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Studies on Dairy Farm Feeding Management Practices and Productivity of Cows in Nashik Tahsil of Maharashtra

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ABSTRACT
The present survey of dairy farms of urban (city) and peri-urban (Near city) Localities of Nashik to analyse the feeding practices in dairy farm of cow and productivity average per milking cow. During this study a Questionnaire based survey was carried out in 92 dairy farms with characteristic categories of landless, Small Holder, Medium Holder, large holder.The majority of feed resources used by dairy farmers were Sugar cane kutti (chalf), Dry Fodder, Green fodder, Grass, oil seed cake, liquid and solid feed supplement in the study area. The dairy animal rearing and feeding management is always challenging for dairy farmers to mitigate productivity of Milking Cows and Non- milking cows. Thus, it could be revealed that the total percentage of cow population of landless farmers was greater followed by Small holders, medium holders, large holders. The proper feeding management practices were more adoptive and productive for calves and milking cows.
Keywords: *Dairy cow, Management, Productivity, Feeding, Resource, Survey.*

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INTRODUCTION

Maharashtra state is 7th rank in the milk production and contributing 6.40 % of total milk production in india [1]. Nashik division contributes about 28% in milk production [2]. Dairy business is major subsector of agriculture in Nashik, which has most diversified agro climatic condition favorable for dairy production. Due to maximum agriculture land under irrigation the cultivation of various crops like jowar, bajra, maize, paddy sugarcane production that generate available source of feed. In this agriculture the total land holders contributes about 54% of small land holders, 44% of marginal land holders and other 2% in Nashik. [3].
Dairy farming provides economic stability to landless and landholder farmers by milk sale and consumptions with uncertainties of crops in wet and dry drought land area. Dairy farming is leading subsector in India about 7.4 % of total GDP [4]. The 70% farmers are small land holder and landless then also the milk production increase tremendously.4 for the productivity of dairy cows feeding management is necessary component among other management practices. The adequate amount of feeding is an important factor for high milk production [5]. The concentrate feeding has more potential, has high protein value helps in milk production in dairy cattle's [6]. There is no significant effect on milk production of dairy cows on feeding frequency time two or three times a day7. The main reason for low productivity in cattle is the imbalance of nature of nutrients, poor quality of feed [8]. The present study aims to acknowledge the scenario of dairy farming along with feeding management and understand basic feed resources available in the area. To study the feeding management and productivity of cow in Nashik tehsil.

MATERIAL AND METHOD

The present investigation was carried out from Nashik tehsil (taluka) of urban and peri-urban (near city) area. Nashik city situated on Godavari River bank the land area covers about 259.13 km2.
Collection of data on basis of survey made during the study from June 2023 to December 2023. For survey a structured questionnaire was prepared to collect data of feeding practices and milk production. During

survey actual visit and interview was taken of randomly selected 92 dairy farms. The interviews were made during farmer's free time at afternoon. Data collected during survey was analyzed, evaluated frequency, percentage of farm management and productivity.

RESULT AND DISCUSSION

The dairy farming in urban and peri urban area with land holding presented table 1 shows that 29.34% of respondent are landless followed by small holder 26.08%, Medium holder 20.65%, and large holder 23.91%. The urban dairy farms are organized in fewer places for animals in the closed type of gotha system of about 69.56% and open Gotha system about 30.43% at the time of study (table 2). Grazing management practices are done randomly with no respondent managed pasture was found it may lead to overgrazing in study area. The feeding system of dairy farmers shows maximum application of semi grazing system. It was also observed from the same table that available fodder in farm from different sources includes the green fodder and dry fodder throughout the year was Natural grass, Napier grass, vegetable waste, sugarcane top and maize stalk. Approximate half of the respondent (41.30%) used sugarcane top and maize stalk for feeding. As Dry fodder Maize stem Kutti, Jowar stem, Bajra stem, Dry grass, other. The available feed sources was quite similar to [9]. Concentrate feeding practices after milking was greater than other ways due to regular habitual practice. For the high productivity 46.73% respondents used mineral mixture to recover the deficiency of dairy cow. It was observed that the concentrate mixture feed given by farmers 61.92 practiced after milking and 27.17 fed during milking. It is supported by Vijay Chandra et al. [10]. that majority of respondent practiced to feed concentrate after milking. However present findings are contradictory to the Rangamma et al. [11] where majority of respondent practiced feeding concentrate after milking. Providing mineral mixture to the milking cow was always on priority based by farmers that is 46.73 (table2) however, more than half farmers were not using mineral mixture. However present investigation was contrasting to the observations of Mansingh chaudhari et al; [12] reported that the majority of respondent were less adoptive for using mineral mixture in feed in that 10% respondent uses mineral; mixture in supplementary diet.

