Summary

To select the best grass-legume associations regarding productivity, percentage of legumes, chemical composition, and persistence for the NE region of Pará State, Brazil, a trial was conducted from September 1993 to August 1995 on a yellow Latosol at the Tracuateua Experiment Station, municipality of Tracuateua, located 36 m.a.s.l., 1° 05' S and 47° W.

A randomized block design was used with four replications. Treatments were arranged in a 2 x 2 x 7 split-split plot design, in which the legumes *Pueraria phaseoloides* and *Stylosanthes guianensis* cv. Cook constituted the main plots (46 m x 5 m); the levels of P (0 and 50 kg/ha) the subplots (23 m x 5 m); and the grasses *Panicum maximum* cv. Sempre verde; *Brachiaria humidicola; Brachiaria decumbens; Setaria anceps* cv. Nandi; *Paspalum maritimum; Panicum maximum* cv. Colonião, and *Paspalum plicatulum* the sub-subplots (5 m x 2 m). Results showed that Sempre verde, Colonião, and *Setaria anceps* associated with the legumes were the most promising combinations in view of their high DM production and enhanced chemical composition.