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Research Article

Feeding practices of dairy animals in periurban areas of Surat district (Gujarat)

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Abstract

This paper focuses on the feeding practices followed by periurban dairy farmers in Surat district. Data was collected with the help of a well structured pretested interview schedule from 200 periurban livestock farmers. Majority of the respondents followed individual and stall feeding of dairy animals. More than half of the respondents (58%) fed their animals twice in a day. Majority of the respondents fed non leguminous green fodder, paddy straw and compounded cattle feed. Great majority of the respondents offered fed concentrate based on the quantity of milk production. Majority of the respondents fed green and dry fodders as such and provided concentrate to the animals after milking. Majority of the respondents fed 2 to 3 kg concentrate to a lactating animal and also provided concentrate to young calves and heifers. About one third of the respondents each fed concentrate during the last two month of pregnancy or confirmed pregnancy to calving. Majority of the respondents (89%) provided special feed after calving. Most of the respondents (64%) provided mineral mixture while 76% did not provide salt to animals. Half of the respondents studied provided drinking water thrice a day and majority depended on bore well as source of drinking water for animals. All the respondents fed colostrum to new born calf and half of them fed before the expulsion of placenta. Less than half of the dairy farmers (44%) allowed calf to suckle both before and after milking and great majority (95%) allowed calf to suckle one teat only.

Introduction

Dairy farming is the key venture for the farmers of periurban areas. An efficient dairy animal is the result of better breeding, but its productivity depends largely upon the feed. Feed is the largest input into commercial milk production. Feeding management and housing plays a very significant role in exploiting real potential of dairy animals as described by Sinha *et al.*, (2009). Animal husbandry development in India has assumed a much broader role in the overall economy than so far envisaged reported by Srichand (1995). Demand for animal food products in India is also rising owing to population increase; urbanization and sustained rise in per capita income reported by Birthal and Taneja (2006). Moreover, India's milk output could be doubled if the dairy animals are adequately fed. The present study was conducted in Surat district to understand the feeding practices followed by periurban dairy farmers.

Materials and Methods

This study was conducted in Surat district of Gujarat state. Mahuva taluka of Surat district was selected for the study as it is having large number of periurban dairy farmers. Mahuva taluka consist of 70 villages out of which eight were selected at random for the study. The villages that are located less than 10 kms from the district headquarter were selected as

periurban area. The selected villages were Karcheliya, Vanskui, Kharvan, Vachhavad, Fulvadi, Narda, Amchak and Amroli. From each selected village 25 livestock farmers were randomly selected to constitute a total of 200 respondents. While selecting the respondents due care was taken to ensure that they were evenly distributed in the village and could provide information regarding prevailing feeding practices in the area. Each selected respondent was personally contacted and interviewed with the help of a well structured pretested interview schedule incorporating all the items pertaining to the specific objective of the study.

Results and Discussion

Data in Table 1 revealed that majority of the respondents (80%) followed stall feeding while 14%allowed grazing. Only 6% of the respondents followed both the practices viz. stall feeding and grazing. This might be due to the lack of pasture land for grazing. This finding is in accordance with that of Gupta *et al.,* (2008).

The data revealed that majority of the respondents (85%) adopted individual feeding while only 15% adopted group feeding. Individual feeding provides an opportunity to feed the milch animals according to their level of production and also to protect docile animals from vicious animals during feeding. Similar findings were reported by Modi (2003). More than half of the respondents (58%) fed their animals twice in a day followed by three or more times (42%). This observation is in contrast with that of Sinha *et al.,* (2009) who reported that majority of the farmers fed their animals thrice or more times in semi-urban areas. Two third of the respondents (63%) grew and fed non-leguminous green fodder throughout the year while remaining 30 and 2% of them grew and fed mixture of non–leguminous & leguminous fodders and leguminous fodder respectively. However, only 5% of the respondents did not cultivate green fodder and fed uncultivated grasses. Farmers of Surat district, in order to minimize the cost of milk production preferred to cultivate some amount of green fodder for feeding dairy animals. This observation is in contrast with that of Modi (2003) who reported that most of the respondents (60 per cent) fed both leguminous and non-leguminous green fodder. Majority of the respondents (86%) fed only paddy straw followed by paddy along with jowar straw (8%) and paddy along with jowar and wheat straw (6%). Rice is the major cereal crop cultivated in the study area. This might be the reason why majority of the respondents fed only paddy straw. Similar finding was reported by Sabapara *et al.,* (2010).

