

Optimization of Levulinic acid production from *Geldium amansii*

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Study of bioproduct, such as biochemicals from inexpensive biomass, has recently attracted considerable attention. One of them marine biomass in comparison to other types of land biomass, there is growing rapidly and easy to cultivate. In addition, annual CO₂ absorption by marine biomass is five to seven times higher than that of wood-biomass. Moreover, carbohydrate content is higher and it can easily be converted to chemicals. In various biochemicals production from marine biomass, Levulinic acid is a highly versatile chemical with numerous industrial uses, having the potential to become a commodity chemical. This studies were carried out to find the optimization condition of temperature, acid concentration and reaction time on levulinic acid production from marine biomass *Geldium amansii* using two step treatments. In the first step through the acid soaking, we obtain solid-state cellulose, it can be produce ethanol by fermentation, and liquid-state galactose. Using high-temperature reaction in batch reactor, we have convert liquid- state galactose into the Levulinic acid by second step. As a result, we obtained approximately 15% conversion of the levulinic acid production when using two step acid treatment.