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Milk marketing practices adopted by farmers in Banaskantha district of North Gujarat

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Abstract
The study reports various marketing channels by milk producer in Banaskantha district of North Gujarat which contributed almost 15 per cent in state's milk production (2018-19). The study based on primary data collected from a sample 160 bovine owners selected using multistage random sampling technique from ten villages of Dantiwada taluka in Banaskantha district. Milk producer of district marketed milk through two channels viz. co-operative society and directly consumers. Most popular channel (91.87%) was co-operative society. Majority of milk producers received payment at 15 days interval. Among the marketing channels, direct sale to consumers fetched better price as compared to co-operative society. The majority farmers (45.62%) spared up to 2.0 liters milk for household consumption. Marketing through milk producers' co-operative society was preferred because of timely and assured payment and payment at small interval.

Keywords: milk marketing, price spread, household, co-operative society

Introduction
The dairy sector is a very important productive activity in Indian agriculture, as milk is the second largest agricultural commodity contributing to GNP, next only to rice, and generates a regular flow of income to the farmer's family throughout the year. It is recognized as an important activity suitable for employment generation and value addition in the agricultural sector in the Indian economy in general and for rural families especially, small and marginal farmers and landless agricultural laborers in particular. But the success of dairy farms (or plants) largely depends on the effective management of operations like milk marketing, because marketing provides a stimulus to greater production and thereby increases demand, which provides its own incentive to increase supply [1]. An efficient marketing system results in a higher proportion of producer profit in the consumer rupee, which influences the producer's decision to invest resources in a particular economic activity in a particular time period. An efficient marketing system also helps bring quality product to the consumers at the lowest possible cost.

The milk production of Gujarat was 14.49 million tons during 2018-19 and Banaskantha district (02.22 MT) comprising about 15 per cent of state milk production [2]. It shows that livestock forms an indivisible part of agriculture in the district. With this background the present study consist the finding of an investigation conducted in Dantiwada taluka of Banaskantha district of North Gujarat with the following objective:

- To study the various channels of milk marketing preferred channel and reason for preference in Banaskantha district.

Methodology
The investigation was carried out in Dantiwada taluka of Banaskantha district of North Gujarat from October, 2014 to April, 2015. The study was conducted in rural area of Dantiwada taluka in which ten villages were selected randomly from university adopted villages and 16 farmers from each village were selected randomly for collection of data, the required information were collected with the help of an interview schedule designed for the purpose though personal contact owners and personal observations. After collection, all the data were compiled and tabulated in master sheet and expressed in percentage. Chi-square test (Test of Independence) was being applied to determine the association of animal management practices with different categories.

Chi square test (x^2)

Chi-square test (Test of Independence) was being applied to determine the association of animal management practices with different categories.

The value of chi-square test (x^2) was calculated by using following formula.

$$x^2 = \Sigma \left[(O_i — E_i)^2 / E_i \right]$$

Where, $X^2 =$ Chi- Square test value

$\Sigma =$ Summation.
$O_i =$ Observed frequency
$E_i =$ Expected frequency

The calculated x^2 value was compared with table x^2 value at 5% & 1% level and given degree of freedom for its test of significance [3] (Panse and Sukhatme, 1980).

Result and Discussion

Table 1: Distribution of owners according to methods of milk marketing under mixed farming (Farmer category wise).

Sr. No.	Category	No. of respondents adopting milk marketing practices	
		Supply to dairy co-operative	supply to Others
1	Marginal (n=40)	40 (100.00)	0 (00.00)
2	Small (n=40)	37 (92.50)	3 (07.50)
3	Medium (n=40)	36 (90.00)	4 (10.00)
4	Large (n=40)	34 (85.00)	6 (15.00)
Total (n=160)		147 (91.87)	13 (08.12)
x^2 = 06.27 (Not significant) n= Respondents Figure in the parentheses indicate percentage of the respondents.			

It was noticed from data in table.1 that majority of respondents were sold their milk to dairy co-operative society in all the categories of farmers. It was highest in marginal (100.00%) farmers followed by small (92.50%), medium (90.00%) and large farmers (85.00%). Very less of respondents (08.12%) were sold their milk to others (directly customers). Trend of milk marketing was not differed significantly among categories of farmers under study area (table 1). The medium and large farmers kept more no. of milch animals have more private customers for milk marketing.

Table 2: Distribution of owners according to methods of milk marketing under mixed farming (Village wise).

Sr. No.	Frequency	No. of respondents adopting milk marketing practices	
		Supply to dairy co-operative	Supply to others
1	Marwada (n=16)	14 (87.50)	2 (12.50)
2	Dhaneri (n=16)	13 (81.25)	3 (18.75)
3	Jegol (n=16)	15 (93.75)	1 (06.25)
4	Vaghrol (n=16)	16 (100.0)	0 (00.00)
5	Nilpur (n=16)	16 (100.0)	0 (00.00)
6	Lodpa (n=16)	16 (50.00)	0 (00.00)
7	Sikaria (n=16)	12 (75.00)	4 (25.00)
8	Bhadli (n=16)	16 (1000.0)	0 (00.00)
9	Chodungri (n=16)	16 (100.0)	0 (00.00)
10	Nani Bhakhar (n=16)	13 (81.25)	3 (18.75)
Total (n=160)		147 (91.87)	13 (08.13)
x^2 = 18.50** n=Respondents Figure in the parentheses indicate percentage of the respondents. ** Indicate chi square statistical significant at 1% level			

