



CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

CM- chitin was successfully synthesized by carboxymethylation reaction at O-6 position of chitin. CM- chitin films can be prepared by solution casting technique and the clearly thin films were obtained. CM- chitin films were effectively crosslink by using glyoxal and the optimum pH in crosslinking reaction was 6. The presence of chitin whisker in CM-chitin/CTW composite films resulted in low degree of swelling and weight loss which led to the improvement of shape stability. For the use as wound dressing carrying active ingredients, CM- chitin could adsorbed cationic compound higher than anionic compound because of the ionic interaction between carboxymethyl group of CM-chitin and cationic group of the compound. Moreover, the existence of chitin whisker in composite films exhibited the lower adsorption and dye desorption due to the low degree of swelling. CM-chitin can be degraded by lysozyme within 12 hrs and then led to the higher desorption capacity. In addition, the increasing of ionic strength in the media could enhance the desorption capacity as well. In conclusion, CM-chitin/CTW composite films showed a potential to be used as a hydrogel based wound dressing material and the optimum blend ratio is 90:10.