
Performance and cost benefit of variable inclusion levels of shea nut meal in the diet of growing sheep

Catherine Amerit, James Ombiro Ondiek, Mary Kivali Ambula and Gerald Zirintunda

Abstract

Poor forages are the drivers to poor livestock performance. Concentrates or fats can improve nutrient utilization in forages if mixed together. However, conventional concentrates are expensive and in demand for use in pig and poultry feeds. This study investigated the nutrient composition of shea nut meal (SNM) and its effect on the performance of growing sheep when added at different inclusion levels. Fifteen ewes weighing 25 ± 0.8 kg were grouped into five ($N = 3$) and assigned five diets containing 0%, 5%, 10%, 15% and 20% SNM in a completely randomized design. Diets were analyzed for chemical composition and data on intake, nutrient digestibility, average daily gain (ADG), feed conversion ratio (FCR) and cost of feed per kg gain were computed. Results obtained showed SNM (g/kgDM) contains 302 (ADF), 589 (NDF), 172 (CP), 304 (EE), 120 (total tannins) and 25 (ME) and improved 395 (ADF), 649 (NDF), 150 CP, 304 EE, and 18.3 ME in diets. Feed intake was improved at 5% but was not different ($p > 0.05$) from 0% but also declined with increasing inclusion of 10%, 15% and 20%. Nutrient digestibility was improved ($p < 0.05$) except for EE. Average daily gain was also improved and was higher at (5%) and lower at (0%) ($p < 0.05$). The best FCR was observed at (20%) but did not differ in all SNM diets ($p > 0.05$). The cost of feed per kg gain (KES/kg) reduced with increasing SNM inclusion levels. It was concluded that SNM is a possible cheaper energy and protein source for growing sheep. It improved nutrients in diets, intake at 5%, nutrient digestibility, ADG, FCR and reduced the cost of feed per kg gain in sheep feeding.

Keywords: Average daily gain, cost of feed/kg gain, feed conversion ratio, feed intake, nutrient digestibility.