It was observed that majority (91.88%) of the respondents preferred to market the milk to village dairy co-operative society as they incurred various benefits by societies and dairy union. Dairy co-operative network is widespread in the Dantiwada taluka. So, respondents can easily sold milk without searching of customers. Usually milk marketing through vendors and customers practiced only the demand of cow milk for infants, old person and patients by customers itself. Trend of milk marketing was differed significant (P<0.01%) among different villages of Dantiwada taluka (Table.2). Private vendors were more in Sikaria, Dhaneri and Nani Bhakhar (18.75 to 25.00%).

This result was similar to Tripathi (2006) [4] reported that 80.0 per cent of respondents sold their milk only to dairy co-operative society and 20.0 per cent of them sold milk to private society and neighbours. Divekar (2008) [5] revealed that majority (86.0%) of Gir owners were sold their milk to milk co-op society followed by retail milk buyer (12.0%) and neighbors (02.0%) in Anand district. Chand (2009) [6] revealed that majority farmers were sold their milk to milk co-op society followed by retail milk buyer in Rajasthan.

Table 3: Distribution of owners according to household consumption of milk per family per day under mixed farming (Village wise).

Sr. No.	Frequency	No. of respondents according to household consumption of milk		
		Up to 2 Lit.	2.0 – 4.0 Lit.	More than 4 Lit.
1	Marwada (n=16)	6 (37.50)	9 (56.25)	1 (06.25)
2	Dhaneri (n=16)	6 (37.50)	7 (43.75)	3 (18.75)
3	Jegol (n=16)	8 (50.00)	6 (37.50)	2 (12.50)
4	Vaghrol (n=16)	9 (56.25)	5 (31.25)	2 (12.50)
5	Nilpur (n=16)	10 (62.50)	5 (31.25)	1 (06.25)
6	Lodpa (n=16)	9 (56.25)	5 (31.25)	2 (12.50)
7	Sikaria (n=16)	7 (43.75)	6 (37.50)	3 (18.75)
8	Bhadli (n=16)	9 (56.25)	6 (37.50)	1 (06.25)
9	Chodungri (n=16)	6 (37.50)	7 (43.75)	3 (18.75)
10	Nani Bhakhar (n=16)	3 (18.75)	11 (68.75)	2 (12.50)
	Total (n=160)	73 (45.62)	67 (41.88)	20 (12.50)
x^2 = 13.58 (Not Significant) n=Respondents Figure in the parentheses indicate percentage of the respondents.				

It was noticed from data in table.3 that majority (45.62%) of respondents spared up to 2.0 liters milk while 41.88 per cent respondents utilized 2.0 to 4.0 liters milk for household consumption. Trend of milk consumption by family was not differed significantly among different villages of Dantiwada taluka. majority of respondents (more than 50%) in Nilpur, Jegol, Vaghrol, Lodpa and Bhadi villages kept 2.0 litres of milk for household consumption while majority of respondents (more than 50%) in Nani Bhakhar and Marwada kept 2.0-4.0 litres of milk for household consumption. Only 12.5% of respondents spared more than 4.0 litres of milk for household consumption.

Table 4: Distribution of owners according to household consumption of milk per family per day under mixed farming (Farmer category wise).

Sr. No.	Category	Up to 2 Lit.	2.0 – 4.0 Lit.	More than 4 Lit.
1	Marginal (n=40)	28 (70.00)	11 (27.50)	1 (02.50)
2	Small (n=40)	25 (62.50)	12 (30.00)	3 (07.50)
3	Medium (n=40)	15 (37.50)	19 (47.50)	6 (15.00)
4	Large (n=40)	5 (12.50)	25 (62.50)	10 (25.00)
	Total (n=160)	73 (45.62)	67 (41.87)	20 (12.50)
x^2 = **34.79**** n= Respondents Figure in the parentheses indicate percentage of the respondents. ** Indicate chi square statistical significant at 1% level				

It was noticed from data in table 4 that majority respondents in marginal (70.00%) and small (62.50%) farmers were spared up to 2.0 liters of milk while in medium (47.50%) and large (62.50%) farmers were spared 2.0 to 4.0 liters of milk. More than 4 liters of milk spared by large farmers (25.00%) was high as compared to others categories of farmers due to large size of family. Trend of milk marketing was differed significantly at (p<0.01) among categories of farmers under study area.

This finding was match with Divekar (2008) [5] found that majority (78.0%) of Gir owners retained 1 to 2 lit. milk at home for family consumption. 13.0 per cent owners were retaining less than 1 lit. and 09.0 per cent of retained more than 2 lit. of milk at home for family consumption.

Conclusion
The study revealed that the importance of milk co-operative society as it had found to be the main milk procurement and marketing agency. Farmers were satisfied with the services provided by dairy co-operative society without cheating fear from private vendor. Marketing through dairy co-operative society was preferred because of timely and assured payment and payment at small interval. The majority farmers spared up to 2.0 liters milk for household consumption.

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