

THEME 5 | GRASSLANDS AND FORAGES**Agronomic characteristics and morphological composition of seed-propagated elephant grass genotype at different ages of regrowth**

Gabriela V. Bedeschi^{*1}, Mirton Morenz², Francisco J.S. Lédó², Juarez C. Machado², Antônio

V. Pereira², Fernando C.F. Lopes², Guilherme S. Mostaro³, João B.S. Oliveira¹

¹Animal Science Institute/Federal Rural University of RJ; ²Embrapa Dairy Cattle National Research Center; ³Federal University of Viçosa

^{*}Master's degree student – gabrielavb_@hotmail.com

Roughage supplementation is essential to ensure the forage supply to animals throughout the year. Tropical grasses are widely used as roughage supplements, either in green chopped or silage form, with highlight to elephant grass, by the high biomass yields and good quality forage. Embrapa's elephant grass breeding program works on a new seed-propagated *Pennisetum purpureum* genotype (CNPGL-2012-1), as a way to facilitate the deployment of crop areas, as well as, reducing the deployment costs. Thus, the objective of this study was to evaluate the agronomic characteristics and morphological composition of elephant grass genotype CNPGL-2012-1, to define its harvest management for silage production. Four regrowth ages (75, 90, 105 and 120 days of regrowth) were studied using a randomized block design, with five replications. Were evaluated dry matter content (DM), dry matter production (DMP), plant height, leaf:stem ratio (L:S) and the proportions of leaves (PL) and senescent material (PSM) in relation to total biomass (DM basis). The data were submitted to analysis of variance using the procedure for mixed models, and the means studied by regression ($P \leq 0.05$). For the DM content, there was a linear ($P < 0.001$) and quadratic ($P = 0.023$) response, with mean values of 13.5, 16.6, 19.4 and 19.7% DM, respectively, for 75, 90, 105 and 120 days of regrowth. These values indicate the possibility of obtaining good quality silage after 90 days, considering that DM content is the main factor that influence in tropical grass silage quality. The DMP, as well as plant height, presented positive linear response as a function of the regrowth ages. The mean values for DMP by cutting were 7.9, 11.2, 15.1 and 17.0 t ha⁻¹, respectively, for 75, 90, 105 and 120 days of regrowth, showing tendency to stabilization from 105 days. Increases in DMP of 41.5%, 34.5% and 13.0% were observed in the intervals of 75-90 days, 90-105 days, and 105-120 days, respectively. Plant height had mean increase of 1.6 cm day⁻¹. The PL, as well as the L:S ratio, presented negative linear response ($PL = 67.5 - 0.3997 \cdot \text{age}$, $r^2 = 81.8\%$; $L:S = 1.33 - 0.0089 \cdot \text{age}$, $r^2 = 82.3\%$). It was observed a reduction in PL, in the magnitude of 0.4% per day, with mean values of 38.4, 30.7, 25.0 and 20.2%, for 75, 90, 105 and 120 days of regrowth, respectively. The PSM presented quadratic response ($PSM = -65.6 + 1.407 \cdot \text{age} - 0.0065 \cdot \text{age}^2$, $r^2 = 88.7\%$), being this behavior due to the significant increase in the senescent material from 75 to 90 days (3.1 to 8.3%), with smaller increases to the others ages of regrowth, being estimated the maximum point of 10.5%, at 108 days. These results indicate that, for silage production, the harvest should be performed between 90 to 105 days of regrowth.

Keywords: *Pennisetum purpureum*, roughage supplementation, tropical grass

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