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Effect of Concentrate Supplement on Growth Performance of Konkan Kanyal Goats

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ABSTRACT: *The average body weights of animals feed on treatment feeds T_0, T_1, T_2 and T_3 were 11.60, 11.88, 12.60 and 12.70 kg, respectively and final body weights at the end of experiment were 13.08, 14.43, 15.13 and 16.38 kg in Konkan Kanyal goats fed with experimental feed in treatment T_0, T_1, T_2 and T_3 groups, respectively. The average daily gain in body weight of animals (40.88 g/day) in goats of treatment T_3 was significantly higher. The chemical composition of concentrate supplement and kashat grass was 93.00% DM, 96.40% OM, 15.20% CP, 6.00% EE, 8.40% CF, 66.80% NFE, 3.60% TA, 0.2% AIA, 0.46% Ca and 0.34% P. and 93.00% DM, 96.40% OM, 15.20% CP, 6.00% EE, 8.40% CF, 66.80% NFE, 3.60% TA, 0.2% AIA, 0.46% Ca and 0.34 % P. respectively.*

Key words: *Concentrate supplement, Konkan Kanyal goat, Growth performance, Nutrients*

INTRODUCTION

Goat can take care of their maintenance need, if found opportunity to feed five to six time in a day in intensive rearing but growth rate is slow. If goat grow quickly and gate more yield of meat and milk they must have additional requirement of concentrate supplements. The primary role of concentrate feed is to provide concentrated sources of necessary nutrients for livestock production. These nutrients include not only macro-nutrients of energy and protein but also important specific nutrients such as amino acids, fatty acids, enzymes, vitamins, minerals and others. The feeding of small amounts of concentrate feeds can increase the utilization of roughage feeds by ruminant livestock in some feeding systems. Improvements in the digestibility of roughages are due to the provision of necessary nutrients (especially degradable protein) to promote rumen fermentation, resulting in the increased fibre digestion and intake of roughages, reduced wastes from unconsumed and undigested feed, and increased animal productivity and efficiency. These effects can be particularly 1, 3, 4 M.Sc. important in feeding systems based on relatively poor quality roughages, such as in many small-holder and semi-intensive ruminant systems. Kashat is good source of nutrients for the maintenance of goat. Therefore it was conducted to study the effect of concentrate supplement with Kashat on growth performance of Konkan Kanyal goat

MATERIALS AND METHODS

The present investigation was carried out to utilize the locally available Kashat grass and different levels of concentrates to study the growth performance. We selected sixteen healthy weaned Konkan Kanyal kids of 6 to 12 months of age of comparable body weight. Fresh Kashat (*Coix lacryma jobi* L.) fodder was selected for basel diet. The concentrate were prepared by taking actual proportion of all the ingredients thoroughly for uniform physical composition. It having Maize crumbs 50 per cent, Rice bran 30 per cent, Groundnut cake 10 per cent, Jaggery 7 per cent, Mineral mixture 2 per cent and Salt 1 per cent. Eight Konkan kanyal kids were divided into two groups of four animals each. T_0 group was served with Kashat grass only and T_1 group was served with Kashat grass + 100g. concentrate mixture T_2 group was served with Kashat grass + 200g concentrate mixture and T_3 group served with Kashat grass + 300g concentrate mixture.. The duration of trial was 90 days. The kids were weighed at the beginning of the experiment and at weekly intervals throughout the experimental period. The feed was offered in the morning and evening every day to animals as per their growth requirement.

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Thus, records of weekly body weight changes were maintained throughout the experimental period. Samples of grass and concentrate were analyzed for proximate principles, Calcium and Phosphorus AOAC, 1995 [1].

RESULTS AND DISCUSSION

The chemical composition on %DM basis of Kashat (*Coix lacryma-jobi)* grass used as basel diet for goats was 27.00% DM, 89.80% OM, 11.59% CP, 2.33% EE, 23.27% CF, 52.10% NFE, 8.90% TA, 2.23% AIA, 0.54% Ca and 0.37% P. And the chemical composition of concentrate supplement was 93.00 % DM, 96.40% OM, 15.20% CP, 6.00% EE, 8.40% CF, 66.80% NFE, 3.60% TA, 0.2% AIA, 0.46% Ca and 0.34% P. The chemical composition of Kashat grass and concentrate supplement given in Table 1.

Table 1
Chemical composition of experimental feed ingredients

(%DM basis). Attribute	*Kashat Grass*	*Concentrate*
	Proximate composition	
OM	89.8	96.4
DM	27	93
CP	11.59	15.2
EE	2.33	6.0
CF	23.78	8.4
NFE	52.1	66.8
Total Ash	10.2	3.6
AIA	7.8	0.2
	Minerals	
Ca	0.54	0.86
P	0.37	0.34

The results on body weight changes of experimental animals fed on different feeds are presented in Table 1. At the start of experiment, average body weights of animals feed on treatment feeds T_0, T_1, T_2 and T_3 were 11.60, 11.88, 12.60 and 12.70 kg, respectively and final body weights at the end of experiment were 13.08, 14.43, 15.13 and 16.38 kg in goats fed with experimental feed in treatment T_0, T_1, T_2 and T_3 groups, respectively. The average daily gain in body weight of animals (40.88 g/day) in goats of treatment T_3 was significantly higher than that of animals fed with treatment T0 as (16.44 g/day), T_1 as (28.33 g/day) and (28.11 g/day) in treatment T_2. Chobtang et al. 2009 [2] reported the growth performance in goat on different level of dietary protein having 8, 10, 12, and 14 in group A, B, C and D the body weight gain of buck in 120 days feeding trial was 6.84, 7.37, 7.60 and 11.04 kg, respectively was higher than present investigation. The comparable value of body weight gain reported by Ferdous et al 2011 [3] in goat offered dal grass for group A, Dal grass and the group B, C, D, E offered 15, 20, 25, 30 per cent concentrate mixture, respectively. The total live weight gain was 1.07, 2.53, 2.93, 2.20 and 3.93 kg of group A, B, C, D, and E, respectively. Hossein et al 2003 [4]reported the higher value of per day body weight gain in goat as 37.77 g/day in group one, 44.43 g/day in group two, 52.96 g/day in group three. Also the Jabber *et, al.* 2008 [5] reported the higher value of body weight gain in Lohi lambs as 105 ± 12 g/day, 144.09 g/day and 198.14 ± 0.10 g day of group A, B, and C respectively. The comparable value of daily body weight gain reported by Mondal et al 2013[6] in lamb's as16.26 g, 19.35g and 20.94 g in group I, II and III, respectively.

Table 2
Average live weight changes and daily weight gain in experimental goats

Treatment	*Initial BW(kg)*	*Final BW (kg)*	*Gain in BW (kg)*	*Gain in weight (g/day)*
T_0	11.60	13.08	1.48	16.44
T_1	11.88	14.43	2.55	28.33
T_2	12.60	15.13	2.53	28.11
T_3	12.70	16.38	3.68	40.88

CONCLUSION

It is concluded that better growth performance it is necessary to fed 300 g. concentrate mixture to the goat with Kashat grass. The feeding of Kashat grass with 300 g. concentrate mixture was found superior over Kashat Grass with 100 g. concentrate mixture and 200 g. concentrate mixture.

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