

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

In this study, the optimum conditions for the pretreatment of *miscanthus* were identified. Under the optimal conditions, total monomeric sugar yields of 2.93, 62.28, and 71.64 g/100g biomass were obtained for alkali-alone, acid-alone pretreatment, and two-stage pretreatments, respectively. The two-stage pretreatment is the most efficient *miscanthus* pretreatment technique among these three microwave/chemical pretreatment process. *Miscanthus* treated by the two-stage microwave/chemical pretreatment showed the lowest extractives, ash, lignin, and hemicelluloses contents than those by single stage pretreatment.

Recommendations

1. Comparison of using *Miscanthus Sinensis* from different sources.
2. Using other characterization techniques to confirm the effect of pretreatment such as XRD, SEM, etc. (Hu *et al*, 2008; Fernández-Bolaños *et al*, 1999).
3. The hydrolysates should be analyzed the amount of inhibitor obtained from the pretreatment because the inhibitor in the hydrolysate influences the further fermentation process.