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Feeding management practices adopted by goat-owners in Pratapgarh district of Rajasthan

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Abstract

A field investigation was carried out during year 2019 in order to collect firsthand data on goat feeding management practices adopted by goat owners in Pratapgarh district of Rajasthan. Four tehsils were selected randomly from Pratapgarh district of Rajasthan. Ten goat owners from each of village were selected thus making a sample of 120 goat keepers. The 44.16 percent goat owners are adopted semi-stall feeding system and goats were generally grazed on community land for more than 5 Hrs. daily. The majority of goat farmers (89%) do not practise pasture land protection. The findings showed that the majority of goat rearers (45.83%) feed their entire flock green fodder. The majority of 65 percent of goat farmers preserve green fodder, 44.99 percent of farmers feed their goat's lucerne and berseem, and 42 percent of farmers feed their goats concentrate and supplements. The majority (59.16%) of goat keepers use ponds to provide drinking water twice daily.

Keywords: Feeding management, goat, owner, berseem, grazing, lucern, husbandry, ruarl, household, milk

Introduction

India is primarily an agricultural nation, with 70% of its people making a living from agriculture. The need of providing a balanced diet for India's growing population is one of its greatest challenges. Because of its low investment requirements, high adaptability, high fertility and fecundity, low feed and management requirements, high feed conversion efficiency, quick payoff, and low risk, goat farming has been suggested as the best option for rural people in developing countries. Goats serve a vital role for generating income, storing capital, creating jobs, and enhancing household nutrition. The main source of income for India's small, landless farmers is goat farming. It offers farmers throughout the year alternate sources of income and serves as insurance against crop failure. Millions of poor, small families in India engage in the tradition of goat husbandry by raising animals on "Crop Residues" and Common Property Resources. In the study area, there were 20.84 million goats in Rajasthan state. Goat keeping requires a strong foundation in education, family educational status, and exposure to communication sources (Chandra *et al.*, 2005) [3].

Smallholders and landless rural poor benefit from the milk, meat, fibre, skins, and manure provided by goats for their subsistence. They are often cared by women, old persons and even children's. The goats are an important component of the dry land farming system and have been referred to as the "Poor Man's Cow" in India due to their low maintenance costs, quick returns on investment, and low risk of capital investment. Goats are the best alternative for marginal or undulating lands that are unsuitable for other animals like cows or buffalo. Goat farming can be made profitable for small and marginal farmers with very little capital outlay.

The majority of rural households fall below the poverty line, and the majority of these households are made up of landless agricultural laborer's, marginal, small farmers, and rural artisans. In areas with rain-fed agriculture, poverty and unemployment rates are comparatively more severe. The rural poor with limited access to land could start and expand a goat-rearing business in these areas. Due to shorter breeding intervals and high prolificacy, the capital investment is relatively low, the amount of land required is minimal, and the reproductive rates are higher.

The farmers mainly improve goats using a comprehensive management system and conventional management techniques, relying on communal land for grazing. The adoption of better management techniques is anticipated to boost farmers' income. Even so, livestock has a sizable economic impact on both the agricultural sector and the overall economy. The goat farmers are still unaware of modern scientific management techniques.

Achieving the desired level of goat production would be possible with better feeding, breeding, and other management practices. (Dudi and Meena, 2013) [5]. To increase goat production, the keepers of goats required more training in breeding and health care. Consequently, extension agencies should disseminate information based on training requirements at the field level to ensure the farmers' livelihood security. (Meena and Singh, 2015) [15].

Materials and Methods

The investigation uses primary total 120 goat keepers were selected from twelve villages of four namely Pratapgarh, Pipalkhunt, Dhariyawad and Chhotisadri tehsils in Pratapgarh district of Rajasthan. The people involved, villages were chosen with purpose because they represented the population of goats with the greatest number. Through surveys, respondents provided the information for the purpose of gathering data on the state of goat feeding and health management practices, the goat farmers were personally contacted. and the goat owners categorized into three categories viz., Goat owners with < 1 hectare, Goat owners with 1-2 hectare, Goat owners with > 2 hectare.

