

## LACTATION PERFORMANCES OF NATIVE CATTLE IN KHULNA REGION

A. Ashraf<sup>a\*</sup> and S.S. Islam<sup>b</sup>

<sup>a</sup>*Biotechnology Discipline, Khulna University, Khulna 9208, Bangladesh*

<sup>b</sup>*Agrotechnology Discipline, Khulna University, Khulna 9208, Bangladesh*

KUS-99/11-111199

Manuscript received: November 11, 1999; Accepted: August 2, 2001

---

**Abstract:** A field survey was made to assess the lactation performances of native cattle of Khulna region. The survey also included the effects of rice straw and concentrate feed on their lactation performances. The average daily milk yield, lactation length and total milk production were found to be  $2.49 \pm 0.06$  kg,  $247.23 \pm 3.51$  days and  $590.40 \pm 15.00$  kg, respectively. The effects of rice straw and concentrate feed supplement were found highly significant ( $P < 0.001$ ) for all the traits under consideration.

**Keywords:** Lactation; Native cattle; Bangladesh; Khulna

---

### Introduction

The native cattle of Bangladesh are the main source of milk, meat, draft power and manure. They play an important role in our national health and economy, but their lactation performances are poor mainly because of improper and insufficient feeding. Among all the traits of cattle, lactation performances are important, because these indicate total milk yields. Islam (1998) reported that in Bangladesh, the availability of milk is only 31.86ml/day/person as compared to the recommended allowances of 250ml and the domestic milk production represents only about 13.58% of total need. The deficit is partly met up by imported powder milk.

The purpose of the study is to assess the performances of milk production of native cattle as well as the effects of rice straw and concentrate feed supplement on various milk production traits.

### Materials and Methods

The field survey was carried out in the semi-urban areas adjacent to the Khulna City. Data were collected by a prepared questionnaire and the survey covering 112 randomly selected farmers during October 1998 to January 1999. The animals under consideration were grazed regularly on grasses growing naturally on uncultivated government or

---

\* Corresponding author. Tel.: 88-041-721791, 720171-3; Fax: 88-041-731244; E-mail: ku@bdonline.com  
DOI: <https://doi.org/10.53808/KUS.2000.2.2.9911-L>

private land and roadsides. However, the grazing hours were variable. In addition, cattle were fed with rice straw and concentrate mixtures as supplement. The quantity of concentrate feed supplied to the animals was 0.25kg to 7.0 kg/animal/day, where a small number of farmers supplied no concentrate feeds. The main ingredients of concentrate feed were rice polish, oil cake, wheat bran and pulse bran. The ratio of ingredients was variable from farmers to farmers. The following lactation performances were considered: daily milk yield, lactation length and total lactational production.

The data analysis was done by a statistical package MINITAB. Analysis of variance was carried out on each of the traits for rice straw and concentrate feed supplement.

## Results and Discussion

The effects of rice straw and concentrate feed supplement on various lactation traits are presented in Table 1. The mean values for each of the traits are shown in Table 2.

**Daily Milk Yield:** The significant effects ( $p < 0.001$ ) of rice straw and concentrate feed were found on daily milk yields (Table 1). Olsson (1996) found significant effect of concentrate feed on milk yield. Chaudhry *et al.* (1994) also found significant effect of feed on the trait. An average daily milk yield was observed  $2.49 \pm 0.06$  kg (Table 2). The results were consistent with the findings of Husain and Mostafa (1985). They found daily milk yield of native cows as  $2.6 \pm 0.23$  kg and  $3.3 \pm 0.50$  kg under rural and farm conditions, respectively. Relatively higher milk yields were observed in native cattle under farm conditions by Ashraf (1998) ( $5.01 \pm 0.44$  kg), Rahman *et al.* (1987) ( $3.19 \pm 0.13$  kg) and Bhuiyan and Sultana (1994) ( $3.00 \pm 0.15$  kg). These may be due to differences in feeding and management systems under village and farm conditions. There are several other factors, which causes the variation in daily milk yields such as season, number of lactations and age of cows.

Table 1. The effects of rice straw and concentrate supplement on lactation traits of native cows.

Traits	Effect of rice straw		Effect of concentrate feed	
	F-value	Level of significance	F-value	Level of significance
Daily milk yield	10.88	***	7.84	***
Lactation length	7.87	***	4.95	***
Total lactation production	6.58	***	5.52	***

\*\*\* $p < 0.001$

Table 2. Various lactation traits of native cows.

