

CONSTRUINDO SABERES, FORMANDO PESSOAS E TRANSFORMANDO A PRODUÇÃO ANIMAL

UROCHLOA RUZIZIENSIS INOCULATED WITH PLANT GROWTH-PROMOTING BACTERIA AND N-FERTILIZATION

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Exploring the potential of growth-promoting bacteria in pasture development and maintenance may be an alternative to avoid or minimize degradation, and to restore forage productivity and quality. In this sense, the objective was to evaluate the production of *Urochloa ruziziensis* inoculated with growth-promoting bacteria and N-fertilizer. The experiment was carried out in a randomized block design, in a 4 x 3 factorial arrangement, four bacteria (no bacteria, *Azospirillum brasilense* Ab-v5, *Pseudomonas fluorescens* total and *Pantoea*) and three N-fertilizer levels (zero, 50 and 100 kg N ha⁻¹) with four replications, in plots of 12 m², during the summer of 2016/2017. The inoculums were prepared with final concentration of 10⁸ cells mL⁻¹ and mixed 15 mL per kg seeds. The soil of the experiment was characterized as Caiuá sandstone, sandy texture, with chemical characteristics: pH = 4.7; Ca²⁺ = 1.0 cmol_c dm⁻³; Mg²⁺ = 0.5 cmol_c dm⁻³; Al³⁺ = 0.1 cmol_c dm⁻³; P (Mehlich) = 5.0 mg dm⁻³; K = 0.16 cmol_c dm⁻³; V = 31.56%; O.M. = 2.1%. The levels of phosphorus, potassium and the equivalent of 20 kg of N ha⁻¹ were corrected. The samples were collected with 95% of light interception, using a square with 0.25 m². The data were evaluated in a factorial scheme using an analysis of variance and the means between the treatments were compared by the Tukey test at 5%. No effect of treatment and no interaction between bacteria and nitrogen fertilization were observed in dry matter (DM) production. However, there was a cut effect, the second cut produced 8248 kg DM ha⁻¹, surpassing the first cut (6784 kg DM ha⁻¹) in 21% and the third one (7478 kg DM ha⁻¹) in 10%. Although there were no differences between treatments, in the first cut *Pantoea* produced 12% (7099 kg DM ha⁻¹) more than in the control treatment (6289 kg DM ha⁻¹), similar to the production of with 100 kg N ha⁻¹ (7051 kg DM ha⁻¹). In the second cut, *Pseudomonas* and *Pantoea* provided on average 5% more forage mass than in the control. In the third cut, *Pseudomonas* produced 7614 kg DM ha⁻¹, *Pantoea* 7739 kg DM ha⁻¹ and *Azospirillum* 7707 kg DM ha⁻¹, while the production of the control was 6935 kg DM ha⁻¹. It is concluded that inoculation benefits the forage mass production of Ruziziensis grass.

Keywords: Nitrogen fixation in non-legumes, Forage mass, Sustainability.

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