

# Summary

In a reddish-yellow Podzol, Porto Velho, Brazil (10° 43' S, 62° 15' W; 2000 mm; 400 m.a.s.l.), between February 1984 and December 1987, compactability, DM production, and persistence of several associated grasses and legumes, planted in rows with 0.80 m between them, were evaluated. The evaluations were conducted in three periods of maximum rainfall (1127 mm) and minimum rainfall (103 mm).

DM production was higher in the maximum rainfall period. In this period, the highest productions were obtained with *Andropogon gayanus* associated with *Desmodium ovalifolium*, *Centrosema macrocarpum*, *C. brasilianum*, and *Pueraria phaseoloides*, and with *Brachiaria humidicola*-*C. macrocarpum*. In these associations, legumes were above 15%. In the minimum rainfall period, besides the previous associations, *B. brizantha* alone and associated with *D. ovalifolium* and *C. macrocarpum* produced the highest DM. Legumes in the associations averaged 28% in this period.