.

T₄- Male goats castrated at the age of 4 months.

RESULT AND DISCUSSION

Growth performance

1. Live body weight

The experimental kids were weighed at monthly interval throughout the experimental period. The live body weight of kids is presented in Table. 1 and graphically presented in Fig.1. It was observed that the average birth weight of selected experimental kids was 2.00, 2.00, 2.00, 2.10 and 2.07 kg for the treatment T₀, T₁, T₂, T₃ and T₄, respectively.

At the start of experiment, at 1st month of age the average live body weight of selected kids of treatment T₀, T₁, T₂, T₃ and T₄ were 5.76, 5.60, 5.70, 5.65 and 5.70 kg, respectively which were homogeneous body weight. All treatments were non-significant at 2 months of age. At 3 months of age, kids of treatment T₁ was found significantly higher body weight than treatments T₀, T₂ and T₄ and was at par with treatment T₃. The kids of treatment T₁ at 4 months of age, was observed significantly higher body weight than T₀, T₂ and T₃ treatments and was at par with treatment T₄. The body weight of kids of treatment T₃ was observed significantly lower than all treatments.

The evident (table. 1) that the average body weight of treatment T₁ at the age of 5th, 6th, 7th, 8th and 9th months was as 12.30, 14.10, 15.75, 16.95 and 18.08 kg, significantly (P<0.05) superior over rest of all treatments. At 6 months of age, treatment T₃ was at par with treatments T₂ and T₄ while treatment T₀ is lowest in all treatments and this trend continues up to 8 months. At the end of experiment i.e. at 9 months of age, average body weight of treatment T₁ (18.08 kg) was significantly (P<0.05) superior over rest of all treatments T₀ (13.10 kg), T₂ (14.45 kg), T₃ (14.70 kg) and T₄ (14.42 kg) which were at par with each other.

Findings of the present study, were in agreement with Phad *et al.* [12] who observed the effect of methods of castration in male kids on body weight and reported that body weight of treatment T₁ (Burdizoo method) was significantly higher than T₀ (un-castrated). Also, Kumar *et al.* [10] who reported the male goats castrated (Baiburtcjan's method) at the age of 1 month had highest growth (26.83 kg) than the male goats castrated at the age of 15 days, 2, 3 months of age and un-castrated male goats having body weight 19.16, 19.83, 24.66 and 15.66 kg, respectively at the age of 18 months in Barbari goats.

Similarly, Devendra and McLeroy [5] conducted the research on effect of castration on growth performance of goats and reported that the advantage of castration has better growth performance and meat quality than entire males.

The results of present investigation are in agreement with Singh *et al.* [14] in Beetal X Assam local goats and El-Hag *et al.* [6] in Desert male goats reported that there was no significant difference in the final body weight at 9 months and 5 months of age, respectively in castrated at 3 months of age and un-castrated.

In contrary, Chawala *et al.* [3] reported that the average live weight at 9 months of age of castrated males (5 days, 3 months and 5 months) was not significantly (p<0.01) different from their respective control groups in Beetal, Alpine X Beetal and Saanen X Beetal goat breeds. Also, Misra *et al.* [12] and Bhushan *et al.* [2] reported that there was no significant difference in final body weight between castrated and un-castrated male goats at the age of 6 months and 1.5 years. The findings of the present study were not

similar to the El-Waziry *et al.* [7]; Solaiman *et al.* [16] and Bello *et al.* [1] who found no significant effect of castration on body weight gain in Ardhi, Boer-Cross and Savannah brown goats, respectively.

Monthly body weight gain

Monthly body weight gain in different treatments was determined from monthly body weight observations and presented in Table 2 and graphically represented under Fig. 2. From the data, it was revealed that the monthly body weight gain for treatment T₁ from 1st to 9th months was higher than rest of all treatments except in 4th month. The findings of present study are in contrary with Chopra *et al.* [4] who reported that monthly gain in body weight was not differed significantly in Beetal goats castrated at 1 months and un-castrated goats up to weaning, and during the 4th, 5th and 6th months of life. Also, Koyuncu *et al.* [9] and El-Waziry *et al.* [7] reported that castration did not affect significantly on body weight gain.

