CHAPTER 9

SUMMARY AND FUTURE WORKS

10.1 Summary

1. Collagens from bigeye snapper and brownstripe red snapper skins were characterized to be type I comprising two different α chains (α1 and α2).
2. Bigeye snapper and brownstripe red snapper skin gelatins contained slightly different amino acid composition. The bloom strength of gelatin gel from bigeye snapper skin was lower than that of brownstripe red snapper skin due to the higher endogenous proteolytic activity of the former species. The addition of MTGase increased the bloom strength of fish skin gelatin from both species.
3. Fish skin gelatin films of both species were generally transparent and relatively strong. Mechanical properties of film from brownstripe red snapper skin gelatin were generally superior to that from bigeye snapper skin gelatin.
4. The properties of fish skin gelatin films from both fish species were affected by types and concentrations of plasticizers. At the same concentration used, films plasticized with glycerol showed the highest elongation at break, whereas ethylene glycol plasticized films showed the highest tensile strength.
5. Incorporation of fatty acid sucrose esters (FASE) generally reduced water vapor permeabilty (WVP) of both fish skin gelatin films more effectively than fatty acids (FA). Chain length of FA or FASE affected mechanical properties and WVP of lipid/gelatin composite films. Films added with FASE were more transparent than those added with FA.
6. Incorporation of BHT or α-tocopherol as well as storage time generally affected the physical and mechanical properties of fish skin gelatin films of both species. Regardless of antioxidant incorporation, oxidation of lard was effectively retarded when covering with skin gelatin films of both species.

10.2 Future works

1. The study on the incorporation of antimicrobials into fish skin gelatin films.

2. Comparative study on gas permeability properties and the decomposition of fish skin gelatin film with other edible/biodegradable films.
3. Improvement of water barrier properties of fish skin gelatin films.
4. The application of fish skin gelatin films in various food products.