

TANNINS IN SOME AGRO FORESTRY SPECIES OF LOCAL INTEREST

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Total and condensed tannin contents were determined in six agro forestry species used by local farmers to feed ruminants. Total and condensed tannins were determined by Folin-Ciocalteu and Butanol-Hcl methods respectively. Total tannin (TT) content ranged from 5.41% for *Calliandra calothyrsus* to 0.15% for *Erythrina indica*. Condensed tannins (CT) contents ranged from 6.92% in *Acacia auriculiformis* to 0.78% in *Gliricidia sepium*. The percentages of CT were 6.40%, 4.60%, and 1.58% respectively for *Artocarpus heterophyllus*, *C. calothyrsus*, and *Leucaena leucocephala*. Among the six species tested, *E. indica*, was free of CT while having traces of TT. On the basis of their respective CT contents *G. sepium* was classified as containing traces of CT (<1%), while *L. leucocephala* classified as containing low level of CT (1-3%). *C. calothyrsus* was classified as containing medium level of CT (4-6%) while *A. auriculiformis* and *A. heterophyllus* classified as containing high level of CT (>6%).

In a further study, it was found that tender leaves and stems (0-30 cm from the tip) of *C. calothyrsus*, and *A. auriculiformis* contained higher levels of TT and CT as compared with mature leaves and stems (30-60 cm from the tip) of the same species. In contrast tender leaves and stems of *A. heterophyllus* contained low levels TT as compared with mature leaves and stems.

The results suggest that TT and CT contents of tested six species are different due to their inherent characteristics. It was also evident that tannins are present not only in leguminous species but also in non-leguminous species such as *A. heterophyllus*. The increase in TT and CT contents in tender parts of *C. calothyrsus* and *A. auriculiformis* may be associated with the chemical defence mechanisms found in younger plant parts. Further investigations are necessary to verify the effects of tannins on their nutritive value of above forages.