Full Length Article

MILKING MANAGEMENT PRACTICES FOLLOWED BY DAIRY FARMERS IN NORTHERN TELANGANA STATE

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ABSTRACT

A field survey was conducted in Karimnagar, Kamareddy, Jagtial, and Peddapalli districts of Northern Telangana state of India to ascertain the milking management practices followed by dairy farmers and data were collected from randomly selected 240 dairy farmers from 24 villages of 8 mandals belonging to the above 4 newly formed districts through personal interview with the help of a pretested semi-structured questionnaire. The present study revealed that, all the respondents milked their animals twice in a day and followed most of the good milking practices. All the farmers allowed the calf to suckle at both the times, 33.75% of the respondents offered concentrate feed and practiced teat manipulation for milk let down. Most of the farmers milked the animals at the same place by using scientific milking pails and adopted the practice of drying off their dairy animals two months before calving. Most of the respondents didn't follow teat dipping. Majority of respondents (99.17%) followed cleaning of milking utensils with tap water. Most of respondents sold their milk to village dairy co-operative society and none of the respondents followed testing for mastitis and sealing of teat canal at the end of lactation in their dairy animals. It can be concluded that, there is enough scope in imparting scientific dairy management practices to the farmers in the study area through training programmes and frequent exposure visits to organised dairy farms apart from providing them milk chilling facility in the form of Bulk milk coolers at village level.

Keywords: Dairy Farmer, Districts, Management Practices, Milking, Telangana

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INTRODUCTION

Livestock sector is an important component of India's economy in terms of income, employment and foreign exchange earnings. Animal husbandry practices play

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a vital role in the improvement of livestock production and productivity. Presently India is boasting to be the leading milk producer in the world with total milk production 187.75 MMT during 2018-19, ensuring 394 gram/ day per capita availability of milk (Narwaria *et al.,* 2019). India had 302.79 million bovine population in 2019 and milk is India's single largest agricultural commodity (Anonymous, 2019). The value of the Indian market for milk and milk products is expected to grow at 15% annually of which the contribution of milk products like cheese, paneer, fermented milk products, butter and ghee would be significant which represents both an opportunity and challenge to our dairy industry. Being the youngest state in India, Telangana state is currently depending on neighbouring states to meet the daily milk requirements, and efforts are being taken up to become self-sufficient though, about 22.5 lakh households in Telangana are engaged in rearing of milch cattle and buffaloes. Dairy farming in the state of Telangana is undergoing dramatic changes, driven by both supply and demand factors. The low production of Indian dairy animal is mainly due to lack of awareness and low adoption regarding improved dairy husbandry techniques by dairy farmers (Patel and Sabapara, 2019). Keeping in view the above facts, the present study has been designed to assess the milking management practices followed by dairy farmers in Northern Telangana state.

MATERIALS AND METHODS

A simple random sampling technique was employed to select the districts, mandals/ towns, villages and respondents for the present study. Out of the 33 districts in Telangana state the present study was conducted in Karimnagar, Kamareddy, Jagtial and Peddapalli districts of North Telangana. These four districts have been purposively selected because, they are potential districts for milk production due to assured veterinary and milk marketing facilities and livestock keeping is an important economic occupation in these districts. Two mandals/towns from each district and three villages from each mandal were selected making up a total of 24 villages with 10 dairy farmers randomly selected from each village, thus making 240 respondents as followed (Rajasekhar *et al.*, 2018). A pretested semi-structured questionnaire in precise language was employed for collecting data through interview and face to face discussion with the dairy farmers duly avoiding ambiguous, dichotomous and non-variant items for proper interpretation.

The researcher visited the villages of the respondents and they were interviewed one at a time by the researcher himself. Before collecting the data, objectives of the study were lucidly explained and careful attempt was made to develop rapport with them. The questions in the schedule were presented to them in precise language to ensure that they perceived the questions correctly, so as to avoid any interpretational variation of the questions among the respondents and answers obtained were recorded instantly along with personal observations. Milking management practices followed by dairy farmers were collected on frequency of milking, splashing of water on teat/udder before milking, washing of hand before milking, milking methods, stripping at the end of milking, place of milking, disposal of milk, cleaning of milking utensils, sealing

of teat canal at the end of lactation etc. The information obtained from the individual respondent for all the statements was recorded and tabulated as per the objectives concerned and simple tabular analysis with percentage was followed for analyzing the data.

