CHAPTER 5
OVERALL CONCLUSION

The impact of cropping season changes on morphological attributes, physico-chemical attributes, sensory qualities and ripening of Smooth Cayenne pineapple fruits was studied during harvesting period 110 to160 days after full bloom (DAFB). The conclusions are as follows:

1. Development of external morphological attributes was modified by variation in environmental condition during the different crop growing seasons. The morphological attributes affected by environmental factors were fruit weight, size, shape, and shell color. Fruitlet number per fruit was not affect by the growing season but crown size was obviously different in fruit grown in different seasons.

The fruit grown during the cool season and harvested early crop had highest fruit weight and size, with most of the fruits were in conical shape, while regular and late crop fruit had low weight and small size, with spherical shape and cylindrical shapes.

The crown of regular and late crop fruits had higher a weight with elongated shape, while early crop had small rosette crown. Regression analysis showed that differences in fruit weights, among seasons were correlated to day and night time temperatures and solar radiation.

2. Seasonal conditions affected shell color quality of fruit. Shell color was delayed in the early crop, and 80% of the fruit was ripe with green shell. Chlorophyll content in the peel was not significantly different among different season crops. The carotenoid of late crop was higher than other crops.

3. Flesh color quality of the regular crop was rated by panelist as better than the other crops. It also had higher L*, a*, b* and chroma values. However, the carotenoids content of each crop were not significantly different as measured at 420 nm and 447 nm.

4. The flesh firmness of the late crop declined most rapidly. The firmness at the middle position of the fruit showed lower variation than the firmness at other positions, suggesting this is the best position to measure firmness.

5. Percentages of translucent fruit were not significantly different for the three cropping seasons. Percentages of translucent fruit averaged about 10-20% in both years, and did not increase with ripeness.

6. The pineapples from all three seasons were ripe with acceptable eating qualities, at 120 DAFB, coinciding with the rise of TSS content and TSS/TA ratio. Total soluble solids and titratable acidity of the late crop were both higher than the other crops. Because of its higher acid content, the late crop had the best eating quality score. There were no further significant changes in eating quality until 140 DAFB. Eating quality of the fruit was lasted for three weeks on the field. At 150 DAFB the fruit were overripe, with an off-flavor and decreased in flesh texture.

7. Sourness is the only sensory attribute that could consistently be distinguish by panelists. However, the fruit of all crops had TSS above 12% and TSS/TA ratio higher than 22.

8. The study clearly indicated that the fruits harvested in different cropping seasons could be diverted for different purposes. The regular crop, which is the main crop, had superior quality yellow flesh, sweet taste and cylindrical-spherical shape. Hence, these could be used for both fresh consumption and canning. Early crop fruits had inferior flesh color, poor taste and a large size with conical shape. Therefore, these can only be used for direct consumption. The late crop yielded spherical shaped fruits with inferior color and sour taste which therefore, are more suitable for canning.