Table 1: Effect of age of castration on monthly body weight of Konkani Kanyal goats (kg).

Treatment	Monthly body weight									
	At birth	1 month	2 month	3 month	4 month	5 month	6 month	7 month	8 month	9 month
T ₀	2.00	5.76	7.43	7.06 ^{bc}	8.03 ^b	9.03 ^b	9.70 ^c	10.50 ^c	11.70 ^c	13.10 ^b
T ₁	2.00	5.60	7.37	9.02 ^a	10.33 ^a	12.30 ^a	14.10 ^a	15.75 ^a	16.95 ^a	18.08 ^a
T ₂	2.00	5.70	7.10	6.77 ^c	8.55 ^b	9.92 ^b	11.02 ^{bc}	11.92 ^{bc}	13.32 ^{bc}	14.45 ^b
T ₃	2.10	5.65	6.90	8.02 ^a	8.07 ^b	9.72 ^b	11.65 ^b	12.57 ^{bc}	13.87 ^b	14.70 ^b
T ₄	2.07	5.70	7.10	7.26 ^{bc}	9.02 ^{ab}	9.15 ^b	11.05 ^{bc}	12.95 ^b	13.95 ^b	14.42 ^b
S.E.	0.03	0.19	0.31	0.34	0.56	0.45	0.63	0.69	0.65	0.63
CD (5%)	0.11	NS	NS	1.04	1.74	1.38	1.93	2.13	2.00	1.93

Means in the same column with different superscripts differ significantly

Table 2: Effect of age of castration on average monthly body weight gain of Konkani Kanyal goats (kg).

Treatment	Monthly body weight gain								
	At 1 month	At 2 month	At 3 month	At 4 month	At 5 month	At 6 month	At 7 month	At 8 month	At 9 month
T ₀	3.75	1.67 ^{ab}	0.38 ^b	0.97 ^a	1.00 ^b	0.67 ^b	0.82 ^b	0.97 ^b	1.10 ^b
T ₁	3.67	1.77 ^a	1.65 ^a	1.31 ^a	1.97 ^a	1.80 ^a	1.65 ^a	1.47 ^a	1.47 ^a
T ₂	3.70	1.40 ^{bc}	0.33 ^b	1.77 ^a	1.37 ^b	1.10 ^{ab}	0.90 ^b	1.05 ^{ab}	1.07 ^b
T ₃	3.67	1.25 ^c	1.12 ^{ab}	0.05 ^b	1.65 ^{ab}	1.67 ^a	0.91 ^b	1.02 ^{ab}	0.83 ^{bc}
T ₄	3.57	1.40 ^{bc}	0.16 ^c	1.75 ^a	0.13 ^c	1.72 ^a	1.58 ^a	0.80 ^b	0.57 ^c
S.E.	0.21	0.09	0.28	0.50	0.19	0.23	0.20	0.15	0.10
CD (5%)	NS	0.28	0.87	1.13	0.58	0.72	0.62	0.47	0.32

