

Effects of Nitrogen and Zinc on Fruit Quality of Pummelo cv. Tubtim Sayam

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Objectives

Pummelo cv. Tubtim Sayam has an origin in Yarang district, Pattani province and distributed to Pak Panang district, Nakhon Si Thammarat province. The characteristics of this cultivar are large fruit, red juice sac with sweet and sour flavour. An important problem for Tubtim Sayam production in this area is a low fruit quality such as pink juice sac, low total soluble solid, high total acids and bitter flavour. Therefore, the objective is to study the factors such as tree age, nitrogen and zinc affecting on Tubtim Sayam fruit quality.

Methods

It was conducted in the pummelo cv. Tubtim Sayam age 4, 7 and 14 years old in Pak Panang district, Nakhon Si Thammarat province during June 2011 to May 2013. In the first year, the study was conducted in three topics: 1) phenology of pummelo cv. Tubtim Sayam, 2) fruit growth and development, 3) fruit quality of pummelo from difference tree ages. In the second year, the effects of nitrogen and zinc on fruit quality will be investigated. The study will record the data such as fruit weight, fruit size, TSS, TA, vitamin C, pH, sugar (sucrose, fructose, glucose), pigment (chlorophyll, chlorotenoid, anthocyanin), limonin and nutrient content in leaves and fruits.

Results and Discussion

The phenology study of pummelo cv. Tubtim Sayam will provide the data of leaf flushing, flowering, fruit set, fruit growth and harvesting period. Appropriate management such as irrigation, fertilizer application and canopy pruning in this weather conditions also will be provided. The study of fruit quality from difference tree ages will know the optimum time for harvesting and its effects on fruit quality. The fruit harvested before ripen displays the pink juice sac, low total soluble solid, high total acid and bitter flavour. While the fruit harvest after ripen appears granulation. The study of effects of nitrogen and zinc on fruit quality will be useful for fertilizer management to give high fruit quality with reasonable cost. Soil in Pak Panang district has a lot of potassium and calcium but lack of nitrogen and zinc. Nitrogen is a component of chlorophyll, amino acids, proteins, hormones, enzymes and organic compounds. Zinc is an important part of the metabolic processes of carbon metabolism. Zinc is also a component of enzyme, chlorophyll and hormones. Optimum levels of nitrogen and zinc can increase fruit size and fruit quality.

Conclusion

This study will provide data for 1) appropriate cultural practices and time to manage factors affecting yield and fruit quality especially during fruit growth period, 2) optimum time for fruit harvesting and 3) the optimum amount of nitrogen and zinc applications.

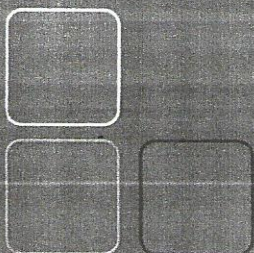
Keywords: nitrogen, zinc, fruits quality, pummelo, tubtim sayam

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