FEEDING COMMERCIAL OF CONCENTRATE AND HOMEMADE GRAIN MIXTURE ALONG WITH BROWSING ITS ECONOMICS AND EFFECTS ON GROWTH PERFORMANCE OF BERARI KIDS

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Abstract: Eighteen weaned Berari kids were selected randomly & distributed into three groups irrespective of sex. Group I was allowed to browse on "jungle grasses" for six hours a day on naturally grown open pasture land only whereas Group II had been supplemented with grain mixture ration (16% crude protein & 65% TDN) at the rate of 1% of the body weight along with of Probiotics (Saccharomyces Cerviceae and Lactobacillus) mixed with feed at the rate of 2 gm per kg of feed, after browsing. The Third Group was supplemented with commercial concentrate (pellets with 16% crude protein & 65% TDN) at the rate of 1% of the body weight along with the same the rate of 2 gm Probiotics per kg of feed, after browsing. Drinking water was provided ad. Lib. during the confined hours. This experiment conducted for a period of 60 days under loose housing system. Significantly higher body weights were achieved by the kids reared on supplementation of whole grains and commercial concentrate as compared to the control group on jungle grass alone. It revealed that supplementation kid's ration with grains mixture or commercial concentrates was more economical than rearing then on browsing alone.

Keywords: Berari, commercial concentrate, jungle grass, probiotics, grains mixture

Introduction: The small ruminants play important role in farmer's life in the most reared animal after buffalo in our country (Sastry and Thomas, 2012). Goats have survived and sustained poor people under different environmental and geographical situation. In the national economy and animal husbandry sector, goat is a very important factor. As per census of 2007, Maharashtra state is having 1.09 Crore goats in which 29.81 Lac is population of Vidarbha region (Department of Animal Husbandry, Maharashtra). Goats have a high prolificacy to recover flock size, much less housing requirement and management problems. Much less risk is there in goat farming, especially in drought prone areas where frequent draughts resulted into large mortality. Women and children easily look after herding, feeding and health care of goats. National Bureau of Animal Genetic Resources, Karnal (NBAGR, 2012), has recently registered "Berari" as 23rd breed of goat, natural habitat this breed is Vidarbh region of Maharashtra state. These Berari goats are mainly reared on browsing alone in Jungals. It is fact that the mixed jungle grass could only support maintenance and cannot support requirement of growth performance (Balaraman and Gupta, 1990). The Grain rations may help in proper development of rumen of kid. It also helps in production of fatty carcass for meat production. Therefore the present study was undertaken to access the growth performance of Berari kids under different feeding strategies.

Material and Methods

Eighteen weaned Berari kids were be randomly selected and grouped into three groups irrespective of sex. This experiment conducted for a period of 60 days under loose housing system. The first group (Group-I) allowed to browse on "jungle grasses" for six hours a day on naturally grown open pasture land. Pasture land was having Jungle Grasses and shrubs like Bor (Ziziphus jujuba), Bhabul (Acacia nilotica), Khair (Acacia catechu), Hiwar(Acacia leucophleca) ,Sabja(Ocimum basilicum) and Peeple (Ficus religiosa). Hiwar was liked by kids during period of experiment for feeding during grazing hours of the day. The locally available Commercial Concentrate (pellets) was procured from market and Grain mixture was prepared on farm for feeding Kids under Group II and Group III which was having 16% crude protein & 65% TDN. The above concentrates were fed at the rate of 1% of the body weight in accordance with Johnson et al. (2010) along with Probiotics at the rate of 2 gm (Saccharomyces Cerviceae and Lactobacillus) per kg of feed, after returned from browsing to the Group II and Group III respectively.

Composition of Mixed grain ration: The home made mixed grain ration was consists of Maize (30Parts), Black grams (28 Parts), Wheat Bran (30 parts), Grams (20 parts), Mineral Mixture(1.5 parts) and Common Salt (0.5 part). Commercial concentrate was in the form of pellets and purchased from market. The Growth parameters like, Weekly live body weight, Weekly live bodyweight gain and Average daily gain were studied during the trial period.

Significantly higher body weights were achieved by the kids reared on supplementation of grains mixture and commercial concentrate as compared to the control group which was maintained on jungle grass alone.

- Results And Discussion

Table No. 1: Average weekly body weight (Kg) of Berari kids under different feeding Strategies

Weeks	Group I	Group II	Group III	Pooled Mean
1	5.75 ±0.16	5.71 ±0.16	5.64 ±0.23	5.70[a]±0.18
2	5.97 ±0.15	5.98 ±0.14	5.92 ±0.22	5.96[a]±0.17
3	6.21 ±0.16	6.28 ±0.13	6.24 ±0.21	6.24[b]±0.16
4	6.43 ±0.17	6.59 ±0.12	6.58 ±0.21	6.53[b]±0.16
5	6.67 ±0.21	6.92 ±0.12	7.08 ±0.21	6.89[c]±0.18
6	6.93 ±0.22	7.28 ±0.13	7.47 ±0.22	7.23[d]±0.19
7	7.04 ±0.18	7.67 ±0.14	7.87 ±0.23	7.53[d]±0.18
8	7.42 ±0.24	8.09 ±0.15	8.30 ±0.25	7.93[e]±0.21
9	7.63 ±0.30	8.52 ±0.16	8.73 ±0.26	8.30[f]±0.72
Pooled Mean	6.67 [a] ±0.59	7.00 [b] ±0.41	7.09 [b] ±0.68	6.92±0.56

