International Journal of Food, Agriculture and Veterinary Sciences ISSN: 2277-209X (Online)
An Online International Journal Available at http://www.cibtech.org/jfav.htm
2013 Vol. 3 (2) May-August, pp. 1-5/Pandian et al.
Research Article

ANALYZING THE COST AND RETURNS OF URBAN MILK PRODUCTION IN TAMIL NADU

***Serma Saravana Pandian A., Shilpa Shree J., Boopathy Raja M. and Vetrivel D.**
Department of Animal Husbandry Economics Madras Veterinary College TANUVAS, Chennai 600007
**Author for Correspondence*

ABSTRACT
The Study was under taken to analyze the cost and returns of Milk Production in urban areas of Tamil Nadu. The Dairy Farmers were selected purposively. A Total Sample Size of 90 Dairy Farmers was selected from three urban areas of Tamil Nadu namely Chennai, erode and Vellore for the study. To Estimate the cost and returns from milk production, based on this study founded that the daily net maintenance cost per milking cow in different farm size groups on selected urban regions was Rs. 107.69 for small farms (CB), Rs. 98.21 for small farms (ND), Rs.97.41 for medium farmer (CB), Rs.96.29 for medium farmer (ND), Rs. 90.99 for large farmer (CB), Rs.95.39 for large farmer (ND) and Rs.97.66 for overall respectively. The corresponding net returns per milking cow were Rs.46.89 for small farms (CB), Rs. 22.61 for small farms (ND), Rs. 54.78 for medium farmer (CB), Rs.22.40 for medium farmer (ND), Rs.52.20 for large farmer (CB), Rs.22.58 for large farmer (ND) and Rs.36.91 for overall respectively .The maintenance cost and net returns much higher for milch cow in small farmer (CB) & medium farmer (CB).

Key Words: *Cost and Returns, Milk Production, Tamil Nadu*

INTRODUCTION
India is home for the largest milch animal population and milk production in the World. The Milk Producers form the backbone for Dairy Industry. The extension of inputs activities, supply of cattle feed and payment of remunerative price for milk are being provided to help the Milk Producers to enhance Milk Production. Dairying provides millions of small marginal farmers and landless labours means for their subsistence. Milch animals are reared mainly through the utilization of crop residues; thus milk production is essentially a subsidiary activity to agriculture. The planners recognized dairying, because of the potential impact it can make, as an instrument to bring about socio-economic transformations in the rural sector. India has a population of more than 1 billion with diverse food habits, cultures, traditions and religions. Regional variations within the country can be mind boggling. On one hand, the country has plains with long tradition of milk production and consumption. On the other hand, there are forest and hilly regions with no tradition of dairying. Cow is holy for Hindus who make up more than 80 per cent of the population of India. Per capita availability of milk in India was 291 grams in 2011-12, against 222 grams in 2001-02. Growing population would require India to drastically improve its milk production from current 127 million tonnes to 210 million tonnes by the end of this decade. Tamilnadu State's share in total milk production at the All India level was 5.38%.Tamilnadu, with a daily milk production of 145.88 lakh litres, is one of the leading states in milk production in India. For the present study, three urban areas of Tamil Nadu namely Chennai, erode and Vellore were selected. This study estimates cost and returns from milk production for local and cross-bred cows in the urban areas. Related studies conducted in rural areas. But very less work is done in urban milk production.

MATERIALS AND METHODS
In Tamil Nadu**,** three urban areas namely Chennai, Erode and Vellore were selected for the present study. From each of these areas, 30 dairy farmers were selected by Simple random sampling technique. In all, a total sample size of 90 dairy farmers was selected for the present study.

Research Article

Period of study
The field survey for this study was conducted during the month of November and December 2012 and the data was collected from the sample units related to the year 2011-2012.

Collection of data
Information relating to various aspects of dairy farming was collected from selected farmers by survey method with a well-designed and pre-tested interview schedule.
Details of inputs used like green fodder, dry fodder, concentrates with their quantities and price, labour employed with wage particulars veterinary and breeding expenses, miscellaneous expenses and data on outputs like milk, manure, gunny bag were also collected from the dairy farmers. The data collected are analyzed with a view to achieve the objectives of the study as follows:

Methodology

Fixed Investment
The cost of buildings, cost of equipment, investment on water and electricity installation and the cost of animals were grouped under fixed investment.