Majority of the respondents (77%) fed compounded cattle feed followed by homemade concentrate mixture along with compounded cattle feed (19%) and only homemade concentrate mixture (4%). This might be because of their awareness regarding the importance of feeding compounded feed for better health and higher milk production. This observation is in contrast with that of Rathore *et al.,* (2010) who reported that majority (60.50 per cent) of the respondents fed home prepared concentrate mixture to their animals. Great majority of the respondents (94%) fed concentrate based on the quantity of milk production of their animals. About 4% of the respondents fed concentrate on flat rate while 1% each followed no criteria and fed animals on the basis of their age. These findings are in accordance with that of Akila and Senthilvel (2012).

Majority of the respondents (74%) fed green and dry fodder as such, while only 26% chaffed both green and dry fodder before feeding. This might be due to their lack of knowledge about the advantages of chaffing fodder. This finding is in accordance with that of Sabapara *et al.,* (2010). More than two third of the respondents (71%) offered concentrate to animals after milking followed by 17 and 12% who fed concentrate during milking and before milking respectively. This is because they thought if offered concentrate before milking animals might be habituated to feeding concentrate during milking and due to any reason if concentrate is not available on some days milking may not be easy. Similar finding was reported by Prajapati (2010). Almost two third of the respondents (62%) fed 2 to 3 kg concentrate followed by 3 to 5 kg concentrate (29%) and 1 to 2 kg concentrate (9%) to a lactating cow per day. Similar finding was observed by Rathore *et al.* (2010). Majority of the respondents (79%) fed concentrate to young calf. This might be because the farmers knew about the role of concentrate in growth of young animals. This finding is in accordance with that of Prajapati (2010).

Majority of the respondents (81%) offered concentrate to heifers. This might be because they knew the importance of feeding concentrate for higher fertility and milk production. Similar result was reported by Prajapati (2010). One third of the respondents each (35%) fed concentrate during the last two month or confirmed pregnancy to calving. Similar result was observed by Sabapara *et al.,* (2010). Majority of the respondents (89%) provided special feed after calving. This finding is in agreement with that of Prajapati (2010). Two third of the respondents (64%) provided mineral mixture to their animals. This might be due to their awareness regarding the beneficial effects of mineral mixture on growth and reproduction of animals. This finding is in contradiction to those of Singh *et al.,* (2007). Majority of the respondents (76%) did not provide salt to animals. This is because of their misconception that feeding salt might reduce the density and quantity of milk. Similar finding was reported by Madke *et al.,* (2006). Half of the respondents (50%) provided water thrice a day followed by twice (26%) and free assess to water (24%). Similar findings were reported by Chowdhry *et al.,* (2006). Two third of the respondents (66%) depended on bore well followed by well (25%), pond (5%) and river (4%) as sources of drinking water. This observation is in agreement with that of Malik *et al.,* (2005).

Table 1: Distribution of periurban dairy farmers according to the feeding practices followed

(n= 200)

