

EVALUATION OF INTERSPECIFIC HYBRIDS AND CULTIVARS OF *BRACHIARIA SPP.* SUBMITTED TO SOURCES AND RATES OF NITROGEN FERTILIZATION

AVALIAÇÃO DE HÍBRIDOS INTERESPECÍFICOS E CULTIVARES DE *BRACHIARIA SPP.* SUBMETIDAS A FONTES E DOSES DE ADUBAÇÃO NITROGENADA

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The management of nitrogen supply (N) is a very important issue concerned to plant growth and the environment healthy. For farmers, to know how much N the plant requires enables the application of appropriate amounts of nitrogen fertilizer, maximizing the use of this material. The availability of N has been identified as one of the main limiting factors, but also a management tool in the production of grasses. The nitrogen in the soil either, as a constituent of organic matter or in the mineral form (ammonium and nitrate), has a limited supply and can be depleted rapidly in a few crops. The aim of this study was to evaluate the effects of sources and nitrogen rates in four genotypes of *Brachiaria* (*Brachiaria brizantha* cv. Marandu, *Brachiaria brizantha* cv. Piata and two interspecific hybrids of *Brachiaria spp*) on the total and the leaf dry matter production, leaf percentage and leaf: stem ratio. The soil was an Psament-Entisol, coming from a pasture of *Brachiaria decumbens* with low organic matter content. The experiment was conducted in greenhouse, in Nova Odessa, Sao Paulo, from October 2009 to April 2010. The experimental design was in randomized complete blocks and the treatments were arranged in a factorial 4 x 2 x 4, four genotypes of *Brachiaria*, two N sources (urea and ammonium nitrate) and four nitrogen rates (0, 75, 150 or 225 mg dm⁻³) with five replicates, totaling 160 pots with a capacity of 3.34 dm³ of soil. Two cuts were performed in the plants. After the second cut a soil sample was collected from each experimental unit. Two evaluations were performed on plants. The first one 52 days after sowing, and the second 56 days after the first cut. Data were analyzed by the mixed procedure of SAS V. 9.2; average qualitative factors were compared by Tukey test at 5% probability. The degrees of freedom related to N rates (quantitative factor) were decomposed into orthogonal polynomials; to obtain the best equation fits the data. The variables evaluated were positively influenced by N fertilization, which can alter growth patterns and canopy structure. The hybrids H69 and H12 showed structural features in relation to all variables evaluated that positively validate as options for pasture. The ammonium nitrate was more effective than urea for dry matter production in hybrids H69 and H12 in the first cut, and for regrowth of cultivars Piata and Marandu. The results showed that nitrogen is a good tool which in turn contributes positively to increases the growth-related variables, such as dry matter (total, leaves and pseudostems). The hybrids H69 and H12 showed morphological, structural features and production of dry matter that validate them as positive options for pasture use.

Keywords: agronomic evaluation, ammonium nitrate, hybrids, urea, *Brachiaria*