

Feed Value of Selected Nigerian Browse Plants: Chemical Composition and in vitro Digestibility

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Abstract : A study was conducted to determine the in-vitro degradation of selected Nigerian browse plants consumed by small ruminants on free range in northern guinea savannah region of Nigeria using in vitro gas production, proximate composition, fibre components, methane gas production and dry matter degradation as tools. The leaves samples of the selected browse plants were collected, processed and incubated using in vitro gas dry matter degradation techniques. Results obtained showed variation in the rate of degradation. The result obtained from chemical analysis showed that the CP content of *A. occidentale* (26.49%) was higher than *F. thonningi* (23.58%), *M. indica* (20.58%) and *T. catappa* (18.61%). Both ADF and NDF of *A. occidentale* (40.00 and 50.00) were as well higher than *F. thonningi* (20.00 and 40.00), *M. indica* (20.00 and 40.00) and *T. catappa* (20.00 and 42.00). Results from in vitro gas production however showed that *T. catappa* (23.67ml/DM) has a significantly higher ($p < 0.05$) value than *F. thonningi* (20.67ml/DM), *A. occidentale* (16.67ml/DM), and *M. indica* (14.00ml/DM) at 72 hours of incubation. Methane gas production and in vitro gas production can be used to predict dry matter degradation and nutritive value of feedstuff for small ruminants. *A. occidentale* with the least methane gas production and highest crude protein (CP) content might have the most nutritive value among the browse plants investigated.

Keywords : in vitro, degradation, browse, gas production

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