Teknologi Delignifikasi dan Produksi Bioetanol Generasi Kedua dari Limbah Agroindustri Ampas Kelapa (*Cocos Nucifer L*), Ampas Tebu (*Saccharum Officinarum L*) *(Delignification Technology And Production Of Bioethanol Second Generation From Agroindustry Waste Coconut Pulp (Cocos Nucifer L), sugarcane bagasse (Saccharum Officinarum L)). Supervised by Dedy Eko Rahmanto, S.TP,M.Si (as chief counselor) and Dr. Nurhayati, S.TP.M.Si (as a member counselor)*

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ABSTRACT

Bioethanol is produced from the fermentation of reducing sugars as a differentiator with ethanol produced by synthesis. Bioethanol is produced from raw materials for cellulose, hemicellulose biomass and bound by lignin. Coconut pulp and sugarcane bagasse contain cellulose, hemicellulose and lignin so pre-treatment delignification is necessary. Delignification technology used is thermal and chemical delignification (NaOH and H_2O_2). Thermal delignification is carried out using aquadest with a mass ratio of material: aquadest is 1: 8 (w / v) and is heated for 15 minutes at 121^oC in the autoclave. Delignification of NaOH is done by immersing the raw material in a 4% NaOH solution with a mass: solution ratio of 1:10 (w / v) for 12 hours. Delignification of H_2O_2 is done by entering 5% H_2O_2 with mass ratio: a solution of 1:10 (w / v) then added 2 M NaOH to pH 11.5 and heated to 50^oC for 2 hours. The delignified raw material will be tested for its lignocellulose content used the Chesson Datta method. The best delignification technology results will be used at a later stage. The stages of hydrolysis used H_2SO4 concentrations of 2 M and 2.5 M. Fermentation stages used 1 gram bread yeast starter with a 200 ml volume substrate. The most effective delignification method is to use 4% NaOH compared to the thermal and chemical delignification method (H_2O_2). Delignification of NaOH 4% can reduce levels of lignin coconut pulp up to 33.88% and sugarcane bagasse up to 25.78%. The highest bioethanol content in coconut pulp is by 2M hydrolysis of 6,11 ± 0,05 ml/L *and the highest bioethanol content of sugarcane bagasse is by 2 M hydrolysis of* 5,01 ± 0,05 ml/L. *The highest bioethanol produced during bread yeast fermentation with coconut pulp and bagasse substrate was at fourth day.*

Key words: *Coconut pulp, Sugarcane bagasse, Bioethanol, Delignification*