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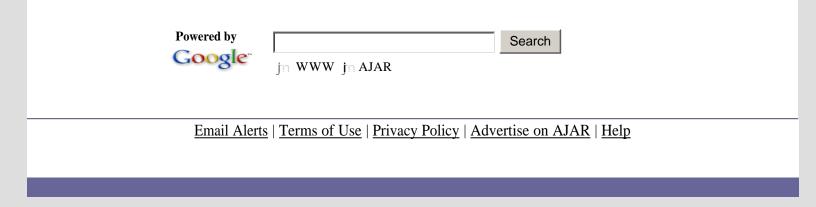
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Viewing options: • Abstract	Full Length Research Paper
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Abstract

Ten Polwarth × Texel lambs $(30\pm1\text{kg}$ live weight (LW)), housed in metabolic cages and fed *ad libitum* a low-quality grass hay (*Cynodon ssp.*) were used in a replicated 5×5 Latin Square experiment to evaluate effects of non-protein N (NPN) and levels of a non-fibre carbohydrate (NFC) source (cassava meal) supplementation (0, 5, 10 and 15 g/kg of LW) on intake, digestibility, N retention, microbial protein synthesis and rumen fermentation. Hay intake and digestibility were not affected by NPN addition. Organic matter, N and digestible energy intake, as well as rumen microbial protein synthesis and N retention increased linearly (P<0.05) but, fibre intake and digestibility, decreased linearly (P<0.05) as NFC supplementation increased. Rumen pH, as well as rumen concentrations of ammonia, sugars, amino acids and peptides was significantly affected by supplementation and time after feeding (P<0.05). Hay utilization was not improved by N addition showing that it was not limited due a lack of N for rumen bacteria. Supplementing both NPN plus a NFC source improved nutrients intake but reduced forage use by ruminants. Although variations of rumen pH and sugars concentrations play an important role, the detailed mechanisms by which fibre digestibility is negatively affected by NFC supplementation needs to be elucidated.

Key words: Digestibility, Intake, Non-fibre carbohydrate, Non-protein nitrogen, Rumen fermentation, Tropical grass.



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