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EFFECT OF SUPPLEMENTATION OF CONCENTRATE ON GROWTH PERFORMANCE OF SIROHI GOATS IN THEIR NATIVE TRACT

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ABSTRACT

The investigation was carried out on-farm, in the Pabuda village of Sirohi block in Sirohi District Rajasthan, located in the native tract of Sirohi Goats. In order to study the effect of supplementation of concentrates, 30 male kids were randomly divided into three equal groups and kept either on normal browsing (as per farmer's practices); (G1) with additional supplementation of concentrate mixture at 100 (G2) and 150 (G3) g per day per kid. During the experiment period of 120 days, BW of kids was recorded fortnightly. The average daily gain (ADG) of the kids was 31.32+ 0.47, 54.02+0.11 and 62.84+ 0.37 in G1, G2 and G3 respectively with significant differences($P<0.05$) among all the groups. It is concluded that, provision of 150g concentrate mixture significantly improved growth performance of Sirohi male kids attributable to a more efficient utilization of the native pasture.

Key Words; Sirohi goat, concentrate supplementation and Body Weight.

In the semi arid region of the country goats are reared mainly on community property resources (CPR) and stubble grazing on cropped arid after harvesting of field crops. Majority of the goat keepers in semi arid region don't supplement concentrate to their goats even critical physiological stages. Sirohi is one of the best suited goat breed for arid and semi arid region of the country. Non availability of the essential nutrients is the key factors for the low productivity of goats. Intensive raising of goats is not a profitable proposition as it raises cost of production. Supplemental feeding to the grazing goats may be a possible way out of this situation. Limited concentrate supplementation, in addition to free grazing on rangeland, is known to improve the growth performance of kids. The present study was conducted to assess the effect of supplementation of concentrate on the growth performance and economics of production of Sirohi kids in its native tract.

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MATERIALS AND METHODS

The investigation was carried out on farm, in the CPR of Bapuda village of Sirohi District of Rajasthan located in the native tract of Sirohi during December, 2013 to March, 2014. Thirty male kids owned by the farmer's were selected for this study and they were randomly divided into three equal groups in ten animals each and kept either on normal browsing (as per farmer's practice; (G-1) alone or with additional supplementation of concentrate mixture at 100 (G-2) and 150 (G-3) g per day per kid. Prior to

commencement of the experiment all thirty kids were dewormed by oral albendazole suspension @ 5mg per kg body weight. The vegetative cover of range land was dominated by *Cenchrus biflorus*, *Cynodon dactylon* grasses, *Zizyphus nummularia, Calotropis sp*., shrubs and fodder trees *Acacia nilotica* and *Prosopis cineraria*. The percent ingredients composition of the concentrate mixture is presented in table 1. The feeding trial was continued for 120 days and the body weight of kids was recorded at fortnight interval. The economics of production was calculated at the end of experimental period.

RESULTS AND DISSCUSSION

The average body weight and average daily gain varied ($p< 0.05$) parallel to the level of concentrate supplementation across the groups. Higher growth rate in local goats grazing in its native pasture supplemented with concentrate mixture was reported[4]. Similar observation on growth performance has been reported due to supplementation of either concentrate mixture or any single ingredient or combination of feed ingredient in different breeds of goats[1, 2, 3& 6]. The growth rate observed in the present experiment in control as well as in supplemented group was higher as compared to the growth rates reported on similar diets by other workers[5]. As regards to cost- benefit analysis of experimental male Sirohi goat, since the farmers were providing their own labour in management and grazing of goats, the cost of only concentrate mixture was considered as the additional cost. Though the cost benefit ratio was more or less similar in G-2 and G-3 but the additional income was observed to be higher in G-3 than that of G-2.

Table 1: Ingredients and chemical composition of concentrate Mixture.

Ingredients composition (%)	
Maize	32
Wheat bran	33
De-oil-rice bran	15
Groundnut oil cake	17
Mineral mixture	02
Common salt	01

Chemical composition (% DM basis) of concentrate Mixture.

CP	22
EE	2.4
CF	10
NFE	55.19
TA	10.41
NDF	40
ADF	20
Lignin	5.55

Table 2: Growth performance and cost benefit analysis of Sirohi goat.

Attributes	G 1	G 2	G 3
Initial body weight (kg)	8.17±0.05	7.98±0.05	8.2±0.05
Final body weight (kg)	12.02± 0.03	14.50±0.04	15.61± 0.04
ADG (g)	31.32^{a} ±0.47	54.02^{b} ±0.19	62.84^{c} ±0.37
Total concentrate intake (kg/kid)	0.0	12.0	18.0
Cost of concentrate/kid (Rs)11.25/kg	_	135.0	202.5
Total live weight (kg/kid)	12.02	14.5	15.61
Cost of live weight @ Rs 150/-per kg	1803	2175	2341.5
Additional income Rs	_	372	538.5
Cost benefit (Rs/Rs spent)	_	1.66	1.60

abc values bearing different superscript in a column differed significantly($P<0.05$) .

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