

ABSTRACT

The Influence of Tillage Systems and N fertilization on Carbon Biomass of The Soil Microorganism (*C-mik*) in Corn (*Zea mays* L.) of 41th Period

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In Indonesia today has developed the application of conservation tillage system. Cultivation of land without conservation measures supported by the soil will cause the decline in land productivity. Effort to increase crop production can also be done by fertilizing. Aims to increase the production, quality production, and quality of crops. In addition, the increase in crop production can also be seen from the index of soil fertility. Land that contains a variety of soil microorganism, in general it can be said that the land is land that has the physical and chemical properties of both. Therefore, the biomass of soil microorganisms can be used as an index of soil fertility.

The research aims were determined the effects of tillage systems and nitrogen fertilization on carbon biomass of the soil microorganism (*C-mik*).

This research was conducted using a randomized block design (RAK) and arranged in factorial with (3x3) 4 replications. The first factor in this research is the treatment of tillage system (T), which T1 = intensive tillage, T2 = minimum tillage, T3 = no tillage, and the second factor in this study were long-term nitrogen fertilization (N), which, N0 = 0 kg N ha⁻¹, N1 = 25 kg N ha⁻¹ and N2 = 50 kg N ha⁻¹. Mix the three soil sampel point in each field trial. Sampling was done one day after tillage system, maksimum vegetatif, and after harvest. Data obtained were tested for homogeneity with Barlett test and aditifity with Tukey test. Data were analyzed by ANOVA and followed by 5% BNJ test than correlated with Organic C, N-Total, and pH.

Over all the result were showed the highest *C-mik* in the no tillage system (TOT) and fertilization 200 kg N ha⁻¹. Whereas the lowest *C-mik* in the intensive tillage system and without N fertilizer. Similarly, the correlation test in organic C and N-

total which the highest organic C was highest N-total in the TOT system. But to pH (Kcl and H₂O) the highest in OTI system.

Key : Tillage system, N fertilization, carbon biomass of the soil microorganism