An analysis of inbreeding levels and factors affecting growth and reproductive traits in the Kenya Alpine dairy goat

Marete, A. G.; Jung'a, J. O.; Mosi, R. O.

Date: 2011

Abstract

The level of inbreeding of the Kenya Alpine dairy goat was investigated by use of Brian Kinghorn's Pedigree viewer© software. From 1,067 doe records, data on parentage was extracted and this resulted to 3,516 individual records that were used for calculating individual inbreeding coefficients for the period 1999 to 2009. The rate of inbreeding (? F) was estimated as the difference between the individual inbreeding (Ft) and the inbreeding of the parents (Ft-1) divided by (1-Ft-1). The proportion of animals that was inbred increased from 0.00 (average F = 0) in 1990 to 0.38 in 2009 (average F = 0.012). Inbreeding depression on body weight was significant ($P<0.05$). In general the level of inbreeding in this population was very low. Further investigation on the birth weight and weaning weight was carried out. Regression analysis indicated that birth weight ($p<0.05$) and weaning weight ($p<0.01$) had improved in inbreds. The decrease in weight at first service and at first kidding was statistically insignificant. Kidding interval increased ($p<0.01$) due to inbreeding. Rate of decline in weight at first service and at first kidding, was different from zero ($p<0.01$). Effect of inbreeding on growth and reproductive traits in Kenya Alpine goats was not very pronounced in the flock.