

## Forage and wood production in the sixth year of an integrated crop-livestock-forest system in a cerrado region of Minas Gerais

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### Introduction

The integrated crop-livestock-forest (ICLF) system has been used to recover degraded areas of crop and pastures in Brazil. These practices contribute with significant increases in carbon sequestration and reduction of emissions of greenhouse gases, promoting biodiversity conservation and low-carbon economy.

### Material and Methods

The experiment was carried out at Santa Rita Experimental Farm/EPAMIG, Prudente de Morais, MG, Brazil, (19°27'15" S, 44°09'11 W, 732 m asl) in a degraded pasture of signal grass (*Urochloa decumbens*) recovered in 2008 using an ICLF with eucalyptus and corn. The experimental design was a randomized complete block in a split plot, with three replications. The eucalyptus arrangements double rows (3 x 2) + 20 m; (2 x 2) + 9 m and single rows (9 x 2m) were distributed in the main plots, with 20 and 9 m between rows and 2 m between tree spacing. Eucalyptus clones GG100, I144 and VM 58, were tested in the subplots. Accumulated forage dry matter yield (DMY) from November/14 to April/15 (three grazing period) and eucalyptus height, diameter at breast height (DBH) and Smalian volume in the sixth year of the ICFL was used for statistical analyses.

### Results and Conclusions

The forage DMY accumulated from December to April in the (3 × 2) + 20 m eucalyptus arrangement was three times higher than in the (2 × 2) + 9 m and 9 x 2 m structural arrangements (Table 1). The proximity between eucalyptus rows may have resulted in more shading of the forage, contributing for the reduction of pasture productivity in these locations. Also the climate changes at this year with a lower rainy season contributed with a reduction on forage production. There was no difference for forage production in the understory of clones. The double lines provided greater heights. The arrangement (3 x 2) + 20 m and 9 x 2 m had higher diameter and volume per plant.

**Table 1** Accumulated dry matter yield (DMY) of *Urochloa decumbens*, eucalyptus height (HT), diameter at breast height (DBH) and plant volume, and plant number in the sixth year of a ICLF

Arrangement	DMY (kgha <sup>-1</sup> )	HT (m)	DBH (cm)	Volume/plant (m <sup>-3</sup> )	Plant ha <sup>-1</sup>
(3 x 2)+20 m	1764.00 a	26.95 a	19.30 a	0.033 ab	434
(2 x 2)+9 m	552.69 b	27.69 a	16.85 b	0.027 b	909
9 x 2 m	6679.38 b	24.33 b	19.41 a	0.036 a	556

<sup>1</sup> Means followed by the same lower case on the column do not differ by Tukey's test at 5%

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