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Effects of Artificial Shading on the Morphology of Forage Grasses in the Brazilian Semi-Arid Region

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Modern Crop-Livestock-Forestry Integration systems encompass various commercial activities, exploiting different vertical strata both in the soil and above ground, providing a productive and sustainable alternative for the agricultural sector. Thus, the species composing the pasture must develop adequately under shaded conditions. In the Brazilian semi-arid region, the conditions are characterized by high temperatures and low humidity, necessitating an evaluation of the development of forage grass cultivars under different conditions for optimal cultivation and management of these pastures. The effects of shading on the morphology of the following forage grass cultivars were evaluated: *Panicum maximum* cv. Aruana, *Brachiaria brizantha* cv. MG4, *Brachiaria* BRS Ipyporã, and *Panicum maximum* BRS Tamani. The experiment was conducted at the Agricultural Sciences Campus of the Federal University of the São Francisco Valley, in pots containing Neossolo quartzarênico class soil, where the cultivars were sown. There were two treatments: shaded and full sun. The pots receiving the shaded treatment were placed inside a nursery with 50% shading screens, blocking 50% of the light, while those receiving the full sun treatment were placed in an uncovered area adjacent to the nursery. The pots were irrigated daily by micro-sprinklers, and after 30 days, data on plant height, stem length, leaf length, stem diameter, and the number of fully expanded leaves per tiller were collected. The data were subjected to Tukey's test at a 5% probability level. There was no significant difference in plant height averages, but a significant difference was observed in the stem length averages for the BRS Ipyporã cultivar, which varied between 6 cm in the full sun treatment and 18.83 cm in the shaded treatment. This may have occurred due to the etiolation of the plants caused by the lack of light in shaded conditions. There were no significant differences in leaf length, stem diameter, or the number of leaves. In conclusion, shading did not significantly affect the morphological characteristics of the evaluated cultivars initially, and therefore did not compromise their development in potential ILPF systems.

Key words: Agroforestry, Shading effects, Forage, Semi-arid, Plant morphology