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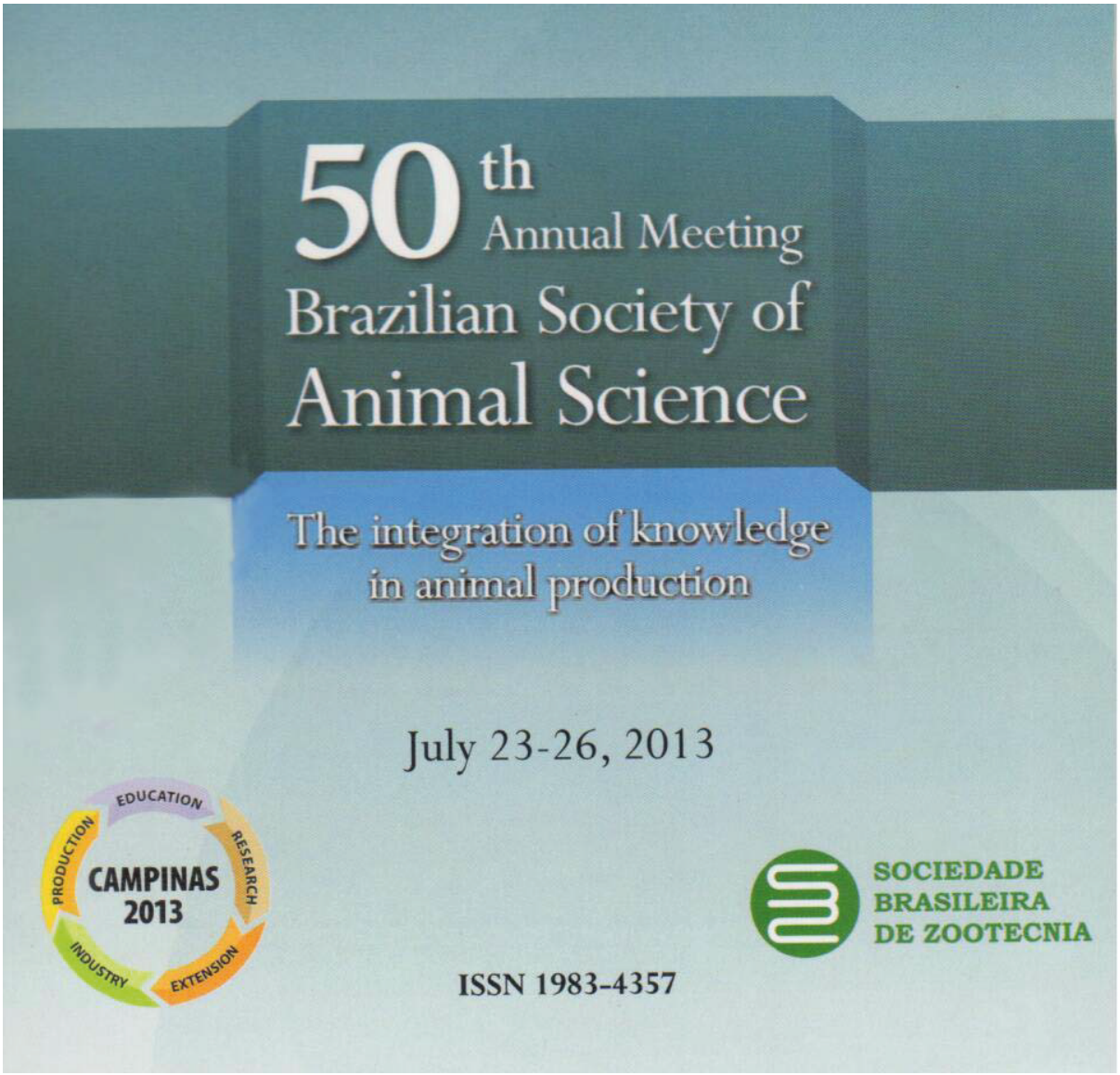

Effect of shading on the morphogenetic and structural traits of *Brachiaria ruziziensis*

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For evaluating the shading effect on *Brachiaria ruziziensis* morphogenetic and structural traits, a trial was carried out at the Experimental Field of Embrapa Rondônia in a completely randomized design with 15 replications (tillers) for testing three shading levels: 0, 20 and 50%. The dynamics of leaf development followed the methodology of marked tillers. Weekly evaluations were done during 36 days from the beginning of September to early October 2011. The condition of the leaves (in expansion, expanded, in senescence and senesced), length of leaf and heights of sheath and tiller were measured. From this data, the following morphogenetic traits were determined: rates of leaves in expansion (LER-cm of leaf.tiller^{-1}.GD^{-1}), in senescence (LRS-cm of leaf.tiller^{-1}.GD^{-1}) and in appearance (LAR-leaf.tiller^{-1}.GD^{-1}); phyllochron (PHILO-GD.leaf^{-1}.tiller^{-1}), leaf lifespan (LLS-GD.leaf^{-1}.tiller^{-1}) and rate of stem elongation (RSE-cm of stem.tiller^{-1}.GD^{-1}). Also, structural characteristics were estimated: total (TL-n° of leaves.tiller^{-1}) and green (GL-n° of leaves.tiller^{-1}) leaves, leaf blade length (LBL-cm.laef^{-1}) and height of tiller (HT-cm.tiller^{-1}). Means were submitted to analysis of variance and compared by Tukey test (P 0.05%), and regression analysis. With exception of LLS (mean of 1.585 GD.leaf^{-1}), all morphogenetic characteristics of *B. ruziziensis* were influenced by shading levels following different models of response ($P \leq 0.01$): LER = 0.001 x + 0.088; LSR = 0.0006 x + 0.040; RSE = 0.0027 x + 0.1541; LAR = 0.00002 x + 0.0034; PHILO = -1.319 x + 289; with coefficients of determination (R^2) of 80, 44, 89, 74, 71%, respectively. Consequently, with exception of LBL (mean of 27 cm.leaf^{-1}), all the other structural attributes showed responses similar to those of morphogenetic traits. The adjusted models ($P \leq 0.01$) were: GL = 0.0387 x + 5.3 (R^2 = 90) and HT = 0.6947 x + 42.1 (R^2 = 82). These results demonstrated that this grass has adaptation strategies to different conditions of shading, which maximize the interception and absorption of solar radiation by allocating and rearranging its photosynthetic apparatus (by increasing the height of tillers) and the photosynthetic tissue (by maintaining a higher amount of green leaves). For this reason, *B. ruziziensis* should be indicated for cultivating in silvopastoral and integrated crop livestock forest systems.

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

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