

Atchara Bunyatulanon 2012: Plant Nutrition Management by Soils Analysis on Yield and Quality of Sweet Pepper (*Capsicum annuum* L.). Master of Science (Economic Botany), Major Field: Economic Botany, Division of Science. Thesis Advisor: Pornpairin Rungcharoenthong, Dr.Aagri. 79 pages.

Field trial on the effect of plant nutrition management base on soil analysis with micronutrient application for improved yield and quality of sweet pepper “Mulan” was conducted at Inthanon Agricultural Royal Project. The experiment was using 5×5 factorial in RCBD designed with 6 replications. The treatment combination consisted of 5 macronutrient fertilizer formula and 5 types of foliar micronutrient fertilizer. The results shown that the application chemical fertilizer following soil analysis was increased plant height that when chemical application was increased level, but the plant diameter was decreased when chemical fertilizer was higher rate. Furthermore, it was found that the apply micronutrients with application chemical fertilizer following soil analysis (12 kg N/rai, 4 kg P<sub>2</sub>O<sub>5</sub>/rai, 6 kg K<sub>2</sub>O/rai) are increased yield of sweet pepper (5.03 ton/rai). The concentration of nutrients in the leaves and fruit, fruit thickness and fresh weight were higher than the others fertilizer. The crop removal was removed 21.05-39.05 kg/rai of urea (46-0-0), 8.77-24.03 kg/rai of triple superphosphate (0-40-0) and 40.36-77.35 kg/rai of potassium chloride (0-0-60) from the soil.

The relationship between leaf nitrogen concentration and SPAD reading of sweet pepper leaf by chlorophyll meter was examined. The relationship between SPAD reading-nitrogen concentration and SPAD reading-chlorophyll concentration were related  $R^2=0.30$  and  $R^2=1$  respectively. It found that SPAD Reading ranges 55-70 are sufficient level for sweet pepper.

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