Means in the same column with different superscripts differ significantly

Fig. 1 Average monthly live weight in different treatment groups

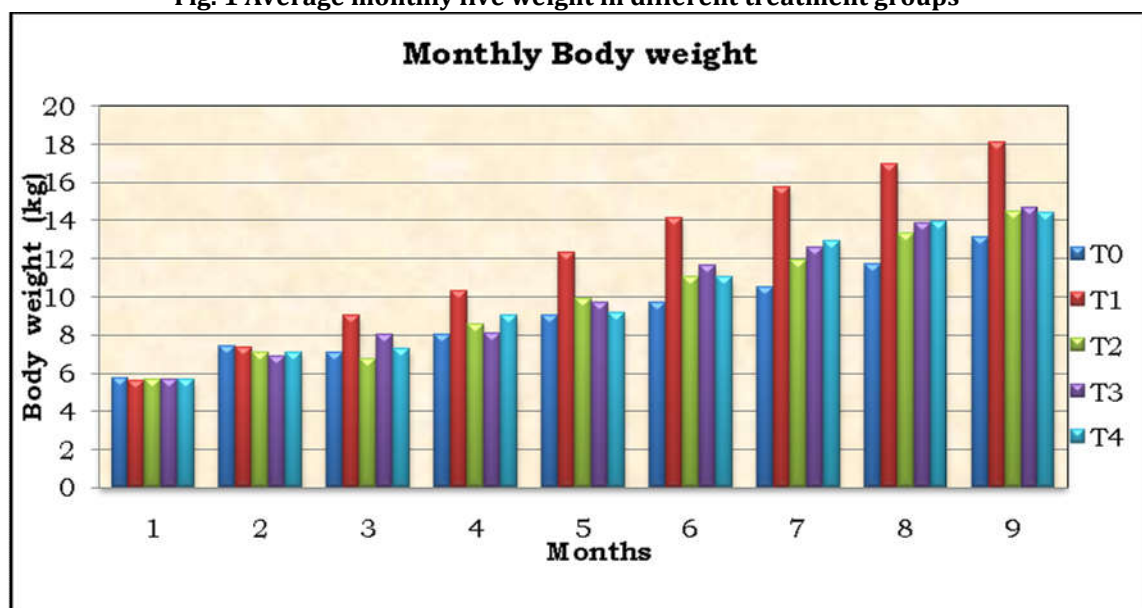
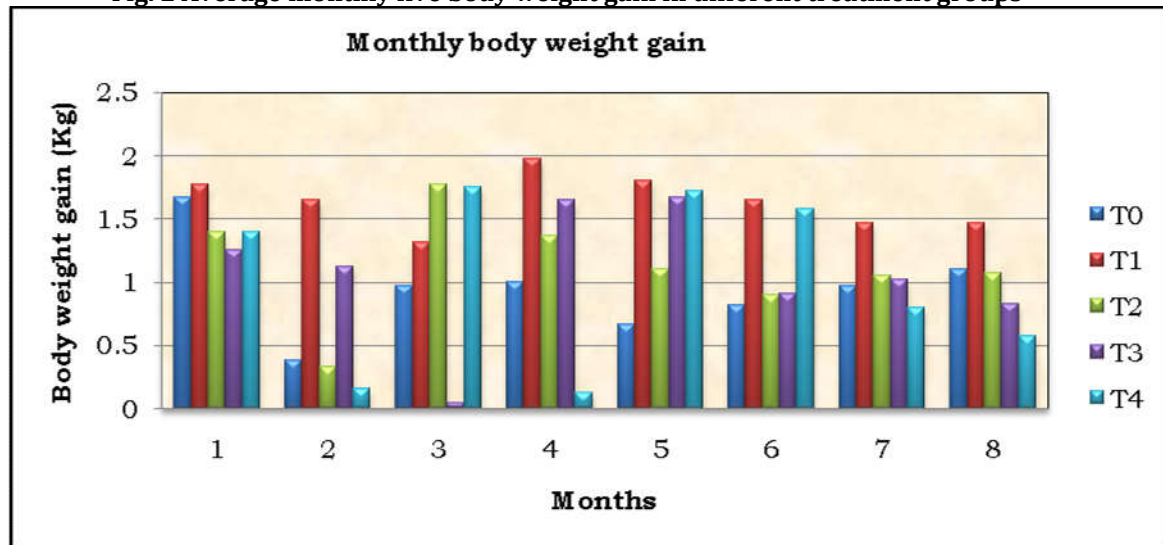


Fig. 2 Average monthly live body weight gain in different treatment groups

CONCLUSION

Goat is the principal meat producing animal in India and therefore, goat meat *i.e.* chevon fetches more revenue than mutton and beef. Hence it can be concluded from experiment the castration of male kids at the age of 1 month significantly improved growth performance given to significant increase in body weight. When body weight gain of goats were its generating economic income of our livelihood.

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