Note : Means bearing same superscript does not differ significantly

Similar findings were also observed by Johnson et. al., (2010), Hossain et al, (2004) and Das (2009) in goat kids, they also observed that supplementation of concentrate helps to achieve maximum body weight in minimum duration. This indicates that Jungle grasses failed to fulfil the protein and energy requirement of kid during growth period. Higher growth rate in groups fed with commercial concentrate or grains mixture along with Probiotic might be due to increased flow of microbial protein leaving the rumen and enhanced supply of amino acid entering to the small intestine (Erasmus, 1992 and Caton, 1993).

2 .Weekly body weight gain

Table No. 2: Average weekly body weight gain (gm) of Berari kids under different feeding Strategies

Weeks	Group I	Group II	Group III	Pooled Mean
1	238.33±13.82	276.67±25.48	292.50±39.91	269.17[a] ±26.40
2	230.88±17.04	290.00±23.76	314.17±39.20	278.33 [a] ±26.66
3	222.50±20.52	312.50±24.95	340.83±34.72	291.94 [a] ±26.73
4	227.50±13.41	332.50±24.95	364.17±34.72	308.06 [a] ±24.36
5	240.83±44.39	356.67±23.96	383.33±34.92	326.94[b] ±34.42
6	245.83±44.92	390.50±22.61	407.50±35.39	347.94 [b] ±34.30
7	238.33±42.96	418.33±18.05	423.33±32.49	360.00 [b] ±31.66
8	239.17±53.20	436.67±16.31	435.83±34.65	370.56 [c] ±34.72
Pooled Mean	235.42 [a] ±31.28	351.73 [b] ±22.50	370.21 [b] ±35.75	319.12±29.84

Note : Means bearing same superscript does not differ significantly

Significantly higher (P<0.01) values were observed for weekly body weight gain of Berari kids of group III and II as compared to group I. These findings were also reported by Jinturkar et. al., (2009), Yadav et. al., (2010), Reddy et. al., (2011), Adagale et. al., (2011) in goat kids. Yadav et. al., (2010) concluded that concentrate supplementation is required for more body weight gain while as per Jinturkar et. al., (2009), Reddy et. al., (2011) and Adagale et. al., (2011) animal supplemented with Probiotics gain higher body weight. As concentrate supplementation was given to kids, they gain more body weight. It revealed that the grasses present in forest were not sufficient to fulfil the nutritional requirement of growing kids. It requires additional nutrients for boosting the growth performance. The concentrate mixture having required nutrients can boost growth performance of kids. Earlier reports also suggest that addition of Probiotics alone or in combination improves daily weight gain (Casey et. al., 2007). It revealed that supplementation of general feeding practices (Browsing/Grazing) with commercial concentrate or homemade grain mixture along with Probiotics helps to gain higher body weight in kids.

3. Average Daily Gain

Table 3. Average daily gain (g) of Berari kids under different feeding Strategies

Weeks	Group I	Group II	Group III	Pooled Mean
1	34.00±1.97	39.50±3.64	41.70±5.70	38.3[a] ±3.77

2	32.90±2.43	39.70±3.96	44.80±5.60	39.20[a] ±3.99
3	31.70±2.93	41.30±2.01	48.60±4.96	40.59[a] ±3.30
4	32.20±1.91	47.40±3.56	52.00±4.96	43.90[a] ±3.47
5	33.90±1.81	50.90±3.42	54.90±5.05	46.62[b]±3.42
6	34.00±1.96	55.80±3.26	58.20±5.07	49.36[b]±3.43
7	32.90±1.94	59.70±2.58	60.40±4.64	51.06 [c] ±3.05
8	33.50±1.85	62.30±2.33	62.20±4.94	52.72 [c] ±3.04
Pooled Mean	33.10[a]±2.10	49.60[b]±3.09	52.9[b]±5.11	45.24±3.43

Note : Means bearing same superscript does not differ significantly

The significant differences (P<0.01) were observed for daily weight gain of Berari kids among the groups, significantly higher average daily weight gain was observed for group II and III. The findings are in agreement with that of Das et al. (2011), who observed similar average daily gain in Sikkim local kids. However Yadav et al. (2011), reported higher average daily gain (76 g) than the present findings in goats under field condition.

The net profit of Berari kids of Group I (browsing jungle Grasses), Group II (browsing jungle grasses supplemented with mixed grain ration with Probiotics) and Group III (browsing jungle grasses, supplemented with commercial concentrate with Probiotics) were 366.63 ± 65.87, 545.67 ± 38.05 and 586.48 ± 67.76 (Rs.), respectively. The control group was solely depends on the jungle grasses or whatever feed resourced available at experimental site but other groups were supplemented and resulted into more net profit.

Conclusion: The study revealed that supplementary feeding with commercial concentrate or homemade concentrate in addition to the browsing is more economical than browsing alone.

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