

Abstract

Fresh *Acacia tortilis* pods were mixed with low quality native grass hay to form the following five rations: 100% hay (T₁), 25% pods and 75% hay (T₂), 50% pods and 50% hay (T₃), 75% pods and 25% hay (T₄) and 100% pods (T₅) on 'as fed' weight basis. Fifteen male *Barka* goats, approximately one year old and 10–15kg body weight, were randomly assigned to the five rations and fed in individual pens. Chemical composition, dry matter intake (DMI), *in vitro* dry and organic matter digestibility and body weight changes of the animals were evaluated. The average crude protein content of the pods was about 47% higher than the 7% minimum required for normal rumen function, while that of the hay was about 13% below. Percent ash, neutral detergent fibre (NDF), acid detergent fibre (ADF), hemi-cellulose (HC), cellulose (CL) and acid detergent lignin (ADL) contents were higher in the hay than in the pods. The pods were, however, generally higher in Ca, P, Mg and Na than the hay. Average DMI (g d⁻¹ and g kg⁻¹ LBW), percent *in vitro* dry and organic matter digestibility and body weight gains (total kg and gd⁻¹) increased with an increase in *A. tortilis* pods, up to 75% level and then begun to decline. However, despite the decrease, T₅ still had significantly ($P < 0.05$) higher feed digestibility and body weight gains than T₂ and T₃. Thus, supplementing low quality range herbage with *Acacia* pods can considerably improve the nutritive value of range livestock diets, particularly during the dry season when other types of fodder are of extremely low quality.