Summary

Between February and December 1992, the liveweight gain (LWG) of animals on five pastures was measured on an Inceptisol at the Chipiriri experiment station in Cochabamba, Bolivia (16° 50' S and 64° 20' W; 225 m.a.s.l.; 5,800 mm rainfall; 25.6 °C, tropical rain forest). Treatments consisted of: (1) *Brachiaria decumbens* CIAT 606-*Desmodium ovalifolium* CIAT 350; (2) *B. decumbens* CIAT 606-*Pueraria phaseoloides* CIAT 9900; (3) *Brachiaria brizantha* CIAT 6294-*D. ovalifolium* CIAT 350-*P. phaseoloides* CIAT 9900; (4) *Axonopus scoparius* (local variety)-*P. phaseoloides* CIAT 9900; and (5) *B. decumbens* CIAT 606 alone. Pastures were established in 1989 in a 1.8-ha field, divided into twenty 800-m^2 paddocks. The local variety was planted using vegetative material, and the other species using seed. Basic fertilization (50 kg/ha P and 30 kg/ha K) was applied at planting. Fifteen crossbred Holstein x creole and Holstein x Gyr steers, with different degrees of crossbreeding, were used. Animals had an average initial weight of 120 kg, and were fed water and mineral salt with 6% P ad libitum. Steers were divided into groups of three, each receiving the same treatment (pasture) and replication.

Pastures were evaluated over six 40-day grazing cycles, in a rotational system with 5 days of occupation and 15 days of rest. Stocking rate was 2.5 AU/ha (1 AU = 400 kg animal live weight). Available forage, botanical composition of the pasture, and index of preference of grasses and legumes were measured in all cycles and in each of the paddocks of the rotation, at the beginning and end of the grazing cycle. To determine LWG, animals were weighed every 40 days, after a previous 12-h fast. A randomized block design, with five treatments (pastures) and six replicates over time, was used to analyze results. The information corresponding to two complete rotations or grazing cycles (40 days) was considered as a replicate. Results were submitted to variance analysis, and the averages were compared using Duncan's multiple range test.

The highest offer of dry green matter (DGM), 3.61 t/ha, occurred in the association *A. scoparius-P. phaseoloides* and the lowest in the *B. decumbens-D. ovalifolium* pasture (2.41 t/ha) and in *B. decumbens* alone (2.47 t/ha). Consumption of DGM was greater in pastures associated with *P. phaseoloides*, being outstanding in the association of this legume with *B. decumbens*. On the contrary, consumption was lowest in pastures of *B. decumbens* alone or associated with *D. ovalifolium*. Animals showed greater preference for grasses than for legumes. In all grazing cycles, the average preference for grasses was above 95%. Except for the *A. scoparius-P. phaseoloides* pasture, the LWG per animal reached in the other associations were higher than that obtained in *B. decumbens* alone. The highest daily LWG were obtained in the *B. decumbens-P. phaseoloides* pasture (358 g/animal) and in the association *B. brizantha-D. ovalifolium-P. phaseoloides* (277 g/animal).