

## ABSTRACT

### **THE SOIL PHYSICAL EFFECT CAUSED BY USING OF NO TILLAGE PLANTER OF SECOND CROP TO THE PRODUCTION ACTIVITY OF SOYBEAN PLANT**

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This study was aimed to find out the effect of soil physical changes caused by using of no tillage planter of second crop that is completed with fertilizer unit and furrow opener to soil growth and production of soybean plant. This research is using Randomized Complete Block Design with 3 refrains (blocks).

This research is implemented by 5 kind of treatment, that are 'no manual soil tillage planting with hand jabber (A)', 'no tillage planter of second crop speed V1 (B)', 'no tillage planter of second crop speed V2 (C)', 'no tillage planter of second crop speed V3 (D)' and 'conventional tillage with hand jabber (E)'. The parameter which was studied in this research namely are bulk density, porosity, water moisturation, soil temperature, organic matter, growth of seed presentation, plant height, leaf amount, biomass, depth root, root density, weeds density and product. The data of this research are analyzed by Univariate Analysis of Variance and Bivariate Correlation.

The result shows that bulk density, water moisturation, temperature, change of temperature, organic matter, root and weeds density on no mechanical tillage have the higher value than no manual tillage with hand jabber and conventional tillage. The change of height plant, leaf amount and biomass on no manual tillage have the highest value amongth the four treatments. The change of bulk density, the change of porosity, the change of water moisturation and the soybean product on no mechanical tillage are fewer than conventional tillage and on no manual tillage. On those parameters there are no significant defferences among treatment and refrain, and there are no interaction among treatment and refrain.

Keyword : physical property, no tillage planter of second crop, the growth of plant, production.