

Pichai Triratanaprapunta 2012: Effects of Fertilizer Rates and Analysis Grades of Suspension Fertilizer in Fertigation System on Yield and Nutrient Concentration in Leaf and Fruit of ‘Sai Nam Phueng’ Mandarin Orange (*Citrus reticulata* Blanco), Master of Science (Agricultural Research and Development), Major Field: Agricultural Research and Development. Thesis Advisor: Assistant Professor Lop Phavaphutanon, Ph.D. 89 pages.

Effects of analysis grades, rates and application frequencies of suspension fertilizer (SF) in fertigation system on yield and nutrient concentration in leaf and fruit of ‘Sai Nam Phueng’ Mandarin Orange were studied in Chiang Mai province. Orchard soil was acidic and high fertility. SF grade 18-6-12 was applied during a vegetative growth period at the rates of 225 and 375 g fertilizer/tree/period and 15-5-20 or 7-3-10 was applied during a fruit development period at the rates of 375 and 625 g fertilizer/tree/period with application frequencies of 15, 30 or 45 days; the total of 12 application treatments. The result showed that fruit yield, quality and nutrient concentration in leaf were not statistically different and satisfactory among the treatments. The treatment, 18-6-12 grade for vegetative growth period and 7-3-10 grade for fruit development period fertigated every 45 day at the rates of 225 and 375 g fertilizer/tree/period, respectively was the most satisfactory combination with the lower fertilizer cost and the less application frequencies. It yielded 112 kg fruit weight/tree with 95.5% favorable yield, 50.6% juice, 12.3 ° Brix TSS, 0.5% TA, 23.1 TSS/TA ratio and leaf N, P, K, Ca and Mg concentrations of 2.34%, 0.16%, 1.22%, 6.58% and 0.99%, respectively. Fruit N, P and K concentrations were 0.81% 0.13% and 1.25%, respectively. Nutrient loss through crop removal was 1.24 g N, 0.19 g P and 1.92 g K for every kilogram fresh weight.

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Thesis Advisor's signature