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MORPHOGENETIC AND STRUCTURAL CHARACTERISTICS OF *PANICUM MAXIMUM* CULTIVARS, MANAGED UNDER ROTATIONAL STOCKING

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Introduction: Understanding the growth dynamics of new forage cultivars is fundamental to support the elaboration of pasture management protocols. Recently introduced forage grasses such as BRS Zuri and BRS Quênia have a promising future for pasture animal production, but require detailed studies on the leaf growth traits and shoots which may be important in developing appropriate strategies of grazing management. The present study aimed to evaluate the morphogenetic and structural traits of *Panicum maximum* cvs. BRS Zuri and BRS Quênia, during the rainy season of two consecutive years.

Material and methods: The experiment was carried out at Embrapa Dairy Catlle, in Coronel Pacheco, MG, Brazil, on pastures of *P. maximum* cvs. BRS Zuri and BRS Quênia, divided into 830 m^2 paddocks and managed under rotational stocking. The experimental design was randomized blocks into subdivided plots scheme, with three replications, where the cultivars were allocated in the plots, and the years, in the subplots. Morphogenetic and structural variables were evaluated during the period of greatest rainfall in the region (January-March), during two years (2017 and 2018). For this, three tillers were marked per clump and two clumps per replication (paddock). From the length of expanded, emergent and senescent leaves and from the length of stems, it was possible to calculate the leaf elongation rate (LER - mm/tiller/day), leaf appearance rate (LAR – leaves/tiller/day), stem elongation rate (SER - mm//tiller/day), leaf senescence rate (LSR - mm/tiller/day) and phyllochron (days/leaf). It was also possible to calculate the leaf length (LL - cm), the leaf life span (LLS - days) and the number of total (NTL) and live (NLL) leaves per tiller. The data were submitted to analysis of variance, with the aid of the

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statistical program SISVAR, to verify the influence of the cultivar, year and their interactions. The estimated averages were compared with Tukey's test at 5% of probability.

Results and Discussion: The LER was influenced ($P < 0.01$) by cultivar x year interaction. For BRS Zuri there was a difference between years (98.9 x 133.6 mm/tiller/day, for the first and second years, respectively), while for BRS Quênia there was no year effect (mean value of 107.3 mm/tiller/day). The Zuri cultivar presented higher LER than Quênia in the second year (133.6 x 104.9 mm/tiller/day), but no difference was observed between cultivars in the first experimental year. As a consequence of the higher LER, especially in the second year, the Zuri presented larger leaf blades ($P < 0.01$) when compared to Quênia (92.1 x 79.1 cm, for Zuri and Quênia, respectively). There was no significant effect ($P > 0.05$) of the factors studied on the variables LAR, phyllocron and LSR, which presented mean values of 0.1279 leaves/day, 8.64 days/leaf and 1.52 mm/tiller/day, respectively. The SER varied ($P < 0.01$) only with the cultivars. BRS Quênia presented higher SER (6.93 mm/tiller/day) than BRS Zuri (3.50 mm/tiller/day), which can be attributed to its early flowering, still in late summer, which induces the stem elongation. The LLS was higher ($P < 0.05$) in the second (47.9 days) than in the first (42.5 days) year. For the NTL and NLL no significant effects of the factors studied were observed, with mean values of 5.82 and 5.61 leaves/tiller, respectively.

Conclusions: The similarity in the most of morphogenetic rates and structural traits reveals that the cultivars show similar growth dynamic. However, the BRS Zuri stands out for the higher leaf elongation rate and BRS Quênia for the more intense elongation of stems. Management strategies that contribute to the elimination of the apical meristem in BRS Quênia in the mid-summer may control the accentuated stem elongation, favoring the pasture structure.

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