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Milking management practices in Kalvarayan hills of Tamil Nadu

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Abstract

In this study we aimed to determine the milking management practices of the dairy farmers in Kalvarayan of Tamil Nadu. Hence we conducted a survey method to determine the above said objective. With respect to milking management, with the help of suckling stimulus, all the dairy farmers were practicing two times milking in a day with 12 hours interval. Method of milking was mainly knuckling (76.18 per cent). Total quantity of milk per herd was 16.12 liters per day with average lactation length of 288 days.

Keywords: milking, management, dairy farmers, lactation length

Introduction

Indian dairy sector plays a vital role in the livelihood of millions of rural poor families. At present, dairy industry in India is growing at the rate of 4.6 per cent as compared to global average of 2.2 per cent with 187.7 million tonnes of milk production and stands first in the world milk production. The national per capita availability of milk is 394 grams per day (NDDDB, 2019) [5]. Tamil Nadu per capita availability of milk is 322 grams per day. Livestock sector is an important subsector of agriculture and serves as a very important role in the socio-economic development of the State. The sector contributes significantly to the State's economy, besides being a source of livelihood for rural women either in principal or subsidiary status. Tamil Nadu, possessing 4.56% of India's livestock population, contributes 4.39% to country's milk production. It needs to be specially mentioned that the State's livestock contributes 45.62% to the value of State's agricultural output, while the All India average is only 28.83%. The estimated milk production, which was 54.74 Lakh Metric Tonnes (LMT) during 2005-06 in Tamil Nadu, increased to 83.62 LMT during 2018-19. The demand for milk and milk products in India is creating new perspective in the profitability of dairy farming. At the same time, there is a substantial decline in fodder availability due to the decrease in area under forest and grasslands and the introduction of high yielding dwarf varieties of cereals. Shortage of fodder is getting compensated with increased use of commercial compounded cattle feed resulting in increased costs of milk production (Reddy, 2007) [9].

Methodology

Pilot study

The semi-structured interview schedule was designed to obtain data on the various parameters of the study. It was pre-tested among 20 dairy cattle owners. Based on the pilot study, some questions were modified, some deleted and some added.

The pilot study also gave an idea on the time taken to interview each respondent.

Sampling design and size

The sampling procedure followed for this study was random sampling and the sample size was 450.

Letting down of milk: It refers to milk let down by cow using calf / oxytocin injection / phantom calf / others.

Frequency of milking: It refers to the number of milking per day (like two / three times in a day).

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Milking interval: It refers to time taken between two successive milking (measured in hours) in a day.

Average milking time /animal: It refers to time taken to completely milk a cow (in minutes).

Milk yield: It refers to the quantity of milk obtained from a cow in a day (measured in litres).

Lactation length: It refers to the number of days in milk from the date of calving to the date of drying or cessation of milk production.

Method of milking: It refers to method of milking like hand milking or machine milking. If it is hand milking - full hand / stripping / knuckling and machine - individual / line.

Result and Discussion

Letting down of milk

Irrespective of dairy farmers in the Kalvarayan hills all the respondents allowed calves to suck the dam before milking for letting down of milk. This finding is in line with the findings of Rathore *et al.* (2010)^[8] and Sabapara *et al.*, (2016)^[11] who found that respondents allowed calves to suck dam before milking for let-down of milk. But this finding is in contradiction with the findings of Kumar and Mehla (2011)^[3] who found that 46.25 per cent of the calves were allowed to suck milk before milking and about 30 per cent of the farmers were using oxytocin injection.

Frequency of milking per day

All the respondents were following two times milking in a day. This finding is in line with the findings of Reddy *et al.*, (2013), Sabapara *et al.*, (2016)^[11] and Shweta *et al.*, (2017)^[12] who found that all the respondents (100%) followed two times milking of dairy cow. The results are in contradiction with the findings of Rathore *et al.*, (2010)^[8] who found that 85.33 per cent of the respondents followed two times milking, whereas 14.67 per cent of the respondents milked their cows thrice a day.

