Economics of production of buffalo milk in vicinity of Parbhani city

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ABSTRACT : The data on selected economic aspects was collected by interviewing the respondent farmers in the year 2012-2013. The total cost of maintenance of a buffalo was worked out to Rs. 38841.87 of which (89.0%) was variable cost and (10.90%) was fixed cost. While gross return worked out to Rs. 60602.85 of which (96.89 %) offered form milk and (1.82%) form dung and (1.29%) was value of heifers. The net profit obtained was Rs. 21760.98. It is observed that, output-input ratio in buffalo milk production was 1.56 which indicated that by investing Rs.1 in buffalo milk production, a net returns of Rs. 0.56 were earned by sample farmers. Hence, the buffalo milk production was profitable venture on sample farms. The other constraints faced by the farmers in buffalo milk production were inadequate knowledge about balanced feeding, non-availability of green fodder around the year, high cost of concentrates, and lack of availability of dry fodder.

KEY WORDS : Economics, Production, Buffalo milk

INTRODUCTION

Milk production in India is predominantly the domain of small holders in mixed farming system. Average dairying assumes great significance in providing employment to rural peoples as well as stable source of income to augment their earning from main enterprise they follow. Dairy enterprise plays very important role in the rural economy of India. It provides income and employment not only to the workers section of the society but also to the farming community of the country in general. The returns from small holding can be maximized by the proper combination of dairy enterprise with crop production.

India ranks first in world milk production and its production has been increased from 17 million tonnes in 1950-51 to 127.9 million tonnes in 2011-12, the per capita availability of milk in India is 290 g per day in 2011-12, which is same as compared to the world average of 289.31 g per day and high as compared to ICMR recommendation of 280 g per day (Anonymous, 2012).

According to 17th livestock census, the total population of milch animals (cattle + buffaloes) in Marathwada region was 1093411 heads of which 66 per cent was cows and 44 per cent were buffaloes. The nutritional status and yield of buffalo milk is high than cow milk. Therefore, the buffalo milk fetch better price in market than cow milk. Hence, now a day's farmer also prefers to rear a buffalo over cow. Considering the above fact, the study entitled, 'Economics of production of buffalo milk in vicinity of Parbhani city was undertaken.

MATERIAL AND METHODS

Multistage sampling design was adopted for selection of the district, tehsil, village and respondent farmers. At first stage, the Parbhani district was purposively selected because it is known for higher milk production in the Marathwada region. At second stage, For selection of villages, a list of villages having maximum milk production was obtained from dairy manager, MIDC, Parbhani. Then villages were arranged

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in descending order of milk collection and top five of them were selected for study. The selected villages along with quantity of milk collected during 2012-13 were given in Table A.

Table A: List of selected villages of Parbhani city		
Sr. No	Name of village (Milk collecting centre)	Quantity of milk collected in litres (2012)
1.	Nandgaon	2,23,995
2.	Porwad	1,47,768
3.	Bhogaon	83501
4.	Panhera	37544
5.	Vadgaon	27638

For selection of farmers the list of milk supplying farmers, direct to consumers and to different agencies was prepared with the help of Sarpanch and other official members and a sample of 10 farmers was drawn randomly from each village. Thus, total sample size constituted of 50 milk producers. Apart from this 10 halwai and 10 hotel owners were also interviewed by developing a pre-tested schedule.

The data was collected from selected farmers by personal interview method, For this purpose, a special pre-tested schedule was developed. The data for the present study pertains to year 2012-13. The analysis of data was carried out by using mathematical and statistical tools like percentages, averages, means, ratios etc.

RESULTS AND DISCUSSION

The findings of the study as well as relevant discussion have been summarized under following heads:

Distribution of milch animals on selected farms:

The information regarding distribution of total milch animals with the selected farmers is presented in Table 1 and indicates that there were a total 287 milch animals with all the selected farmers, of which 20.56 per cent (59 animals) were local cows, 24.74 per cent (71 animals) were crossbred cows and 54.70 per cent (157 animals) were local buffaloes. The average numbers of milch animals per farm were 5.74. Results are conformity with Bharadwaj *et al.* (2006).

