

Chapter 1

Introduction

In Thailand, tangerines are currently cultivated on 2.5 – 3 hundred thousand rais with the total production of 6 - 8 hundred thousand tons. More than 2.2 hundred thousand tons of tangerines are from the North of Thailand, especially Chiang Mai and ninety five percent of these produces are from Chai Prakan-Fang-Mae Ai valley (Chiang Mai Provincial Agricultural Extension Office, 2007). In 2005, Thailand was one of the world's major tangerine producers and fed 6.7 hundred thousand tons to the world's market (Wikipedia, 2007c).

The 'Sainampueng' is a commercial cultivated variety of tangerine that has been produced in Fang district for over 20 years. In 1996, the production area of Sainampueng was greatly expanded due to the relatively high price of tangerine. Since the year 2000, the price has decreased while the production costs increased especially fertilizer and chemicals. Buasap (2001) and Barker and Pillbeam (2007) indicated that tangerines required nutrients with the proper balanced amounts for vegetative growth and fruit development but the growers did not exactly concern with this fact. The farmers believed that more fertilizer will give more fruit yield. Apparently, crop production was currently low due to inadequate and unbalanced fertilization (Barker and Pillbeam, 2007). Balanced nutrition of plants should, therefore, be the first priority among orchard management activities for every tangerine grower (Zekri and Obreza, 2008).

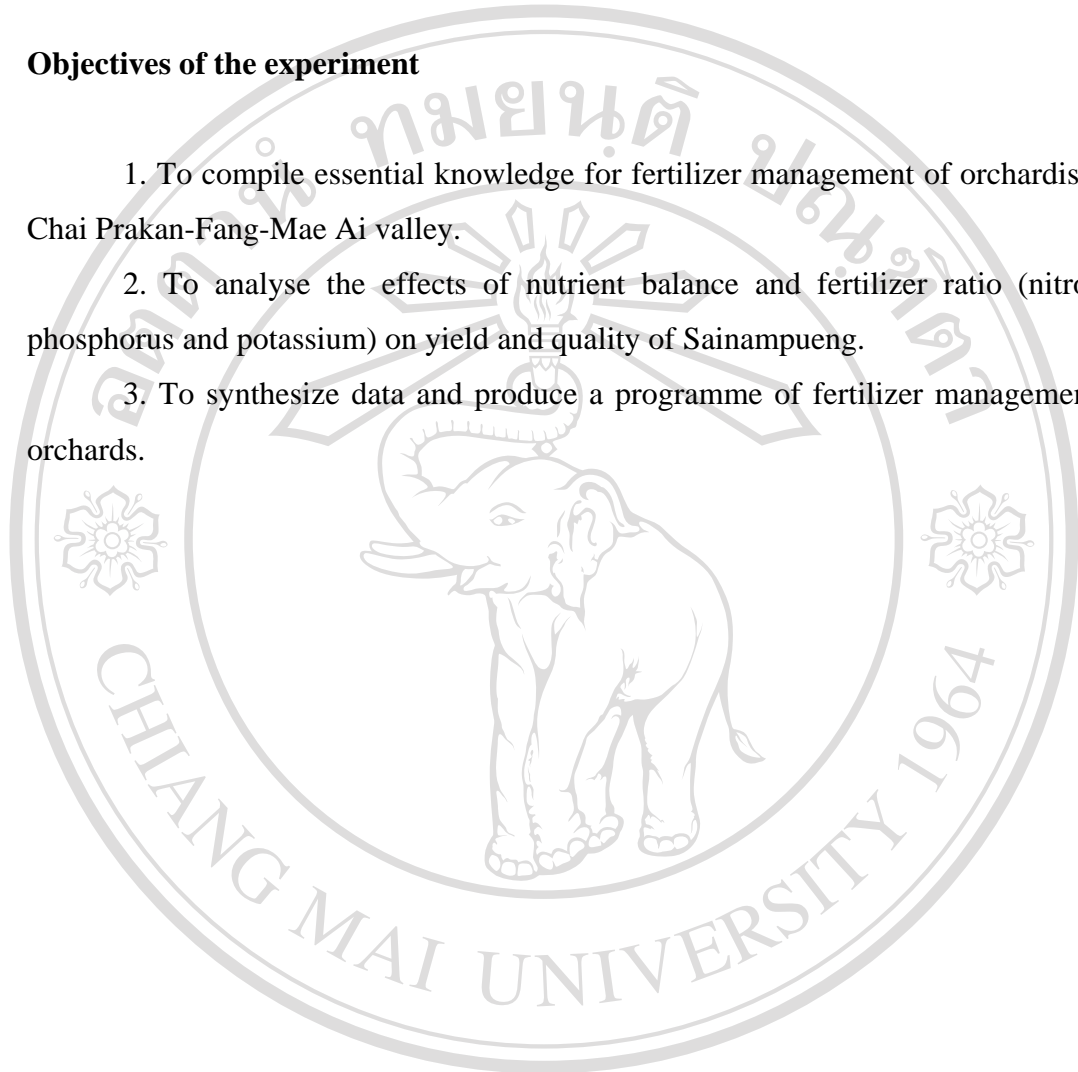
Plant and soil analysis are used as a diagnostic tool to monitor the nutrient status of the tangerine trees and the fertility of the soil, respectively. However, the farmers normally applied fertilizers in accordance with their skill and experience without any information on soil nutrients (Supakamnerd, 2004). Via soil analysis, the fertilizer applications could be optimized with the increase in production as well as the decrease in costs (Food & Fertilizer Technology Centre, 2003; Buasap, 2001).

