

Short communication

## Performance of Jersey crossbred dairy cattle in Karnataka

The information on sequence of calving influencing production performance is limited and hence it was proposed to probe into the effect of parity of calving on performance traits and to ascertain the production levels of Jersey crossbreds in Karnataka.

The data collected between 1972 and 1981 from 460 performance records of Jersey crossbreds stationed at Regional Research Station, Dharwar were analysed. Calves were weaned at birth and heifers were housed in loose house system. Pregnant and milch animals were maintained in cattle sheds. Nutritional requirements of growing stock and adults were met as per the prescribed standards. The milch animals were fed concentrate at the rate of 40 per cent of their yield. Abnormal lactations due to prolonged illness and short lactations less than 100 days were excluded from the analysis. Standard statistical procedures (Snedecor and Cochran, 1967) were adopted to analyse the non-genetic effects on performance traits and the critical difference was tested by 't' test.

The analysis of variance and parity wise average lactation performance is given in Table-1. The parity of calving significantly affected lactation yield, lactation length and peak yield. The results were closely agreeable with the findings of Katpatal (1970) and Mc Dowell *et al.* (1976). The 305 days

yield and peak yield remained unaffected and were comparable to the earlier reports of Batra and Desai (1960) and Choudhary *et al.* (1974). The significant differences among lactation performances might reflect the various environmental factors particularly the variation associated with supply of quality and quantity nutrients year after year besides, the changes occurring in physiological maturity of cow as age advances.

The mean 305 days yield ranged from  $1710 \pm 50$  kg in first lactation to  $1882 \pm 83$  kg in fifth lactation. The over all mean lactation yield of  $1903 \pm 31$  kg was obtained in lactation period of  $332 \pm 4$  days with the coefficient of variation of 26.63 per cent. Mean critical difference as tested by 't' test indicated that second, fourth and ninth lactation yields were significantly lower from the rest of lactation yields and no significant differences were observed in other lactations.

The average peak yield of  $9.8 \pm 0.1$  was attained in the peak days of  $23.0 \pm 0.9$  days with a very high CV of 89.79 per cent. The variation can be exploited through appropriate selection for increasing peak yield. The peak yield obtained in first, second and eighth lactations were significantly lower than the peak yields recorded in the rest of the lactations, but no significant differences were observed in the rest of the lactations. The crossbreds might have attained physiological

maturity after completion of second lactation and hence, no further variation could be noticed in later lactations. The first lactation length was significantly longer than the remaining lactation lengths, but no differences were observed in later lactation lengths. The results were in close agreement with the findings of Agarwal (1968) and Mani Mohan *et al.* (1984) pertaining to Jersey crosses maintained in the Gangetic plains. However, Nair (1973) and Stephen (1983) have observed much lower yields ranging from 1104 to 1530 kgs in Jersey crosses maintained in Kerala, falling under hot-humid conditions of coastal region. On the contrary, Yadav and Sharma (1983) and

Vij and Basu (1983) reported much higher yield potentials ranging from 2000 to 2500 kg. The variations noticed might reflect the genetic constitution of different indigenous breeds and different sources of Jersey male lines involved in crossing, besides management effects.

It is concluded that the sequence of calving forms a part of non-genetic effects and is largely under the influence of care and management, provision of adequate nutrition, timely breeding, suitable male lines, the provision of which would ensure higher production levels as well as life time production.

Table 1: Average lactation performance of Jersey crossbred dairy cattle.

Lactation order	No. of observations	305 days yield (kg.)	Lactation length (days)	Lactation yield (kg.)	Peak yield (kg)	Peak period (days)
Overall <sup>1</sup>	460	1756±25 <sup>NS</sup>	332±4 <sup>**</sup>	1903±31 <sup>*</sup>	9.8±0.1 <sup>*</sup>	23.0±0.9 <sup>NS</sup>
First	115	1710±50	375±7 <sup>a</sup>	1986±46 <sup>a</sup>	8.9±0.2 <sup>b</sup>	24.9±1.9
Second	97	1622±54	317±7 <sup>b</sup>	1726±50 <sup>b</sup>	9.2±0.2 <sup>b</sup>	23.9±2.0
Third	66	1935±61	323±9 <sup>b</sup>	1937±60 <sup>a</sup>	10.2±0.3 <sup>a</sup>	21.4±2.5
Fourth	52	1767±66	323±10 <sup>b</sup>	1874±68 <sup>a,b</sup>	10.3±0.3 <sup>a</sup>	19.8±2.8
Fifth	42	1882±83	315±11 <sup>b</sup>	1991±76 <sup>a</sup>	10.4±0.4 <sup>a</sup>	23.4±3.0
Sixth	32	1857±95	316±13 <sup>b</sup>	1956±87 <sup>a</sup>	10.6±0.4 <sup>a</sup>	21.3±3.5
Seventh	28	1866±101	313±14 <sup>b</sup>	1986±93 <sup>a</sup>	10.8±0.5 <sup>a</sup>	23.8±3.8
Eighth	18	1872±126	338±17 <sup>b</sup>	2121±22 <sup>a</sup>	10.0±0.6 <sup>a,b</sup>	22.4±4.7
Ninth	10	1859±169	289±23 <sup>b</sup>	1907±155 <sup>a,b</sup>	11.5±0.8 <sup>a</sup>	19.3±6.3

Means with the same superscripts do not differ from each other.

<sup>1</sup> = Effects of parity on lactation performance.

\* $P \geq 0.05$ , \*\* $P \geq 0.01$ , NS = Non significant.

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