

COST OF MILK PRODUCTION OF MILCH BUFFALOES MAINTAINED IN NILANGA TAHSIL OF LATUR DISTRICT

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ABSTRACT

The present investigation was carried in Nilanga tahsil of Latur district during the year 2020-21. The data on 150 buffaloes from villages namely viz., Jau, Malegao and Dapka in Nilanga tahsil of Latur district randomly selected for the study with help of pretested interview schedule. Total 150 buffaloes selected from study area of Nilanga tahsil. Fifty buffalo owners were selected from each village.

The cost of milk production was determined as per the method employed at National Dairy Research Institute, Karnal, under this investigation various component were considered such as food, labour and supervision, health cover (veterinary and medicine), miscellaneous expenses and replacement cost. The data were collected from the farmer by personal interview with the help of a pretested questionnaire in Nilanga tahsil of Latur district.

For the productive range up to 5 litre the average gross cost of milk production litre⁻¹ of buffaloes on wet and herd basis, was Rs. 24.09 and Rs. 43.11 respectively and the corresponding values of net cost on wet and herd basis were Rs. 19.09 and Rs. 37.73 respectively, which is based on 35 milch and 15 dry buffaloes. The average gross cost litre⁻¹ of milk production in buffaloes for the productive range from 5 to 10 litre on wet and herd basis was Rs. 17.15 and Rs. 29.97 respectively, which is based on 35 milch and 15 dry buffaloes and corresponding values of net cost were Rs. 14.55 and Rs. 26.89 respectively and in productive range above 10 litre, the average gross cost of milk production litre⁻¹ for buffaloes on wet and herd basis was Rs. 15.14 and Rs. 27.78 respectively, which is based on 35 milch and 15 dry buffaloes and the corresponding values for net cost were Rs. 13.41 and Rs. 25.92 respectively.

(Key words: Cost of milk production, replacement cost, health cover)

INTRODUCTION

Total buffalo population in the country is 109.85 million during 2019. Total Buffalo has increased by 1.1% over previous Livestock Census (2012). Female Buffalo Population increased by 8.61%, whereas Male Buffalo is declined by 42.35% over previous census. About 20.5% of the total livestock is contributed by buffaloes. Milch buffalo population has increased marginally by 0.2% over previous census in which in-milk has increased by 4.3% whereas, dry category has declined by 10.2% (Anonymous 2012).

Animal husbandry plays a very important part in agriculture in Maharashtra. Cattle rearing for milk and milk products leather and flesh are important occupations for most of the people living in the state. Since, animal husbandry is included in the state list, the responsibility of taking care of the cattle is of the state (Kadam *et al.*, 2019).

Livestock plays an important role in the national economy. About 20.5 million people depend upon livestock for their livelihood. Livestock contribute 16% to the income

of small farm households as against an average of 14% for all rural households. Livestock provides livelihood to two-third of rural community. It also provides employment to about 8.8% of the population of India. Livestock sector contribute 4.11% GDP and 25.6% total agriculture GDP. The cattle and end buffalo have remained as key stone of Indian farming since time immemorial as draft and milk stock. (Anonymous, 2018).

Milk for man is important constituent of human diet, so the importance of milk in human diet cannot be over emphasized in India. Milk is only source of animal protein, calcium and riboflavin, as getting an adequate quantity of animal protein and calcium is difficult solely from plant foods. Hence, it is necessary to include milk in any balanced diet particularly vegetarian anxiety the dairy enterprise, feed is an important aspect of dairy sector.

Keeping these in view, an attempt was made to study on cost of milk production of milch buffaloes maintained in Nilanga tahsil of Latur district.

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MATERIALS AND METHODS

The present investigation entitled, "Cost of milk production of milch buffaloes maintained in Nilanga tahshil of Latur district" was undertaken with an object to worked out the cost of milk production litre⁻¹ according to the different levels of milk production during the year 2020-21 for the milch buffaloes on wet and herd basis separately.

Data on 150 buffaloes was collected from total 50 buffalo owners from selected villages namely *viz.*, Jau, Malegao and Dapka in Nilanga tahsil of Latur district randomly selected for the study with the help of pretested interview schedule.

