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An Economic analysis of buffalo milk production in rural area of Allahabad district (U.P)

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Abstract

The present study entitled "An Economic analysis of buffalo milk production in rural area of Allahabad District (U.P.)" revealed that the Economic analysis in terms of cost of maintenance, return, farm income, profitability indicate that milk production is economically viable. Multi-stage random sampling procedure was adopted in the study. The district Allahabad was purposively selected. The study was conducted in 12 villages of two blocks of Allahabad district. Total of 180, milk producer households were selected, out of which 90 were in small size group, 58 medium size group and 32 were in large size group respectively. The survey method was adopted for the data collection in present study; for the year 2007-2008.The cost of maintenance of milch (buffalo) animal shows that maintenance cost was higher in large size groups followed by medium size and small size groups in all category of milch animals. The milk production pattern shows significant difference between all three different size groups. The milk production results revealed that the higher milk production was in large size groups followed by medium size group and small size groups in all categories of milch animals. The milk producer household with the higher herd size of animal holding obtained the maximum milk production. Therefore, their cost of milk production per litre was also lower compared to medium size and small size group in all the category of milch animals.

Keywords- Milk production, lactation, depreciation, gross cost

Introduction

Milk is considered as a complete and perfect food for the mankind. It is considered almost all the nutrients in adequate proportions which meet the requirements of a normal body. Milk is the only source for the supply of excellent quality proteins particularly to vegetarian population of India. India is the world's single largest milk producing country with a share of about 14 percent in world milk production. The total production of various livestock products has considerably increased in the past three decades. With growth rates much higher than population growth, the per capita availability of milk, meat and eggs has also recorded significant rise. Distribution of livestock wealth among the farm households is more equitable than land. Land use for livestock rearing is also versatile and varied. In the agriculturally progressive north western India including Punjab, Haryana, Western Uttar Pradesh

and parts of Rajasthan, farmers are resourceful to maintain large producing stock. They also use farm surplus such as edible grains, coarse grains and Agri bi- products considerably. Adopting of modern rearing and management technologies is also of a high order. The process of intensified, commercialised production is now visible. More than other factors, land use for cultivable fodder production, which is most essential for high dairy productivity is to the tune of 12-15 per cent while the national average is not more than 4 per cent of the cultivable land.

Material and methods

Uttar Pradesh is the largest milk producer, followed by Punjab and Rajasthan in the second and third position respectively. Allahabad district is one of the important districts of Uttar Pradesh State. Which have 7 tehsils, 20 blocks and 2766 villages, out of 2504 –inhabited, 262-Unhabited villages (Source: Vikas Bhawan, Allahabad). Allahabad a city within the province of U.P. has the reputation of producing of milk in the India. In view of this, an attempt has been made to present a clear picture of milk production. Therefore the present study was carried out to ascertain the cost of Buffaloes milk production among different categories of milk producers and to study the net returns from milk production accruing to different categories of milk producers in the study area. In order to achieve these objectives, 180 milk producer households were selected for the present study. Multi-stage random sampling procedure was adopted. In first stage district Allahabad was purposively selected in second stage blocks were selected purposively. The villages and milk producer households were selected randomly in third and fourth stage respectively. For the purpose of milk production, the study was conducted in 12 villages of two Blocks (Jasra and Korihare) of Allahabad district. The milk producer households were divided into three size groups on the basis of their milch animal holdings. A sample of 20% was selected randomly from each size groups from each selected villages. Therefore a total of 180, milk producer households were selected, out of which 90 were small size group (having 1-2 adult she buffalo), 58 from medium size group (having 3-4 adult she buffalo) and 32 were the large size group (having 5& above adult she buffalo) for the present study. The survey method was adopted for the data collection for the period 2007-2008 for the present study.

Results and discussion

To compute the maintenance cost of each milch animal, all the costs incurred in rearing the animal were aggregated. The fodder cost was worked out at the prevailing market prices. In case of grasses, the cost was estimated as per cost of labour fetching them. Wherever the family labour was used in milk production in the study area, its cost was imputed on the basis of the average wage paid to permanent hired labour. Depreciation on animal, dairy equipment and cattle shed was calculated by the straight line method. The net cost of maintenance was arrived at by deducting the income from dung and calf from gross cost of maintenance. The net return per litre of milk production was obtained by deducting the cost of milk production from the sale price of milk. The findings of the investigation are summarized below. Maintenance Cost of milch Buffalo per day/lactation in different group size farm.
Maintenance Cost of desi Buffalo per day and per lactation in different group size farm. It is observed from the table.1 that the average maintenance cost per day of desi buffalo in the study area was Rs. 53.97. The table also revealed that the maintenance cost per day was higher in large size group Rs.61.93 followed by medium size Rs.56.13 and small size group Rs.49.75 respectively. It varied from Rs.49.75 in small size milk producer to Rs.61.93 in large size milk producers. The annual lactation

