

Economic Performance of Cross-bred cows and Murrah Buffaloes milk production in Shamshabad Block of Agra District

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Abstract

*The lactation milk yield of cross-bred cows and Murrah buffaloes in Shamshabad block of Agra District was studied in selected villages. The lactation milk yield (2725.64±41.21 litre) of cross-bred cows was significantly (*pd*" 0.01) greater than that of Murrah buffaloes (2218.73±33.61 litre). The lactation length (338.00±5.63 days) of cross-bred cows was significantly higher and dry period (93.00±2.60 days) was shorter than that of Murrah buffaloes (312.00±4.21 and 129.60 days). The cost of Milk production per litre of cross-bred cows (22.16±0.32) was significantly (*pd*" 0.01) lower than that of Murrah buffalo (27.63±0.47). It was due to higher milk production performance of cross-bred cows than Murrah buffaloes. The input- output ratio of cross-bred cows (1:1.44±0.021) was also significantly (*pd*" 0.05) higher than that of Murrah buffaloes (1:1.37±0.016).*

Key words: Cross-bred cows, Murrah buffaloes, lactation period, dry period, input-output ratio, Maintenance cost, Dung value.

Introduction

Animal husbandry and dairy farming are vital sectors of rural economy. Dairying provides a significant proportion of self employment opportunity in agriculture-livestock sector. Landless milk producers, marginal and small farmers engage themselves in dairying for gainfull employment for supplementing their income. Indian dairy farmers have un-doubtfully done the greatest task of making India number one producer of milk. The production showed a continuous rise and now in the year 2014-15, the estimated milk production reached 146.3 million tonnes, from 22.5 million tonnes in 1970-71 to 31.6 million tonnes in 1980-81, 53.9 M.T in 1990-91, 80.6 M.T. in 2000-01, 121.8 M.T. in 2010-11 and 137.6 M.T. in 2013-14. The per capita availability of milk has also been estimated 322 gm. in 2014-15 from 127 gm. in 1979-80 to 178 gm in 1991-92, 220 gm in 2001-02, 262 gm. in 2009-10 and 307 gm. in 2013-14. (Dept. of A.H. Dairying and fisheries, Ministry of Agriculture, G.O.I., 2016).

Livestock farming is the most suitable production system that has enormous potential to

improve the socio-economic status of the large percentage of the rural population. Currently dairying provides 70-80 million farm families the triple benefit of nutritive food, supplementary income and productive employment, while setting right the seasonal imbalance in employment. Dairy animals, apart from their role in milk production and contribute huge quantity of organic manure. (Tanwar and Kumar, 2014). India is blessed with huge bovine population of 199.10 million cattle and 105.30 million buffaloes accounting 16.24 and 56.90 percent, respectively in world bovine population and stand first in the world in bovine population. (Livestock census 2007, GOI.). Dairying in India is by large in the hand of small/marginal land holders and agricultural labours. Eighty percent of 97.7 million farm families in India possess cattle and or buffaloes that have neither the knowledge nor the appreciation of the concept of cost of production. So as to assess the viability of such activity found by (Rao et al. 2000). The economics of milk production could be envisaged through two angles, viz: decreasing the unit cost of milk production and increasing the milk productivity of milch animals. Any attempt to achieve these objectives will encourage the producer to produce more milk by mobilization of the available resources (Kumar &

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Bhaskar, 2013).

Thus, recent agricultural development has increased interest in milk production which has necessitated a study on economics of milk production. Present study was therefore undertaken to assess the economic performance of cross-bred cow and Murrah buffaloes in Shamshabad block of Agra district with the following objectives.

- (i). To determine the production performance of cross-bred cows and Murrah buffaloes.
- (ii) To determine the reproductive performance of these animals.
- (iii) To determine the cost of milk production per litre.
- (iv) To determine the input-output ratio of these ruminants.

Research Methodology

The present study was conducted in 10 villages of Shamshabad block of Agra district 2014-15 sessions. After selection of villages, a list of families having cross-bred cows and Murrah buffaloes was prepared. The information collected from each family revealed that there were a total of 75 animals, out of which 40 were cross-bred cows and the remaining 35 Murrah buffaloes.

The selected milk producer families were interviewed and necessary information regarding milk production per lactation per animal, sale price of milk per litre, fixed capital investment, animal cost, feeds and fodders given to per animals per lactation with cost, length of lactation, dry period, labour and other charges and miscellaneous charges were collected through the records maintained by milk producers and personal interview every months and analyzed according to the systematic method relevant for the village farmers.

