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Research Article

PRODUCTION AND REPRODUCTION PERFORMANCE OF ENDANGERED BARGUR CATTLE UNDER THE FIELD CONDITION IN TAMILNADU

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ABSTRACT
Bargur, a hilly draught cattle breed of Tamilnadu, is present in the Bargur hills, Bhavani Taluk Erode district of Tamilnadu. Absence of systemic studies on Production and reproduction performance of Bargur cattle in Farmers herd is a serious lacuna in assessing the genetic potential of the breed. The present study, a total of 59 female cattle in different stages of lactation was selected for studying the average daily milk yield and its composition. The Bargur cows are generally not milked by the farmers and the available milk is for the calves. However, to estimate milk production, one quarter of the udder was selected at random and full stripping was done as milking was not possible without suckling by the calf. The average daily milk yield of Bargur cattle was 468±28g with a range of 330 g to 790 g. The overall milk fat, solid not fat and total solids content in the present study was 5.65 ± 0.23, 8.06 ± 0.23, and 13.99 ± 0.25 percent respectively. The average age at first estrus was 30.00 ± 1.36 months. The average age at first calving of 40.61 ± 1.21 months. Average calving interval for Bargur cows were 12 to 18 months.

Key Words: *Bargur Cattle, Bargur Hills, Production, Reproduction*

INTRODUCTION
Bargur, a hilly draught cattle breed of Tamilnadu, is present in the Bargur hills, Bhavani Taluk Erode district of Tamilnadu. The total enumerated population of Bargur cattle in its breeding tract in 2007 was 2,529 and numbers of breedable females were found to be 1109 and it was categorized as endangered breed. The populations of Bargur cattle were decline drastically in the last decade (Ganapathi *et al.,* 2009). The Bargur cattle was the only Indian cattle breed as well as Bos Indicus subspecies that had the occurrence of recent genetic bottle neck in their population (Ganapathi *et al.,* 2012). There is an urgent need to conserve this breed for future use for its adaptability to harsh environment, poor nutrition and longevity which are special features of this breed. It is well adapted to hilly environment and was maintained in the Zero input system of grazing without any feed supplements given to the animals. Absence of systematic studies on production and reproduction performance of Bargur cattle in farmers' herds is a serious lacuna in assessing the genetic potential. Hence, an investigation was undertaken to study the productive and reproductive parameters of Bargur cattle in its breeding tract.

MATERIALS AND METHODS
For the present study, a total of 59 female cattle in different stages of lactation were selected for studying the average daily milk yield and its composition. Generally, the Bargur cows are not milked by the farmers and the available milk is for the calves. However, to estimate milk production, one quarter of the udder was selected at random and full stripping was done as milking was not possible without suckling by the calf. Milk was measured with a measuring cylinder and yield was recorded to an accuracy of 10 ml. The milk yield estimated from one quarter was multiplied by four to arrive at the total milk yield/day. The milk samples were collected and preserved by adding formalin at a concentration at 1 in 20,000 and were tested within 48 hours of collection. Fat percent, Solid not fat and total solids were estimated as per

routine procedure (ISI, 1982). Information on reproductive traits of females *viz.*, age at first oestrus, age at first calving and calving interval were recorded by interviewing the herdsman using pre tested questionnaire. The basic statistics consisting of mean, standard error (SE), least-squares means and co-efficient of variation (CV) were computed.

RESULT AND DISCUSSION

The mean daily milk yield and milk composition in different stages of lactation were given in the table1. The overall mean estimated daily milk yield was 468 ± 28 g with a range of 330 g to 790 g. The estimated daily milk yield in bargur cattle was found to be lower when compared to other draught breeds of Tamilnadu. The cows were mainly grazed and no separate feed supplement was given. Some cows were also put to work. These factors might have contributed to the low yield of milk. Rajendran, (2007) reported that average milk yield in umbalacherry breed was 2058 ± 18 g and it ranged from 400 to 4750g. There was a wide variation in the milk yield among the different stages of lactation as well as within the group which is evident from higher coefficient of variance (43.13%). This suggests the possibility of improving their daily production by genetic means. In field condition the animals were kept for draught purpose only and are not usually milked; if at all necessary, the quantity of milk required for home consumption only is drawn. Selling of milk of Bargur cattle was not practiced by the farmers.

