Produksi Bioetanol Dari Kulit Pisang Kepok Dengan Variasi Npk Melalui Hidrolisis Asam Klorida *(Production of Bioethanol from Kepok Banana Peels with Variations of Npk Through Hydrolysis of Hydrochloric Acid) Zeni Ulma, SST., M.Eng. (as chief counselor)*

Prayuda Alfian Syah Arya Pratama
Study Program of Renewable Energy Engineering
Department of Engineering
Program Studi Teknik Energi Terbarukan
Jurusan Teknik

ABSTRACT

To reduce dependence on fuel oil, the use of bioethanol is encouraged, one of which is the second generation. The second generation of bioethanol is produced from cellulose, hemicellulose as raw materials and bound by lignin, one of which is Kepok banana peel. The process of destroying lignin using chemical delignification was carried out by soaking kepok banana peel flour in a 10% NaOH solution with a mass ratio of 1:6 (w/v) for 12 hours. The delignified raw materials were then tested for their lignocellulosic content using the Chesson Datta method. The delignification method with 10% NaOH can decrease the lignin of Kepok banana peel by (36,6%), hemicellulose by (11,1%) and increase the cellulose content by 62,8%). The result of delignification was continued in the hydrolysis step using HCl concentration of 2M, the result was 13.5° brix. The fermentation stage uses a starter of baker's yeast with a concentration of 1.4%, urea nutrition with a concentration of 1% and a variety of NPK nutrients (0.6%, 0.8%, 1.0%) for 3 days and a substrate volume of 150 ml followed by distillation. until it doesn't drip. The best Kepok banana peel bioethanol content (6.5%) with a volume of 17ml was obtained at 0.8% NPK treatment. The yield produced in this treatment was 17%.

***Key word** : bioethanol, kepok banana peel, fermentation, NPK nutrition*