Table1: land holding and no. of dairy farmers

Land sizes (acres)	No. of dairy farms	No. of Percent
Marginal (0-1)	27	29.34
Small holder (1-2)	24	26.08
Medium Holder (3-4)	19	20.65
Large (>5)	22	23.91

Table 2: Feeding management practices

Criteria	Category	frequency	percent
Feeding system	Free grazing	08	8.69
	Semi grazing	27	29.34
	Zero grazing	57	61.95
Source of feed	Own Plantation	24	26.04
	Natural pasture	17	18.47
	purchase	51	55.43
Type of Gotha	Closed	64	69.56
	Open	28	30.43
Fodder availability in farm			
Green	Natural grass	07	7.6
	Napier grass + lahsun grass	33	35.86
	Vegetable Waste	09	9.7
	Sugarcane top+ Maize talk	38	41.30
	other	05	5.4
Dry	Maize stem (Kutti)	43	46.73
	Jowar stem	14	15.21
	Bajra stem	13	14.13
	Dry grass	16	17.39
	other	6	6.5
Concentrate feeding	after milking	57	61.92
	During milking	25	27.17
	Before milking	10	10.86
Feeding mineral mixture	yes	43	46.73
	No	49	54.44

Present investigation reported (table 3) that the pattern of feeding diet with relation to milk production was varies according to land holding in that average milk yield of large holder farmers up to 12-22 kg/day/cow for cross breed cows. While indigenous cow 4-5 kg/day/cow. However it is quite low in small holder farmer due to low quantity of feed and fodder. It was also investigated that (table 4) Farmers perception towards adoption of improved feeding practices majority of farmer from all group were good and it is concluded that 90-100 % respondents using improved feeding and high milking cows. However it is contrast to the Rangamma B (2013)11.

Table 3: Feeding and milk production a Indigenous cow, b Cross breed

Land holder	Type of cow	Green fodder (kg)	Dry fodder (kg)	Concentrate (kg)	Average Milk yield (liter/day/cow)
landless	a	10-12	7-8	1-2	5-6
	b	20-25	6-7	4-5	10-20
Small holder	a	8-10	5-6	Up to 1	2-5
	b	14-15	8-10	1-2	8-12
Medium holder	a	10-13	5-8	2-3	4-8
	b	18-22	7-8	3-4	8-15
Large holder	a	10-13	6-7	2-3	5-8
	b	20-25	7-8	4-5	12-22

Table 4: Farmer's perception towards adoption of improved feeding practices:

Characteristic Feeding practice	Landless (n=27)	percent	Small holder (n=24)	percent	Medium holder (n=19)	percent	Large holder (n=22)	percent	Total Percent (n=92)
Rearing of high milking cow	25	92.59	12	50	15	78.95	16	72.72	73.91
Use of nutritional balance diet	23	85.18	16	66.66	14	73.68	18	81.81	77.18
Quantity and Quality of green fodder	27	100	13	54.16	14	73.68	22	100	82.60
Quantity and Quality of dry fodder	26	96.29	24	100	19	100	21	95.45	97.82
Use of concentrate	27	100	24	100	19	100	22	100	100

CONCLUSION

The proper feeding management practices always being suitable for productivity and performance of cows. It is also concluded that the maintaining the feeding diet is always challenging throughout year. However, from last decade there was improvement in management practices and productivity of milking cow with respect to feed provided by dairy practitioners.

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