Tropentag, September 18-21, 2016, Vienna, Austria

"Solidarity in a competing world — fair use of resources"

Performance of Camels and Cattle Kept Extensively on East African Rangelands

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Abstract

Camels (*Camelus dromedarius*) and local cattle breeds (*Bos indicus*) are among the preferred livestock species kept in the arid and semi-arid regions of the Horn of Africa as they play an important role in providing milk and meat. In addition, they are adapted to utilising forage from extremely dry land areas. The present study aimed at comparing dairy camels with two dairy cattle breeds (local "Pokot" cattle and Boran × Guernsey crossbreds) with regard to their performance. All genotypes were subjected to two different supplementation treatments: no supplementation (NO) vs. supplementation with rumen-degradable protein *ad lib* (PS). Measurements were performed in the rainy season (R; May/June 2015) and a more dry transition period (T; September/October 2015) (36 days each). The animals were all accompanied by calves and grazing in rangeland during the day. Milk yield and composition were assessed daily, the latter by using a portable ultrasonic milk analyser (Lactoscan SA-L, Milkotronic Limited, Nova Zagora, Bulgaria). The values measured were adjusted by regressions using lab values from Swiss cows. The Mixed procedure of the SAS programme (version 9.3) was used for analysis of variance separately per genotype. The mean values obtained per period for each animal were used and a covariable (milk yield and composition recorded before supplementation) was included. The milk amount recorded did not include the amount suckled by calf. Supplementation ($p > 0.05$) had no effect on milk yield in the two cattle genotypes and in the camels. Period had a strong effect ($p < 0.01$) on milk yield in both Pokots and crossbreds. The milk yield of the camels did not differ ($p > 0.05$) between periods suggesting better coping strategies of the camels than the cattle to the changing climatic conditions in the arid and semi-arid areas of East Africa. By contrast, there was no comparative advantage of the Pokot against the exotic crossbreds.

Keywords: *Camelus dromedarius*, milk yield, Pokot, season, supplementation

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