

ABSTRACT

EFFECT TILLAGE SYSTEM AND BAGASSE MULCH APLICATION TO HUMIC ACID AND FULVIC ACID ULTISOL SOIL IN SUGAR CANE PLANTATION

By

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Soil degradation is the main problem in agriculture system. One of the factors that affected soil degradation is reduction of soil organic matter. No tillage system with use of waste-based sugar cane mulch is expected to be able to improve soil organic matter, and than improve humic acid and fulvic acid in soil. Humic acid and fulvic acid is very important substance that determining soil fertility. This research is designed to compare the effect of tillage system and application bagasse mulch to humic acid and fulvic acid ultisol soil in sugar cane plantation. This research was designed as split plots in randomized block design (RBD) with 5 replications. The main plot was tillage system, which consists of no tillage (T_0) and intensive tillage (T_1). Subplot was the application of bagasse mulch, consisting of without bagasse mulch (M_0) and with bagasse mulch with dose of 80 t ha^{-1} (M_1). The combination of treatment were applied as follows: T_0M_0 = no tillage + no mulch bagasse, T_0M_1 = no tillage + bagasse mulch 80 t ha^{-1} , T_1M_0 = intensive tillage + no mulch bagasse, and T_1M_1 = intensive tillage + bagasse mulch 80 t ha^{-1} . The data obtained were analysed their homogeneity with Bartlett Test and additivity with Tukey test, and continued by Least Significant Different (LSD) with 5% level and 1% level. The result showed that the application of tillage system and bagasse mulch was not significantly different to humi acid, fulvic acid, organic carbon, and total nitrogen in soil.

Key word : bagasse mulch, fulvic acid, humic acid, intensive tillage, and no tillage