Effects of Planted Green Manure Soybean to Promot Soil Fertility and Sugar Apple Growth in Refreshed Arable Land

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Abstract

Taimali river embankment collapse by typhoon Morakot in 2009 and erosion arable land around. The refreshed arable sandy land was low organic matter content and barren, unfavorable for crop growth. In this study, we planted green manure Soybean TN.7 in Taimali refreshed arable land, and investigated its effect on soil properties and the growth of sugar apple tree. Results showed that planted green manure could increase soil organic matter content over time. Phosphorus, potassium and magnesium of the soil also increased over time but no significant. In leaves of sugar apple there were no significant differences between treatments, showed that planted green manure did not affect the growth of sugar apple. In terms of yield and fruit quality, in the first year yield treatment slightly lower than the control, than to the third year treatment yield 11.6 kg per tree had been higher than the control (9.8 kg per tree). The results demonstrated that planted green manure could improve Sugar apple yield. The soluble solids content of treatment and control were similar. The study showed that planted green manure soybean could increasing soil surface nutrients effectively, there were no significant effect at beginning but showed positive effects on soil and trees during three years later.

Keywords: Sugar apple, Green manure soybean Tainan No.7, Soil fertility management

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