CHAPTER V
CONCLUSION

The degree of ethanol used during precipitation did not significantly affect on chemical composition ($p>0.05$), but significantly affected the precipitation yield of okra mucilage ($p\leq0.05$). The higher percentage of ethanol used during precipitation gave the better yield. The major composition of okra mucilage was carbohydrate, followed by protein, ash, and fat, respectively.

Okra mucilage had higher surface tension, followed by guar gum and xanthan gum, respectively. It was found that the concentration had an effect on the surface tension of all types of gum solution. The decrease of surface tension of gum in water solutions could be observed and the extent increased when the concentration of gum increased.

The rheological properties of okra mucilage depended on concentration, pH, and temperature. The results showed that the flow behavior of okra mucilage was more similar to that of xanthan gum than guar gum, as was observed in oscillatory test, and steady shear test. In dynamic test, similar to xanthan gum at low concentration, okra mucilage exhibited the viscous flow. On the other hand, at higher concentration, it exhibited an elastic property over the tested frequency range. When the concentration increased and a temperature decreased, okra mucilage significantly exhibited more shear thinning behavior ($p\leq0.05$). pH slightly affected flow behavior of both of okra mucilage and xanthan gum. A decrease in pH yielded a slight increase in flow behavior index; in the other word, a significant decrease the shear thinning behavior ($p\leq0.05$).

Due to their viscoelastic behavior, emulsion stabilized by okra mucilage, and that by guar gum tended to be pourable, whereas emulsion stabilized by xanthan gum tended to be spoonable. Emulsion stabilized by xanthan gum had higher stability than those stabilized by okra mucilage and guar gum.

1% and 2.5% w/w okra mucilage were used to improve the flow property of the 50% reduced oil salad dressing as could be seen by the results, which indicated that the 50% reduced oil salad dressing containing okra mucilage was more slimy and pourable than the control salad dressing with 100% oil and the 50% reduced oil salad

dressing. In addition, the 50% reduced oil with 2.5% w/w okra mucilage exhibited more shear thinning, comparing to other samples. As observed by naked eyes, the colors of the salad dressing with and without okra mucilage were similar.