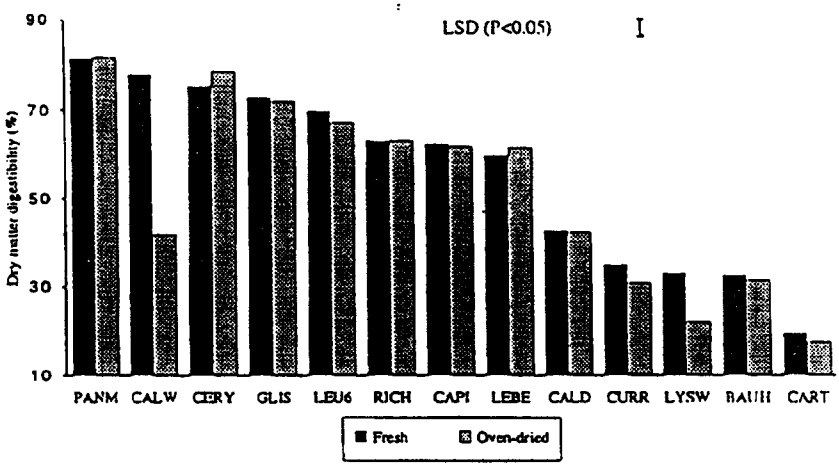
# IN SACCO DIGESTIBILITY OF FRESH AND OVEN-DRIED TROPICAL LEGUMES

R.O. BALOGUN, R.J. JONES *, B.J. HOSKING and J.H. G. HOLMES

The preparation of pasture samples for in sacco digestibility analysis by chopping or grinding and drying may not affect the nutritive value of all pastures equally; Palmer and Schlink (1992) showed that drying significantly reduced digestibility of *Calliandra calothyrsus.* Sample preparation may result in tannin complexes with other components of the feed and in changes in the physico-chemical properties of carbohydrate and lignin. Preparation methods were evaluated with 12 tropical browses, chopped to about 3 mm and dried at 65° for 24 h or used in the fresh state. Dried samples were analysed for extractable, protein-bound and fibre-bound condensed tannins (ECT, PCT, FCT) (by Prof. T.M. Barry, Massey University, Palmerston North, NZ), nitrogen (N), neutral detergent fibre (NDF), acid-detergent fibre (ADF) and lignin. About 5 g DM equivalent was incubated in dacron bags for 48 h in the rumens of five steers. For nine legumes, there was close agreement between digestibilities of fresh and dried material; for *C. calothyrsus, Acacia currasavica* and *Lysiloma watsonii,* digestibility was reduced by up to half following drying.




Nylon bag dry matter digestibility of shrubs varying in condensed tannin content
LSD is for species x drying interaction

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|---|---|---|---|---|---|
| PANM | Panicum maximum | CALW | Calliandra calothyrsus; | CERY | Combretum erythrophloeum; |
| GLIS | Gliricidia sepium; | LEU6 | Leucaena spp (CPI 61226); | RICH | Albizia richardiana; |
| CAPI | Combretum apiculatum; | LEBE | Albizia lebbek | CALD | Calliandra acapulcensis; |
| CURR | Acacia currassavica; | LYSW | Lysiloma watsonnii; | BAUH | Bauhinia rufescens; |
| CART | Cathormium umbellatum | | | | |

Digestibility was correlated (P<0.001) with NDF (-0.663), ADF (-0.666), lignin (0.810), ECT (-0.620), total CT (-0.601), less with PCT (0.210, ns) or FCT (-0.389, P<0.01). NDF, ADF and lignin increased with oven-drying, perhaps due to formation of tannin-fibre complexes. This was not related to changes in digestibility. Depression of digestibility following drying was not related simply to any analytical results

PALMER, B. and SCHLINK, A.C.(1992) Tropical Grasslands 26: 89.

Department of Agriculture, University of Melbourne, Parkville, Victoria 3052
*CSIRO Davies Laboratory, Aitkenvale, Queensland 4814