

Economic analysis of milk production in different sizes of dairy units in Pune district of Maharashtra

P.L. KOLEKAR, R.B. CHANGULE, B.B. MANE, U.S. MANE AND S.H. GHARGE

ABSTRACT

The study was conducted in Pune district of Maharashtra during the year of 2009-2010. The study revealed that large dairy unit was more profitable as compared to small and medium dairy units. There were Rs. 17,66,965.96 as gross income and net income is Rs. 2,52,768.35 for large dairy unit per annum. The improved breed of cows and better feeding might be helpful for increasing the income and employment opportunities in the study area.

KEY WORDS : Cost and returns, Economic analysis, Dairy units

Kolekar, P.L., Changule, R.B., Mane, B.B., Mane, U.S. and Gharge, S.H. (2011). Economic analysis of milk production in different sizes of dairy units in Pune district of Maharashtra, *Res. J. Animal Hus. & Dairy Sci.*, 2 (1&2) : 34-36.

INTRODUCTION

Milk production in India is increasing at annual growth rate of 4.5 per cent as compared to 1 per cent in the world as a whole. Total milk production of the country has increased from 21 million tonnes in 1961 to 114.4 million tonnes in 2010. Consequently, the per capita milk availability has also increased from 124 grams in 1961 to 250 grams in 2010 (Dairy India, Anonymous 2010). Milk has now emerged as the second largest agricultural commodity next to rice production and is contributing substantially the importance of the Indian Agricultural System in particular and national economy in general. Milk has become day's part and parcel of life of every human being especially of those who stay in urban area.

Pune is one of the major milk producing districts in Maharashtra. The dairy unit owners maintain cross-breed cows for milk production. However, the rural dairy unit owners have several questions regarding cost and returns of milk production.

Keeping this view in mind, present study was conducted in Pune district of Maharashtra. The specific

objective of study was cost and return estimate of cow milk production at prevailing production pattern of Maharashtra.

MATERIALS AND METHODS

Multistage random sampling technique was employed for selection of sample for the study. District Pune of Maharashtra state was selected purposively. A total 48 samples of dairy unit owners were selected from 8 villages of the Baramati Tehsil. The data were collected on green fodder, dry fodder and concentrates fed to animals, labour used for upkeep of animals, milk yield and all other parameters during the year of 2009-2010 with pre-tested and well structured schedule. The tabular analysis was employed to workout cost of milk production and returns received from the sale of milk. Cost concept of fixed and variable cost was used.

Total cost:

The total maintenance cost was worked out by adding total variable cost and total fixed cost.

Gross income:

Gross income from milch animal includes the value of milk, value of young stock and manure produced by the animals. The gross income was estimated at the prevailing price in the area.

Correspondence to:

P.L. KOLEKAR, Department of Economics, College of Agriculture, LATUR (M.S.) INDIA

Authors' affiliations:

R.B. CHANGULE, B.B. MANE, U.S. MANE AND S.H. GHARGE, Department of Economics, College of Agriculture, LATUR (M.S.) INDIA

Net income:

This is the true income to the households, which is computed by deducting total cost from gross income:

$$\text{Net income} = \text{Gross return} - \text{Total cost}$$

Per liter cost of milk production:

$$\text{Cost of milk} = \frac{\text{Working capital} - \text{Receipt other than from milk}}{\text{Production per litre}} \quad \text{Litres of milk}$$

RESULTS AND DISCUSSION

The cost analysis of different dairy units is presented in Table 1. Result revealed that, at an overall dairy unit, variable cost, fixed cost and total cost were Rs. 9,23,631.62, 1,69,420.37 and 10,93,051.99, respectively. Total cost of large dairy unit was Rs. 15,14,197.61 per annum where

as it was Rs. 6,68,846.91, 10,96,111.46 and 10,93,051.99 for small, medium and overall dairy unit, respectively. In large dairy unit, modern machinery was used, which resulted to comparatively higher cost of maintenance.

The return of different dairy units is presented in Table 2. The higher milk realized from large dairy unit provided higher net returns (Rs. 2,52,768.35) as compared to small, medium and overall dairy units. The per litre cost of milk production was less in large dairy unit compared to small, medium and overall dairy unit, The benefit-cost ratio was more in large dairy unit than small, medium and overall dairy units. Thus, the cost and returns were significantly higher for large dairy units as compared to other dairy units. The large dairy units was remunerative being Rs. 17,66,965.96 gross income and Rs. 2,52,768.35 as net