Milking interval in hours

All the respondents were following 12 hours interval between two milking in a day in Kalvarayan hills. This finding is in line with Shweta *et al.*, (2017)^[12] who found that all the dairy farmers were following 12 hours gap between two milking in Rajasthan. Milking two times a day only was mainly found in the study area because of the fact that the cows were medium yielders.

Average milking time per animal

The mean milking time per animal was 8.47 minutes and it ranged from 5 to 15 minutes. This finding is in line with the findings of Meena *et al.*, (2008)^[4] who found that a majority of the farmers followed full hand milking and the mean milking time ranged from 5 to 15 min with an average of 9.03 min for complete milking of one animal.

Udder washing

All the respondents were following udder washing before and after milking every day. This practice helped clean milk production by removing dirt and dung adhered to the udder and teats. This finding is in line with the findings of Bimal *et al.*, (2013)^[1], Sabapara *et al.*, (2016)^[11] and Shweta *et al.*,

(2017)^[12] who found that respondents washed teats along with udder of milking animal before milking. But this finding is in contradiction with Divekar *et al.*, (2016) who found that only 75 per cent of dairy farmers followed udder washing in Gujarat.

Cleaning of milking utensils

Dairy farmers were practicing cleaning of milking utensils every day in Kalvarayan hills. This finding is in line with the findings of Bimal *et al.*, (2013)^[1], Sabapara *et al.*, (2016)^[11] and Sabapara *et al.*, (2015)^[10] who found that all the dairy farmers followed cleaning milk utensils. But these findings are in contradiction with Divekar *et al.*, (2016) who found that only 70 per cent of dairy farmers followed cleaning milk utensils in Gujarat.

Method of milking

From the data, it is observed that more than one half of the dairy farmers were practicing knuckling (76.18 per cent) for milking their animals. Only 20.33 per cent of the dairy farmers were following full hand milking and 3.49 per cent of the dairy farmers were practicing stripping method of milking. Majority of the dairy farmers opined that traditionally they used knuckling method of milking, as it was easy. This finding is in line with the findings of Rathore *et al.*, (2010)^[8] who found that knuckling was the main method of milking in Rajasthan and Kumar and Mehla (2011)^[3] who found that no dairy farmer was practicing machine milking. But this finding is in contradiction with Kumar and Mehla (2011)^[3] who found that majority of farmers followed full hand method of milking in Haryana. Paramasivam (2012)^[6] found that 95.25 per cent of dairy farmers followed hand milking and remaining 4.74 per cent dairy farmers followed machine milking in Tamil Nadu and Divekar *et al.*, (2016) found that 25 per cent of dairy farmers were following full hand milking in Gujarat.

Herd milk yield

The mean milk yield per cow was 7.18 litres per day. The mean milk yield was 16.92 litres / day / herd with a range from 5.50 to 85.00 litres / day / herd. The milk yield in the morning ranged from 2.50 to 40.00 litres / day / herd with a mean of 8.94 litres / day / herd. The milk yield (evening) ranged from 2.00 to 45.00 litres / days / herd with a mean of 7.98 litres / day / herd. The mean milk yield in the morning was higher when compared with evening yield. These findings are in line with the findings of Ramkumar and Rao (2001)^[7] and Tamizhkumaran and Rao (2012)^[14] who found that mean milk production in Puducherry was more than 6 litres /day.

Lactation length

The lactation length varied from 265 to 300 days with an overall mean of 288 days. This finding is in almost line with the findings of Sreedhar *et al.*, (2017)^[13] who found that the lactation length in cross bred cow ranged from 280 - 310 days.

Conclusion

All the dairy farmers allowed their calves to suck their dam before milking and followed two times milking in a day with 12 hours interval between milking, udder washing before and after milking and cleaning of milk utensils. Majority (76.18 per cent) of the dairy farmers were practicing knuckling as

method of milking. Total quantity of milk produced per cow was 7.18 litres per day. Average lactation length was 288 days. The knowledge of dairy farmers on dairy farming was low in both rural and urban categories which require different levels of training in the areas like method of milking.

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