RESEARCH ARTICLE

Housing and Feeding Management Practices Followed by Goat Keepers of Middle Gujarat

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Abstract

A study was conducted in selected areas of Dahod and Kheda districts of Middle Gujarat to ascertain the housing and feeding management practices followed by goat keepers. The data was collected from randomly selected 240 goat keepers (120 each from Dahod and Kheda district) through personal interview with the help of pre-tested structured schedule. The present study revealed that majority of the goat keepers (65.83%) had an enclosed shed for housing their goats followed by open shelter during day or night time by using a deshi clay tiles (61.25%) and thatched type roofed materials (26.67%) and 97.50 % of the goat keepers housed their goats on kutcha floor attached to human dwelling (56.67%) and near to human dwelling (42.50%). Majority of goat keepers (88.75%) used wooden pole in goat shelter and 93.33 % of the goat keepers regularly cleaned goat shelter. Only two fifth of the respondents (40.0%) used feeding trough in goat shelter. Majority of the goat keepers (74.17%) maintained the goats under extensive system followed by semi-stall-feeding system (25.83%) by allowing 4-6 hours of browsing time per day (70.0%) on fallow land or/and forest pasture area by covering about 3-4 km distances daily by flock. About 46.67% goat keepers provided green fodder regularly, while 54.17% respondents fed locally available tree leaves and loppings to the goats regularly and 75.42 % offered dry forages occasionally to goats as per availability of browse, while more than half (57.92 %) of the goat keepers fed home-made concentrates/grains mixture to lactating goats and 64.17 % of the goat keepers provided tube well water for drinking to goats. The district-wise differences were more in providing roofing materials, feeding trough and source of drinking water, and the grazing land was more of plain type in Kheda district.

Keywords: Goat keepers, Housing, Feeding Management, Middle Gujarat.

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Introduction

Goat rearing, one of the most widely adopted livestock activities in the country, has the potential to emerge as a very good source of income and employment for the rural people especially in the unfavourable environments. In such areas, goats are being raised by peasants because of their low initial investment, low input requirement, higher prolificacy, early sexual maturity, and ease in marketing (Kumar *et al.,* 2010). The goat population in Gujarat state is about 4.867 million, where Dahod and Kheda districts occupies 0.50 and 0.102 million goats, respectively (Anonymous, 2019). The productivity of goats under the prevailing traditional extensive production system is low (Singh and Kumar, 2007) mainly because of feed scarcity and lack of adoption of improved technologies and management practices. Knowledge of livestock farmer about various husbandry practices such as breeding, feeding and managements of animals, determines largely the success or failure of a livestock enterprise. Current limitations of nutrient supply prevent goats from expressing their genetic potential (Mandal *et al*., 2005). Birthal and Jha (2005) identified feed scarcity as the most limiting constraint in improvements of livestock productivity. Production potential of livestock depends mostly on the management practices under which they are reared and these rearing practices vary significantly across various agro-ecological regions due to many factors. Therefore, the present study was undertaken to collect the information regarding housing and feeding management practices followed by the goat keepers of middle Gujarat.

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Materials and Methods

A survey study was conducted in randomly selected four talukas each from Dahod and Kheda districts of middle Gujarat. From each selected talukas, five villages and from each village six goat keepers were randomly selected. Thus,

total 240 respondents were included in this study. A pre-tested structured interview schedule was used to collect the relevant information regarding the existing housing and feeding management practices followed by goat keepers by research personnel, keeping in view the objectives of the study. According to prevailing conditions in selected study area, different management practices of goat rearing were followed by goat keepers. Data was tabulated and analyzed as per standard statistical tools like frequency and percentage (Snedecor and Cochran, 1994).

