

## CHAPTER VII

### CONCLUSION

A dietary fiber ingredient could be prepared from fresh (FDF) and dried (DDF) corn silk, which is a by-product from the corn milk processing facility, by an alcoholic extraction. Both FDF and DDF corn silk fiber contained a high amount of dietary fiber with the values being 76.94% TDF with 65.04 IDF and 50.86% TDF with 44.32% IDF for FDF and DDF, respectively.

FDF and DDF corn silk fiber were neutral in pH. Their particle size was not uniform. However, this may make it possible for wide range of food applications. The water holding capacity of FDF and DDF corn silk fiber was high (9.80 and 4.94 g/g fiber, respectively).

In contrast the emulsifying activity and emulsion stability were low compared to other sources of fiber from agricultural by-products. For the oil holding capacity, only the value for FDF was considered to be high. (5.41 g/g fiber) while that of DDF was low.

The low water activity of FDF and DDF corn silk fiber indicated good storage ability and shelf-life. Hence, from the physicochemical properties, FDF and DDF showed a good potential to be used as an alternative source of dietary fiber in food products. Nonetheless, their color may restrict the application in certain foods.

Bleaching of the fibers should be further investigated. Regarding the food application, fiber-supplemented cakes were formulated with similar physical quality to the control products. Sensory acceptability was achieved in a certain number of panelists (judging from the mode scores) while the overall mean scores were not satisfactory.

Nevertheless, the products could be labeled as a source of dietary fiber according to the nutrition labeling regulation. For fried batter-coated chicken added with 3% corn silk fiber (either FDF or DDF), the products were accepted by the panelists with exception of general appearance and color.

Addition of fiber did not indicate a clear trend on improving the fried food quality including oil uptake reduction. The extraction and bleaching procedure for corn silk fiber, the study of corn silk fiber structure and its application in other types of food should be further investigated.