Maintaining animals in improved feeding and management conditions along with details of full milk recording at weekly intervals are required to determine the full potency of the breed. In the field condition, the lactation length observed was in the range of 180 – 240 days which is lower than standard lactation of 305 days.

The overall milk fat, solid not fat and total solids content in the present study was 5.65 ± 0.23, 8.06 ± 0.23, and 13.99 ± 0.25 percent respectively. The values were higher than the average values of 4.94 ± 0.06 % fat, 7.80 ± 0.03 % SNF and 12.74 ± 0.09 % total solids in Umblachery cattle (Rajendran, 2007).

The average age at first estrus was 30.00 ± 1.36 months. The average age at first calving of 40.61 ± 1.21 months was obtained in farmers' herd. Average calving interval of 12 to 18 months is comparable with value of 16-18 months (Littlewood, 1936 and Pattabhiraman, 1962) reported for Bargur cows. Maximum benefit from a cow could be obtained only if the animal matures and calves at an earlier age. A short calving interval leads to better economics because of reduced unproductive period. Bargur cows were regular calving, once in 16 to 18 months. Rajendran, (1995) reported that in Kangayam cows, that the age at first oestrus, first mating and first calving were 33.08, 33.13 and 43.17 months respectively and calving interval was 15.34 months.

Table 1: Means ± SE and coefficients of variation of daily milk yield and milk constituents of Bargur cows

	Average partial milk yield (g)	**Fat (%)**	**SNF (%)**	**Total solids (%)**
Early lactation (n=23)	672 ± 44	3.70 ± 0.36	8.53 ± 0.37	12.22 ± 0.38
Mid lactation (n=19)	434 ± 48	5.92 ± 0.42	7.67 ± 0.40	14.44 ± 0.45
Late lactation (n=17)	298 ± 51	7.33 ± 0.42	7.99 ± 0.43	15.32 ± 0.45
Overall (n=59)	468 ± 28	5.65 ± 0.23	8.06 ± 0.23	13.99 ± 0.25
Coefficient of variation (%)	43.13	32.05	21.77	13.35

Conclusion

From the present study, it was observed that the daily milk yield was highly variable with a coefficient of variability of 43%. This suggests the possibility of increasing the productivity of bargur cattle by means of improved feeding, management and breeding strategies. Maintaining animals in improved feeding and

management conditions along with details of full milk recording at weekly intervals are required to determine the full potency of the breed.

REFERNCES

Ganapathi P, Rajendran R and Subramanian A (2009). Distribution and Population Status of Bargur Cattle. *The Indian Veterinary Journal* **86** 971-972.

Ganapathi P, Rajendran R and Kathiravan P (2012). Detection of occurrence of a recent genetic bottleneck event in Indian hill cattle breeds Bargur using microsatellite markers. *Tropical Animal Health and Production* **44**(8) 2007-13.

ISI (1982). Determination of SNF(Solid Not Fat) in milk by use of the lactometer. Indian Standards Institution, New Delhi 10083.

Littlewood RW (1936). Livestock of Southern India. Government of Madras, Madras.

Pattabhiraman D (1962). Breeds of Cattle in Tamil Nadu, Madras.

Rajendran R (1995). Distribution and Characteristics of Kangayam Cattle. M.V.Sc. Thesis, Tamilnadu Veterinary and Animal Sciences University, Chennai.

Rajendran R (2007). Lactation performance and milk constituents of Umblachery breed of cattle (*Bosindicus*) in its native coastal ecology of Tamilnadu, India. *Livestock Research for Rural Development* **19** *Article #71.*Retrieved July 24, 2007, Available: http://www.cipav.org.co/lrrd/lrrd19/5/raje19071.htm