Table 1: Distribution of milch animals on selected farms			
Sr. No.	Types of milch animals	Numbers	Percentage
1.	Local cow	59	20.56
2.	Crossbred cow	71	24.74
3.	Buffalo	157	54.70
	Total	287	100

(Percentage figures are percentages to total milch animals)

Per buffalo fixed capital investment:

It was evident from Table 2 that per buffalo fixed investment on sample farms was Rs. 34414.57 of which 91.34 per cent was investment on value of buffalo followed by investment in cattle shed, (8.04%) and dairy equipments (0.62 %).

Table 2: Per Buffalo fixed capital investment					
Types of Animals	Average no. of animals	Investment (Rs. / Animal)			Total (Rs./ animal)
		Animal	Cattle shed	Dairy equipment	
Buffalo	3.14	31433.12	2767.51	213.94	34414.57
		(91.34)	(8.04)	(0.62)	(100)

(Figures in the parentheses are percentages to total fixed investment)

Per buffalo working capital investment on selected farms:

It is observed from Table 3 that working capital required per animal per annum was Rs. 30627.68 of which value of dry fodder 33.73 per cent followed by wages of labour (29.54 %) and 18.42 per cent on concentrate then 17.60 per cent on green fodder and 0.71 per cent on medicine and miscellaneous expenditure. Hence, from Table 3, it was evident that all categories of farmers were not aware of balance feeding practice and not properly use green fodder, dry fodder and concentrates. They usually use lower quantities of all feeds and fodder, which results the lower yield. Results are conformity with Choudhari (2004).

Table 3: Per buffalo working capital expenditure on selected farms (Rs./ animal/year)			
Sr. No.	Particulars	Qty	Value
1.	Hired human labour	-	-
2.	Family labour(days)	75.40	9048 (29.54)
3.	Green fodder(qtl.)	21.56	5390 (17.60)
4.	Dry fodder(qtl.)	20.66	10330 (33.73)
5.	Concentrates(qtl.)	3.76	5640 (18.42)
6.	Medicine and Miscellaneous (Rs.)	-	219.68 (0.71)
	Total working capital investment	-	30627.68 (100)

(Figures in parentheses are the percentages to total working expenditure)

Cost and returns structure in buffalo milk production:

It is observed from Table 4 that the total cost of maintenance of buffalo was worked out to Rs. 38841.87 of which (89.10%) was variable cost and (10.90%) was fixed cost, while gross returns were worked out to Rs. 60602.85 of which 96.89 per cent was received from milk and 1.82 per cent from dung and 1.29 per cent was value of heifers. Net profit obtained in buffalo milk production was Rs. 21760.98, Singh and Dayal (2004).

Table 4: Cost and returns structure in buffalo milk production

Sr. No.	Particulars	Cost / returns in Rs.
1.	Family labour	9048
2.	Green fodder	5390
3.	Dry fodder	10330
4.	Concentrate	5640
5.	Veterinary aids	150
6.	Miscellaneous	69
7.	Interest on working capital(1-6)	3981.51
8.	Variable cost Σ1-7	34608.51
9.	Depreciation on cattle shed	822.50
10.	Depreciation in animal	3093.31
11.	Interest on fixed capital	317.55
12.	Fixed capital Σ9-11	4233.36
13.	Total cost	38841.87
	Returns	
1.	Milk	58719.85
2.	Manure	1103
3.	Calf up to 1 year	780
	Gross return	60602.85
	Net profit	21760.98
	Output-input ratio	1.56

Per litre cost of milk production of buffalo:

The per litre cost of milk production would give the real picture of dairy enterprise. The per litre cost of milk production was calculated by dividing net maintenance cost to quantity of milk produced. The net cost was arrived by deducting value of dung from total cost of maintenance and presented in Table 5, thus, it is evident from Table 5 that per liter cost of milk production of buffalo was Rs. 22.49.

