

**Production Effectiveness of Ambon Banana Peel Waste Bioethanol (*Musa Acuminata Cavendish*) with Differences in Concentration of Bread Yeast (*Saccharomyces cerevisiae*) and Fermentation Time.** Supervised by Dedy Eko Rahmanto, S.TP,M.Si (as chief counselor)

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**ABSTRACT**

Research on the second generation of bioethanol production has been developed in many institutions and universities in Indonesia. Second generation bioethanol has been produced and used as liquid fuel in several countries. Bioethanol is produced from cellulose, hemicellulose and bound by lignin as raw material. Ambon banana peel has the potential to become bioethanol raw material. The process of breaking lignin from ambon banana peel using chemical delignification is carried out by immersing the raw material in 10% NaOH solution with a solution mass ratio of 1:10 (w / v) for 12 hours. The delignified raw materials were then tested for lignocellulosic content using the Chesson Datta 1981 method. The delignification results were continued at the hydrolysis stage using 2 M H<sub>2</sub>SO<sub>4</sub> concentration. with variations in the length of fermentation (2 days, 3 days, 4 days, and 5 days) and a substrate volume of 200 ml followed by distillation for 2 hours. The delignification method with 10% NaOH can reduce the lignin of ambon banana peel by (12.93%). The best bioethanol content of ambon banana peel (17.98%) was obtained in W2K4 treatment using 0.8% bread yeast starter and fermentation time for 3 days. The highest effectiveness test score was found in W2K4 with ethanol content (17.98%), distillation volume (32.25 ml), pure ethanol volume (5.81 ml) and distillation rate (15.75 ml / hour) with total weight score (4.00).

**Key Word :** *Bioethanol, ambon banana peel, Fermentation, Bread yeast.*