In practice, the application rate of fertilizers for tangerine trees was varied according to age of trees, fruit load, soil fertility and nutrient status of trees. A

fertilizer program based on these parameters may be modified in accordance with the result of plant and soil analysis.

Objectives of the experiment

1. To compile essential knowledge for fertilizer management of orchardists in Chai Prakan-Fang-Mae Ai valley.
2. To analyse the effects of nutrient balance and fertilizer ratio (nitrogen phosphorus and potassium) on yield and quality of Sainampueng.
3. To synthesize data and produce a programme of fertilizer management in orchards.



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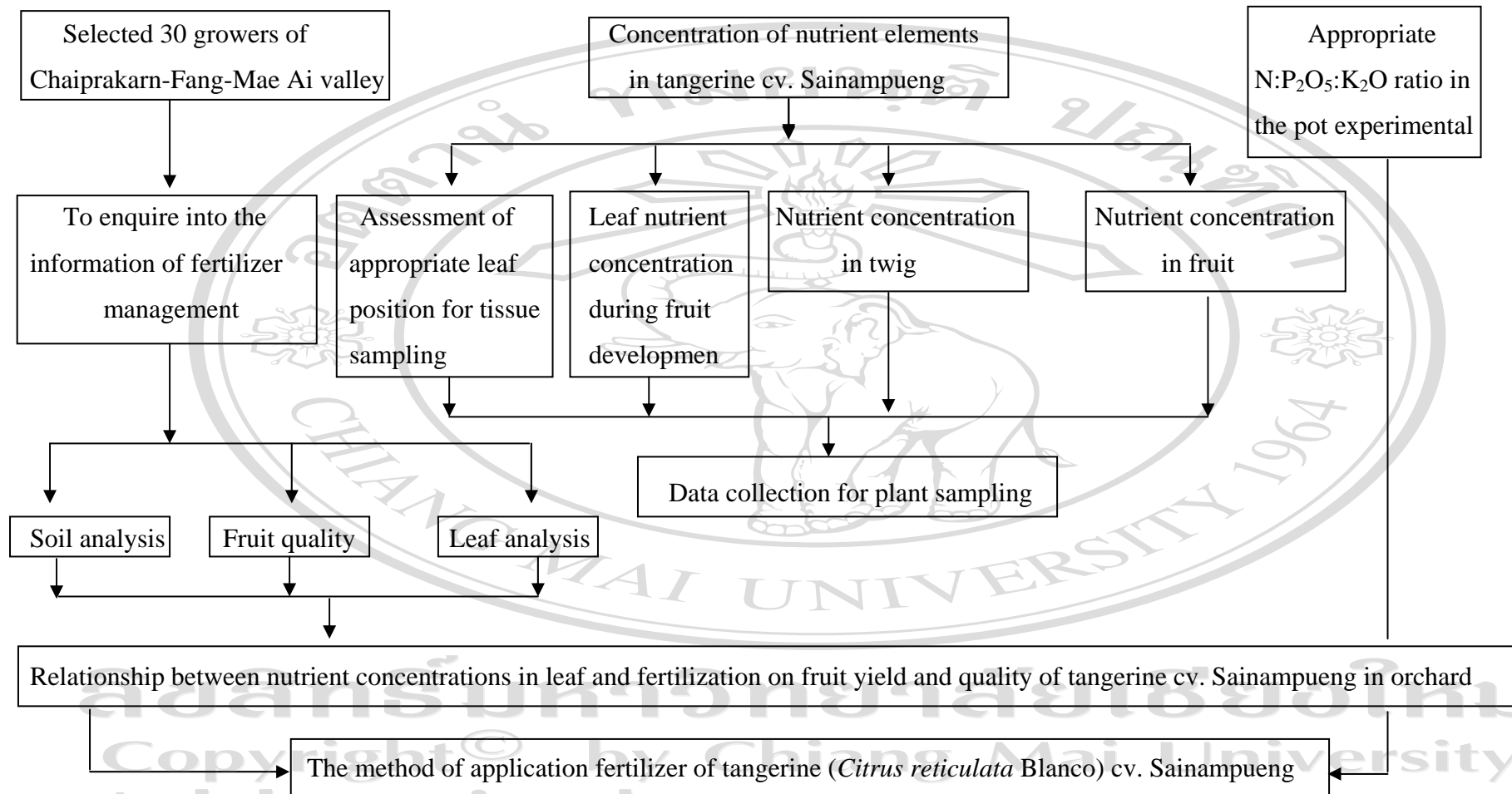


Figure 1.1 Conceptual frameworks for the use of nutrient balance for improving fruit yield and quality of tangerine (*Citrus reticulata* Blanco) cv. Sainampueng