

115. Relationships between *in vitro* gas production characteristics and composition of tree leaf fodders from Bolivia, West Africa and Colombia

C. D. Wood¹, C. Grillet², M. Rosales¹ and S. Green¹

¹Natural Resources Institute, Chatham Maritime, Chatham, Kent ME4 4TB; ²CIRAD-EMVT, BP 5035, 34032 Montpellier, Cedex 01, France

Sample of tree leaf fodders (20 from Bolivia, 26 from West Africa and 24 from Colombia) were dried and analysed for crude protein (CP), ash, ether extract, acid detergent fibre (ADF), neutral detergent fibre (NDF), extractable tannins by protein precipitation activity, total phenols and condensed tannins. Samples were then fermented using an *in vitro* gas production technique. The relationships between *in vitro* gas production variables and composition were investigated using step-wise multiple regression analysis. Gas production variables investigated were cumulative gas production after 6, 12, 24 and 52 h incubation, the dry-matter disappearance (DMD) after 166 h incubation, and the rate constant (k) produced by fitting an exponential curve to the gas production data. ADF and extractable tannins as measured by the total phenols assay were significant in accounting for variability in cumulative gas production at all the times investigated and in DMD. CP was significant only in the 6 h cumulative gas production data. Components important in accounting for variability in k were ash, ether extract, NDF (which was closely related to ADF) and total phenols. For all gas production parameters, the source of the samples appeared to affect the relationship between gas production and composition, generally by affecting the relationship between total phenols and gas production. This may have been due to unidentified site-specific components, site-specific differences in phenols or differences in sample preparation. In no case did the components measured account for even as much as 0.5 of the variability in gas production, so clearly other parameters were important.