



ISSN (E): 2277-7695
ISSN (P): 2349-8242
NAAS Rating: 5.23
TPI 2023; SP-12(8): 486-488
© 2023 TPI
www.thepharmajournal.com
Received: 01-05-2023
Accepted: 05-06-2023

Meetha Lal Meena
M.Sc. Scholar, Department of
Animal Husbandry and
Dairying, Raja Balwant Singh
College, Bichpuri, Agra,
Uttar Pradesh, India

Rajkumar Soni
M.Sc. Scholar, Department of
Animal Husbandry and
Dairying, Raja Balwant Singh
College, Bichpuri, Agra,
Uttar Pradesh, India

Rajendra Kumar Soni
M.Sc. Scholar, Department of
Animal Husbandry and
Dairying, Raja Balwant Singh
College, Bichpuri, Agra,
Uttar Pradesh, India

Hansa Jat
M.Sc. Scholar, Department of
Animal Husbandry and
Dairying, Raja Balwant Singh
College, Bichpuri, Agra,
Uttar Pradesh, India

Virendra Singh
Research Scholar, Department of
Agronomy, Raja Balwant Singh
College, Bichpuri, Agra,
Uttar Pradesh, India

Corresponding Author:
Meetha Lal Meena
M.Sc. Scholar, Department of
Animal Husbandry and
Dairying, Raja Balwant Singh
College, Bichpuri, Agra,
Uttar Pradesh, India

Dietary crude protein (D.C.P) and dry matter management for ensuring growth and development of goats in Rajasthan

Meetha Lal Meena, Rajkumar Soni, Rajendra Kumar Soni, Hansa Jat and Virendra Singh

Abstract

Ensuring proper Dietary Crude Protein (D.C.P) and Dry Matter (DM) management is crucial for the growth and development of goats in Rajasthan or any other region. Rajasthan's climate and feed availability may present unique challenges for goat rearing, making it essential to focus on nutrition to achieve optimal growth and development. Here are some important points to consider for D.C.P and DM management. Precise DCP and dry matter for Goats For intake recommendations, it is best to consult a qualified animal nutritionist or veterinarian who can assess your goats' specific needs based on their age, weight, reproductive stage and available feed resources. Dietary Crude Protein (DCP) Requirements: DCP requirements of goats can vary depending on their age, physiological state (eg, pregnancy, lactation), growth rate and production goal (eg, meat or milk production). Generally, young goats (kids) and pregnant/lactating goats require higher DCP levels for growth and milk production.

Keywords: Dry matter, growth and development, dietary crude protein, goat and nutrition

Introduction

The exploding human population of the country is pressing hard on the direct use of land and is limiting its indirect use through animal agriculture. The possibilities of providing animal protein in human diets are, therefore, posing important questions in the minds of planners and thinkers for the near future. It is needless to emphasize the importance of animal proteins for the balanced nutrition of man which has repeatedly been so well recognized and reported from time to time, its deficiency in human diets is known to cause a number of diseases and difficulties viz. Tissue atrophy, bloodlessness, decreased synthesis of plasma proteins. No human race can therefore, continue to enjoy health and happiness without the involvement of animal protein in its nutrition. As such nations have a judicious combination of plant and animal agriculture in a benefiting manner to meet the specific situations for the purpose. Considering the Agro-economic conditions of the country at this moment and projecting them for the next century (21st century), it can be clouded that the keeping of the larger animals like cattle and buffaloes is becoming more and more tedious and it may become impossible in times to come. The only hope of the source of animal protein in our already poorly balanced diets is perhaps the small ruminants which include sheep and goat, while sheep caters to the needs of meat only, goats have the advantage of doing so both the rough meat and milk, a very large number of people are vegetarians and do not take meat, milk happens to be the only source of animal protein for them. The dairy goat can as best convert the pastures and fodder crops into milk as can the modern dairy cow, like most small production unit, the goat is expensive with labour, but in its use of raw materials it surpasses the cow. They are harder than any other live - stock and do well under harsh climatic conditions.

Methods and Materials

The plan of work includes collection of information on feeding and managerial practices followed by goat owners in these villages through personal discussion and actual observations covering forty-nine farmer's selected at random from 5 villages of Tehsil- Bonli of Sawai Madhopur district. The climate and season in the region can impact the feeding patterns of goats. During extreme weather conditions, such as hot summers or harsh winters, goats may need adjustments in their diets to cope with environmental stresses. Observations pertaining to variations in practices of feeding which covered preparation of feeds, frequency of feeding and

watering, and also the type of human labour employed for these jobs in these selected household, were also undertaken. The prime objective of the present study are followings. Keeping all above facts in minds, it has been decided to take up a small research project regarding survey on goats in villages of one Tehsil-Bonli District Sawai Madhopur Rajasthan with a view to ascertain the feeding pattern of goats vis-a-vis socioeconomic standard of the owner so as to make a comprehensive generalization regarding the goat farming in East Rajasthan.

Results and Discussion

Average D.C.P intake for goats

Protein Sources Goats are ruminant animals with unique digestive systems that allow them to digest fibrous feeds effectively. They can obtain a substantial portion of their protein needs from grazing on pasture and browsing on shrubs

and trees. High-quality forages with good protein content are essential for meeting their DCP requirements. Concentrate Feeds: In some situations, goats may be supplemented with concentrate feeds, such as grains or formulated commercial feeds, to meet their higher DCP requirements during specific growth or production stages. (Sen and Ray, 1964) ^[10, 11]. Balancing Nutrients it's crucial to balance the overall diet to meet the goats' protein requirements while also providing adequate energy, minerals, and vitamins for optimal health and performance. The roughages contributed only 40.90 per cent of the total DCP and the major protein i.e. 59.10 per cent came from costly ingredients of concentrate which is a direct testimony to the poor quality in respect of protein content in roughages used. The daily intake of DCP in goats was found to be apparently less in the households which possessed more number of goats.

