

CONSTRUINDO SABERES, FORMANDO PESSOAS E TRANSFORMANDO A PRODUÇÃO ANIMAL

NITROGEN DOSES AFFECTING Mombaça GRASS MORPHOGENETIC CHARACTERISTIC UNDER GRAZING

Denise Baptaglin MONTAGNER^{*1}, Valéria Pacheco Batista EUCLIDES¹, Caryze Cristine Cardoso SOUSA², Alexandre Romeiro de ARAÚJO¹, Leandro Francisco BARBOSA², Daniele Lopes de SOUZA³

*corresponding author: denise.montagner@embrapa.br

¹Embrapa Gado de Corte, Campo Grande, Mato Grosso do Sul, Brasil

²Universidade Federal da Grande Dourados, Programa de Pós-Graduação em Zootecnia, Dourados, Mato Grosso do Sul, Brasil

³Bolsista PIBIC/CNPq/EMBRAPA. Graduanda em Zootecnia, Universidade Católica Dom Bosco, Campo Grande, Mato Grosso do Sul, Brasil.

The *Panicum maximum* cv. Mombaça is the most productive tropical grass. For this reason, it is used on intensive production systems submitted to high stocking rate and inputs uses, like nitrogen, irrigation, etc. The nitrogen use implies increases on biomass production due to its effects on morphogenetic plants characteristics. The objective of this work was evaluating morphogenetic and structural responses of mombaça grass receiving 100, 200 or 300 kg ha⁻¹ of nitrogen in form of urea. It was used the randomized block design, with three treatments and four replicates (six paddocks of 0.25 ha each treatment), totaling 4.5 ha. Pre-grazing condition was defined by sward height (80 - 90 cm) and post-grazing conditions by residual sward height (45 - 50 cm). Animals were used as grazers with the aim of reach the post-grazing condition. Sward height and herbage mass were evaluated on pre and post-grazing condition. There were marked 10 tillers by paddock to evaluating pseudo-stem height, leaf appearance and elongation, and senescence rate. The leaf appearance (0.059 leaf tiller⁻¹ day⁻¹), leaf elongation rate (1.83 cm tiller⁻¹ day⁻¹) and stem elongation rate (1.90 cm tiller⁻¹ day⁻¹) were lower when mombaça grass received 100 kg ha⁻¹ of nitrogen. Stem elongation rate was higher (4.08 cm tiller⁻¹ day⁻¹) when 300 kg ha⁻¹ of nitrogen was used. The leaf life time was higher in 100 kg ha⁻¹ (117.2 days), smaller in 200 (90.4 days) and intermediary in 300 kg ha⁻¹ of nitrogen (109.2 days). The tillers population density (285.3 tillers m⁻²) and the number of live leaves (5.52 leaves tiller⁻¹) were lower in 100 kg ha⁻¹ dose, but were similar between 200 and 300 kg ha⁻¹ of nitrogen. The final leaf size and leaf:stem relation did not differ by nitrogen doses (p<0.05). The senescence leaf rate was higher (1.09 cm tiller⁻¹ day⁻¹) when mombaça grass received 100 kg ha⁻¹ of nitrogen. Despite of effect of nitrogen doses on morphogenetic characteristics, pre (5,670 kg ha⁻¹ dry matter(DM)) and post-grazing (3,544 kg ha⁻¹ DM) herbage mass have no difference among treatments (p<0.05). The use of nitrogen doses can affect by different ways the morphogenetic characteristics. It seems that, the grazing management based on sward target control (sward state) was efficient alternative to promote the best use of nitrogen doses productive potential.

Keywords: leaf appearance, leaf elongation, stem elongation, tiller population

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