

ATTRIBUTES OF CHEMICALS AFTER SOLO YEARS CORN WITH BRACHIARIA RUZIZIENSIS INTERCROPPING, IN PONTA PORÃ, MS, BRAZIL

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In Brazilian central region, the base grain production is on the succession soybean and off-season maize. The winter corn with perennial forage intercropping produces high amounts of plant residues in no-tillage; as a result, it may increase the soil chemical properties. The aimed of this study was to evaluate the soil chemical properties after years of winter corn intercropping with *Brachiaria ruziziensis*. The experiment was conducted at the experimental field of EMBRAPA Western Agriculture in Ponta Porã, MS, 2016/2017 season crop, Dystroferric Red Latosol (Oxisol). The experimental design was a randomized block design with six treatments: T1 - single corn, T2 - Intercropping in 2011, T3 - Intercropping in 2011 to 2013, T4 - Intercropping in 2011 to 15, T5 - Intercropping in 2013 to 15, T6 - Intercropping in 2015, in four replications. Soil samples were collected during soybean flowering period, for chemical analysis macronutrients, micronutrients and soil moisture, in the layers 0.0 to 0.10 m and 0.10 to 0.20 m. The data were subjected to ANOVA and average were compared by Tukey's test at ($p < 0.05$). The layer 0.10 - 0.20 m presented higher moisture (21.5%) relative than the layer of 0.0 - 0.10 m. All chemical attributes presented in the layer 0.0 to 0.10 m be greater than 0.10 - 0.20m, excepted Fe, as was more in the 0.10-0.20 layer. T4 show higher total carbon (29.3%) and organic matter (1.7 g kg⁻¹) in soil, when compared to other treatments. It's possibly for the contribution of crop residues for corn intercropping with *B. ruziziensis* during the five years. The corn intercropped with *B. ruziziensis* does not changes the availability of nutrients but increases the soil organic matter and soil carbon content.

Keywords: soil compaction; tillage; crop rotation.

Acknowledgements: Embrapa Western Agriculture, CAPES, UFGD.