Summary

In order to evaluate compatibility and dry matter (DM) production of *Andropogon gayanus* with several accessions of *Desmodium ovalifolium*,

Centrosema pubescens, Stylosanthes capitata, S. guianensis, and *Pueraria phaseoloides,* a trial was conducted between February 1982 and December 1983 in an Oxisol at the experimental field of the Centro de Pesquisa Agroflorestal de Rondônia, Porto Velho, Rondônia, Brazil. The area is characterized by annual rainfall of 2000 to 2500 mm and a mean temperature of 24.9 °C. The grass was established by vegetative material in rows separated by 80 cm, and the legume at the rate of 3 kg/ha of seed between the grass rows. At the time of planting, 22 kg/ha of P were applied.

Results indicated that the most compatible associations in terms of annual DM production and crude protein content were *A. gayanus* with: *S. guianensis* cv. Cook (42.5 t/ha and 8.6%), *C. pubescens* CIAT 438 (40.1 t/ha and 9.8%), *S. capitata* CIAT 1097 (35.4 t/ha and 10.5%), and *S. capitata* CIAT 1405 (37.6 t/ha and 9.0%). In these associations, a larger amount of nitrogen was fixed and transferred to the grass, and thus better quality forage resulted.