Sr. No.	Feeding Practices	Frequency	Percentage
1	**Feeding system**		
i	Stall feeding	160	80.00
ii	Grazing	28	14.00
iii	Both	12	6.00
2	**Feeding of milch animal**		
i	Individual	170	85.00
ii	Group feeding	30	15.00
3	**Frequency of feeding**		
i	Once	0	0.00
ii	Twice	116	58.00
iii	Thrice or more	84	42.00
4	**Fodder availability**		
a.	Green fodder		
i	Non-legume	126	63.00
ii	Legume	4	2.00
iii	Non - legume + Legume	60	30.00
iv	Not cultivating but feeding Grasses	10	5.00
b.	Dry fodder		
i	Paddy straw	172	86.00
ii	Paddy straw + Jowar straw	16	8.00
iii	Paddy straw + Jowar straw + Wheat straw	12	6.00
5	**Type of concentrate**		
i	Homemade mixture	8	4.00
ii	Compounded cattle feed	154	77.00
iii	Homemade + compounded cattle feed	38	19.00
6	**Methods of feeding concentrate**		
i	Mixed with fodder	0	0.00
ii	Separately	200	100.00
7	**Feeding standard followed (based on)**		
i	Body weight	2	1.00
ii	Milk production	188	94.00
iii	Age	0	0.00
iv	Flat rate	8	4.00
v	No criteria	2	1.00
8	**Chaffing of green and dry fodder**		
i	Yes	52	26.00
ii	No	148	74.00
9	**Time of feeding concentrate**		
i	During milking	34	17.00
ii	After milking	142	71.00
iii	Before milking	24	12.00
10	**Quantity of concentrate fed to the lactating cow per day**		
i	1-2 kg concentrate	18	9.00
ii	2-3 kg concentrate	124	62.00
iii	3-5 kg concentrate	58	29.00
11	**Feeding concentrate to young calf**		
i	Yes	158	79.00
ii	No	42	21.00
12	**Feeding concentrate to heifer**		
i	Yes	162	81.00

ii	No	38	19.00
13	**Feeding concentrate to pregnant heifer**		
i	No special feeding	12	6.00
ii	For last 15 days	6	3.00
iii	For last one month	42	21.00
iv	For last two months	70	35.00
v	Confirmed pregnancy to calving	70	35.00
14	**Special feeding after calving**		
i	Yes	188	89.00
ii	No	22	11.00
15	**Feeding mineral mixture**		
i	Yes	128	64.00
ii	No	72	36.00
16	**Feeding salt**		
i	Yes	48	24.00
ii	No	152	76.00
17	**Frequency of watering**		
i	Twice	52	26.00
ii	Thrice	100	50.00
iii	Free assess to water	48	24.00
18	**Sources of water**		
i	Bore well	132	66.00
ii	Pond	10	5.00
iii	Canal	0	0.00
iv	River	8	4.00
v	Well	50	25.00
19	**Feeding colostrum to new born calf**		
i	Yes	200	100.00
ii	No	0	0.00
20	**Feeding colostrum to new born calf before expulsion of placenta**		
i	Yes	108	54.00
ii	No	92	46.00
21	**Allowing calf to suckle**		
i	Before milking	38	19.00
ii	After milking	74	37.00
iii	Both time	88	44.00
22	**No. of teats allowed for suckling**		
i	One	190	95.00
ii	Two	10	5.00

All the respondents fed colostrum to new born calf. This might be because of their knowledge about the benefits of feeding colostrum. Madke *et al.,* (2006) also reported that 100% of the respondents practiced feeding colostrum to newly born calf. More than half of the respondents (54%) fed colostrum to new born calf before the expulsion of placenta, while 46% fed colostrums only after the expulsion of placenta. This observation is in agreement with that of Malik *et al.,* (2005). In periurban areas, 44% of the respondents allowed calf to suckle both before and after milking followed by 37% after milking and 19% before milking. Similar finding was observed by Rathore *et al.,* (2010) who reported that a large percentage of cattle keepers allowed calf for suckling both times i.e. before and after milking. Great majority (95%) allowed calf to suckle only one teat, while remaining 5% allowed calf to suckle two teats. This observation is in contrast with that of *Rathore et al.,* (2010).

Conclusion

Majority of the respondents fed green and dry fodders without chaffing. Almost two third of the respondents fed 2 to 3 kg concentrate and majority provided concentrate to young calves and heifers also. One third of the respondents each fed concentrate during the last two month of pregnancy or confirmed pregnancy to calving and majority provided special feed after calving. Two third of the respondents provided mineral mixture while majority did not provide salt along with feed. All the respondents fed colostrum to new born calf and more than half of them fed colostrum before the expulsion of placenta. Nearly half of the respondents allowed calf to suckle both before& after milking and great majority of the respondents allowed calf to suckle one teat only. The periurban dairy farmers need to be provided knowledge and skill through training in scientific feeding practices.

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