The cost of milk production for milch buffaloes was worked out on herd basis and wet basis separately. The costs of milk production on wet basis were determined by considering the milch buffaloes only and on herd basis by considering milch and dry both buffaloes together. Data pertaining to six months during the year 2020-21 on cost influencing factors such as feed and fodder, labour and supervision and daily milk yield according to productive level on 150 milch buffaloes maintained in Nilanga tahsil was used for present investigation. The cost of milk production was also determined according to different productive level (up to 5 litre, 5-10 litre, above 10 litre).

The details of various cost influencing factors of cost of milk production such as feed cost, labour and supervision expenses, health cover, miscellaneous cost and replacement cost was worked out. The cost of milk production was determined as per the method employed at National Dairy Research Institute, Karnal (Kuber Ram and Kulwant Singh, 1979).

The gross cost litre⁻¹ of milk production was assessed by totalling the cost brought about on distinctive expense segments, of milk production. The net cost was calculated by deducting the income earned through FYM from the gross cost.

RESULTS AND DISCUSSION

Cost of milk production according to productive range up to 5 litre

According to productive range up to 5 litre the average gross cost of milk production litre⁻¹ for buffaloes on wet and herd basis, was Rs. 24.09 and Rs. 43.11 respectively and the corresponding values of net cost on wet and herd basis were Rs. 19.09 and Rs. 37.73 respectively. The average percentage of cost contributing factors were 69.30, 25.15, 2.28, 2.20 and 1.07 per cent on feed, labour and supervision, health cover (veterinary and medicine), miscellaneous items and replacement cost on wet basis and 81.40, 15.17, 1.25, 1.53 and 0.65 per cent on herd basis respectively, which was based on 35 milch and 15 dry buffaloes.

Cost of milk production according to productive range from 5 to 10 litre

The average gross cost litre⁻¹ of milk production in buffaloes for the productive range from 5 to 10 litre on wet and herd basis was Rs. 17.15 and Rs. 29.97 and relating values for net cost were Rs. 14.55 and Rs. 26.89 respectively which was based on 35 milch and 15 dry buffaloes. The average percentage of distribution of expenditure on feed labour and supervision, health cover (veterinary and medicine), miscellaneous items and on replacement costs were 73.41, 18.42, 3.40, 3.26 and 1.51 per cent of gross cost on wet basis and 83.02, 11.91, 1.94, 2.20, and 0.93 per cent of gross cost on herd basis respectively.

Cost of milk production according to productive range above 10 litres

For the productive range above 10 litre, the average gross cost of milk production litre⁻¹ for buffaloes on wet and herd basis was Rs. 15.14 and Rs. 27.78 respectively and the corresponding values for net cost were Rs. 13.41 and Rs. 25.92 respectively. The average percentage of distribution of expenditure on feed, labour and supervision, health cover (veterinary and medicine), miscellaneous items and on replacement cost were 76.90, 13.87, 3.83, 3.69 and 1.71 per cent of gross cost on wet basis and 86.42, 8.09, 2.09, 2.4 and 1.00 per cent on herd basis respectively, which was based on 35 milch and 15 dry buffaloes.

Feed was the major component of milk production as highest expenditure on feed ranging from 69.30 to 76.90 and 81.40 to 86.42 per cent on wet and herd basis during the year 2020-2021 which was also observed by Kumar and Singh (2008) and Pandian *et al.* (2013), they observed the expenditure on feed accounted 88.69%, and 72.51 % respectively. On contrary Jayaweera *et al.* (2007), Gunlu *et al.* (2010), Venkatesh and Sangeetha (2011) and Prem Chand and Smite Sirohi (2012) noticed lower expenditure on feed component i.e 41.7%, 42.84%, 61.6%, and 62.57% respectively.

The next highest item of cost of milk production was labour and supervision. The expenditure on labour and supervision during the year 2020-2021 according to different productive range (up to 5, 5-10, and above 10 litre) was in between 8.09 to 25.15 per cent. These results are comparable with Gunlu *et al.* (2010), who noticed labour and supervision charges accounted as 27.48%.

