

Ilatsia, E. D., S. A. Migose, W. B. Muhuyi and A. K. Kahi. 2011. Sahiwal cattle in semi-arid Kenya: genetic aspects of growth and survival traits and their relationship to milk production and fertility. *Tropical Animal Health Production*, DOI 10.1007/s11250-011-9845-x.

Abstract

The aim of this study was to estimate genetic and phenotypic parameters for growth and survival traits of Sahiwal cattle in Kenya and determine their relationship to milk production and fertility. Performance records of 5,681 animals were obtained from the National Sahiwal Stud and the traits considered were: birth weight (kilogrammes), weaning weight (kilogrammes), pre-weaning average daily gain (grammes per day), post-weaning average daily gain (grammes per day), yearling weight (kilogrammes), mature weight at 36 months (kilogrammes), pre-weaning survival rate (SR), post-weaning survival rate (PSR), lactation milk yield (kilogrammes), age at first calving (days), and calving interval (days). The data was analysed using univariate and bivariate animal model based on restricted maximum likelihood methods, incorporating all known pedigree relationship among animals. The additive direct effects were more pronounced than maternal genetic effects in early and in post-yearling growth performance. The additive genetic variance and heritabilities were low for SR and PSR. The correlation between direct additive genetic and maternal genetic effect were negative for pre-yearling traits. Genetic and phenotypic correlations among growth traits and between growth and milk yield were positive, whilst those between growth and fertility were weak and negative. Correlations between survival and growth were generally low and positive. The estimates obtained in this study provide the necessary technical parameters for evaluating alternative breeding programmes and selection schemes for sustainable improvement of Sahiwal cattle.