CHAPTER 4

CONCLUSIONS

1. Muscles of black tiger shrimp and white shrimp were the good source for protein and polyunsaturated fatty acids. However, chemical composition varied with species. White shrimp had the higher connective tissue content than did black tiger shrimp. Thermal stability of muscle proteins was different between species. The differences in chemical compositions and thermal property between both species might be associated with the different characteristics of shrimps.
2. Physical properties and microstructure of both shrimps were influenced by thermal process. Cooked meats were tougher than raw meats for both species, particularly with increasing heating time. The shrinkage of shrimp muscle fibers occurred when sample was heated. Cooked black tiger shrimp had higher a*-value than white shrimp.
3. Physicochemical properties of protein induced by freeze-thawing were somehow different between white shrimp and black tiger shrimp and the degree of changes was more pronounced with increasing freeze-thawing cycles. Freeze-thawing process caused the protein denaturation, tissue disruption and the damage of muscle fibers. Such the differences might govern the varying quality losses between both species, particularly as affected by freeze-thawing process.
4. Changes in qualities of shrimp meats during iced storage were different between species. The changes were more pronounced with increasing storage time. The increases in TVB, TMA, TBARS, K-value, cooking loss, melanosis score with the decreases in WHC and shear value were concomitant with the losses in sensory property. Decapitation together with the appropriate icing method was a possible means to retard those changes. Changing ice every two days could lower the melanosis in shrimps. The decreased acceptability of both shrimps was most likely associated with spoilage bacteria, which contributed to the texture softening or production of offensive odor and flavor. Generally, both shrimps could be kept in ice up to 8 days.

FUTURE RESEARCH

1. More research is needed to inhibit polyphenoloxidases (PPOs), which have the vital role in black spot or melanosis during ice storage of shrimps.
2. Proteolytic enzymes, which soften shrimp muscle during ice storage of shrimps, should be investigated. Much attention should be paid to limit the activity of those enzymes.