Output-input relationship in dairy enterprises:

The output-input ratio (B:C ratio) in buffalo milk production was worked out by dividing gross returns to total cost and is presented in Table 6. It is observed from Table 6 that, output-input ratio in buffalo milk production was 1.56 which indicated that by investing Rs.1 in buffalo milk production, a net returns of Rs. 0.56 were earned by sample farmers. Hence, the buffalo milk production was profitable venture on sample farms, Sarkar and Ghosh (2010).

Constraints faced by buffalo owner:

Constraints faced by the farmers in buffalo milk production are recorded and presented in Table 7. It is seen from table that lack of A.I. and veterinary facilities which was reported by 80 per cent farmers was the major constraint faced by farmers. Followed by high cost of feed and fodder which was reported by 78 per cent farmers and inadequate knowledge about balance feeding reported by 52 per cent farmers. The other constraints were non - availability of green fodder round the year and lack of availability of dry fodder etc. Results are in conformity with Chaudhary and Intodia (2000) and Chaudhary *et al*. (2010).

Conclusion:

The farmers in study area were maintaining local cows, crossbred cows and buffaloes for milk production. However, the proportion of buffaloes was more (54.70%) on farms followed by crossbred cows (24.74%) and local cow (20.56%). In dairy enterprise buffalo milk production is profitable activity as its output-input ratio was 1.56.

Policy implications:

Based on the results of the present study and the information obtained from the sample farmers, following

Table 5 : Per litre cost of buffalo milk production (Figures in Rs.)

Animal	Total cost (per year)	Value of dung	Net cost (per year)	Milk yield (per year)	Cost of production per liter of milk
Buffalo	38841.87	1103	37738.87	1677.71	22.49

Table 6: Output-input relationship for buffalo

Sr.No.	Type of milch animal	Output-input ratio
1.	Buffalo	1.56

Table 7: Constraints faced by buffalo owners in production of milk

Sr. No.	Constraints	Farmers (n=50)	Percentage
1.	Lack of AI and veterinary facilities	40	80
2.	Non availability of green fodder round the year	31	62
3.	Lack of availability of dry fodder	18	36
4.	High cost of feed and fodder	39	78
5.	Inadequate knowledge about balance feeding	26	52

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suggestions are most useful for planning, execution and improvement of dairy business in study area.

On small farms, there is no scope to increase the area under crops. But scope for increasing dairy unit. Considering the good availability of labour, they should perform other activities like poultry keeping and milk production etc. so as to absorb labour availability. This will help to increase the profit of the farm.

The main constraint in buffalo milk production was lack of A.I. and veterinary facilities. In this regard, the farmers should have to be trained in preparation of silage to increase the palatability of available fodder.

The infrastructure for dairy was not well developed in study area. However, the productivity of milch animal's remains below optimum level in buffalo was above the unity. In this context, it is necessary to educate the dairy farmers in respect of proper management of milch animals.

To adopt modern technology in dairy business, credit is one of the important inputs. So, necessary arrangement for cheaper credit supply should be made to enable the farming community to adopt modern technology on proper line so as to increase the income of farmer.

LITERATURE CITED

Anonymous (2012). Livestock census 2012.

Bharadwaj, A., Dixit, V.B. and Sethi, R.K. (2006). Economics of buffalo milk production in Hisar district. *Indian J. Dairy Sci.*, **59**(5): 322-327.

Chaudhary, M. and Intodia, S.L. (2000). Constraints perceived by cattle owners in adoption of modern cattle management practices. *Indian J. Anim. Res.*, **34**(2): 116-119.

Choudhari, P.K. (2004). Economics, marketing and constraints of milk production in progressive dairy farms. *Indian J. Agric. Econ.,* **5**(4): 133-137.

Choudhary, V.K., Godara, R.K. and Lakhera,M.L. (2004). Economics of dairy enterprises with improved milch animals. *Indian J. Agric. Econ.* **59**(3): 641.

Sarkar, D. and Ghosh, B.K. (2010). Constraints of milk production: A study on cooperative and non-cooperative dairy farms in West Bengal. *Agric. Econ. Res. Rev.,***23**(1): 303-314.

Singh, R.B. and Dayal, Rekha (2004). Economic analysis of production and marketing of milk in central region of Uttar Pradesh. *Indian J. Agric. Econ.*, **59**(3): 654.