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Chemical composition and nutritive value of four varieties of cassava leaves grown in South-Western Nigeria.

Oni AO, Onwuka CF, Arigbede OM, Anele UY, Oduguwa OO, Onifade OS, Tan ZL.

Abstract

The nutritive value of leaves of four varieties of cassava - MS 6, TMS 30555, Idileruwa and TMS 30572 was evaluated based on their chemical composition and in vitro fermentation. Crude protein (CP) contents of cassava leaves ranged from 177 to 240 g/kg dry matter (DM), with TMS 30555 showing the highest CP contents. Neutral detergent fibre (NDFom) and acid detergent fibre (ADFom) contents of cassava leaves ranged from 596 to 662 and 418 to 546 g/kg DM respectively. Condensed tannin (CT) and hydrocyanic acid contents ranged from 1.0 to 3.8 g/kg and 58.5 to 86.7 mg/kg DM respectively. The range of volatile fatty acids (VFA) in the supernatant after in vitro incubation of the cassava varieties was: acetate (14.7-31.5 mmol/l); propionate (4.5-6.3 mmol/l); butyrate (3.1-3.9 mmol/l); valerate (0.4-0.6 mmol/l); iso-butyrate (0.6-1.3 mmol/l); iso-valerate (1.1-1.9 mmol/l). The acetate:propionate ratio resulting from fermentation of TMS 30555 was higher($p < 0.05$) than that of the other leaves. The highest in vitro gas production of 50.5 ml/200 mg DM was recorded for MS6 being higher ($p < 0.05$) than for TMS 30572, but similar to TMS 30555 and Idileruwa. The DM, CP, ADF and HCN contents of cassava leaves were positively correlated with gas production, while CT content was negatively correlated with gas production. The study showed that leaves of the varieties MS 6 and TMS 30555 are superior to the others in terms of CP and gas production indicating a higher digestibility and energy content and thus nutritive potential. They may therefore serve as supplements for ruminants fed on poor roughages.