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Cost of Production of Milk in the Urban Area with Special Reference to Surat City of Gujarat State

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ABSTRACT

The expenditure on feed is the most important item of cost in dairy farming. The urban milk producers of Surat district incurred more expenditure on concentrate feeding as compared to rural milk producers, who spend more on dry fodder. The average total cost of maintenance of an animal per year accounted to Rs. 5866.98 and it was higher on large size farm group. The per litre cost of milk production was Rs. 2.82. The per litre cost showed positive trend with dairy farm size i. e. as the dairy farm size increases the per litre cost also increases.

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INTRODUCTION

The change in the structure of traditional dairy sector to organised dairy activity, the studies on cost of production of dairy products especially of liquid milk have assumed greater importance in the country. Milk production business become part and parcel of agricultural business and is considered as an important economic activity. A large number of individuals especially in the urban demand centres started it as an economic occupation or major income generating source. The income from any business is influenced by the cost structure and price of the commodity that is produced. Milk production activity is not different from this.

MATERIALS AND METHODS

The present study on cost of maintenance of an animal was undertaken during the year 1980 in Surat City of Gujarat State. The main objectives of the study are (i) to study the cost maintenance of an animal per year in different dairy farm size groups, (ii) to study the cost of production of milk per letre in different dairy farm size groups. The data were collected from 60 milk producers of Surat milk producer's co-operative union of Surat city. The producers were grouped into three groups based on the number of animals with the producer viz., Group-I consists of milk producers having less than 30 animals (small dairy farm size group), Group-II

consists of producers having 30 to 60 animals (medium dairy farm size group) and Group-III consists of producers having more than 60 animals (large dairy farm size group). Nearly 40 per cent of milk producers of Surat milk producers co-operative union were covered in the study. The costs were estimated on the basis of cost concepts i.e. Cost-A_1, Cost-A_2, Cost-B and Cost-C.

RESULTS AND DISCUSSION

Cost of maintenance of animal per year

The different types of costs are worked out per animal per year and presented item-wise in Table-1.

The data in the table show that the expenditure on feed (green fodder, dry fodder and concentrates) increases with size of the dairy farm. The average maintenance cost on feeds was Rs. 4,223.64 per annum (71.99 per cent in gross cost). Among the three groups of feeds, concentrates occupied a major share in the expenditure followed by dry fodder and green fodder i.e. on an average Rs. 2,174.04 (37.06 per cent), Rs. 1,321.26 (22.52 per cent) and Rs. 728.34 (12.41 per cent) respectively. The expenditure on feeds was higher (Rs. 4,494.48) on large size farm group and less (Rs. 4,128.48) on small size farm group. The depreciation charges were higher in large size farm group (Rs. 428.22; 7.05 per cent) and less in medium size farm group (Rs. 402.60; 6.96 per cent). The depreciation on animals was higher (Rs. 376.98; 6.43 per cent) followed by sheds (Rs. 21.96; 0.37 per cent) and then on equipment Rs. 14.64 (0.25 per cent).

TABLE 1

Cost of maintenance of animal per year (1980).

(Amount in Rs.)

Sr. No.	*Components of cost*	*Small size farms*	*Medium size farms*	*Large size farms*	*Overall the farms*
1.	*2.*	*3.*	*4.*	*5.*	*6.*
1.	Green Fodder	834.48 (14.22)	647.82 (11.20)	724.68 (11.94)	728.34 (12.41)
2.	Dry fodder	1357.86 (23.14)	1284.66 (22.22)	1354.20 (22.30)	1321.26 (22.52)
3.	Concentrates	1936.14 (33.00)	2250.90 (38.92)	2415.60 (39.79)	2174.04 (37.06)
	Sub-Total :	4128.48 (70.36)	4183.38 (72.34)	4494.48 (74.02)	4223.64 (71.99)
4.	Depreciation on animals	376.98 (6.43)	366.00 (6.33)	391.62 (6.45)	376.98 (6.43)

