



Growth patterns of mulato grass subjected to strategies of rotational stocking management

Veridiana A. Limão ^{*1}, Leandro M. Barbero ¹, Salim J. de S. Júnior ², Márcia C. T da Silveira ³
Karine da S. Pena ⁴, Sila C. da Silva ⁵, Carlindo S. Rodrigues ⁶

^{*1}Faculty of Veterinary Medicine, Federal University of Uberlandia, Block 2T, Ceara Street,
Uberlandia, MG, Brazil

²Universidade Federal do Pará, Altamira, PA

³Embrapa Pecuária Sul, Bagé, RS

⁴Universidade Federal de Viçosa, Viçosa, MG

⁵Universidade de São Paulo, Piracicaba, SP

⁶Instituto Federal de Educação, Ciência e Tecnologia Baiano, Ilhéus, BA

*verilimao@gmail.com

Use of forage grasses on pastures without taking into account basic information related to their pattern of growth and development results in lack of knowledge regarding their morphophysiological limits to grazing, which may result in degradation of large areas of cultivated grasslands. Against that background, the objective of this study was to evaluate the growth patterns of mulato grass subjected to strategies of rotational stocking management, aiming at providing important physiological interpretations for planning and structuring grazing management practices. Treatments corresponded to combinations of two post-grazing (post-grazing heights of 15 and 20 cm) and two pre-grazing conditions (95% and maximum canopy light interception during regrowth – LI 95 % and LI Max), and were allocated to experimental units (1200m² paddocks) according to a 2x2 factorial arrangement and a randomized complete block design, with four replications, from January 2008 until April 2009. The following response variables were studied: sward leaf area index (LAI), crop growth rate (CGR), net assimilatory rate (NAR), relative growth rate (RGR), leaf area ratio (LAR), specific leaf area (SLA) and leaf weight ratio (LWR). During summer 1, treatment with LI Max and 20 cm post-grazing heights resulted in the largest value of CGR, consequence of large remaining LAI associated with the post-grazing height of 20 cm and of the long grazing interval associated with the pre-grazing target of LI Max. CGR decreased throughout autumn/winter/early spring and late spring. During summer 2, treatment with LI 95 % and 15 cm post-grazing heights showed larger values of CGR than treatments LI Max and 15 cm post-grazing heights and LI Max and 20 cm post-grazing heights, consequence of larger values of RGR and residual LAI of swards managed at LI 95% relative to those managed at LI Max. NAR and LWR varied only with season of the year. Except during summer 1, swards managed at LI 95% showed larger values of LAR than those managed at LI Max, a result of morphological adjustments mainly characterized by variations in SLA. Overall, grazing interval was more effective than grazing severity in interfering with most of the response variables studied. Therefore, adequate management of mulato grass under rotational stocking conditions correspond to a pre-grazing height of 30 cm (equivalent to the pre-grazing target of LI 95%) and post-grazing height of 15 to 20 cm.

Keywords: *Brachiaria*, Grazing management, Plant morphophysiology, Rotational stocking

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