

Evaluation of *Rhus lancea* and *Celtis africana* as Browse for Mixed-Feeders in Captivity

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Abstract : A study was carried out to determine seasonal changes in fiber composition and condensed tannin (CT) concentrations in *Rhus lancea* and *Celtis africana* and their effects on feed intake and blood metabolites in mixed-feeders. *Rhus lancea* and *C. africana* were analysed for dry matter (DM), acid detergent lignin (ADL), acid detergent fiber (ADF), neutral detergent fiber (NDF) and CT concentrations over four seasons; early wet (EWS), late wet (LWS), early dry (EDS) and late dry (LDS). Twelve indigenous male goats were kept in metabolic crates for periods of 21 days per season and fed one of two diet combinations; the test diet comprised *R. lancea* and *C. africana* (denoted as BROWSE) and the lucerne diet comprised lucerne (*Medicago sativa*) and concentrates (CON). Feed intake, body weight and blood metabolites were determined in all goats over each study period. Goats fed BROWSE in the EDS, LDS and LWS lost weight while goats fed CON gained weight ($P < 0.05$). Goats fed CON had higher urea, alkaline phosphatase and gamma-glutamyl transferase concentrations than those fed BROWSE ($P < 0.05$). Creatinine and cholesterol concentrations in all goats across LWS, EDS and LDS were lower than the normal range, while total protein and globulin concentrations were higher. The goats fed BROWSE had higher creatinine concentrations ($P < 0.05$) than those fed CON. Cholesterol concentrations were higher ($P < 0.05$) in goats fed BROWSE than in those on CON fed. It was concluded that goats fed BROWSE lost weight, indicating insufficient nutrients for maintenance requirements.

Keywords : fiber, maintenance, condense tannins, blood metabolites

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