average (Table 1.1) maintenance cost of desi buffalo in the study area was Rs.15657.97. The maintenance cost of desi buffalo per day was higher in large size group Rs. 18807.81 followed by medium size Rs.16690.25 and small size group Rs. 13872.72 respectively. It varied from Rs. 13872.72 in case of small size milk producer to Rs.18807.81 in large size milk producers. The maintenance cost increased with increase in the size of milch animals.

The average milk yield of desi buffalo per day was found to be 6.43 litres. The milk yield per day was higher in large size milk producers 7.66 litres followed by medium size group 6.79 litres and 5.77 litres respectively. Whereas, the average milk yield per lactation of desi buffalo was found to be 1864.43 litres. The milk yield per lactation was also higher in large size milk producers 2311.17 litres followed by medium size 2012.74 litre and in small size was 1610.02 litres respectively. It is revealed from the table that the milk producers with higher size of the animal holdings having (more than two milch animals) obtained the maximum milk production and this might be due to the high yielder milch animals maintained by the milk producers. Prabhaharan and Sivaselvam (1986) and Narandera Reddy *et. al.,* (2000) also reported that milk productivity of animals was increased with the herd size.

Table 1. Maintenance cost (in Rs) of desi buffaloes per day in different group size farm

Size group	Green fodder	Dry fodder	Concentrates	Labour	Veterinary &Misc expenses	Depreciation @	Interest on fixed cost	Total 'or' Gross cost	Income from dung	Net Cost	Milk yield in ltrs	Lactation period
I Size	2.64	11.13	9.01	13.70	1.26	3.56	5.52	49.75	1.95	44.90	5.77	278.85
II Size	3.08	12.81	14.73	13.90	1.83	2.80	3.55	56.13	1.99	51.03	6.79	297.35
III Size	4.02	13.34	17.46	14.05	3.49	2.44	3.18	61.93	2.14	56.41	7.66	303.76
Average	3.03	12.07	12.54	13.90	1.84	3.12	4.47	53.97	2.00	48.92	6.43	289.24

Table 1.1: Maintenance cost (Rs) of desi buffaloes per lactation In different group size farm

Size group	Green fodder	Dry fodder	Concentrates	Labour	Veterinary &Misc expenses	Depreciation @	Interest on fixed cost	Total 'or' Gross cost	Income from dung	Net Cost	Milk yield in ltrs	Lactation period
I Size	735.10	3103.00	2517.00	3848.15	351.35	992.71	1539.25	13872.78	543.70	12521.82	1610.02	278.85
II Size	916.40	3809.10	4381.00	4147.50	544.16	832.58	1055.59	16690.25	588.87	15179.31	2012.74	297.35
III Size	1220.0	4053.60	5300.00	4267.85	1060.31	741.17	965.96	18807.81	646.88	17141.04	2311.17	303.76
Average	879.30	3498.70	3591.00	4020.45	539.52	896.39	1281.49	15657.97	576.60	14199.32	1864.43	289.24

As revealed by table: 1.2 the average cost of milk production/litre in desi buffalo was Rs. 8.43. Whereas, the cost of milk production/litre was higher in small herd size group Rs. 8.62 followed by medium size and large herd size group Rs.8.29 and Rs.8.14/litre respectively, this was the lowest cost of milk production/litre. Whereas, the table also revealed that the average net return per litre accrued in case of desi buffalo was Rs.7.57. It is also revealed from the table that the net return per litre was higher in large size group Rs. 7.86 followed by medium size Rs.7.71 and small size group was Rs.7.38 respectively. It is clearly indicated from the table that, if the cost of family labour is not account in

calculating the cost of milk production, there is significant increase in net returns which may be termed as family labour income. It mainly accrued to small herd size group.

Table: 1.2 Cost and returns in milk production of desi buffaloes /Litre (Rs.)