Traits	Total number of observations	Mean $\pm$ SE
Daily milk yield (kg)	636	$2.49 \pm 0.06$
Lactation length (days)	636	$247.23 \pm 3.51$
Total lactation production (kg)	636	$590.40 \pm 15.00$

**Lactation Length:** Effects of rice straw and concentrate feed supplement were found significant ( $p < 0.001$ ) on the trait (Table 1). Significant effect of feed on milk yield was also found by Chaudhry *et al.* (1994). In the present study, average lactation length was

observed  $247.23 \pm 3.51$  days (Table 2), which was consistent with the findings of Bhuiyan and Sultana (1994) ( $241.18 \pm 10.53$  days), Ashraf (1998) ( $244.63 \pm 10.16$  days) and Hossain and Routledge (1982) ( $240.00 \pm 63.00$  days). A lower LL was found by Islam (1995) ( $200.50 \pm 63.48$  days) and the highest LL was found by Rahman, *et al.* (1987) ( $323.0 \pm 8.90$  days) and Jahan *et al.* (1990) ( $317.18 \pm 11.18$  days). These dissimilarities may be due to variation in different management systems.

**Total Lactational Production:** The trait was found significant ( $p < 0.001$ ) for rice straw and concentrate supplement effects (Table 1). Similar result was also observed by Chaudhry *et al.* (1994). Average total lactational production was found  $590.40 \pm 15.0$  kg (Table 2). A lower total lactational production was observed by Hossain and Routledge (1982) ( $213 \pm 88$ kg) but much higher values were found by Jahan *et al.* (1990) ( $1148.59 \pm 97.99$  kg) and Ashraf (1998) ( $937.0 \pm 183.0$  kg) in native cows. These variations may be due variation in lactation length, quality and quantity of feed supplied, management factors, rearing pattern etc.

## Conclusion

It was concluded that the rice straw and the concentrate feed supplement have significant influences on lactation performances of native cows. So emphasis should be given on proper supplementation of rice straw and concentrate feeds in addition to grazing to obtain the maximum yield of milk from the native cows.

## References

- Ashraf, A., 1998. A Study of some Economic Traits of Indigenous and Graded cattle in Khulna region. MS. Thesis, Department of Animal Breeding and Genetics, Bangladesh Agricultural University, Mymensingh, Bangladesh, 66 pp.
- Bhuiyan, A.K.F.H. and Sultana, R., 1994. Analysis of performance of exotic cattle breeds and their crosses in Bangladesh. Proceedings of the 5th World Congress on *Genetics Applied to Livestock Production*, Australia, 20: 355-358.
- Chaudhry, M.Z., Tahir, M.J. and Rafique, M., 1994. Production performance and milk producing efficiency in different filial groups of H Friesian  $\times$  Sahiwal half-breds. *Asian-Australasian Journal of Animal Sciences*, 7(3): 383-387.
- Hossain, M.A. and Routledge, S.F., 1982. Performance of Crossbred and Local cattle under village conditions in Pabna district of Bangladesh. Proceedings of a Seminar on "*Maximum Livestock Production from Minimum Land*" February 1982, Joydebpur, Bangladesh, pp. 161-167.
- Husain, S.S. and Mostafa, K.G., 1985. Reproductive potentialities of Local and Crossbred animals under farm and village conditions. *Livestock Advisor*, 10 (4): 15-19.
- Islam, A.B.M.M., 1998. Livestock Development Policy and Production Strategies for Bangladesh. Proceedings of the Workshop on *Agricultural Policy, Krishibid (BAU Chapter)*, 29<sup>th</sup> February 1998, Bangladesh Agricultural University, Mymensingh (under publication).
- Islam, S.S., 1995. Analysis of the performance of crossbred Sahiwal cattle in Bangladesh Milk Producers' Cooperative Union Limited areas. MS thesis, Department of Animal Breeding and Genetics, Bangladesh Agricultural University, Mymensingh, Bangladesh, 97pp.

Ashraf, A. and Islam, S.S., 2000. Lactation performances of native cattle in Khulna region.

Jahan, S., Howlader, M.M.R., Chowdhury, S.M.H.Z, Nahar, N. and Rahman, M.F., 1990. Performances of Local and Crossbred dairy cows in farm condition. *The Bangladesh Veterinarian*, 7 (1): 48-49.

Olsson, G., 1996. Effects of feeding strategy before calving on dairy cow performance. *Acta-Universitatis-Agriculturae-Sueciae -Agraria* (Swedish University of Agricultural Sciences, Uppsala, Sweden), 18: 44 (Abstr.).

Rahman, M.F., Ahmed, N. and Ahmed, A.R., 1987. A comparative study on some productive and reproductive performances of Dairy cows at Savar Dairy and Cattle Improvement Farm. *Bangladesh Veterinary Journal*, 21 (1-10): 55-61.