

## **ABSTRACT**

### **THE EFFECT OF SOIL TILLAGE TO TOTAL SOIL BACTERIA ON SOYBEAN PLANT IN PLANTING SECOND SEASON AFTER CORN PLANTING IN THE USED OF LAND OF THE REEDS (*Imperata cylindrica. L*)**

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Fertile agricultural land is now limited because agricultural land converted into residential areas, especially in urban areas. One of the efforts in improving and maintaining food security is through the expansion of agricultural land. One area of considerable potential for the development of agricultural land reeds are by far the open land and left untapped.

One of the important agricultural cultivation is soil tillage. Tillage did not consider the conservation aspects will cause the soil to become rapidly degraded land returned into critical. Use of Conservation Tillage Systems (OTK) can improve the physical, chemical and biological properties of soil, soil biological properties in addition it is important that determine whether or not the productivity of land, the soil microorganisms.

This study aims to determine the effect of tillage systems on *Imperata* grasslands are used as a soybean crop after the second growing season maize to total soil bacteria.

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The research this performed using by randomized block design (RBD) with three treatments tillage systems namely: TOT = No Tillage, OTM = Minimum Tillage, OTI = Intensive Tillage, with six replications. Soil samples were taken two weeks before tillage, one day after tillage, vegetative the maximum, and one day before harvest soybean plants. Soybean crop is used as an indicator of response to the treatment applied. The data obtained were tested homogeneity with Bartlett test and additivity tested by Tukey's test. Test the correlation between the main variables of total soil bacteria with supporting variable pH, C-organic, N-total, temperature, and soil moisture. Data were analyzed by analysis of variance followed by LSD test 5%.

Tillage treatments were not significantly different to the total bacteria in the soil two weeks before the observation tillage, one day after tillage, vegetative period and the maximum one day before harvest soybean plants.

There is a correlation between soil pH (H<sub>2</sub>O) with total soil bacteria in the observation of one day before harvest soybean plants.

Keywords: Reeds, soybean, soil pH(H<sub>2</sub>O), tillage systems, total soil bacteria.