RESULTS AND DISCUSSION

Milking management practices adopted by milk producers are presented in Table 1. The data reveals that all the respondents (100%) followed two times milking and selling milk to dairy co-operative societies in the districts of Karimnagar, Jagtial, and Peddapalli and to households in Kamareddy district. The results are in agreement with the findings of Varaprasad *et al*. (2013) and Sabapara *et al*. (2015). The current study revealed that, all the respondents (100%) in Karimnagar, Kamareddy, Jagtial, and Peddapalli districts followed the practice of splashing of water on udder before milking. These findings are in agreement with the observations of Kalyankar *et al.* (2004) and Divekar *et al*. (2016).

Data in Table depicted that all the respondents (100%) developed habit of washing hands before milking. These results are similar with the reports of Malik and Nagpaul (1999) and Sabapara *et al*. (2015). Majority of the farmers (66.25%) in the study area had a habit of wet hand milking and 33.75% respondents had a habit of dry hand milking. The present results are in accordance with the findings of Malik and Nagpaul (1999) and Sabapara *et al*. (2015), who revealed that (87.33%) of the respondents had a habit of wet hand milking and only 12.33% of respondents had habit of dry hand milking.

Majority (69.16%) of the respondents practiced full hand milking in the study area, whereas (19.17%) of respondents practiced knuckling method and (11.67%) of respondents practiced stripping method of milking. These findings are in accordance with the reports of Meena *et al.* (2008) and Varaprasad *et al.* (2013). However, the results we obtained are in contrary to the results of Sah *et al.* (2003) and Kumar *et al*. (2017).

It was observed that majority (63.33%) of the respondents followed stripping at the end of milking, while (36.67%) of respondents didn't follow this practice. The present results are in accordance with the findings of Malik and Nagpaul (1999) and Sabapara *et al*. (2015). However, the present results are lower than the results of Kumar and Mishra (2011). It was revealed that few (26.25 %) dairy farmers adopted proper cleaning of udder after milking. In total, (73.75 %) respondents did not practice proper cleaning of udder after milking in the study area. The present results are in accordance with the findings of Sabapara *et al*. (2015). However, our findings are lower than reports of Patbandha *et al*. (2015), who revealed that 57.5% of the respondents wiped the udder and teats after milking in Gujarat state.

It was found that, overall, 100% of the respondents allowed calves for suckling both times i.e. before and after milking in Karimnagar, Kamareddy, Jagtial, and Peddapalli districts. These findings are in agreement with the observations of Gupta *et al.* (2008) and Meena *et al.* (2008) who observed that a fairly high percentage of farmers allowed calves to suckle their mothers before and after milking.

