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Reproductive Performance of Local Goats in Extensive Production Systems of Arid Northern Kenya: Implications on Reproduction Management of Small Ruminants

HARUN WARUI¹, BRIGITTE KAUFMANN¹, CHRISTIAN HÜLSEBUSCH², HANS-PETER PIEPHO³, ANNE VALLE ZÁRATE¹

¹University of Hohenheim, Inst. for Animal Production in the Tropics and Subtropics, Germany

²German Institute for Tropical and Subtropical Agriculture (DITSL), Germany

³University of Hohenheim, Inst. of Crop Production and Grassland Research, Germany

Abstract

Goats in the arid and semi arid lowlands of northern Kenya are kept in a harsh and resource poor environment. The goats' reproductive performance is an indicator of their adaptation to the adverse conditions. A six months field study was carried out to assess reproductive performance of Gabra and Rendille goat populations in Marsabit district of northern Kenya. Reproduction data of 444 Gabra and 432 Rendille female goats (does) with 1267 and 1602 parturitions during period 1997 to 2006, was gathered using progeny history survey technique. Reproduction parameters were calculated both at the doe level (age at first birth and average kidding interval) and population level (abortion, mortality and annual reproductive rates). Main and interaction effects of goat population, goat adaptation types and number of parturitions, with the number of abortions as the covariate, were assessed in an ANCOVA model. A saturated loglinear model was fitted for the number of first births for does at different combinations of age by goat population, type of year of birth and goat adaptation type. Logit models were used in the analysis of abortions and occurrence of kid mortality by goat population, goat adaptation type, doe's parity and sex of kid (only for mortality data). Rendille goats had better reproductive performance than the Gabra goats. Most important was the higher mortality rates of 25% for kids at the age of 3 to 8 months in Gabra goats than in Rendille goat kids (13%). Nevertheless the reproduction parameter values in both goat populations were similar to those observed in other pastoral systems. Reproduction management by the Gabra livestock keepers of striving for higher kidding rate during the long dry season of normal years could be contributing to the high kid mortality rate. Management measures to reduce reproduction wastage are recommended, especially in years that coincide with post drought periods in order to facilitate fast building of flocks. Such measures will also impact positively on the reproduction performance of sheep since both species are managed together in the pastoral systems of northern Kenya.

Keywords: Arid areas, goats, livestock keepers' knowledge, local breeds, reproductive performance, resource poor systems

Contact Address: Harun Warui, University of Hohenheim, Inst. for Animal Production in the Tropics and Subtropics, Garbenstraße 17, 70593 Stuttgart, Germany, e-mail: hmwarui@uni-hohenheim.de