



Morphogenetic and structural characteristics of *Brachiaria brizantha* cv. Xaraés subjected to levels of shading

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To evaluate the response of *B. brizantha* (*Urochloa brizantha*) cv. Xaraés to three shading levels (0, 20 and 50%), an experiment was conducted at Embrapa Rondônia in Porto Velho-Brazil; in randomized complete block design with replications, three blocks and five replications. The dynamics of leaf development followed the methodology of marked tillers, if conducting weekly evaluations, for 36 days elapsed from the beginning of September and early October 2011, when the determined condition of the leaves (expanding, expanded in senescence and senesced), and told, we measured the length of leaf blade and heights sheath and tiller. From this information we determine the morphogenetic traits: rates the of leaves expansion ($LER\text{-cm of laef.tiller}^{-1} \cdot GD^{-1}$), senescence ($LRS\text{-cm of laef.tiller}^{-1} \cdot GD^{-1}$) and appearance ($LAR\text{-laef.tiller}^{-1} \cdot GD^{-1}$), phyllochron ($PHILO\text{-GD.laef}^{-1} \cdot tiller^{-1}$), leaf lifespan ($LLS\text{-GD.laef}^{-1} \cdot tiller^{-1}$) and rate of stem elongation ($RSE\text{-cm of stem.tiller}^{-1} \cdot GD^{-1}$); as well as structural characteristics: total amount ($TL\text{-n}^{\circ} \text{laves.tiller}^{-1}$) and green leaves ($GL\text{-n}^{\circ} \text{laves.tiller}^{-1}$), leaf blade length ($LBL\text{-cm.laef}^{-1}$) and height of tillers ($HT\text{-cm.tiller}^{-1}$). The means were submitted to analysis of variance and compared by Tukey test ($P \leq 0.05\%$), and regression analysis. The LLS and RSE were influenced by shading, the more morphogenic attributes remained constant across this factor. The behavior of LLS was erratic, under intense shade leaves lasted longer than under moderate shade, both did not differ from those kept in full sun, this trait is not set to a response model to this factor. The RSE was greater in bright sunlight restriction regarding moderate and without restriction ($0.879 \times 1.168 \text{ cm of stem.tiller}^{-1} \cdot GD^{-1}$), which did not differ. The response to this characteristic of this factor was given by $RSE = 0.259 + 0.0019 \times$ ($P \leq 0.05$ and $R^2 = 68$). All structural attributes were influenced by the level of shading. Though with low determination coefficients, their responses to this factor ($P \leq 0.05$) were given by: $GL = 4.3 + 0.0109$ ($R^2 = 35$); $LBL = 36.6 + 0.164 \times$ ($R^2 = 54$) and $HT = 68.9 + 0.294 \times$ ($R^2 = 49$). Demonstrating that the grass assumed adaptation strategies the condition of the shaded, which seek maximize interception and absorption of solar radiation, through the allocation and arrangement of their photosynthetic apparatus (f.e. increasing the height of tillers and leaf length), and increasing the photosynthetic tissue (f.e. maintaining a higher amount of green leaves). What gives the Xaraés grass potential for use in silvopastoral and integrated crop-livestock-forest systems.

Keywords: forage, light intensity, integrated crop-livestock-forest, silvopastoral systems.

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