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Dry matter intake and growth performance in osmanabadi goat kids maintained on DHN6 grass, Dashrath grass and Jowar straw

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Abstract

The present study was conducted for 12 weeks on 6 Osmanabadi goat kids of either sex in confinement to study the Dry Matter Intake, Growth Performance of Osmanabadi Goat kids maintained on DHN6 grass, Dashrath grass and Jowar straw. Daily feed intake, weekly body weights were recorded for 12 weeks. It was found that dry matter intake, dry matter intake percentage, weekly body weight gain, and daily body weight gain were ranged 393.94 ± 0.95 to 566.79 ± 4.07 g, 3.43 ± 0.29 to $3.53 \pm 0.27\%$, 11.90 ± 1.0 to 16.43 ± 1.04 kg, and 47.62 ± 1.59 to 63.81 ± 1.41 g, respectively during the study period. It was inferred that the feeding DHN6 grass, Dashrath grass, and Jowar straw without supplementation of concentrate mixture gives satisfactory growth performance in Osmanabadi goat kids.

Keywords: Goat kids, DHN6, growth performance, Dashrath grass

Introduction

Goats are the backbone of the economy of small and marginal farmers and landless labours in India. It is an insurance against crop failure and provides alternate sources of livelihood of farmers round the year. They play an important role in income and employment generation and improving house-hold nutrition. The goat "poor man's cow" has tremendous potential to be projected as the 'Animal of Future' for rural prosperity under the changing agro-geo-climatic conditions and depleting resources for crop-based livelihood. There are around 880 million goats in the world out of which India has over 135.17 million (15.36%) of 34 defined and non-descript breeds that are adapted efficiently in different agro-climatic conditions all over the country. India has 26.4% goat of the total livestock population (512.02 million) out of which Rajasthan contributes to 16.03% [1]. The goats in India are reared primarily for meat and also for milk and hairs. The goat meat production in India has doubled (9.3% to 18.3%) and goat milk production showed a growth rate of 31.53% during the last decade [6]. Goats are mainly reared by grazing without feeding the concentrate mixture by the poor and landless farmers. Therefore the present study was planned to investigate the dry matter intake, dry matter intake percentage, and gain in body weight in Osmanabadi goat kids in confinement without supplementation of concentrate mixture.

Materials and Methods

The present study was conducted for 12 weeks on 6 Osmanabadi goat kids of either sex in confinement to study the dry matter intake, growth performance without supplementation of concentrate mixture. These goat kids were reared under intensive system that is confinement during the period of study. The kids were healthy and free from external and internal parasites. All the goat kids were maintained only on DHN6 grass, Dashrath grass (Hedge Lucerne) and Jowar straw. The daily fodder intake, weekly body weights were recorded. Based on the data recorded total dry matter intake, dry matter intake percentage, total live weight gain, daily weight gain were calculated and the data were statistically analyzed by using the Paired T -test as per [4].

Results and Discussion

Chemical composition of fodders: The chemical composition on percent DM basis of experimental feeds namely Hedge Lucerne (*Desmanthus virgatus*), DHN-6 (Dharwad hybrid napier-6) and jowar straw (Dry roughage) is given in Table 1.

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The dry matter content of jowar straw was 89.90 percent whereas the dry matter content in Hedge Lucerne and DHN-6 were 15.87 and 16.12 percent, respectively. The percent CP content of DHN-6 and Hedge lucerne was 12.81 and 19.54 percent. Percent crude fiber and ether extract of all the offered fodders remained in normal range for the respective category. The total ash content of DHN-6 and jowar straw was 10.6 and 10.34 percent, respectively. The dry matter content of Hedge Lucerne (24.88 percent) was significantly lower when compared to that reported by [3], [5] who have recorded higher dry matter content (29.14 and 24.88 percent) of Hedge Lucerne in their studies. The composition of DHN-6 and jowar straw used ranged in normal limits for said fodders.

Table 1: Chemical composition of green and dry fodder

Sr. No.	Proximate principles percent	Hedge Lucerne	DH6 Fodder	Jowar straw
1	Dry matter	15.87	16.12	89.90
2	Crude protein	19.54	12.81	2.82
3	Ether extract	4.36	5.10	1.65
4	Total ash	5.45	10.6	10.34
5	NFE	50.37	46.01	51.74
6	Crude fibre	20.28	25.48	33.45
7	Acid insoluble ash	---	--	--

Table 2: Performance and dry matter intake in Osmanabadi goat kids without supplementation of concentrate mixture.

Parameter	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
Average daily dry matter intake (g)	393.94±0.95	409.96±1.26	421.49±1.42	436.20±1.21	453.90±0.98	471.51±1.75	487.99±4.09	498.72±2.82	520.84±2.67	529.15±2.12	540.82±2.51	566.79±4.07
Dry matter intake percentage	3.45±0.33	3.45±0.30	3.43±0.30	3.43±0.29	3.45±0.29	3.48±0.28	3.46±0.27	3.46±0.26	3.53±0.27	3.47±0.26	3.45±0.23	3.50±0.22
Average Weekly live body weight	11.90±1.0	12.31±0.98	12.70±0.99	13.14±0.99	13.56±1.01	13.97±1.01	14.41±1.01	14.80±1.02	15.17±1.03	15.62±1.04	16.02±1.04	16.43±1.04
Average daily gain in body weight (g)	47.62±1.59	59.05±4.09	55.24±3.35	62.86±5.90	60.00±4.36	56.43±2.55	63.81±1.41	54.76±1.90	52.38±4.40	63.81±4.59	57.62±1.09	57.62±2.11

The maximum daily gain in body weight of Osmanabadi goat kids found was 63.81±4.59 g in Xth week of experiment whereas lowest daily gain in body weight found was 47.62±1.59 g during the Ist week of the present study. There was no particular trend in daily weight gain was found during the study period. These results are in the partial fulfillment of [2] who reported the daily gain in body weight in Osmanabadi goat kids in confinement was ranged from 36.72±0.27 to 61.21±0.14 g.

Conclusion

It was inferred that Osmanabadi goat kids could be gain in daily body weight up to 60 g per day with feeding DHN-6, Hedge Lucerne, and Jowar straw and without supplementation of concentrate mixture.

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The values of average daily dry matter intake, dry matter intake percentage, live body weight and daily weight gain in Osmanabadi goats were depicted in table 2.

Average dry matter intake and dry matter intake percentage: The average daily dry matter intake varies from 393.94 ±0.95 to 566.79±4.07 g from Ist to XIIth week of treatment and the average daily dry matter intake increased as age advances [5] reported the dry matter intake in growing Osmanabadi goats as 646.20 to 685.99g/day with feeding Hedge lucerne, DHN-6, Jowar straw fodders, and concentrate mixture.

The dry matter intake percentage in the present study was ranged from 3.43±0.29 to 3.53±0.27% whereas the lowest and maximum dry matter intake percentage was found in the IVth and IXth week of the experiment, respectively.

Average weekly live body weight and daily gain in body weight

The average weekly live body weight in goat kids ranged from 11.90±1.0 to 16.43±1.04 kg and the weekly live body weight was found to be increased during the whole period of the present study. The final body weights at the end of the experiment recorded by [5] were from 15.18 to 15.61 kg which was slightly lower than the final body weight (16.43±1.04 kg) recorded in the present study.

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