

Chapter 10

Conclusions

In this study, the main agro-ecosystems for tangerine of selected area in Chai Prakan-Fang-Mae Ai valley were on the gentle hill slopes and the upper terraces areas. There were seven previous crops found before the cultivation of tangerine. Lychee was the most farmer crops (32.9 %). Most orchardists (80.3 %) held full land ownership certificates. They possessed a single farm and the majority of them (88.7 %) were the small orchard (less than 20 rai) holders. Sainampung was the common (93.4 %) cultivar which was generally (94.4 %) propagated by air layering method. The greatest numbers of trees (82.8 %) were at 2–5 years old and most of them were already productive. Tangerine trees were predominantly (69.0 %) planted in a single row on the raised bed system with a close spacing of 4 m x 4 m. Most farmers (85.4 %) irrigated their orchards by mini sprinklers and the most water came from rainfall harvesting reservoir (84.7 %). The orchardist fertilizer applications were organic, organic-chemical, and chemical fertilizers of 14 different formulas. The most preferred fertilizer programme was the application of 15-15-15 at vegetative and fruit development stage, while 13-13-21 at flower development and pre-harvesting stages. The purchasing decisions on fertilizers and pesticides were mostly made on the basis of self experience while other sources of knowledge were also obtainable. Most orchardists (71.0 %) sold their produces through traders without fruit grading.

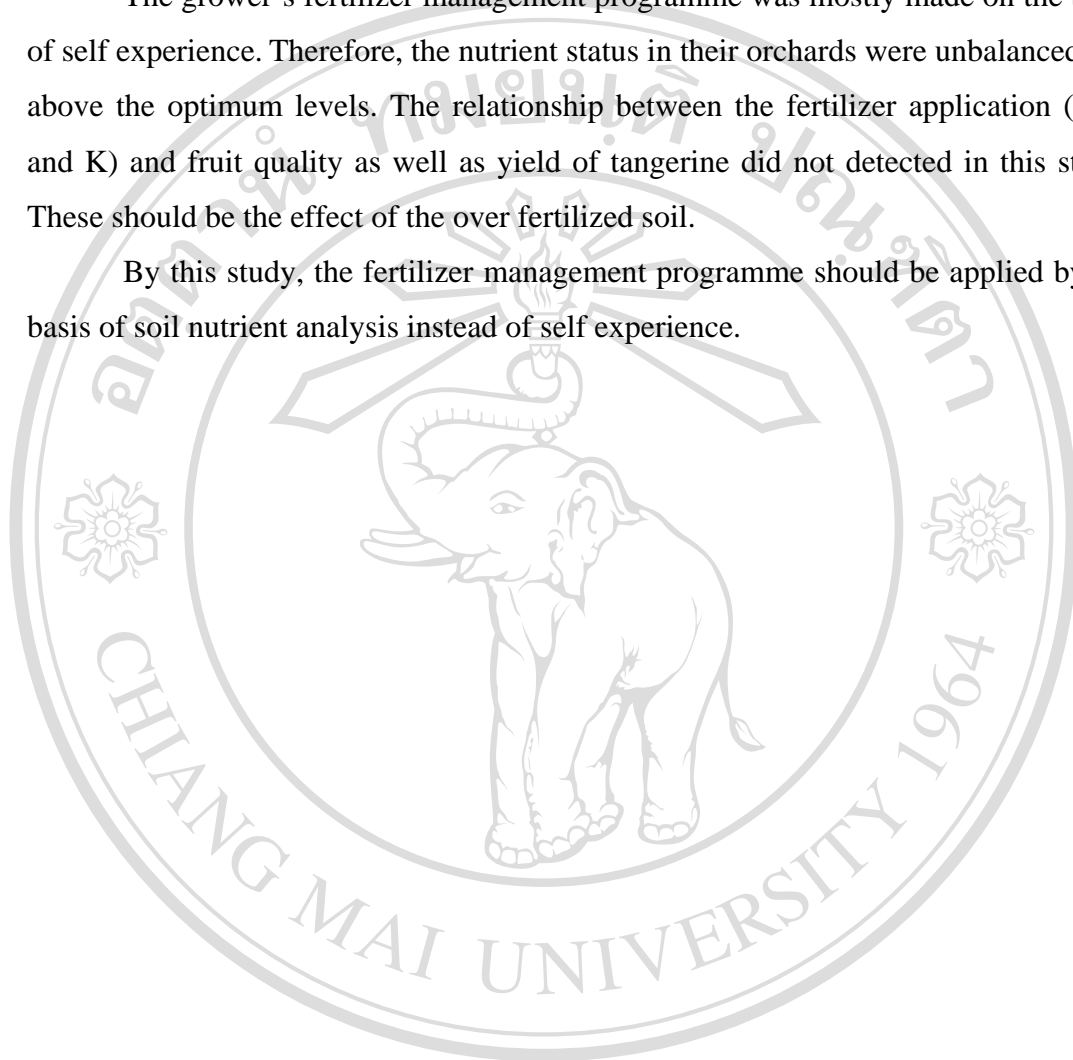
Plant and soil analysis is helpful to fertilizer management of plant. Leaf tissue was appropriated to be used as a sample for the plant nutrient analysis. The appropriate position for sampling was the third leaf from shoot apex and 90-day-old leaves without fruit because the nutrients concentration in leaf and twig begins to vary as twigs started bearing fruit.

In sand culture, the nutrient balance especially macronutrient (N, P and K) concurrently refers to the supply of nutrients according to plants need due to the plant analysis. The adjusted N:P₂O₅:K₂O ratio of the fertilizer to approximately 4:2:5, came from the analysis of nutrient content in tangerine fruit and yield, provided the best

growth of fruit, fruit size (6.16 cm), fruit weight (109.8 g), yield (2.15 kg/tree) and the nutrient concentrations in fruit at this ratio were higher than others.

The grower's fertilizer management programme was mostly made on the basis of self experience. Therefore, the nutrient status in their orchards were unbalanced and above the optimum levels. The relationship between the fertilizer application (N, P and K) and fruit quality as well as yield of tangerine did not detected in this study. These should be the effect of the over fertilized soil.

By this study, the fertilizer management programme should be applied by the basis of soil nutrient analysis instead of self experience.



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