Sr. No.	Particulars	Small	Medium	large	overall
1.	Dry fodder	83,253.75	1,36,006.25	1,81,971.87	1,33,743.95
2.	Green fodder	1,95,371.87	3,16,974.40	4,40,518.75	3,17,621.67
3.	Concentrates	1,67,231.56	2,75,575.00	3,75,300.00	2,27,702.18
4.	Supplement	3,138	5431.50	7,727.43	5,432.31
5.	Upkeep charges	54,187.5	68,437.50	96,221.25	72,948.75
6.	Miscellaneous expenses	14,893.75	35,956.25	57,856.25	36,235.41
7.	Rope	586.25	995.00	1,361.25	980.83
8.	Interest on working capital	51,866.268	83,937.586	1,16,095.68	83,966.511
9.	Total variable cost	5,70,528.94	9,23,313.44	12,77,052.48	9,23,631.62
10.	Depreciation	33,533.43	58,778.22	80,931.55	57,747.67
11.	Interest on fixed capital	64784.54	1,14,019.02	1,56,213.58	1,11,672.38
12.	Total fixed cost	98,317.97	1,72,798.02	2,37,145.13	1,69,420.37
13.	TOTAL COST	6,68,846.91	10,96,111.46	15,14,197.61	10,93,051.99

Sr. No.	Particulars	Small dairy unit	Medium dairy unit	Large dairy unit	Overall dairy unit
1.	Number of cows	15.75	25.25	35.81	25.61
2.	Total milk production (Litre)	44,365.00	74,735.37	1,07,430.12	75,510.16
3.	Value of milk (Rs.)	6,46,938.13	10,83,662.86	15,36,250.71	10,88,950.56
4.	Total manure production (Tonnes)	40.25	68.53	82.84	63.87
5.	Income from manure(Rs.)	54,337.50	92,515.50	1,11,834.00	86,224.50
6.	Number of calves	14.21	22.28	30.86	22.45
7.	Value of young stock (Rs.)	44,625.00	75,562.50	1,18,881.25	97,585.42
8.	Gross income (3+5+6)	7,45,900.63	12,51,740.86	17,66,965.96	12,72,760.48
9.	Net income (7-1)	77,053.72	1,55,629.40	2,52,768.35	1,97,708.49
10.	Net cost for milk production (1-5-6)	5,69,884.41	9,28,033.46	12,83,482.36	9,27,133.41
11.	Cost per litre of milk production (Rs.) (9/2)	12.84	12.41	11.94	12.27
12.	Price per litre of milk (Rs.)	14.62	14.50	14.30	14.47
13.	Net profit per litre of milk production (11-10)	1.78	2.09	2.36	2.20
14.	Output - input ratio (11/10)	1.14	1.17	1.21	1.18

income per annum along with benefit- cost ratio which was 1.21. Similar results were obtained by Suresh *et al* (2009) with benefit- cost ratio 1.13. Banumathy (2003) Worked out the economics of cow and buffalo milk production. In Farrukhabad district of Uttar Pradesh, Chandra and Agarwal calculated the cost and return from milk production, Similarly, Raju *et al.* (2005) also worked out the cost of milk production in Bangalore. Suresh *et al.* made investigation on the comparative economics of buffalo and cow milk production in Karnal.

Conclusion:

The study concluded that, in Pune district of Maharashtra milk production under large dairy unit was more profitable as compared to small and medium dairy units. The improved breed of cows, better feeding and management practices might be helpful for increasing the income and employment opportunities in the study area.

LITERATURE CITED

Autkar, V.N., Rupkumar, K. and Thokar, M.R. (1995). Towards livestock economy in Vidarbha Region. *Indian J. Agric. Econ.*, **50**(3): 325-326.

Banumathy, V. (2003). Economics of cow and buffalo milk production. *Indian farming.*, pp. 14-17.

Chandra A. and Agarwal S.B. (2000). Cost and return from milk production in Farrukhabad district of Uttar Pradesh. *Indian J. Dairy Sci.*, **55**(4) : 310-316.

Kakade, V.B. and Bagade D.S. (2001) . Profit and loss of dairy industry-A case of Malshiras taluka. *Maharashtra Co-op. Quarterly*, **74**(4) : 60-62.

Mandhare, D.H. (1986). Economics of dairy farming around Pune city. Unpublished *M.Sc.(Agri.)thesis*, submitted to Mahatma Phule Krishi Vidhyapeet, Rahuri, M.S. (India).

Raju, S. S., Anathram K. and Sampth K.T. (2005). Cost of milk production in institute village linkage program adopted villages in Bangalore district of Karnataka. *Indian J. Dairy Sci.*, **58** (5): 365-367.

Regeena, S. (2006). An economic analysis of livestock production in homestead farms of Kerala. *Indian farming* **57**(2):26-28.

Suresh, R. Tripathi, R. S. and Solanki A. (2009). Comparative economics of buffalo and cow milk production in Karnal district of Haryana. *Indian J. Anim. Res.*, **43**(3):224-225.

