Summary

The experiment was conducted in a well-drained, isohyperthermic savannas ecosystem of the Venezuelan Llanos, located a 9° 20' N latitude and 67° 4' W longitude. Soils are Typic Haplustox and the annual rainfall is 1050 mm, with the rainy season from May to October. In June 1986, hybrid maize P.B.8 was planted at 90 cm between rows with a density of 63,000 plants/ha. *Andropogon gayanus* CIAT 621 was established between the rows of maize. Nitrogen was applied at 28 kg/ha, P at 25 kg/ha and K at 24 kg/ha. Treatments consisted of cutting at different ages (28, 56, 84, 112, and 140 days), arranged in a completely randomized design with three replications. Biomass, morphological, and growth variables were determined for each species. The value index of importance (VI) was determinated as the sum of relative basal area, density, green biomass, coverage and height. Growth starts with the ecological dominance of maize (VI = 391) until day 84; afterwards, *A. gayanus* dominates (VI = 339). Green biomass, absolute growth rate (AGR), leaf area index (LAI), and maize coverage show exponential curves until day 84. Afterwards, those curves decline until maize harvest at day 140. Maximum total green biomass (1340 g DM/m^2/day), LAI (4.06), and AGR (39 g DM/m^2/day) occur at day 84. The performance of the variables indicates that the association of maize and *A. gayanus* does not affect maize production and growth. In *A. gayanus*, green biomass, coverage, AGR, and LAI are low until 84 days of age, being lower than maize. The values are also low compared with the pure pasture. After day 84,

these variables were higher for *A. gayanus*. Data on pasture flowering at day 140, maximum green biomass (4429 g DM/m²/day), coverage (73%), AGR (11.24 g DM/m²/day), and LAI (2.89) indicated a good establishment of *A. gayanus*. The establishment of this pasture, associated with a high maize production, is therefore feasible in the Venezuelan Llanos.