Results and Discussion

The Table 1 revealed that milk production per

lactation per animal of cross-bred cows and Murrah buffaloes was found to be 2725.64 ± 41.21 and 2218.73 ± 33.61 litre, respectively. These results revealed that cross-bred cows elicited significantly greater milk yield than murrah buffaloes. The table further indicated that the rate of milk per litre was lower in cross-bred cows milk but value of milk was higher than Murrah buffaloes, significantly ($p < 0.01$). It is due to more production performance of cross-bred cows than Murrah buffaloes.

Table 2 indicated that the lactation length and dry period of cross-bred cows and Murrah buffaloes found to be 338.00 ± 5.63 and 93.00 ± 2.60 and 312.00 ± 4.21 and 129.60 ± 3.40 days, respectively. It is observed from the study that cross-bred cows have longer lactation period and shorter dry period than Murrah buffaloes.

The data presented in Table 3 indicated that the maintenance cost of cross-bred cows and Murrah buffaloes were found to be Rs.64164.52 \pm 416.00 and 65621.20 \pm 443.00, respectively. The net maintenance cost have similar trend as maintenance cost. The dung values of cross-bred cows and Murrah buffaloes was Rs.3764.34 \pm 37.31 and 4317.69 \pm 47.63, respectively. The dung value of cross-bred cows was less than Murrah buffaloes. The table further revealed that the cost of milk production per litre of cross-bred cows and murrah buffaloes were found to be Rs.22.16 \pm 0.32 and 27.63 \pm 0.47, respectively. The input-output ratio of these animals was Rs.1:1.44 \pm 0.021 and 1:1.37 \pm 0.016, respectively. The cost of milk production per litre of cross-bred cows was significantly ($p < 0.01$) lower than Murrah buffaloes but input-output was higher. Our results on cost of milk production per litre and input-output ratio are similar with the finding of Badal and Dhaka (1998), Bhaskar, et.al (2007),

Table 1: Production performance of Cross-bred cows and Murrah buffaloes

Ruminants	No. of Animals	Milk Production per animal/lactation (Lit)	Rate of Milk/ht	Value of Milk/ animal per lactation
Cross-bred Cows	40	2725.64 \pm 41.21	32.00 \pm 0.08	87220.48 \pm 416.00
Murrah buffaloes	35	2218.73 \pm 33.61	38.00 \pm 0.06	84311.74 \pm 379.00
Overall	75	2472.19 \pm 37.42	35.00 \pm 0.07	85766.11 \pm 398.00
Test of Significance		9.831 ⁺⁺	3.986 ⁺⁺	5.060 ⁺⁺

++ = Significant at $p < 0.01$

Table 2: Reproductive performance of cross-bred cows and Murrah buffaloes

Ruminants	No. of Animals	Lactation length (Days)	Dry period(Days)	Inter calving period (days)
Cross-bred Cows	40	338.00±5.63	93.00±2.60	431.00±2.80
Murrah buffaloes	35	312.00±4.21	129.60±3.40	441.60±3.10
Overall	75	325.00±4.92	111.30±3.00	436.00±2.95
Test of Significance		4.106 ⁺⁺	7.634 ⁺⁺	4.362 ⁺⁺

++ = Significant at $p < 0.01$

Table 3: Economic performance of Cross-bred cows and Murrah buffaloes

Ruminants	No. of Animals	Maintenance Cost	Dung Value	Net Maintenance Cost	Cost of Milk Production/ litre	Input-output Ratio
Cross-bred Cows	40	64164.52±416.00	3764.34±37.31	60400.18±386.60	22.16±0.32	1:1.44±0.021 ⁺
Murrah buffaloes	35	65621.20±443.00	4317.69±47.63	61303.51±392.00	27.63±0.47	1:1.37±0.016
Overall	75	64892.86±430.00	4041.02±42.47	60851.85±389.30	24.90±0.40	1:1.41±0.018
Test of Significance		2.616 ⁺	7.967 ⁺⁺	2.531 ⁺⁺	7.216 ⁺⁺	2.116 ⁺

+ = Significant at $p < 0.05$

++ = Significant at $p < 0.01$

Bhaskar (2015) and Singh et.al (2016).

According to above findings, it is concluded that the productive as well as reproductive performance of cross-bred cows reared by village farmers was found better than that of Murrah buffaloes. The cost of milk production per litre of cross-bred cows was also significantly much lower than Murrah buffaloes. The input-output ratio was also much better in these cows than buffaloes. Thus it is clear from the study that rearing of cross-bred cows was much better than Murrah buffaloes in village farmers.

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