However, the results of Anwar and Younas (2000) and Kumar and Rai (2008) were not in agreement with the finding of this study, because of inclusion of salaries of ministerial staff. They recorded highest expenditure on labour in the range of 30.19 to 46.05 per cent likewise, Jayaweera *et al.* (2007) also recorded higher cost on labour supervision charges (44.1%).

The expenditure on health cover (veterinary and medicine) for the year 2020-2021 according to different productive range, were in the range of 1.5 to 3.83 per cent of

Table 1. Cost of milk production of litre⁻¹ on wet and herd basis on different productive ranges (Rs.)

Cost components	Up to 5 litre		5-10 litre		Above 10 litre	
	Wet	Herd	Wet	Herd	Wet	Herd
Feed	16.69	35.09	12.59	24.88	11.64	24.01
	*(69.3)	*(81.4)	*(73.41)	*(83.02)	*(76.90)	*(86.42)
Labour and supervision	6.06	6.54	3.16	3.57	2.10	2.25
	*(25.15)	*(15.17)	*(18.42)	*(11.91)	*(13.87)	*(8.09)
Health cover	0.55	0.54	0.58	0.58	0.58	0.58
	*(2.28)	*(1.25)	*(3.40)	*(1.94)	*(3.83)	*(2.09)
Miscellaneous	0.53	0.66	0.56	0.66	0.56	0.66
	*(2.20)	*(1.53)	*(3.26)	*(2.20)	*(3.69)	*(2.4)
Replacement	0.26	0.28	0.26	0.28	0.26	0.28
	*(1.07)	*(0.65)	*(1.51)	*(0.93)	*(1.71)	*(1.0)
Gross cost	24.09	43.11	17.15	29.97	15.14	27.78
Income from FYM	5.0	5.38	2.60	3.08	1.73	1.86
Net cost	19.09	37.73	14.55	26.89	13.41	25.92
Average milk yield						
Day ⁻¹ Animal ⁻¹ (litre)	4.32	4.01	8.29	7.0	12.52	11.61

(*) indicate values of percentage gross cost

Table 2. Comparisons of cost of milk production according to different productive range up to 5 litre and above 10 litre

Sr.no.	Cost components	Cost of milk production on wet and herd basis (Rs.) productive range				% increase (+) decrease (-) over productive range up to 5 litre	
		Up to 5 litre		Above 10 litre		Wetbasis	Herd basis
		Wet basis	Herd basis	Wet basis	Herd basis		
1	Feed expenses	16.69	35.09	11.64	24.01	-30.25	-31.57
2	Labour and supervision expenses	6.06	6.54	2.10	2.25	-65.34	-65.59
3	Health cover	0.55	0.54	0.58	0.58	+5.45	7.40
4	Miscellaneous expenses	0.53	0.66	0.56	0.66	+5.66	-
5	Replacement cost	0.26	0.28	0.26	0.28	-	-
6	Gross cost	24.09	43.11	15.14	27.78	-37.15	-35.56
7	Income from manure (F.Y.M)	5.0	5.38	1.73	1.86	-65.40	-65.42
8	Net cost	19.09	37.73	13.41	25.92	-29.75	-31.30
9	Average milk yield Day ⁻¹ Animal ⁻¹ (litre)	4.32	4.01	12.52	11.61	-	-

gross cost which is more or less comparable with the findings of Meenal (2014).

For the year 2020-2021 the cost incurred on miscellaneous items on wet and herd basis for productive ranges (up to 5, 5-10, and above 10 litre) was in the range of 1.53 to 3.69 per cent of gross cost. The results of Jayaweera *et al.* (2007) are agreeable with the findings of present study, who recorded the expenditure on miscellaneous items accounted as 2.4 %.

However, these values are more as compared to findings of Singh *et al.* (2006), Kumar and Singh (2008) and Pandian *et al.* (2013), who recorded the expenditure in the range of 4.27 to 11.11 per cent of gross cost. This might be due to less expenditure on utilization of routine items like phenyl, lime, salt and detergent.

The average replacement value litre⁻¹ of milk production according to productive ranges (up to 5, 5-10, and above 10 litre) on wet and herd basis was in the range of 0.65 to 1.71 per cent of gross cost.