Table 1. Milking management practices adopted by respondents

S. No.	Milking management practices		Karimnagar N=60 (%)	Kamareddy N=60 (%)	Jagtial N=60 (%)	Peddapalli N=60 (%)	Overall N=240 (%)
1.	Frequency of milking	Twice	60 (100.00)	60 (100.00)	60 (100.00)	60 (100.00)	240 (100.00)
		Thrice	0(0)	0(0)	0(0)	0(0)	0(0)
2.	Splashing of water on teat/udder before milking	Yes	60 (100.00)	60 (100.00)	60 (100.00)	60 (100.00)	240 (100.00)
		No	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
3.	Washing of hand before milking	Yes	60 (100.00)	60 (100.00)	60 (100.00)	60 (100.00)	240 (100.00)
		No	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
4.	Milking habit	Dry hand	13 (21.67)	27 (45.00)	24 (40.00)	17 (28.33)	81 (33.75)
		Wet hand	47 (78.33)	33 (55.00)	36 (60.00)	43 (71.67)	159 (66.25)
5.	Milking method	Full hand	48 (80.00)	39 (65.00)	34 (56.66)	45 (75.00)	166 (69.16)
		Knuckling	6 (10.00)	15 (25.00)	17 (28.34)	8 (13.33)	46 (19.17)
		Stripping	6 (10.00)	6 (10.00)	9 (15.00)	7 (11.67)	28 (11.67)
		Machine milking	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
6.	Stripping at the end of milking	Yes	37 (61.67)	39 (65.00)	36 (60.00)	40 (66.67)	152 (63.33)
		No	23 (38.33)	21 (35.00)	24 (40.00)	20 (33.33)	88 (36.67)
7.	Wipe the udder and teats just after milking	Yes	18 (30.00)	17 (28.33)	16 (26.67)	12 (20.00)	63 (26.25)
		No	42 (70.00)	43 (71.67)	44 (73.33)	48 (80.00)	177 (73.75)
8.	Calf is allowed to suckle	Both times	60 (100.00)	60 (100.00)	60 (100.00)	60 (100.00)	240 (100.00)
		Not allowed	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
9.	Practice adopted for letting down of milk on expiry of calf	Offer concentrate feed and teat manipulation	21 (35.00)	23 (38.33)	22 (36.66)	15 (25.00)	81 (33.75)
		Oxytocin injection	15 (25.00)	12 (20.00)	7 (11.67)	11 (18.33)	45 (18.75)
		Dummy calf	12 (20.00)	9 (15.00)	13 (21.67)	19 (31.67)	53 (22.08)
		None	12 (20.00)	16 (26.67)	18 (30.00)	15 (25.00)	61 (25.42)
10.	Place of milking	Milking at the same place	48 (80.00)	50 (83.33)	55 (91.67)	45 (75.00)	198 (82.50)
		Milking at separate dry place	12 (20.00)	10 (16.67)	5 (8.33)	15 (25.00)	42 (17.50)
11.	Type of milking pail	Open mouth bucket	9 (15.00)	8 (13.33)	9 (15.00)	14 (23.33)	40 (16.67)
		Scientific milking pail	51 (85.00)	52 (86.67)	51 (85.00)	46 (76.67)	200 (83.33)
12.	Drying period	>2 months	35 (58.33)	32 (53.33)	21 (35.00)	25 (41.67)	113 (47.08)
		<2 months	25 (41.67)	28 (46.67)	39 (65.00)	35 (58.33)	127 (52.92)
13.	Teat dipping	Yes	2 (3.33)	28 (46.67)	1 (1.67)	4 (6.67)	35 (14.58)
		No	58 (96.67)	32 (53.33)	59 (98.33)	56 (93.33)	205 (85.42)
14.	Cleaning of milking utensils	Hot water	0 (0)	0 (0)	2 (3.33)	0 (0)	2 (0.83)
		Tap water	60 (100.00)	60 (100.00)	58 (96.67)	60 (100.00)	238 (99.17)

15.	Disposal of Milk	Co-operative society	51 (85.00)	0 (0)	45 (75.00)	42 (70.00)	138 (57.5)
		Vendors	5 (8.33)	24 (40.00)	4 (6.67)	6 (10.00)	39 (16.3)
		Middle man	1 (1.67)	18 (30.00)	3 (5.00)	1 (1.67)	23 (9.6)
		Home use	3 (5.00)	18 (30.00)	8 (13.33)	11 (18.33)	40 (16.7)
16.	Test for mastitis detection	Yes	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
		No	60 (100.00)	60 (100.00)	60 (100.00)	60 (100.00)	240 (100.00)
17.	Sealing of teat canal at the end of lactation	Yes	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
		No	60 (100.00)	60 (100.00)	60 (100.00)	60 (100.00)	240 (100.00)

Figures in parenthesis in the table indicates percentages

It was observed that (33.75%) of the respondents offered concentrate feed and teat manipulation, while (18.75%) of the respondents used *Oxytocin* injection, whereas (22.08 per cent) of the respondents used dummy calf if the animal did not let down milk due to the death of calves. The present results are similar with the results of Rathore *et al.* (2010) and Sabapara *et al*. (2015), who reported that 21% of respondents used *Oxytocin* injection for let-down of milk.

