

Summary

At the Gado de Corte National Research Center, Campo Grande, Brazil, a trial was carried out between 1982 and 1984 with the purpose of determining the contribution of *Calopogonium mucunoides* to the N content in *Brachiaria decumbens* pastures. The trial was carried out in a Latossolo Roxo álico, in which *B. decumbens* was planted alone and in association with *C. mucunoides*. These pastures were fertilized at planting with 50 and 35 kg/ha of P and K, respectively, and they were used with 2.5 AU/ha in three repetitions. DM production and N content in the grass and legume were determined every 28 days by a harvest on each parcel of 10 samples measuring 0.25 m x 0.25 m.

In spite of the fact that the high stocking rate caused a reduction in persistence of the legume, *C. mucunoides* contributed significantly to

increasing the N content of the pasture when it was associated with *B. decumbens*. The estimated quantity of N fixed by the legume in 725 experimental days was 416 kg/ha. This contribution was more important at the beginning of the dry season, when N in the biomass tends to increase. The transfer of N from the legume to the grass occurred principally through the dead portion of the plant.