Size group	Cost of milk production	Sale price	Net Return	Cost excluding family labour	Family labour income
I Size	8.62	16.00	7.38	6.22	2.40
II Size	8.29	16.00	7.71	6.25	2.04
III Size	8.14	16.00	7.86	6.77	1.37
Average	8.43	16.00	7.57	6.27	2.16

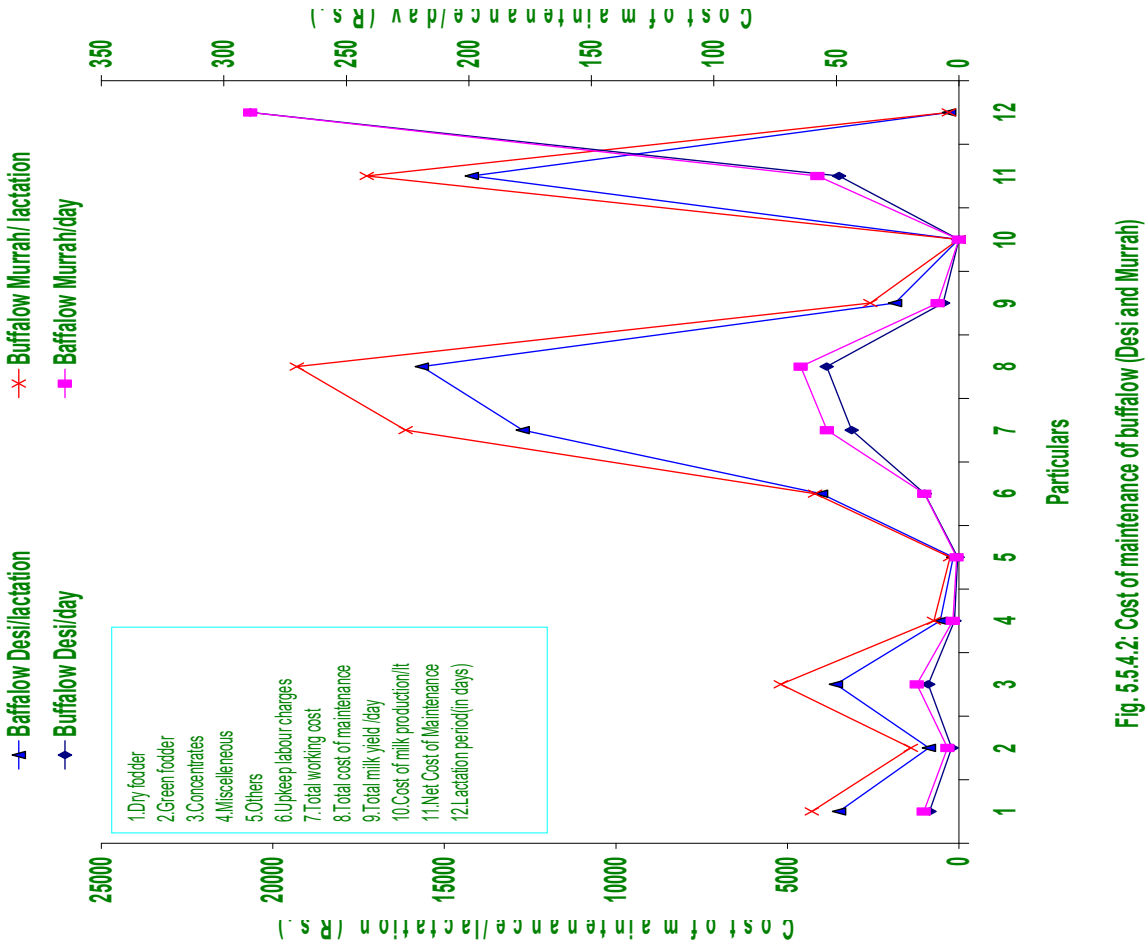

Fig. 5.5.4.2: Cost of maintenance of buffalow (Desi and Murrah)

Maintenance cost of crossbred cow per day and per lactation in different group size farm. It is revealed from the table. 2 that the average maintenance cost per day of murrah (kunni) buffalo in the study area was Rs.64.49. Table also revealed that the maintenance cost per day was higher in large size group Rs.73.42 followed by medium size Rs.66.98 and small size group Rs.59.71 respectively. It shows that the cost varied from Rs. 59.71 in small size milk producers to Rs.73.42 in large size milk producers.