Comparison of cost of milk production according to different productive range up to 5 litre and above 10 litre during year 2020-2021

The details of cost of milk production according to different productive range (up to 5 and above 10) for the buffaloes on wet and herd basis are presented in Table 2.

The average gross cost of milk production litre⁻¹ on wet basis for the productive range up to 5 litre and above 10 litre was Rs. 24.09 and 15.14, respectively. The corresponding values of average net cost were Rs. 19.09 and 13.41, respectively. The gross cost of milk production on wet basis in productive range above 10 litre was decreased by 37.15 per cent over the productive range up to 5 litre. This was due to increase in level of milk production. Also the net cost of milk production in productive range above 10 litre was decreased by 29.75 per cent over the productive range up to 5 litre because of same reason.

The average gross cost of milk production litre⁻¹ on herd basis for the productive range up to 5 litre and above 10 litre was Rs. 41.11 and 27.78, respectively, and the corresponding average net cost were Rs. 37.73 and 25.92, respectively. There was decrease in gross and net cost of milk production by 35.56 and 31.30 per cent, respectively.

REFERENCES

- Anonymous, 2012. Cattle and dairy development, Department of animal husbandry, dairying and fisheries, Government of India. www.vikaspedia.in/agriculture/agri-directory/reports-and-policy-briefs/20th-livestock-census/
- Anonymous, 2018. Cattle and dairy development, Department of animal husbandry, dairying and fisheries, Government of India. <https://www.vikaspedia.in/agriculture/agri-directory/reports-and-policy-briefs/20th-livestock-census/>
- Anwar, M. and M. Younas, 2000. Cost Of milk production in district Toba Tek Singh, Punjab, Pakistan. *Pak. J. Agri. Sci.* **37**(3): 186 -190.
- Gunlu, A., H. Cicek 2 and M. Tandogan, 2010. Socio-economic analysis of dairy buffalo enterprises in Afyonkarahisar province in Turkey. *J. Food, Agric. and Environ.* **8** (3&4): 689-691.
- Jayaweera, T.S.P., H.A.D. Ruwandeepika, K.M.S.B. Kendaragama, W.A.P.Fernando, H.M.K.P. Jayarathne and T.S.J. Thotawatthe, 2007. Analysis of Cost of Milk Production In Ratnapura District. *The J. Agril. Sci.* **3**(1): 24-32.
- Kadam, N. P., A. B. Motghare, A. A. Bhondave and S. B. Bhalerao, 2019. Feeding practices followed by crossbred cattle owners in Seloo tahsil of Wardha district. *J. Soils and Crops*, **29**(1): 112-116.
- Kuber Ram and Kulwant Singh, 1979. Comparative economics of crossbred and pure-bred zebu cow in milk production. *Indian J. Agric. Econ.* **30**(3): 151.
- Kumar, A. and D.C. Rai, 2008. Cost and returns from milk production in Faizabad district of Uttar Pradesh. *Indian J. Anim. Nutr.* **25**(4): 369-372.
- Kumar, B.G. and R.V. Singh, 2008. Economics of milk production in cattle and buffalo farming in Andaman And Nicobar Islands - A comparative analysis. *Indian J. Dairy Sci.* **61**(3):205-211.
- Meenal, A.P. 2015. Cost of milk production of crossbred cows around Nagpur city. M.Sc.(Unpub.) Thesis. Dr. PDKV, Akola.
- Prem Chand and Smite Sirohi, 2012. Dairying in Semi-arid Eastern, plain zone of Rajasthan: Input productivity and net returns. *Indian J. Dairy Sci.* **1**:79-82.
- Pandian, S. S., K. N. Selvakumar, M. Prabhu, 2013. Economics of Buffalo Milk Production –A Case Study in Rural Tamil Nadu. *Int. J. Scientific Res.* **2**: 408-409.
- Singh, R.N., A.K. Chauhan and S.P. Sharma, 2006. Economic analysis of milk production in tribal area of Udaipur (Rajasthan). *Indian J. Dairy Sci.* **59** (5): 328-336.
- Venkatesh, P. and V. Sangeetha, 2011. Milk production and resource use efficiency in Madurai district of Tamil Nadu: an economic analysis. *J. Community Mobilization and Sustainable Development.* **6**(1): 25-30.

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