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Nutritive Evaluation of Eight Browse Trees in Butana Area, Sudan

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Abstract

This study was conducted during the late rainy season (September – October) to evaluate the proximate composition, mineral content, condensed tannins and *in vitro* organic matter digestibility (IVOMD) of eight pasture plant species collected from Butana area, Abu Deleig, Sudan. The browse tree species were, *Acacia tortilis*, *A. mellifera*, *A. seyal*, *A. ehrenbergiana*, *A. nilotica*, *A. nubica*, *Ziziphus spina-christi*, and *Balanities aegyptica*. Twigs from the browse trees species were collected, air dried, and analysed for dry matter (DM), crude protein (CP), ether extract (EE), ash, crude fiber (CF), neutral detergent fiber (NDF), acid detergent fiber (ADF), lignin, calcium, phosphorus, magnesium, sodium, potassium, manganese, ferrous, zinc, cobalt, selenium, and copper, and compared with general requirement of camels.

The results revealed that the range of CP and CF of browse trees in Butana area were 12.37–26.61 % and 19.54–31.11 %, respectively. For condensed tannins, *Z. spina-christi* contained the highest level of tannins (5.2%), however, *B. aegyptiaca* contained the lowest level of condensed tannins (0.2%) among the eight tree species studied. The highest IVOMD value was recorded for *Z. spina-christi* (79.1%) followed by *A. mellifera* (71.3%).

The calcium and phosphorus contents were relatively low and ranged between 0.68–1.07 % and 0.11–0.57 %, respectively. Plant species were high in magnesium content except in *A. nilotica* and *Z. spina-christi*. The mean values of magnesium lay within the average of 0.27–0.51 %. High level content of potassium (1.08–2.56 %) and sodium (1.58–2.26 %) were recorded. The content of micro-minerals in browse trees was relatively high with 0.13–0.29, 0.27–0.76, 6.67–19.95, 0.31–0.60 and 0.15–0.84 ppm, for Cu, Mn, Fe, Zn and Se, respectively.

As a conclusion most of plant species in Butana area which examined in the present study may provide a considerable part of camels demand for energy, crude protein, and macro and micro minerals.

Keywords: Browse trees, Butana area, chemical composition, *in vitro* digestibility, late rainy season, mineral content, Sudan, tannins