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Ensiling Pasture Grass with Pods of Browse Plants is Potential to Solving Dry Season Feed Shortage for Ruminants in Nigeria

Olaniyi Jacob Babayemi, Ayodele James Igbekoyi

University of Ibadan, Animal Science, Nigeria

Abstract

All year round forage is difficult in Nigeria due to often protract dry season. Ensiling forage offers a strategic solution to the off-season feeds for ruminants. The study was undertaken to assess the performance of WAD sheep fed ensiled Guinea grass (GG) with *Albizia saman* pod (ASP). Guinea grass and *Albizia saman* pods were ensiled as 10 % ASP + 90 % GG, 20 % ASP + 80 % GG, 30 % ASP + 70 % GG and 40 % ASP + 60 % GG. Quality and chemical composition of silage were verified. Also, using a completely randomised design, twenty four rams were allotted to the silages for determination of intake, growth and nutrient digestibility by West African dwarf (WAD) rams. The pH of silage ranged between 4.2 and 4.8. Silage structure was observed to be firm and in-destructive. The colour ranged from olive green in 10 % to yellow in 40 % ASP inclusions. Smell of silage was characterised by nice in 10 %, pleasant in 20 % and 30 % and fruity in 40 %. Crude protein contents (ranged 14–17.5 g DM/100 g) significantly increased with increasing level of ASP but decreased the proportion of CF. Values for NDF, ADF, ADL and cellulose increased with increasing level of ASP. Hemicellulose was noticed to decrease with increasing amount of ASP. Dry matter intake (g/d), daily weight gain (g/d) and nutrients intake (CP, CF, NDF, ADF, ADL and cellulose) increased significantly ($p < 0.05$) with increasing inclusion of ASP. The apparent digestibility of dry matter (ADDM), organic matter (ADOM), crude protein (ADCP), crude fibre (ADCF), ether extract (ADEE), NDF (ADNDF), ADF (ADADF), ADL (ADADL), cellulose (ADC) and hemicellulose (ADH) respectively ranged from 65.5–70.2, 65–69.4, 54.8–70.1, 59.9–68.1, 74.0–80.1, 59.8–65.3, 55.8–65.8, 47.4–70.5, 14.8–82.9 and 43.3–68.7. The ADDM, ADOM, ADCP, ADCF, ADEE, ADNDF, ADADF, ADADL and ADC significantly ($p < 0.05$) increased due to increase of ASP except that of ADH that decreased with increasing amount of ASP in the silage. It is concluded that *Albizia saman* pods can replace Guinea grass up to 40 % for silage as dry season feed and without detrimental effects on performance of WAD ram.

Keywords: *Albizia saman* pods, roughage, performance, silage, WAD ram

Contact Address: Olaniyi Jacob Babayemi, University of Ibadan, Animal Science, Ibadan, Nigeria, e-mail: ojyemi@yahoo.co.uk