



CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

In this study, chitin sheets incorporated with curcumin were fabricated by the paper-making process, using a water-based system. According to the FTIR spectra, no chemical interaction between curcumin and chitin matrix could be observed. Although chitin sheet could act as a carrier for curcumin, the sufficient amount of Tween 20 was necessary for solubilizing and releasing of curcumin from chitin sheet. However, the added amount of Tween 20 in chitin suspension before fabrication was limited since Tween 20 had an adverse effect on sheet-forming ability of chitin. Anyway, the addition of Tween 20 into the releasing solution could help in solubilizing of insoluble curcumin incorporated in chitin sheet and in further releasing of solubilizing curcumin from chitin sheet into the exterior solution. In the presence of excess amount of Tween 20 in the system, this resulted in the complete releasing of curcumin from chitin sheet. Accordingly, chitin has a potential to be used as a carrier for curcumin and Tween 20 that is a key factor to get a high releasing amount of curcumin. The solubility and stability of curcumin incorporated chitin sheets could be achieved by the addition of Tween 20.