Cost Components
The cost components have been classified into fixed cost and variable cost.

Fixed Cost
It included interest on fixed capital, depreciation on buildings, depreciation on equipment and machinery and insurance cost .The interest rate of 15 percent annum on the total value of animals, buildings and equipment and machinery were worked out. For animal sheds, depreciation was calculated at the rate of 5 percent per annum and depreciation on equipment was worked out at the rate of 10 percent.

Variable Cost
Variable cost included cost of feed (green fodder, dry fodder, and concentrate), labour cost and cost of veterinary and medicine charges (breeding, vaccination, deworming). Feed cost was calculated taking into account the market rate and transport charges. Labour cost was calculated based on wages received by casual labourers and the same was used to impute the cost of family labour. The cost of veterinary expenses included expenditure incurred on medicines, vaccines, deworming charges and fees paid to veterinarians. Breeding cost included expenditure incurred on natural services or artificial inseminations.

Total Cost
Total cost was calculated by adding all the components of fixed cost and variable cost.

Return
The return in milk production included the income realized through the sale of milk, manure and gunny bags. The value of milk, manure and gunny bags were valued at the rate prevailing during the period of study**.**

RESULTS AND DISCUSSION

Cost and Returns of Milk Production

Cost of Milk Production
Average cost of milk production for cross bred and local cows as observed in the study are shown in Table 1. Total variable cost worked out to be 88.58 per cent to the total cost for cross bred cow and 90.57 per cent for local cow while total fixed cost contributed 11.42 and 9.53 per cent, respectively, indicating higher capital investment for cross bred cow. However in absolute terms total variable cost per cross bred cow per day averaged Rs.87.41 compared to Rs.87.41 for local cow.
Total fixed cost per cow is almost equal for all the category of farms. Total variable cost was decreased with increasing farm size for both cross bred and local cows Manoharan *et al*., (2004) also reported decreased total variable cost with increased farm size only in cross bred cows.
However, among the farmers with local cows, total cost was decreased with increasing farm size ie., Rs.98.21 for small farmer, Rs.96.29 for medium farmer, Rs.95.39 for large farmer Tarunvir Singh *et al.,* (2012) also reported the total cost was highest in small farms and total fixed cost was decreased in small

Table 1: Cost of milk production for cross bred cow and local cow (Rs./cow/day)

	CATEGORY OF FARMERS							
	Small		Medium		Large		Overall	
COST OF ITEMS	Cross breed cow	Local cow	Cross breed cow	Local cow	Cross breed cow	Local Cow	Cross breed cow	Local cow
				FIXED COST				
Interest on fixed investment	10.36 (9.62)	6.72 (6.84)	10.55 (10.83)	9.58 (9.95)	10.6 (11.65)	9.55 (10.01)	10.5 (10.64)	8.62 (8.92)
Depreciation of building	0.8 (0.74)	0.36 (0.36)	0.58 (0.59)	0.68 (0.71)	0.59 (0.65)	0.51 (0.53)	0.7 (0.70)	0.52 (0.53)
Depreciation of equipment	0.08 (0.07)	0.08 (0.09)	0.08 (0.08)	0.08 (0.08)	0.08 (0.09)	0.08 (0.08)	0.08 (0.08)	0.08 (0.08)
Total fixed cost	11.24 (10.43)	7.16 (7.29)	11.21 (11.5)	10.34 (10.74)	11.27 (12.39)	10.14 (10.62)	11.2 (11.42)	9.21 (9.53)
				VARIABLE COST				
Green fodder	13.58 (12.62)	14.87 (15.14)	14.94 (15.33)	13.50 (14.02)	14.82 (16.29)	14.31 (15.00)	14.44 (14.63)	14.23 (14.73)
Dry fodder	11.42 (10.60)	9.37 (9.54)	9.35 (9.60)	9.00 (9.35)	9.43 (10.36)	9.73 (10.20)	10.06 (10.19)	9.36 (9.69)
Concentrates	35.44 (32.90)	36.43 (37.09)	34.03 (34.93)	32.00 (33.23)	30.60 (33.63)	34.50 (36.17)	33.35 (33.79)	34.31 (35.63)
Labour	34.47 (32.02)	29.50 (30.06)	27.17 (27.89)	31.12 (32.32)	24.64 (27.08)	26.12 (27.38)	28.76 (29.14)	28.91 (29.92)
Health expenses	1.54 (1.43)	0.88 (0.89)	0.71 (0.75)	0.33 (0.34)	0.23 (0.25)	0.59 (0.63)	0.82 (0.83)	0.6 (0.60)
Total variable cost	96.45 (89.57)	91.05 (92.71)	86.20 (88.5)	85.95 (89.26)	79.72 (87.61)	85.25 (89.38)	87.45 (88.58)	87.41 (90.57)
Total cost	107.69 (100.0)	98.21 (100.0)	97.41 (100.0)	96.29 (100.0)	90.99 (100.0)	95.39 (100.0)	98.69 (100.0)	96.63 (100.0)
Milk yield per cow (litres)	9.02	6.63	8.89	6.0	8.32	6.47	8.74	6.37
Cost of milk production per litre	11.93	14.81	10.95	16.04	10.93	14.74	11.27	15.19

