



BRS Paiaguás Grass Performance in different pastures systems in the Cerrado Region

Giovana Alcantara Maciel^{*1}, Leonardo Oliveira Fernandes², Nínive Jhors Carneiro Reis³, Marcia Ingrid de Paiva³, Luiz Adriano Maia Cordeiro⁴

¹Animal scientist, Researcher – Embrapa Cerrados, Planaltina - Brazil.; ²Animal scientist, Researcher – Epamig Oeste, Uberaba- Brazil, ³Animal Scientist, ⁴Agronomist, Researcher – Embrapa Cerrados, Planaltina - Brazil

¹*Animal scientist, Researcher: *giovana.maciell@embrapa.br

The objective of the experiment was to evaluate the effect of two pasture systems grazed by cattle on canopy height, forage mass and volumetric density of *Urochloa brizantha* BRS Paiaguás in the Cerrado Region. The experiment was conducted in the Experimental Farm of ABCZ – during the execution of the Quality Meat Program, located in Uberaba, Minas Gerais State, Brazil (19° 45' 56" of South Latitude and 47° 57' West Longitude, at an altitude of 774 m). The experimental period lasted from June of 2021 to March of 2022. In the warm months the mean temperature is 23.2° C, while in the cool months, the mean temperature is 19.4° C. The annual rainfall is 1685 mm and the mean humidity of the air is 71%. The grazing method was rotational stocking and forage allowance of 6 kg of dry mass 100 kg-1 of live weight day-1 during dry and wet season based on height and availability of dry grass mass. The treatments were: 1) SPS - Silvopastoral System with *U. brizantha* BRS Paiaguás integrated with eucalyptus trees (*Eucalyptus citriodora* and *E. cloeziana*) planted in 2013, in triple rows spaced 30 to 35 m and 1.5 m among trees, east-west direction, and pastures seeded in 2015/2016 crop season intercropped with maize for silage; and, 2) FS – Full Sun pastures of *U. brizantha* BRS Paiaguás, intercropped with maize for silage in 2019/2020, with eighteen repetitions. Both treatments received topdressing nitrogen fertilization of 150 kg ha⁻¹ split in three times during the wet season. To maintain planned forage allowance samplings of forage mass in the pre-grazing were made. The canopy height (cm) and forage mass were randomly sampled in 6 sites of 1 x 1 m at pre-grazing (kg DM ha⁻¹). The volumetric density of forage (kg DM cm⁻¹.ha⁻¹) was estimated based in forage mass and canopy height. During experimental period 7 grazing cycles were conducted: 10/06/2021–22/08/2021, 23/08/2021–21/10/2021, 22/10/2021–11/11/2021, 12/11/2020–07/12/2021, 08/12/2021–11/01/2022, 12/01/2022 –07/02/2022 and 08/02/2022 –12/03/2022, respectively for cycles 1, 2, 3, 4, 5, 6 and 7. The experimental design was completely randomized with split plots repeated in time and the means were submitted to analysis of variance with Scott-Knott test at 5% probability. Canopy height was 8% higher in the SPS treatment (P<0.05), this behavior is due to the stretching in the grass caused by shading from the trees. Under these conditions, the plant grows in search of photosynthetically active radiation. However, there was a decrease of 15% in dry matter (P<0.05) in the SPS compared to grass established in FS treatment. The dry mass availability (kg ha⁻¹ DM) was higher in the SPS (4.936 + 134.9) compared to that observed in FS (4.397 + 134.9). Thus the forage density expressed in kg cm⁻¹ ha⁻¹ DM was not different among the systems evaluated. The loss of productivity of pasture intercropped with trees in integrated systems in relation to single pasture can be avoided according to the arrangement and amount of trees planted per hectare, which should allow the maximum input of solar radiation.

Keywords: Silvopastoral System, shading, pasture performance.