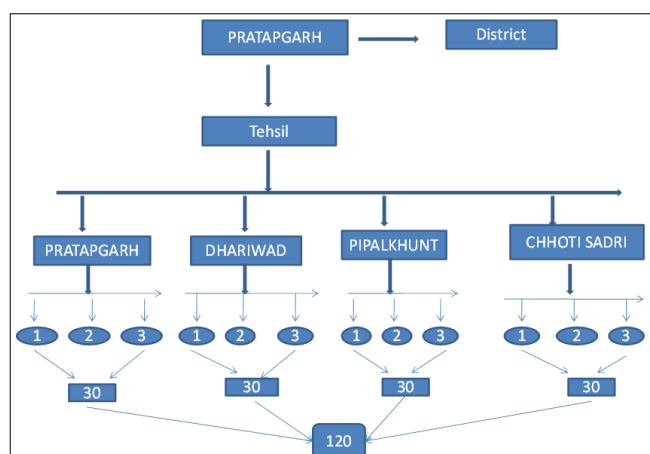


Fig 1: List of selection of Tehsils, village & respondents of Pratapgarh district of Rajasthan

Observations

Details of goat feeding and health care practices were obtained using following parameters such as mode of feeding (Complete stall feeding, Semi stall feeding and complete grazing); grazing site (Own land, Community land) Grazing time in hours, Protection of pastureland, provision of green fodder to various categories, Preservation of tree leaves (Pala), Types of green fodder used for feeding (Lucerne, Berseem, Weeds, Monsoon grass) and Concentrate feeding to the goats.

Results and Discussion

The information relating to feeding practices goat management used by goat owners in Rajasthan's Pratapgarh district has been illustrated and discussed below.

Data presented in table 1 shows that maximum goat rearers (44.16%) adopted semi stall feeding system followed by (39.16%) complete grazing and only 16.66 percent goat keepers followed complete stall feeding. Findings are in line with Warale *et al.* (2017) [21] who concluded that majority of goat owners (95.0%) followed stall feeding + grazing, while very few (5%) adopted only stall feeding.

The data given in Table 2 indicated that mostly grazing was

done on community land (65%). On the other hand only (35%) goat keepers used their own land for grazing of their goats. Among the goat rearers majority of (73.33%) used community land in Pipalkhunt and Pratapgarh tehsil and maximum own land used by (40%) goat rearers in Dhariyawad tehsil of Pratapgarh district of Rajasthan. Findings are in agreement with who revealed that animals were mostly grazed in mixed grazing on community land/public range land for about 4-8 h in a day. Table 1 shows that 59.16 percent of goat keepers sent their goats for grazing for more than 5 hours daily. The percentage of goat keepers grazing goats for less than 5 hours was 40.83 percent. Among the goat rearers 46.66 percent grazing their goats for less than 5 hours in Pipalkhunt and 63.33 percent grazing (>5 hours) in Chhotisadri tehsil. Findings are in agreement with who indicated that almost half of the respondents (51.33%) maintained their goats by allowing grazing for 4-6 hours per day.

Table 3 indicated that large number of goat keepers (74.16%) didn't protecting the grass land whereas; small number of goat keepers (25.83%) protected their pasture land by boundary wall or fencing. The maximum protection of pasture land was followed in Pipalkhunt tehsil (33.33%) and minimum (20%) in Pratapgarh and Chhotisadri tehsil of Pratapgarh district. Similarly, Kumar *et al.* (2016) [14] revealed that large number of goat rearers 97.50 percent didn't protects the grass land whereas, very few number of goat rearers (2.50%) protected their pasture land by fencing and boundary wall. Table 4. indicates that 45.83 percent goat rearers provide green fodder to whole flock, 33.33 percent to milking does and 20.83 percent only to kids. The majority (50%) of goat keepers provide green fodder to their whole flock in Pratapgarh tehsil. Findings are in similar with who revealed that majority (52.8%) of goat owners raised their animals in extensive systems, and 96% of goat keepers feed their animals green fodder during grazing in the form of trees lopping.

