

PRODUCTION OF MIXED PASTURES OF MARANDU PALISADEGRASS AND STYLOSANTHES SPP. SUBMITTED TO SHADE

PRODUÇÃO DE PASTOS CONSORCIADOS DE CAMPIM MARANDU E STYLOSANTHES SPP SUBMETIDOS AO SOMBREAMENTO

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Abstract

This study evaluated the productivity of mixed canopies of *Brachiaria brizantha* cv. Marandu palisadegrass and *Stylosanthes spp* cv. Campo Grande at different shading levels during the dry season in the Cerrado biome of Midwest Brazil. The trial was carried out at the Experimental Farm of the Federal University of Mato Grosso do Sul, Brazil, in Terenos, Mato Grosso do Sul. The experimental design used was completely randomized blocks. Plots of 30 m² (5 x 6 m) were established. The shading conditions (0, 30 and 50%) were obtained using shades arranged over the experimental plots. The light interception (LI) and leaf area index (LAI) of the canopies were measured with an AccuPAR LP-80 canopy analyzer. Pasture production was estimated through the total forage mass (TFM), and botanical composition was determined through grass forage mass (GM) and legume forage mass (LM). Morphological composition was also estimated through grass and legume leaf mass (gLM and ILM, respectively), grass stem mass (gSM), legume stalk mass (ISM), grass dead material mass (gDM and IDM, respectively), grass and legume green mass (gGM and IGM, respectively), and leaf stem or stalk ratio (L:S) of legume and grass. These evaluations were performed by collecting samples using frames (0.25m²) and cutting the forage close to the ground. Samples were weighed and separated for botanical and morphological composition, later weighed and placed in an oven at 55 °C for 72 hours to obtain dry matter. The 50% shade provided greater LI ($P<0.05$; 77.4%) in relation to 0 and 30% (71.6 and 73.1%, respectively). The LAI did not vary between treatments, with averages of 1.92 cm² ($P>0.05$). There was no effect of canopy height between shading levels ($p>0.05$), showing an average height of 47.1 cm between treatments. The 50% shade resulted in higher TFM and GM ($P<0.05$; 9,596 and 9,153 kg.ha⁻¹, respectively) compared to the averages of other treatments (7,685 and 8,048 kg.ha⁻¹ and, 7,226 and 7,491 kg.ha⁻¹, respectively). There was no effect of shading levels on LM, which averaged 487 kg.ha⁻¹. There was no difference in gLM, gSM and leaf:stem ratio ($P>0.05$). The gDM was highest at 30% ($P<0.05$; 1052 kg.ha⁻¹), intermediate at the 50% (903 kg.ha⁻¹) and lowest at the 0% shading level (760 kg.ha⁻¹). The MVF was higher with 50% shade ($P<0.05$; 8693 kg.ha⁻¹) in relation to the average of the other treatments (7,226 and 6,996 kg.ha⁻¹, respectively). There was no effect of shading for the legume morphological composition variables ($P>0.05$). The greater shading promoted higher LI, TFM, and GM without impacting the legume population in the dry season in the Cerrado biome.

Keywords

Brachiaria brizantha, light interception, botanical composition, *Stylosanthes*.