

**PRODUCTIVE AND REPRODUCTIVE PERFORMANCE OF  
SAHIWAL CATTLE IN DRY ZONE OF SRI LANKA  
IN RELATION TO THE  
ENVIRONMENTAL PARAMETERS**

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## ABSTRACT

A study was conducted to assess the productive and reproductive performance and related to the effects of environmental factors and animal factors of Sahiwal cattle in the dry zone of Sri Lanka. Data was collected on calving, lactation, age at first calving and birth weight of calves were tabulated and analyzed in relation to ambient temperature (AT), relative humidity (RH), and rainfall (RF) during the period of 2000-2006. The mean AT fluctuated between  $26.6^{\circ}\text{C}$  and  $34.9^{\circ}\text{C}$  while RH varied between 64.7% and 87.6%. The annual RF ( $817.2 \pm 157.1$  mm) was not follow-up bimodal, reaching the highest level from October to December a very small elevation in March to May. The majority of the calves (47%) were born from February to May. Birth weight of male ( $19.39 \pm 3.18$  kg) and female calves ( $18.84 \pm 3.20$  kg) were not significantly different. Gestation length ( $285.73 \pm 56.24$  days) was not different between the two sexes. Lactation length ( $279.5 \pm 52.18$  days) and lactation yield ( $1401.92 \pm 540.5$  liters) decline with the parity, Total milk yield increases till third lactation, and reach a peak yield of  $1497.6 \pm 521$  lit in  $281.5 \pm 51$  days, and decline there after. Mean ambient temperature of the month ( $r = -0.342$ ) is significantly ( $p < 0.05$ ) correlated to birth weight. The results suggest that the prepartum period as the most vulnerable stage to environmental stress. Mean temperature and relative humidity, as the most important environment factors affecting the performance. Alleviating heat stress during prepartum is suggested as a means for improving reproduction performance of cows and birth weight of calves.

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