

MORPHOPHYSIOLOGICAL CHARACTERISTICS AND NUTRITION OF ARIES GRASS (*PANICUM MAXIMUM*, JACQ.) WITH NITROGEN FERTILIZATION

CARACTERÍSTICAS MORFOFISIOLÓGICAS E NUTRIÇÃO DE CAPIM ÁRIES (*PANICUM
MAXIMUM*, JACQ.) MEDIANTE A ADUBAÇÃO NITROGENADA

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Low availability of nitrogen (N) is a factor that limits forage production. Pastures are mostly formed of grasses, which need large N amounts to sustain high yields. Additionally, the availability of this nutrient affects the persistence and quality of the forage produced. However, when applying fertilizers containing nitrogen up to 50% can be lost, making their use costly for farmers. N is a highly volatile gas, and urea, widely used in agriculture, contains 46% N. When urea comes in contact with moisture in the soil, hydrolysis occurs due to the precipitation of the enzyme urease, accelerating the transformation of urea into ammonia, which can be lost by volatilization. One of the techniques to increase the efficiency of using urea is application of nitrogen fertilizers along with urease inhibitors, to retard the breakdown of urea so that it becomes incorporated in the soil slowly. One of the inhibitors used is N-(n-butyl) phosphate triamide (NBPT). This study aimed to assess the effect of nitrogen sources and doses on some productive characteristics of Áries grass (*Panicum maximum*, Jacq) to find ways to improve the effectiveness of nitrogen application. The tests were performed at Centro Nutrição Animal e Pastagens – Instituto de Zootecnia in Nova Odessa, São Paulo, from March to August 2012. The experimental design was randomized blocks, with five replications in 2 x 3 factorial setup, where we studied the use of urea and urea containing urease inhibitor (NPBT), in pottery vessels (3.34 dm³). The treatments involved the following rates of N application: 0, 75.0 and 150.0 kg ha⁻¹. The traits analyzed were dry biomass, leaf dry weight, dry weight of pseudostems, number of tillers, leaf area, nitrogen concentration and accumulation, and concentrations of chlorophyll and flavonoids. The data were analyzed using the GLM procedure of the SAS program. The results showed that nitrogen promoted considerable improvements in the plants, contributing to the production of biomass, number of tillers, chlorophyll content and nitrogen accumulation. However, no significant differences were found from the use of urea and urea containing urease inhibitor in the grass investigated in this study.

Key words: nitrogen nutrition, urea, urease inhibitor.

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