

Chapter 5

Conclusion and Recommendations

Geographic Information Systems (GIS) as well as other secondary data indicated that there are twelve districts in Chiang Mai, namely Chai Prakan, Chiang Dao, Fang, Hang Dong, Mae Aei, Mae Orn, Mae Taeng, Mae Wang, Omkoi, Phrao, Samoeng, and Wiang Haeng are potential areas to produce late season Kaew mango like as Chiang Dao district. The results from field survey showed that farmers in these twelve districts preferred growing other fruit trees, such as, litchi, longan and mandarin to mango. Thus, the promising area to produce late season Kaew mango is only found in Chiang Dao district, particularly Mae Ore Nai village.

Late season production of Kaew mango was divided into three approaches, namely delaying the period of flowering, extending the panicles growth and delaying preharvest fruit maturity. Two experiments of delayed pruning months (from June to October) and panicle thinning (at 1, 5, 10 and 20 cm in length) used to prove the delaying flowering period. The results revealed that neither pruning nor panicle thinning made the longer harvesting period of Kaew mango. In addition, some treatments of both two methods did great damage to mango yield in that year.

The extension of panicle growth by PBZ application were studied by dividing into two experiments of (1) PBZ concentrations and time of application panicle growth period and (2) PBZ concentration and panicle appearance. In case of PBZ concentrations (5 levels : 0, 1000, 3000, 5000 and 7000 ppm) and panicle stages at PBZ spraying (2 levels : 1 and 5 cm in length), the result showed that PBZ had significant effect on reducing blooming. PBZ treatment had no significant effect on delaying the full bloom stage but had an influence on delaying fruit development since hen's egg stage until harvesting stage. Panicle sprayed with PBZ, particularly PBZ at 1000 ppm, reached at hen's egg and harvesting stage later than control trees by 4.52 and 10.18 days after full bloom (DAF), respectively. With respect to PBZ concentration 3 levels (0, 1000 and 1500 ppm) and panicle appearance (1 cm in length), the results indicated that PBZ treatments had no significant effect on extending the time of full bloom (29.46-31.32 days). The

average period from full bloom to fruit development at peanut stage (13.57-15.89 days), bird's egg stage (23.38-25.38 days) and hen's egg stage (34.71-37.39 days) were similar among the treatments, excepted to harvesting stage. Fruits from spraying PBZ 1000 ppm gained the delayed harvesting time 6.37 days behind the untreated treatment.

The experiments on prolonged fruit maturity were divided into fruit bagging and GA spraying. Bagging at 30, 45 and 60 DAF had no significant effect on delaying the harvesting time, ranged of 117.86-122.27 DAF. But the advantage of bagging was fruit color improvement. The another experiment to delay preharvest fruit maturity was GA spraying. The results indicated that GA treatment at 50-150 ppm had a significant effect on extending the harvesting time more than untreated fruits 5.76-9.15 days. While, fruit age at spraying 2 levels (82 and 89 DAF) gave the same effect on extending the harvesting time. The application of GA 50 ppm on fruits at 85, 95 and 105 DAF gave the same result but extended the harvesting time over the untreated trees by 8.75 to 10.15 days.

It was apparent that PBZ 1000 ppm sprayed on panicle appearance and GA 50 ppm sprayed on fruit at 85 DAF had positive effect on the delayed harvesting. Both methods were combined to prove again at farmer's orchard in Mae Ore Nai village, Chiang Dao district. The results showed that PBZ 1000 ppm treated on panicle appearance caused not only reducing the panicle growth, but also delaying the full bloom stage by 1.82 days. Because this method had significant effect on delaying fruit growth after full bloom at peanut stage, bird's egg stage and hen's egg stage later than control trees, 2.10, 1.72, and 5.41 days, respectively. PBZ alone (133.88 DAF) and combination of PBZ and GA spraying (135.99 DAF) gave the similar effect on the delayed harvesting time 18.29 and 20.4 days behind the control. Nevertheless, the result of delaying the harvesting Kaew mango could not extend to the target period of July 15. There were some limitations, particularly high temperature and climate variation.

With respect to the farmers' views in adopting technique of producing late season Kaew mango at Mae Ore Nai village, Chiang Dao district, revealed that 93.33% of farmers agreed with this technique because they realized the advantage of late season production. In addition, 86.67% of farmers thought that late season of Kaew mango could be practice in Mae Ore Nai village. It was also accepted that this technique was easy and practical in their orchards.

Recommendations

1. There are several conditions to consider in producing late season Kaew mango. For example, the farmers should pay good attentions to their orchards, particularly pest and disease problems. Mango trees for producing late season should be kept healthy and vigorous. PBZ and GA application should spray in accordance with the schedules.

2. These experiments were carried out in the same orchard for two years. This orchard was differ from other orchards by late pruning the trees in September. While other orchards often pruned their trees after harvesting in August. Thus, this is another factor to be considered.

3. The reason which some farmers (8.89 %) rejected this technology was their worries about the unavailable market. This problem can be solved by forming and giving more information to the market. This method will also generate the bargaining power for the growers.