Results and Discussion

Housing Management Practices

The data depicted in Table 1 regarding existing housing practices followed by goat keepers suggested that majority (65.83%) of the respondents provided enclosed shed type shelter to their goats followed by provision of both enclosed and open type shelter (28.33%) and 96.67 % respondents secured their goats in indoor house during night time. Most of the goat shelters were attached to human dwelling (56.67%) and near to human dwelling (42.50%). Most of the respondents (97.50%) had kutcha floor in goat shelter and deshi clay tiles (61.25%), whereas 26.67, 6.25 and 2.92% of them used thatch, GI sheet and asbestos white sheet roof materials in goat shelter, respectively. Majority of the respondents (88.75%) used wooden poles to assist the strength to goat shelter and regularly did clean the goat shelter. Only two fifth (40.0%) of the respondents used the feeding trough in goat shelter. Similar findings were reported by Deshpande *et al.* (2010), Debraj *et al.* (2011), Tanwar and Rohilla (2012), Jana *et al.* (2014) and Sabapara *et al.* (2014), while more relevant results were reported by Tanwar *et al.* (2007) and Mordia *et al.* (2018[a]) that the goats were housed near dwelling and most of goat owners had open goat shed attached to own house with floor made by dung and clay with regular cleaning and washing of goat houses. Among the two districts surveyed, majority of the housing management practices followed were common, except that the thatch roof and clay titles was equally and more prevalent in goat houses in Kheda district and mainly clay tiles in Dahod district, and that the provision of feeding trough in goat shelter was common in Dahod and was least practiced in Kheda district (Table 1).

Feeding Management Practices

The data presented in Table 2 regarding existing feeding practices followed by goat keepers revealed that majority of the respondents (74.17%) followed extensive type rearing system, *i.e.*, allowing flock to graze at morning and evening time (89.58%) by covering about 1-2 km grazing area (48.33%) and spent up to 4 h grazing time per day to flock (70.0%). More than 72 % farmers covered 1-2 km grazing in Dahod and 3-4 km in Kheda district. Majority of the respondents (67.92%) had access to plain grazing area for flock, and used mostly fallow or gochar land along with harvested fields (59.17%) for browsing purpose. This was particularly in Kheda (95.0% and 82.5%, Table 2), These findings showed agreement with the results reported by Gurjar *et al.* (2009), Deshpande *et al.* (2010) and Lavania *et al.* (2014). Moreover, it was found that 46.67% of the goat keepers provided green fodder regularly, while 54.17% of the respondents fed locally available tree leaves and lopping to the goat and 75.42 % offered dry forages occasionally or sometimes to the goats as per availability of grasses on farm. More than 95% Farmers of Dahod district provided green forage and rarely the dry forage. These findings concurred with the pattern reported by Mordia *et al.* (2018[b]). More than half (57.92%) of the goat keepers fed home-made concentrate mixture to lactating goats and 64.17 % used drinking water for goat from tube well water source followed by village pond or community water trough. The tube well water was the main source of drinking water (95%) in Dahod district (Table 2). Similar findings were observed by Deshpande *et al.* (2010), Lavania *et al.* (2014) and Rai *et al.* (2014) that the majority of respondents offered home-made concentrate prepared from bajara, jowar, wheat, tur chuni, gram chuni and babul pods to lactating does. Tanwar and Khem Chand (2011) reported that about 88.33% and 30.83% of goat owners supplemented their goats with dry and green fodder, respectively.

Conclusions

From the findings of the present study, it is concluded that majority of the goat keepers maintained their goats in kutcha thatch house, with clay tiles on roof, constructed near human dwelling. Only two fifth of the respondents (40.0%) used feeding trough in goat shelter. Majority of the goat keepers maintained the goats mostly under extensive system on fallow land or/and forest by allowing 4-6 h of browsing time per day (70.0%) and covering about 3-4 km distances daily by flock. About less than half of the goat keepers (46.67%) provided green fodder regularly and 75.42 % offered dry forages occasionally to goats as per availability of browse, while more than half of the respondents (54.17%) fed locally available tree leaves and lopping to the goats regularly. About 57.92 % of the goat keepers fed home-made concentrates/ grains mixture to lactating goats and 64.17 % of the respondents used tube well water for drinking to goats.

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Table 1: Housing management practices followed by the goat keepers in Gujarat

