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## INTERCROPPING MAIZE BRACHIARIA MODALITIES FOR SOIL PROTECTION

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In Brazil central region, the grain production is based on the succession soybean and maize off-season. Soybean is grown in the spring-summer and maize in the autumn-winter. Brachiaria inclusion in this production system increases the soil cover, with improvements in soil physical, chemical and biological properties. The objective was to evaluate the biomass and maize grain yield in different intercropping modalities. The experiment was conducted under no-tillage in the fall-winter 2013 year, in Dourados, Mato Grosso do Sul, Brazil. The experimental design was a randomized blocks with six replications. Six treatments were evaluated by single and intercropped maize combination and three row maize spacing (reduced - 0.45 m, conventional - 0.90 m and mixed - 0.45 and 0.90 m). The Brachiaria ruziziensis was sown in the maize row in the reduced spacing, and, inter-row maize in the conventional and mixed spacing. At maize flowering maize and Brachiaria biomass, and in the maize maturation the grain yield were evaluated. Data were submitted to analysis of variance and means were compared by Tukey test at 5% probability. The maize dry biomass was greater in single maize (16,831 kg ha<sup>-1</sup>) and not different of the reduced spacing intercropping (15,856 kg ha<sup>-1</sup>). The dry biomass Brachiaria was greater in the mixed spacing (1,624 kg ha<sup>-1</sup>) as compared to conventional or reduced spacing (794 kg ha<sup>-1</sup>). The grain yield was higher in the reduced spacing in both the single maize (9433 kg ha<sup>-1</sup>) as intercropped (8287 kg ha<sup>-1</sup>). The perennial forage cultivation enables increased production of residue to soil cover after the maize harvest.

**Key-words:** Maize plant arrangement; no-tillage; cover crop.

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