



### **CARBON IN SOIL MICROBIAL BIOMASS WITH CORN GROWN UNDER DIFFERENT SYSTEMS MANAGEMENT WITH SWINE WASTE AS FERTILIZER**

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The quantities of manure generated by Brazilian pig production are worrisome, becoming an environmental problem. An alternative to trying to solve this problem is the use of pig manure as organic fertilizer. The decomposition of these materials depends on the ground procedures for transformation of organic matter by microorganisms in the soil, through which one can measure the quality of the soil, determining the carbon content of the microbial biomass. Therefore, the objective of this study was to quantify the carbon content of the soil microbial biomass, soil cultivated with maize in the savannah with addition of swine manure fertilizer. Soil samples were collected from five areas: I - irrigated with pig manure, II and III - the two areas of cerrado, IV - conventional chemical fertilizer and V upland with pig manure at four depths, 0-15, 15 - 30, 30-60 and 60-90 cm and in two seasons 60 and 90 days after emergence of corn plants, using the CFE method - chloroform-fumigation-extraction proposed by Vance (1987). The microbial biomass carbon content was calculated by the formula:  $BMS (mg. Kg^{-1}) = FC \cdot Kc - 1$  where F and FN represents the total carbon as CO<sub>2</sub> was released from fumigated and non-fumigated samples, respectively; kc is a constant (0.33). The results were submitted to analysis of variance using the statistical program Sisvar. Largest increase was observed for CBM time of 90 days compared to 60 days time, from 355.8 to 450.9 mg C g<sup>-1</sup> soil respectively. The carbon values decreased with depth in all ages studied. In undisturbed soils, the accumulation of carbon in the surface layer was higher than in cultivated soils. These results indicate that the microbial biomass promotes immobilization of carbon when crop residues remain on the soil surface.

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