Sr. No.	Housing management	Number of respondents					
		Dahod (n=120)		Kheda (n=120)		Total (n=240)	
		N	%	N	%	N	%
1	**Type of goat shelter**						
	Enclosed shed type	77	64.17	81	67.50	158	65.83
	Open type	3	2.50	11	9.17	14	5.83
	Both enclosed and open shelter	40	33.33	28	23.33	68	28.33
2	**Type of Night shelter**						
	Kept goats in indoor house	120	100.00	112	93.33	232	96.67
	Kept goats in outdoor paddock	0	0.00	8	6.67	8	3.33
3	**Site of goat shelter**						
	Attached to human dwelling	52	43.33	84	70.00	136	56.67
	Near to human dwelling	67	55.83	35	29.17	102	42.50
	On special chosen area	1	0.83	1	0.83	2	0.83
4	**Floor type in goat shelter**						
	Pakka floor	3	2.50	3	2.50	6	2.50
	Kutcha floor	117	97.50	117	97.50	234	97.50
5	**Roof materials in goat shelter**						
	No roofing	0	0.00	7	5.83	7	2.92
	Thatch roof	14	11.67	50	41.67	64	26.67
	Deshi clay tiles	96	80.00	51	42.50	147	61.25
	GI sheet roof	6	5.00	9	7.50	15	6.25
	Asbestos white sheet	4	3.33	3	2.50	7	2.92
6	**Type of pillar used in goat shelter**						
	RCC pole	16	13.33	11	9.17	27	11.25
	Wooden pole	104	86.67	109	90.83	213	88.75
7	**Use feeding trough in goat shelter**						
	Yes	92	76.67	4	3.33	96	40.00
	No	28	23.33	116	96.67	144	60.00
8	**Regularity in cleaning of goat shelter**						
	Daily cleaning	108	90.00	116	96.67	224	93.33
	Periodical cleaning (2-3time/week)	12	10.00	4	3.33	16	6.67

Table 2: Feeding management practices followed by the goat keepers in Gujarat

Sr. No.	Feeding management	Number of respondents					
		Dahod (n=120)		Kheda (n=120)		Total (n=240)	
		N	%	N	%	N	%
1	**Goat rearing system**						
	Extensive type system	72	60.00	106	88.33	178	74.17
	Semi-intensive type system	48	40.00	14	11.67	62	25.83
	Intensive type system	0	00.00	0	00.00	0	0.00

(Table continued)

(Table continued)

Sr. No.	Feeding management	Number of respondents					
		Dahod (n=120)		Kheda (n=120)		Total (n=240)	
		N	%	N	%	N	%
2	**Preference given to grazing time for flock**						
	Allow flock to graze at Morning	11	9.17	6	5.00	17	7.08
	Allow flock to graze at Evening	7	5.83	1	0.83	8	3.33
	Allow flock to graze at morning and evening	102	85.00	113	94.17	215	89.58
3	**Grazing hours/day to flock**						
	Allow up to 2 hours per day	9	7.50	20	16.67	29	12.08
	Allow up to 4 hours per day	78	65.00	90	75.00	168	70.00
	Allow up to 6 hours per day	33	27.50	10	8.33	43	17.92
4	**Grazing area covered by flock**						
	About 1-2 kilometers/day	88	73.33	28	23.33	116	48.33
	About 3-4 kilometers/day	29	24.17	87	72.50	116	48.33
	About 5-6 kilometers/day	3	2.50	5	4.17	8	3.33
5	**Topography of grazing land**						
	Plain area	49	40.83	114	95.00	163	67.92
	Undulating / hilly area	71	59.17	6	5.00	77	32.08
6	**Type of browsing /grazing area**						
	Pasture land and forest area	75	62.50	18	15.00	93	38.75
	Fallow land/gochar/harvest fields	43	35.83	99	82.50	142	59.17
	Road sides and riverbanks area	2	1.67	3	2.50	5	2.08
7	**Frequency of forages offered to goats**						
a.	**Green forages**						
	Regularly offered	109	90.83	3	2.50	112	46.67
	Sometimes offered	8	6.67	70	58.33	78	32.50
	Never offered	3	2.50	47	39.17	50	20.83
b.	**Dry forages**						
	Regularly offered	7	5.83	2	1.67	9	3.75
	Sometimes offered	113	94.17	68	56.67	181	75.42
	Never offered	0	0.00	50	41.67	50	20.83
c.	**Tree leaves /loppings**						
	Regularly offered	83	69.17	47	39.17	130	54.17
	Sometimes offered	37	30.83	70	58.33	107	44.58
	Never offered	0	0.00	3	2.50	3	1.25
8	**Provide grains feed to lactating goats**						
	Yes	117	97.50	22	18.33	139	57.92
	No	3	2.50	98	81.67	101	42.08
9	**Fed grains feed to recently kidded doe up to five days**						
	Yes	74	61.67	34	28.33	108	45.00
	No	46	38.33	86	71.67	132	55.00
10	**Source of drinking water to goats**						
	River or canal water	0	0.00	1	0.83	1	0.42
	Village pond/ water trough	6	5.00	79	65.84	85	35.42
	Tube well water	114	95.00	40	33.33	154	64.17

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