Table 4 shows that 35 percent goat rearers followed practice of preservation of tree leaves in different forms and 65 percent caretakers of goats did not practice preserving the tree leaves. The practice of preservation of tree leaves was followed maximum (46.66%) at Pipalkhunt tehsil. Findings are in agreement with Kumar *et al.* (2016) [14] who reported that majority of goat keepers (92.50%) did not preserve the tree leaves while, only 7.50 percent of goat keepers were found to adopted this type of practice. The difference among the tehsils with preserved tree leaves is significant because the chi-square value was greater than the tabulated value at the 5% level of significance.

The table 5 shows that maximum 25 percent goat keepers offered weed followed by 23.33, 21.66 and 16.66 percent Lucerne, berseem and grasses, respectively. The chi-square value was less than tabulated value at 5 percent level of significance. Hence the difference is non-significant between the tehsils with regards to type of fodder used for feeding. Finding are in agreement with Sandhu *et al.* (2018) who reported that majority of goat keepers fed their animal on common property resources (85.56%) followed by cultivated fodder (13.33%).

Table 6 indicated that overall 42 percent goat rearers fed concentrate with supplements to their goats, while majority of them (68.00%) provide concentrate without supplements to their goats. Among the goat keepers of different tehsil providing concentrate without supplements to their goats are maximum (60%) in Pipalkhunt tehsil. The chi-square value was less than tabulated value at 5 percent level of

significance. Hence the difference was non-significant between the tehsil with regards to concentrate feed offered to goats. Findings are in agreement with who revealed that only (36.7%) goat keepers use of mineral mixture and concentrate feed. Dar *et al.* (2016) [4] who revealed that very few respondents (11.67%) fed concentrate to their goats, while majority of them (88.33%) did not provide concentrate to their animals.

Table 7 indicated that the ponds were the most common source of water followed by bore wells or tube wells. Percentage of farmers using ponds and tube wells was 59.16 and 40.16, respectively. This table 8 also shows that 41.66 percent goat keepers provide water to their goats twice in a day (24 hrs.), 31.66 percent goat owners provide drinking water thrice in a day and 26.66 percent goat keepers provide water to their goat once in a day. Findings are in line with who reported that major sources of drinking water were ponds and bore well followed by canal and hand pumps in Bundelkhand region of U.P.

Table 1: Mode of feeding adopted by goat keepers

S. No.	Tehsil	Complete stall feeding	Semi-stall feeding	Complete grazing
1	Pratapgarh	5 (16.66%)	15 (50%)	10 (33.33%)
2	Pipalkhunt	4 (13.33%)	14 (46.66%)	12 (40.00%)
3	Dhariawad	5 (16.66%)	11 (36.66%)	14 (46.66%)
4	Chotisadri	6 (20%)	13 (43.33%)	11 (36.66%)
5	Total	20	53	47
6	Av. of tehsil	5	13.25	11.75
7	Percent of farmers	16.66	44.16	39.16

Table 2: Grazing site followed by goat owners

S. No	Tehsils	Own land	Community land
1	Pratapgarh	8 (26.66%)	22 (73.33%)
2	Pipalkhunt	11 (36.66%)	19 (63.33%)
3	Dhariawad	12 (40.00%)	18 (60.00%)
4	Chotisadri	11 (36.66%)	19 (63.33%)
	Total	42	78
	Av. of tehsil	10.5	19.5
	Percent of farmers	35	65

Table 3: Goat grazing hours in four tehsils

S. No	Tehsils	<5 hours	>5 hours
1	Pratapgarh	12 (40.00%)	18 (60.00%)
2	Pipalkhunt	14 (46.66%)	16 (53.33%)
3	Dhariawad	12 (40.00%)	16 (60.00%)
4	Chotisadri	11 (36.66%)	19 (63.33%)
	Total	49	71
	Av. of tehsil	12.25	17.75
	Percent of farmers	40.83	59.16