The (annual) per lactation average (table. 2.1) maintenance cost of murrah (kunni) buffalo in the study area was Rs.19300.28. The table also revealed that the maintenance cost per lactation was higher in large size group Rs.22549.52 followed by medium size Rs.20306.99 and small size group Rs.17496.22 respectively. The table clearly shows that the maintenance cost per lactation varied from Rs.17496.22 in small size milk producers to Rs.22549.52 in large size milk producers. Therefore, the results clearly indicated that the maintenance cost increased with increase in the size of milch animals 'or' herd size. The average milk yield of murrah (kunni) buffalo per day was found to be 8.62 litres. Whereas, the milk yield per day was higher in large size milk producers 9.99 litres followed by medium size 9.08 litres and small size group 7.83 respectively. The average milk yield in murrah (kunni) buffalo per lactation was 2578.22 litres. The table shows that the milk yield per lactation was higher in large size milk producers about 3067.00 litres followed by medium size 2751.86 litres and small size group 2292.54 litres respectively.

Table 2: Maintenance cost (Rs) of murrah (kunni) buffaloes per day in different group size farm

Size group	Green fodder	Dry fodder	Concen Trates	Labour	Veterinary &Misc expenses	Depreciation @	Interest on fixed cost	Total 'or' Gross cost	Income from dung	Net Cost	Milk yield in ltrs	Lactation period
I Size	4.45	13.02	14.34	13.85	1.69	3.41	5.36	59.71	1.98	53.08	7.83	293.02
II Size	4.76	14.78	20.11	14.25	2.50	2.79	3.60	66.98	2.06	60.17	9.08	303.18
III Size	4.83	17.05	22.45	14.30	4.04	2.53	2.92	73.42	2.41	65.95	9.99	307.16
Average	4.71	14.35	17.19	14.05	2.43	3.05	4.36	64.49	2.08	57.65	8.62	298.81

The milk producers with higher size of the animal holdings obtained the maximum milk production and this might be due to the high yielder maintained by the milk producers having more than two milch animals. Prabhaharan and Sivaselvam (1986) and Narandera Reddy *et al.*(2000) also reported that milk productivity of animals was increased with the herd size. Deogare and Bhattacharya (1994) also reported that the average annual milk yield per milch animal was higher in large size group and revealed that the large size groups were better managed their animals than the other size groups ,due to better availability of resources. The table.2.2 depicted that the average cost of milk production/litre in murrah (kunni) buffalo was Rs.7.50. The table also revealed that the cost of milk production/litre was higher in small herd size group Rs. 7.63 followed by medium size Rs.7.38 and large herd size group Rs.7.35 per litres respectively which was the lowest cost of milk production.

Table 2.1: Maintenance cost (Rs) of murrah (kunni) buffaloes per lactation In different group size farm

Size group	Green fodder	Dry fodder	Concen Trates	Labour	Veterinary &Misc expenses	Depreciation @	Interest on fixed cost	Total 'or' Gross cost	Income from dung	Net Cost	Milk yield in ltrs	Lactation period
I Size	1304.8	3816.6	4206.00	4055.45	495.20	997.20	1570.16	17496.22	577.70	15560.05	2292.54	293.02
II Size	1443.6	4480.6	6099.00	4320.30	758.93	845.93	1091.45	20306.99	619.90	18252.87	2751.86	303.18
III Size	1484.3	5235.0	6899.00	4392.40	1240.91	777.01	893.71	22549.52	732.95	20275.52	3067.00	307.16
Average	1404.3	4289.9	5196.00	4198.35	730.78	909.31	1295.65	19300.28	618.9	17266.04	2578.22	298.81

Whereas, the table also revealed that the average net return per litre accrued in case of murrah (kunni) buffalo was Rs.8.50. It is also revealed from the table that the net return per litres was higher in large

size group Rs. 8.65 followed by medium size Rs.8.62 and small size group was Rs.8.37 respectively. It is clearly indicated that, if the cost of family labour is not account in calculating the cost of milk production, there is significant increase in net returns which may be termed as family labour income. It mainly accrued to small herd size group.

Table: 2.2 Cost and returns in milk production of murrah (kunni) Buffaloes/litre (Rs.)

Size group	Cost of milk production	Sale price	Net Return	Cost excluding family labour	Family labour income
I Size	7.63	16.00	8.37	5.87	1.76
II Size	7.38	16.00	8.62	5.82	1.56
III Size	7.35	16.00	8.65	6.28	1.07
Average	7.50	16.00	8.50	5.88	1.62

Conclusion

The present study revealed that the milk production is a viable source of income and employment for rural people of the study area. The economic analysis in term of cost and return, net income indicate that the milk production is economically viable. It is also observed that large milk producer households are better managed by trained people and getting higher yield as compared to small and medium milk producer households. It was also concluded that small size milk producer household are not economically viable as compared to large size and medium size milk producer households. This will pave the way for making milk production more lucrative and viable source of income to the rural people and society as a whole.

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