ENZYME ACTIVITY ASSESSMENT IN SOILS OF CERRADO CULTIVATED WITH SOYBEANS, CORN AND CANE SUGAR

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Goiás is one of the agricultural centers in Brazil noted by the production of soybean, corn and sugarcane. Although the financial and social benefits, agricultural practices cause alterations in soil microbiota changing physical, chemical and biological soil components. Extracellular enzymes can be used to assess the quality of the soil, because they respond quickly to changes derived from the management processes. In this sense, this study aims to evaluate the enzymatic activity in soils of Brazilian Cerrado with different cultures. Native Cerrado soil samples and soil with soybean, corn and sugarcane were collected at a depth of 0-10 cm in six municipalities in the South Goiás and were evaluated for activities of $\alpha$ and $\beta$-glucosidase acid fostase, glycine aminopeptidase, and protease. Data were analyzed by ANOVA two-way, considering $p <0.05$. The highest activity values of $\alpha$, $\beta$-glucosidase, acid phosphatase and glycine aminopeptidase were found in soil samples with corn and protease was highest in soybean soil. The differences in enzymatic activity at different sampling points may be explained by the variations in physico-chemical and microbiological composition of the soils. Despite the enzymatic activity have been statistically different ($p = 0.00001$) among the land use classes, the conversion of Cerrado ecosystem to biotech crops has possibly increased the enzymatic activity. Annual crops, compared to the perennial crops, have more enzyme activity in all sampled sites. This kind of culture makes a positive contribution to nutrient cycling in the soil and can promote fertility gains for agriculture. On the other hand, the enzymes studied for responding differently in sampling points can be used as soil quality indicators.

PALAVRAS-CHAVE: Soil enzymes; Cerrado Goiano; Fertility

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