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Opportunities of an Adjusted Feeding of Goats in Traditional Farming Systems of Al Jabal al Akhdar, Oman

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Abstract

Goat husbandry is an important component of the agropastoral mountain oasis systems of Al Jabal al Akhdar, Oman. The vegetation of natural pastures surrounding the villages is the main source of fodder for goats. Due to its low nutritional value and serious overgrazing, performance of goats is limited, although farmers offer dates and dried sardines as well as cultivated fodder such as green maize and barley at the homestead.

To determine organic matter (OM) intake of goats on pasture in response to different feeding at the homestead, a study was conducted in the village Qasha' in October 2006. The first ration (C) was rich in dates and dried sardines and contained only little prebloom maize. The second ration (R) contained a high proportion of maize and low amounts of dates and sardines. The rations were similar in metabolisable energy and crude protein content, but differed in the content of neutral detergent fibre. Each ration was offered to 6 male goats during a 9-day adaptation and 7-day experimental period, thereby weighing the amounts offered and refused. Faecal excretion was determined using the external faecal marker TiO_2 ; diet digestibility was calculated from the nitrogen concentration in faecal OM.

Goats' daily intake ($\text{g OM kg}^{-0.75}$) varied between 84–110g. While group C ingested 30g (SD 3.5) of dates, 2.5g (SD 0.5) of fish and 19g (SD 2.7) of maize, group R consumed 15g (SD 0.1) of dates, 1.6g (SD 0.5) of fish and 30g (SD 3.5) of maize at the homestead. OM intake on pasture ranged between 34–61g, equivalent to 40–57% of total intake and did not differ ($p > 0.05$) between both treatments. However, values for intake ($\text{g OM kg}^{-0.75} \text{ d}^{-1}$) from pasture were lower than those determined for goats in Qasha' under farmers' feeding practices (76g, SD 24.2; October 2005), when hardly any cultivated fodder was offered (2g, SD 1.4). Results suggest that the amount of green fodder consumed at the homestead reduces feed intake on pasture, easing the grazing pressure on the pastures. Hence, an appropriate supplement feeding is needed to simultaneously conserve the natural resources and improve livestock production.

Keywords: faecal marker, feed intake, grazing, Oman