CHAPTER 6
CONCLUSION

1. Coating materials application created a barrier to vapor exchange which acted positively in reducing aging and senescence of the peel by minimizing weight loss and shrinkage. Fruit coated with all commercial coatings could retain their initial visual appearance with decreasing rates of oxygen exchange to the inner tissue. The metabolism was thus shifted towards anaerobic condition. This promoted the build up of off-flavor, especially in fruit coated with Supershine-C, Wax (unknown), Rosy Plus and Citrashine after approximately 1 week and 1 month of storage period at room and low (5°C) temperatures, respectively.

2. The coated fruit had lower respiration rate with higher alcohol dehydrogenase activity than the non-coated fruit. Coatings had no effects on skin color, total soluble solids, pH, titratable acidity, TSS/TA ratio and vitamin C content.

3. The maintenance of quality and shelf life extension of tangerine fruit by Zivdar coating were preferable during commercial storage and marketing. Coated tangerine fruit with Zivdar had beneficial effects not only on the optimal exchange of O_2 and CO_2 gases as well as lower level of internal ethanol content, but also the occurrence of off-flavor which was released at the slower rate than fruit coated with other coating materials.

4. The rapid water loss in non-coated fruit caused early shrinkage of the peel, rendering them flaccid and unmarketable from the first and the third weeks of storage period at room and low temperatures, respectively. Non-coated fruit had higher internal O_2 content, lower internal CO_2 content, and ethanol concentration in fruit juice than coated fruit. Non-coated fruit had the best taste and odor during storage period.

5. The developed formulation D and Zivdar coating materials were considered suitable in extending shelf life of 'Sai Nam Phueng' tangerine friut. The attributes of fruit quality coated with formulation D and Zivdar were improved similarly with the presence of lower ethanol content.

6. Tangerine fruit coated with formulation B, C, D and Zivdar had the similar internal O_2 and CO_2 concentration levels with better levels of gas exchange in comparison to formulation A. The latter formulation had the lowest weight loss but generated off-flavor at the faster rate than fruit coated with other formulations and Zivdar. Coatings had influenced on PDC and ADH activities but had no effect on chemical compositions of tangerine fruit.

7. The natural wax platelets are irregular in shape and size with rough surfaces. The observations showed that most coatings revealed the smooth surface while the minority indicated porous and cracked surfaces.

8. Films made from formulation D and Zivdar had lower values of O_2 permeability than the non-coated film. However, the water vapor permeance of coated and uncoated films indicated only small discrepancies.