Table 1: Average D.C.P intake through for goats.

Av. No. of adult goats	Av. Body weight (kg)	Average D.C.P intake through (kg)		
		Roughage	Concentrate	Total
3.29	32.28	0.016-31.37@	0.035-68.63@	0.051
7.65	27.64	0.021-43.75@	0.027-56.25@	0.048
13.00	33.59	0.016-37.20@	0.029-62.80@	0.086
7.16	29.84	0.018-40.90	0.029-59.10	0.044
105.49**	2.97*	0.33NS	4.30*	2.49NS

The value for daily DCP intake per goats in groups - I (<5 goats), II (5–10 goats), and III (more than 10 goats) recorded as 0.051, 0.048 and 0.043 kg respectively. The intake of DCP did not influenced in the present investigation as the size of goats increases per household and obviously it was recorded to explicit an decreasing trend with increase in number of goats per household. A more or less parallel trend of results have encountered with that of daily DCP intake either through roughage or through concentrate. The results made so far with this regard revealed that contribution of roughages and concentrate towards daily DCP intake of goats tended to be decrease with increase in number of I goats per household.

Average daily DCP intake of goats was found as 0.044 kg of which major portion came through concentrate (59.10%) Roughages contributed only 40.90 per cent of total DCP supplied to goats daily. A more or less parallel trend of results

have been encountered with regard to daily DCP intake of goats surveyed either through roughage or concentrate moiety of ration and was appeared to exhibit insignificant influenced by the size of number of goats kept per household. Interestingly it has appeared that daily intake of D.C.P. of the goats tended to decreased with increase in size of goats herd per household.

Average intake Dry Matter (DM) for goats

The daily dry matter intake of goats during present study has to range from 1.17 to 2.49 kg with a concomitant average figure of 1.72 kg per goat. No significant variation due to change in size of goats herd per household was encountered with regard to average total dry matter intake and average D.M. supplied either through roughages or through concentrate parts of ration.

Table 2: Average intake Dry Matter (DM) for goats

Av. Body weight (kg)	Average D.M. intake through (kg)				
	Dry	Green	Total	Conc.	Total
32.28	0.43	0.26	0.69-69.70 @	0.29-30.30 @	0.99
27.46	0.40	0.26	0.67-75.28 @	0.22-24.72 @	0.89
33.59	0.40	0.30	0.75-78.13 @	0.19-21.87 @	0.96
	0.14	0.27	0.68-73.91 @	0.24-26.09 @	0.92
2.97*	0.19NS	0.29NS	0.93NS	4.28*	1.15NS

The daily average dry matter intake either through roughages or concentrate tended to enhanced with decrease in size of goat herd per household. It is noteworthy that the percentage contribution of roughages and concentrate dry matter of the ration towards daily total average D.M. supply to goats was being worked out as 81.40 and 18.60 per cent respectively which quite fall within the accepted principles of feeding for profitable performance.

Conclusion

In conclusion, a well-designed feeding program that considers the D.C.P and DM needs of goats, along with their age,

reproductive stage, and the available feed resources in Rajasthan, can contribute significantly to their growth and development. Regular monitoring and adjustments based on the goats' responses to the diet are essential for ensuring their health and productivity. Working with knowledgeable experts and adopting good management practices are vital for successful goat rearing in Rajasthan.

Conflict of Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

References

1. Ahlawat MR, Pant RN, Leather AN. A study of the practices in the feeding of buffaloes in four towns of Punjab. *Indian J Dairy Sci.* 1960;13:126-135.
2. Bhuyan R, Baruah KK, Bora MC, Das PC. Effect of different dietary protein and energy levels on growth, nutrient utilization and feed efficiency in Beetal x Assam local goats. *Indian J Anim. Nut.* 1997;14(1):20-24.
3. Bhuyan R, Baruah KK, Bora MC, Das PC. Effect of different dietary protein and energy levels on growth, nutrient utilization and feed efficiency in Beetal x Assam local goats. *Indian J Anim. Nut.* 1997;14(1):20-24.
4. Devendra C. Studies in the nutrition of the indigenous goat of Malaya. *Nutrition Abst. and Review.* 1966;37(2):628.
5. Gahhagher JR, Shelton M. Efficiency of conversion of feed to fiber of Angora goats and Rambouillet Sheep. *Nutrition Abst. and Review.* 1972;42:1670.
6. Kumar H, *et al.* Some observation on Barbari goats under field condition of Tarai area in U.P. In recent Naget advances in goat production, Vth International Conference on Goats, March 1992, New Delhi; c1992. p. 358-360.
7. Longnecher JB. Utilization of dietary protein in newer methods of nutritional biochemistry. Pub. Academic Press, New Delhi; c1963, p. 113-141.
8. Malechek JC. The batanical and nutritive composition of goat diet on lightly and heavily grazed range. *Nutrition Abst. and Review.* 1971;42:369.
9. Mudgal VD, Malikarjunppa S. Influence of various Saxena roughage and focused rationale on lactation performance and feed conversion efficiency of Murrah buffaloes, 1986.
10. Sen KC, Ray SN. Nutritive value of Indian cattle feeds and the feeding of animals. Vth ed. I.C.A.R. Bulletin No.25, ICAR, New Delhi; c1964.
11. Sen KC, Ray SN. Nutritive value of Indian cattle feeds and the feeding of animals. Vth ed. I.C.A.R. Bulletin No.25, ICAR, New Delhi; c1964.
12. Sherman HE. Chemistry of food nutrition, Pub. Macmillan & Co. Ltd., New York; c1941.