The results presented in Table revealed that, the overall (82.50%) of the respondents milked their dairy animals at the same location (place), while only (17.50%) of respondents milked their animals at separate or changing location of milking frequently. These findings are in line with the reports of Gupta *et al*. (2008).

It was observed that majority of the respondents (83.33%) used scientific milking pails for the collection of milk during milking, while only (16.67%) of the respondents used open mouth buckets for collection of milk during milking. These findings are in contrary with the reports of Meena *et al.* (2008) and Sabapara *et al*. (2015), who reported that 97.33% and 99.67% of the respondents used open mouth buckets for the collection of milk during milking.

It was noticed that more than fifty per cent of the dairy farmers in Karimnagar (58.33%) and Kamareddy (53.33%) districts were aware of importance of dry period in animals, whereas, majority of farmers from Jagtial and Peddapalli districts were not aware about dry period of animals. The probable reason might be due to the fact that most of the farmers were interested to get regular supplementary income through the sale of milk and felt the need to maintain the milk production without any break.

Perusal of data in Table 1 reveals that (85.42%) of respondents did not follow dipping of teats after milking, whereas only (14.58%) of the respondents followed teat dipping after milking. These findings are in line with the findings of Sabapara *et al*. (2015). This might be due to the lack of awareness of the respondents regarding good udder health in milking animals. Majority of the respondents (99.17%) in Karimnagar, Kamareddy, Jagtial, and Peddapalli districts

used tube well water directly for washing of their milking utensils. These findings are well supported by the results of Malik and Nagpaul (1999) and Sabapara *et al*. (2015).

It was observed that, most of the dairy farmers disposed their milk to district dairy co-operative union in Karimnagar (85%), Jagtial (75%) and Peddapalli (70%) districts, whereas 40% farmers in Kamareddy district disposed off their milk to vendors, followed by middlemen (30%) due to non-availability of cooperative dairy union in that area. The findings of the present study are corroborating the findings of Meena *et al.* (2008) and Rangamma *et al*. (2013). In Karimnagar, Jagtial and Peddapalli districts farmers supplying their milk to district dairy co-operative union indicates that they get more benefits, incentives and it is easy disposal of milk through the network of co-operative society and encourages farmers for adoption of more and more dairy husbandry practices.

The present study also revealed that none of the respondents followed mastitis diagnosis tests in their dairy animals. These results are similar to the findings of Sabapara *et al*. (2015) in Surat district. Further, it was reported that none of the dairy animal owners followed the sealing of teat canal at the end of lactation. Similar findings were reported by Kumar and Mishra (2011).

CONCLUSION

It can be concluded that, all the respondents followed milking twice a day, splashing of water on the udder before milking, washed their hands before milking and adopted wet hand (66.25%) and full hand (69.16%) methods of milking. Majority (63.33%) of the respondents followed stripping at the end of milking and all the respondents (73.75%) didn't wipe the udder and teats just after milking. All the respondents allowed calf to suckle both the times. Majority (60%) of the respondents allowed calves for suckling before milking and 33.75% of the respondents offered concentrates and did teat manipulation, while 22.08% of the respondents used dummy calf and 18.75% used *Oxytocin* injection if the animals did not let down milk after the death of calf. Majority (82.50%) of the respondents milked their animals at the same place. Scientific milking pails were used by majority (83.33%) of the respondents. Majority (85.42%) of the respondents did not follow teat dipping after milking. Majority (57.50%) of the respondents disposed the milk to co-operative societies and none of the respondents followed testing for mastitis and sealing of teat canal at the end of lactation in their dairy animals. Therefore, it is opined that, there is enough scope in imparting scientific dairy management practices to the farmers in the study area through training programmes and frequent exposure visits to organised dairy farms apart from providing them milk chilling facility in the form of Bulk milk coolers at village level.

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