

EFFECTS OF METEOROLOGICAL FACTORS ON YIELD AND QUALITY OF WAX APPLE IN WINTER IN PING-TUNG AREA

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SUMMARY

Wax apple is one of tropical fruit trees, the suitable temperature for the tree to grow is from 25 to 30 °C. Under natural condition, wax apple is used to harvest from May to July. For improving the fruit quality and market sale, a forcing cultural technology has been applied in order to adjust the productive season from summer to winter. However, during the winter season, cold fronts often pass through Taiwan, thus the air temperature may drop below 10 °C, and cause fruit damages. The main purposes of this study are to observe the degree of chilling injuries at different stages of fruit development and the relationship between some meteorological factors and fruit quality. This experiment was conducted at Kao-shu and Chia-tung of Pingtung from Sep. 1991 to Feb. 1994. During this period of time the minimum temperature below 10°C occurred 5 times, and the longer the duration of low temperature, the higher the percentage of fallen fruits.

A survey made on Jan. 16, 1993 found that the chilling injury for wax apple was most severe at mature fruit stage, it caused about 45 % of fallen fruits, the degree of injury was declined for young fruits, it was 24%, 21%, and 15% of fallen fruits at green red fruit, young fruit and flower bud stage, respectively. The results from correlation analysis showed that there was no significant correlation between fruit weight and accumulative sunshine hours, fruit weight and accumulative temperature. But both the accumulative sunshine hours and accumulative temperature have positive correlation on sugar content of the fruit. Thus a good weather condition during the ripening stage is very important for producing better quality of fruit.

Key words: Wax Apple, Chilling injury, Adjustment of productive season.

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