

Nutritive value and extractable Tannin contents of some common tree forage fed to goats

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Foliage of diverse trees and shrubs are important sources of feed for goats. Most of this foliage contains significant amounts of secondary plant metabolites such as tannins, which may act as anti-nutritive factors. However, the nutritive value of tree forage based goat feeds have not been subjected to many investigations. Therefore, objective of this study was to determine the nutritive value (dry matter and crude protein), total and condensed tannin contents of seven foliage species used by local farmers to feed goats.

Forage samples (4 replicates /sample) were randomly collected from a medium scale goat shed over a period of two months, chopped and dried at 50°C for 48 hours. Dry matter and crude protein contents were determined using ground samples according to the standard procedures. Total tannins were determined by Folin-Ciocaltau method while condensed tannins were determined by Butanol-HCl method. Dry matter and crude protein contents of seven foliage species ranged from 25.8 to 48.2% and 6.4 to 17.5% respectively, suggesting their potential use as sole goat feeds. Total tannin content ranged from 9.4% for *Terminalia catappa* (Kottang) to 1.6% for *Symplocos spicata* (Bobu). Condensed tannin contents were ranged from 6.2% in *Carallia integerrima* (Dawata) to 1.4% in *Mangifera indica* (Mango). Among the species tested *Symplocos spicata* (Bobu) was free of condensed tannins. On the basis of their respective condensed tannins contents, *Carallia integerrima*, *Aporosa lindleyana* (Kabella) (5.4%) and *Ceiba pentandra* (4.9%) could be classified as containing high levels (>4%), while *Syzygium caryophyllatum* (2.5%), *Terminalia catappa* (1.5%) and *Mangifera indica* were classified as having medium levels (1-3%) of condensed tannins.

The results reveal that TT and CT contents of seven forage species are different. It was also evident that tannins are present in non-leguminous plants as well. *Symplocos spicata* (Bobu) could be considered as the best foliage among the tested species due to low level of TT and while being free of CT.

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