1.	2.	3.	4.	5.	6.
5.	Depreciation on sheds	21.96 (0.37)	21.96 (0.38)	25.62 (0.42)	21.96 (0.37)
6.	Depreciation on Equipment	21.96 (0.37)	14.64 (0.24)	10.98 (0.18)	14.64 (0.25)
	Sub-total :	420.90 (7.17)	402.60 (6.96)	428.22 (7.05)	413.58 (7.05)
7.	Paid labour	369.66 (6.30)	333.06 (5.76)	307.44 (5.06)	340.38 (5.80)
8.	Veterinay and medical charges	58.56 (1.00)	40.26 (0.70)	43.92 (0.73)	47.58 (0.81)
9.	Miscellaneous charges	29.28 (0.50)	43.92 (0.76)	29.28 (0.48)	36.60 (0.62)
10.	Interest on working capital	150.06 (2.55)	142.74 (2.47)	153.72 (2.53)	146.40 (2.50)
11.	**Cost-A_1**	5156.94 (87.89)	5145.96 (88.99)	5457.06 (89.87)	5208.18 (88.17)
12.	Interest on fixed capital	475.80 (8.11)	475.80 (8.23)	497.76 (8.20)	479.46 (8.17)
13.	**Cost-B**	5632.74 (96.00)	5621.76 (97.22)	5954.82 (98.07)	5687.64 (96.94)
14.	Value of family labour.	234.24 (3.99)	161.04 (2.78)	117.12 (1.93)	179.34 (3.06)
15.	**Cost-C**	5866.98 (100.00)	5782.80 (100.00)	6071.94 (100.00)	5866.98 (100.00)

Note : Figures in the parenthesis denote percentage to gross cost.
Source : Field Survey.

The paid labour charges were higher on small size farm group (Rs. 369.66; 6.30 per cent of gross cost) and lower on large size farm group (Rs. 307.44; 5.06 per cent). It was Rs. 333.06 (5.76 per cent) on medium size farm group. The per cent contribution of paid-labour in gross costs over all the groups accounted to 5.80 per cent. This showed that with increase in size of the group the paid labour charges were decreasing. The veterinary and medical charges were higher in small size farms (Rs. 58.56; one per cent) and lower in large size farms (Rs. 43.92; 0.73 per cent). These charges over all the size groups accounted to Rs. 47.58 (0.81 per cent) per animal per annum.

The miscellaneous expenditure by all the groups on an average came to Rs. 36.60 (0.62 per cent). These charges were higher in medium size group (Rs. 43.92; 0.76 per cent) and in small and large farm groups they accounted to Rs. 29.28 (0.50 per cent) and Rs. 29.28 (0.48 per cent) respectively. The interest charges reckoned on working capital were Rs. 146.40 (2.50 per cent) over all the groups per annum. It was higher on large size farms (Rs. 153.72; 2.53 per cent) followed by small size farms Rs. 150.06 (2.55 per cent) and then medium size farms Rs. 142.74 (2.47 per cent). The interest on fixed capital was the second largest item of cost, contributing in gross cost next only to feeds. Irrespective of the size group this item of cost accounted to Rs. 479.46 (8.17 per cent) per annum. It was higher on large size farm group (Rs. 497.76; 8.20 per cent).

The value of family labour reckoned at prevailing labour rates accounted to Rs. 179.34 (3.05 per cent) over all the farm size groups. The item of cost increases with decrease in the farm size group and vice versa.

The maintenance cost per animal per year depicted so far, indicated that feed formed the largest item of cost amounting to about 71 per cent in gross cost. Among different feeds, concentrates were the major item of expenditure accounting to 37 per cent followed by dry fodder and green fodder. It was interesting to note that in rural areas of Surat District Madalia and Charan (1976) noticed that the dry fodder contribution was the largest (i. e. 59.97 per cent) in the gross cost than concentrates (i. e. 8.77 per cent). However in the present study of Surat city concentrate feeding was prominent and then dry fodder follows. Hence it can be put forwarded that the urban milk producers of Surat District were incurring more expenditure on concentrate feed than the rural producers.

