

***Brachiaria* genotypes yield under integrated crop-livestock-forest system in the Brazilian Cerrado**

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Introduction

To better explore the production potential of integrated systems, information is needed about forage behavior under such systems. In this context, this work addressed dry matter yield of six *Brachiaria* genotypes under different levels of shading in an integrated crop-livestock-forest system in the Brazilian Cerrado.

Material and Methods

The experiment is located at Embrapa Beef Cattle, Campo Grande-MS, Brazil (20°27'S and 54°37'W; mean altitude of 530 m). Experimental design was randomized blocks in split split plots with two replicates. Plots corresponded to the forages: *Brachiaria brizantha* cultivars Marandu, Paiaguás, Piatã, Xaraés, *B. brizantha* access B4 and *Brachiaria* hybrid BRS RB 331 Ipyporã. Split plots corresponded to sample points (A, B, C, D, E and F, with different levels of shading) and the split split plots corresponded to harvesting period in 2014 (February, April and June). The system is based on 22 m distant single rows of eucalyptus trees (227 trees ha⁻¹) planted in 2009. Pastures are kept for three years, followed by one season of soybeans crop. As reference, a similar system with no trees was also established. Forages evaluated were seeded in October 2013, in 20 x 1.5 m plots with 0.25 m space between grass rows, receiving 50 kg ha⁻¹ NPK 0-20-20 at seeding and 90 kg ha⁻¹ after the second forage harvest. Seeding rates were adjusted for 60 pure viable seeds ha⁻¹. Forage samples were taken at five equidistant points (A, B, C, D and E) between eucalyptus rows. Point F was located in the reference system. Photosynthetically active radiation (PAR) was measured in the morning and in the afternoon using a ceptometer (Accupar, model PAR-80). Plants were cut close to the ground, weighted and dried in forced-air oven at 65°C until constant weight was reached. Analysis of variance was performed and means were compared through Tukey test (p<.05).

Results and Conclusions

PAR in grass canopy at sampling points A, B, C, D, E and F averaged 302; 599; 538; 591; 365 and 1,027 $\mu\text{m m}^{-2} \text{s}^{-1}$, respectively. Grasses performed similarly for all harvests, with higher yields at point F and direct relationship between the yield and light incidence (Table 1). There was no statistical difference in dry matter yield of the different grasses, averaging 2,541 kg ha⁻¹.

Table1. Dry matter yield (kg ha⁻¹) of *Brachiaria* genotypes for three harvest periods in 2014 on sampling points with different levels of shading.

| Harvest / Point | A | B | C | D | E | F |
|-----------------|-----------|-----------|-----------|-----------|-----------|----------|
| February | 838 bB | 1,418 abB | 1,846 abB | 1,263 abB | 1,109 abB | 2,378 aC |
| April | 2,330 cdA | 4,087 bA | 3,513 bcA | 2,734 cdA | 1,998 dAB | 5,594 aA |
| June | 2,582 bA | 3,039 abA | 2,459 bAB | 2,005 bAB | 2,221 bA | 4,331 aB |

Means followed by the same letter, lowercase in lines and uppercase in columns, do not differ by Tukey test (p>.05).

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Embrapa, Unipasto.