

Application of high quality organic and chemical fertilizers on yield and quality of dragon fruit in Rayong province

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Abstract

Using high quality organic fertilizer and chemical fertilizer on yield and quality of dragon fruit grown at Maenamcoo sub-district, Proakdang district, Rayong province from October 2008 to September 2011 in soil group 35. The soil was classified as Mabbon (Mb) soil series which is sandy soil texture. The experimental design was RCB with six treatments of three replications i.e., 1) conventional farmer practice, 2) high quality organic fertilizer application, 3) high quality organic fertilizer with the recommended application of chemical fertilizer following the conjunction of the Department of Agriculture (DOA), 4) high quality organic fertilizer with the $\frac{1}{2}$ rate DOA, 5) high quality organic fertilizer with the $\frac{3}{4}$ rate DOA, and 6) fertilizer with the recommended application of chemical fertilizer following the conjunction DOA. The results showed that the average pH increased from 4.3 to 5.1-5.7 after treatments. The conventional farmer practice and high quality organic fertilizer with the recommended application of chemical fertilizer following the conjunction of the DOA has the highest average amount of organic matter accumulated in the soil as well. The relatively low level of 1.59 percent high quality organic fertilizer with the $\frac{1}{2}$ rate DOA has the highest phosphorus content at the high level of 217 mg/kg. The conventional farmer practice and high quality organic fertilizer application the highest potassium was 85 mg/kg. The average yield of high quality organic fertilizer with the $\frac{1}{2}$ rate DOA was 1,179.24 kg/rai. The fertilizer with the recommended application of chemical fertilizer following the conjunction DOA was the highest economic returns value of 18,590 baht/rai and the high quality organic fertilizer showed the highest sweetness value of 17.50 percent brix.

Keywords : dragon fruit, high quality organic fertilizer, chemical fertilizer