Cost-A, Cost-B and Cost–C Estimates

The data in the table show that on average Cost-A_1 per animal per year was Rs. 5,208.18 for overall the size groups. It was higher on large size farm group (Rs. 5,457) and lower on medium size farm group (5,145.96) and it was Rs. 5,156.94 in small size farm group. Cost-B was directly estimated after Cost-A_1 because the dairy sheds were owned by the producers and no rented sheds were present, hence Cost-A_2 was not studied. Cost-B was Rs. 5,687.64 per annum per animal over all the size groups. It was higher in large size farm group (Rs. 5,954.82) and lower on medium size farm group (Rs. 5,621.76). Irrespective of the farm size group the average gross cost (Cost-C) per animal per annum accounted to Rs. 5.866.98. It was higher on large size farm group (Rs. 6,071.94) and lower on medium size farm group (Rs. 5,782.80). The Cost-C on small size farm group came to about Rs. 5,866.98. The higher total costs incurred by large size farm group was due to more expenditure on feeding and also due to slightly higher capital investment than the rest of the groups.

Per litre cost of production

The cost of production per litre of milk was obtained by dividing each item of cost with total milk production and depicted in Table-2. The expenditure of per litre cost of milk production on feeds was Rs. 1.94 in small size farm group, Rs. 1.99 in medium size farm group and Rs. 2.29 in large size farm group. The expenditure on feeds irrespective of size group accounted to Rs. 2.03. Next important item of cost per litre of milk was interest on fixed capital i. e. 23 paise over

TABLE 2

Cost of production per litre of milk.

(Amount in Rs.)

Sr. No.	*Components of Cost*	*Small size farms*	*Medium size farms*	*Large size farms*	*Overall the farms*
1.	Green Fodder	0.39 (14.18)	0.31 (11.23)	0.37 (11.97)	0.35 (12.41)
2.	Dry fodder	0.64 (23.27)	0.61 (22.10)	0.69 (22.33)	0.64 (22.70)
3.	Concentrates	0.91 (33.09)	1.07 (38.17)	1.23 (39.81)	1.04 (36.88)
	Sub-Total :	1.94 (70.54)	1.99 (72.10)	2.29 (74.11)	2.03 (71.99)
4.	Depreciation charges	0.20 (7.27)	0.19 (6.88)	0.22 (7.12)	0.20 (7.09)
5.	Paid labour	0.17 (6.10)	0.16 (5.81)	0.16 (5.18)	0.16 (5.67)
6.	Veterinary and medical charges	0.03 (1.09)	0.02 (0.72)	0.02 (0.65)	0.02 (0.71)
7.	Miscellaneous charges	0.01 (0.36)	0.02 (0.72)	0.01 (0.32)	0.02 (0.71)
8.	Interest on working capital	0.07 (2.55)	0.07 (2.54)	0.08 (2.59)	0.07 (2.48)
9.	**Cost-A_1**	2.42 (88.00)	2.45 (83.71)	2.78 (89.97)	2.50 (88.65)
10.	Interest on Fixed Capital	0.22 (8.00)	0.23 (8.33)	0.25 (8.09)	0.23 (8.16)
11.	**Cost-B**	2.64 (93.00)	2.68 (97.10)	3.03 (98.06)	2.73 (96.81)
12.	Value of family labour	0.11 (4.00)	0.08 (2.90)	0.06 (1.94)	0.09 (3.19)
13.	**Cost-C**	2.75 (100.00)	2.76 (100.00)	3.09 (100.00)	2.82 (100.00)

Note : Figures in parenthesis indicate percentage to gross cost.

Source : Field Survey.

all the size groups followed by depreciation charges 20 paise. Next of importance was paid labour accounting to 16 paise over all the size farm groups. Veterinary and medical services and miscellaneous charges accounted to 4 paise for all the size farm groups.

The Cost-A, Cost-B and Cost-C estimates were greater in large size farm group and with increase in size of the farm the per litre cost of production increased. Cost-A and Cost-B per litre accounted to Rs. 2.42 and Rs. 2.64 in small size farm group and in large size farm group, they were Rs. 2.78 and Rs. 3.03 respectively. The total cost (Cost-C) to produce one litre of milk was Rs. 2.75, Rs. 2.76 and Rs. 3.09 in small, medium and large size farm groups respectively.

To conclude that the expenditure on feed is the most important item of cost. The urban milk producers of Surat district incurred more expenditure on concentrate feeding as compared to rural milk producers, who spends more on dry fodder. The average total cost of maintenance of an animal per year accounted to Rs. 5866.98 and it was higher on large size farm group. The per litre cost of milk production was Rs. 2.82. The per litre cost showed positive trend with dairy farm size i. e. as the dairy farm size increases the per litre cost also increases.

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