

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

The hydrolysis was performed on untreated sugarcane bagasse by using cellulose-producing bacteria, *Microcerotermes* sp., from Thai higher termites. The result showed that the maximum glucose concentration in the product was 1.03 g/L obtained from the hydrolysis of the 60 mesh ground bagasse with the M 015 bacteria strain at 37°C. The glucose concentration was slightly lower in the batch that used the 40 mesh ground bagasse. The bacteria strain played an important role on the hydrolysis. The glucose concentration from the hydrolysis with the A 002 strain was much lower than that from the M 015 strain. The glucose production kinetics at 30 °C operating temperature was slower than at 37 °C for both M 015 and A 002 bacteria strains. Moreover, the type of fermentation media has an important effect on the glucose production. Both bacteria strains did not work under other fermentation media except 65 modified DSMZ broth medium 2 without CMC.

5.2 Recommendations

For future work, the hydrolysis should be performed on treated sugarcane bagasse with various pretreatment techniques. Effects of hemicellulose and lignin contents in the raw material on the microbial hydrolysis should also be studied. The bacteria strain should be measured for other enzyme activity such as xylase and arabinase.