Table 2: Returns from dairy farming for cross bred cow and local cow (Rs./cow/day)

S.No	Sources of income	CATEGORY OF FARMERS							
		Small		Medium		Large		Overall	
		cross breed	local cow	cross breed	local cow	cross breed	local cow	cross breed	local cow
1	Sale of milk	153.47	119.34	151.13	117.00	141.44	116.46	148.66	117.6
		(99.28)	(98.78)	(99.25)	(98.58)	(98.78)	(98.72)	(99.11)	(98.70)
2	Manure	1.06	1.38	1.08	1.63	1.69	1.42	1.27	1.48
		(0.68)	(1.14)	(0.70)	(1.39)	(1.18)	(1.20)	(0.84)	(1.24)
3	Gunny bag	0.05	0.1	0.08	0.03	0.06	0.09	0.06	0.07
		(0.04)	(0.08)	(0.05)	(0.03)	(0.04)	(0.08)	(0.05)	(0.06)
4	Total return(TR)	154.58	120.82	152.19	118.69	143.19	117.97	149.99	119.15
		(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)
5	Total cost	107.69	98.21	97.41	96.29	90.99	95.39	98.69	96.63
6	Net return(TR-TC)	46.89	22.61	54.78	22.4	52.2	22.58	51.29	22.53
7	Net return per litre of milk	5.19	3.41	6.16	3.73	6.27	3.48	5.87	3.54

farmer (Rs.7.16) and then medium (Rs.10.34) and large (Rs.10.14) farmers had almost same.Cost of milk production per litre varied from Rs. 10.93 in large farm to Rs.11.93 in small farms for cross bred cows while the same ranged between Rs.14.74 in large farms to Rs.16.04 in medium size farm with local cows. The higher cost of milk production per litre in local cows might be due their poor efficiency of production .It was found that among both cross bred and local cows, cost of milk production per litre in small size farms were found to be higher than both medium and large size holdings indicating the cost advantage of relatively large and medium size farms was not observed in small size farms of the size under study.

Returns from Dairy Farming

The details of the different sources income given in Table 2 sale of milk was the main source of income which ranged from 99.11 per cent for cross bred cow to 98.70 per cent for local cow in all categories of farmers in the study area. Income from sale of manure and gunny bag provided a meager share of (1.33 to 1.55 per cent) in the total return was found to be more in cross bred cow (149.99 per cow per day)compared to local cow (119.15 per cow per day). This clearly showed advantage of rearing cross bred cow compare to local cow.

Conclusion

It was concluded from the above findings that concentrate and labour cost was major cost component in total cost of milk production followed by green and dry fodder. The cost of concentrate contributed maximum in the total cost. Labour cost was higher for small farms (Rs.29.50 to 34.47 per cow per day) which were due to the involvement of whole family labour in the milk production. The net return was found highest in medium farmer (Rs 22.40 to 54.78 per cow per day). Higher use of green fodder and concentration increases the return from daily animals.

REFERENCES

Manoharan R, Selvakumar KN and Serma Saravana Pandian A (2004). Efficiency of milk production in Pondicherry: A frontier production approach. *Indian Journal of Animal Research* **38**(1) 25 – 30.

Tarunvir Singh and Sudhakar Dwivedi (2012). cost and return from milk production among tribles (Gujjars) in different districts of Jammu region of j & k state in India. *International Journal of plant, Animal and Environmental sciences* **4**(2) 65 – 71.