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***In vitro* gas fermentation assessment of shed leaves of some predominant plants as ruminants’ forage**

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Abstract

Sometimes, some deciduous plants shed their leaves, which litter the environment and perhaps can be utilised as forage resources. Chemical composition and *in vitro* gas production parameters of shed leaves from different browse plants (*Tamarindus indica*, *Terminalia catappa*, *Bambusa vulgaris*, *Anacardium occidentale* and *Cola nitida*) were investigated. The shed leaves of each plant were picked, cleaned and milled. Chemical composition and *in vitro* gas production analyses were carried out. Results revealed that significant variations ($p < 0.05$) in all the parameters considered under chemical composition. *Bambusa vulgaris* leaf had the highest (93.10%) dry matter content, while *Terminalia catappa* leaf recorded the lowest (91.82%). Same trend was observed for crude protein, with *Bambusa vulgaris* leaf recording the highest (10.90%) value, while lowest (4.89%) value was obtained in *Terminalia catappa* leaf. Neutral detergent fibre ranged significantly ($p < 0.05$) from 52.92 to 61.53% in *Tamarindus indica* leaf and *Terminalia catappa* leaf respectively. Similar pattern was observed for acid detergent fibre (33.13 – 48.95%) and acid detergent lignin (16.48 – 24.12%). Among the shed leaves, the highest (10.67 ml/200 mg DM) gas production ($p < 0.05$) was obtained in *Bambusa vulgaris* leaf, while the lowest (6.67 ml/200 mg DM) was recorded for *Terminalia catappa* leaf. *Bambusa vulgaris* leaf recorded highest values for ME (4.34 MJkg⁻¹ DM), OMD (30.30%) and SCFA (0.19 mmol). The methane volume produced ranged from 2.5 to 4.5 ml/200 mg DM in *Terminalia catappa* leaf and *Tamarindus indica* leaf respectively. It can be concluded that these shed leaves have potential in ruminant nutrition and can be used by ruminant farmers to serve as off season forage in the tropics

Keywords: Chemical composition, *in vitro* gas production, ruminants, shed leaves