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Seasonal variations in diet selection of Nguni goats: effects of physical and chemical traits of browse

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Abstract

Goats select some browse species more than others, given options. Seasonal trends of diet selection of Nguni goats indexed by intake were investigated in cafeteria-style experiments. The relationships between diet selection and plant chemical/physical traits of *Vachellia nilotica*, *Vachellia robusta*, *Dichrostachys cinerea*, *Euclea crispa*, *Rhus lancea* and *Ziziphus mucronata*, representing abundant species were studied in the dry and rainy seasons. Seasonal changes in browses affected diet selection. Selection of long shoot species, which were concomitantly broad-leafed, was higher than species with short shoots. Selection was higher for spineless than spinescent species. Diet selection correlated positively with increased leaf mass. In the rainy season, cellulose positively correlated with intake, number of bites and browsing time, whereas in the dry season, cellulose correlated with bite size. Diet selection tended to be driven more by shoot morphology and leaf mass than by either spinescence or plant chemistry. Plant chemical influence on diet selection was diverse in both seasons and showed no definite trend, whereas spinescence had no significant effect on short-term intake. The results represent important input to goat production and range forage species management.