Table 4: Green fodder offered different category

S. No.	Tehsil	Whole flock	Only milking doe	Only kids
1	Pratapgarh	15 (50.00%)	9 (30.00%)	6 (20.00%)
2	Pipalkhunt	13 (43.33%)	9 (30.00%)	8 (26.67%)
3	Dhariawad	13 (43.33%)	11 (36.66%)	6 (20.00%)
4	Chotisadri	14 (46.67%)	11 (36.66%)	5 (16.67%)
	Total	55	40	25
	Av. of tehsil	13.75	10	6.25
	Percent of farmers	45.83	33.33	20.83

Table 5: Pattern of preservation of tree leaves

S. No	Tehsil	Preservation of tree leaves	
		Yes	No
1	Pratapgarh	10 (33.33%)	20 (66.66%)
2	Pipalkhunt	14 (46.66%)	16 (53.33%)
3	Dhariawad	10 (33.33%)	20 (66.66%)
4	Chotisadri	8 (26.66%)	22 (73.33%)
	Total	42	78
	Av. of tehsil	10.5	19.5
	Percent of farmers	35	65

Table 6: Type of fodder used for feeding to goat keepers

S. No	Tehsil	Berseem	Lucerne	Weed	Grasses	Other
1	Pratapgarh	3 (10%)	9 (30%)	6 (20%)	8 (26.66%)	4 (13.33%)
2	Pipalkhunt	9 (30%)	6 (20%)	7 (23.33%)	2 (6.66%)	6 (20%)
3	Dhariawad	8 (26.66%)	4 (13.33%)	8 (26.66%)	6 (20%)	4 (13.33%)
4	Chotisadri	6 (20%)	9 (30%)	9 (30%)	4 (13.33%)	2 (6.66%)
	Total	26	28	30	20	16
	Av. Of tehsil	6.5	7	7.5	5	4
	Percent of farmers	21.66	23.33	25.00	16.66	13.33

Table 7: Respondents supplementing concentrate with mineral mixture (minerals vitamins etc.) to goats

S. No	Tehsil	Use of concentrate	
		Without supplement	With supplement
1	Pratapgarh	17 (56.66%)	13 (43.33%)
2	Pipalkhunt	18 (60.00%)	12 (40.00%)
3	Dhariawad	17 (56.66%)	13 (43.33%)
4	Chotisadri	16 (53.33%)	14 (46.66%)
	Total	68	52
	Av. of tehsil	17	13
	Percent of farmers	68.00	42.00

Table 8: Availability and frequency of water

S. No.	Tehsils	Source of drinking water		Frequency of water		
		Ponds	Bore wells	Once in 24 hrs	Twice in 24 hrs	Thrice in 24 hrs
1	Pratapgarh	20 (66.66%)	10 (33.33%)	7 (23.33%)	14 (46.66%)	9 (30.00%)
2	Pipalkhunt	18 (60.00%)	12 (40.00%)	9 (30.00%)	11 (36.66%)	10 (33.33%)
3	Dhariawad	14 (46.66%)	16 (53.33%)	6 (20.00%)	13 (43.33%)	11 (36.66%)
4	Chotisadri	19 (63.33%)	11 (36.66%)	10 (33.33%)	12 (40.00%)	8 (26.66%)
	Total	71	49	32	50	38
	Av. of tehsil	17.75	12.25	8	12.50	9.50
	Percent of farmers	59.16	40.83	26.66	41.66	31.66

Conclusion

It intends to ensure that goat farmers' adoption of feeding management strategies is very satisfactory. The adoption of scientific feeding follows overall was positive, but some practices-such as feeding children and pregnant women concentrate mixtures and mineral mixtures-require significant improvement. Therefore, there is a greater need for these practices to be improved in this area. The results also point to

the need for institutional intervention to preserve the common grazing land services and extension activities to disseminate improved management practices in order to increase goat productivity and poor farmers' income.

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