



CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

This study show the optimum condition for six types of pretreatment processes of *Napier grass*. Under single stage pretreatment, the highest total monomeric sugar yields of 5.57, 5.69, 24.99 and 30.93, g/100g biomass were obtained for microwave-assisted NaOH, NH₄OH, H₃PO₄, H₂SO₄, respectively. And two-stage pretreatment provided the highest total monomeric sugar yields 40.16 and 45.28 for microwave-assisted NH₄OH followed by H₂SO₄ and microwave-assisted NaOH followed by H₂SO₄, respectively. Two-stage pretreatment was effective in improving the digestibility of *Napier grass* to enhance total monomeric sugar yields and remove of lignin, comparing with single stage.

5.2 Recommendations

- Sugar determination with must be done as soon as possible after pretreatment or the later within one week of hydrolysis to correct the measurement. If the hydrolysis liquor must be stored, it should be freeze in a refrigerator.
- Other characterization techniques should be performed to confirm the effect of pretreatment such as SEM, BET, and XRD (Chen *et al.*, 2010, Wang *et al.*, 2010).