

**Optimasi Produksi Bioetanol dari Air Kelapa (*Cocos nucifera L.*) dan Ragi (*Saccharomyces cerevisiae*) dengan Penambahan Urea (*Optimization Of Bioetanol Production from Coconut Water (*Cocos nucifera L.*) and Yeast (*Saccharomyces cerevisiae*) with Additional Urea*)**  
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***ABSTRACT***

Fossil energy reserves are dwindling while the use of oil fuels is increasing over time. This requires alternative energy such as bioethanol to reduce the use of fossil fuels. Coconut water in Indonesia is very abundant, reaching an average of 15.5 billion pieces / year. The purpose of this study was to find the best type of yeast and the effect of the concentration of addition of yeast and urea to produce the optimal bioethanol from coconut water. The treatment in this study lies in the fermentation process using two types of yeast, namely bread yeast and tape yeast with variations in the addition of yeast (0.2%, 0.4%, 0.6%, and 0.8%) and urea variations (0 %, 0.04%, 0.06%, and 0.08%). Fermentation was carried out for 72 hours by observing the quantity of CO<sub>2</sub> bubbles every 24 hours for 10 minutes. The fermented slurry was distilled at a temperature of 90°-93°C until the distillate reached 20 ml. Then the distillation rate was observed and the bioethanol distillate content was tested. Baker's yeast is the best yeast with a variation of the addition of 0.8% yeast concentration and 0.04% urea to produce the highest ethanol content (64.89%). The addition of 0.08% urea is the best variation with the highest quantity of CO<sub>2</sub> bubbles indicating a large number of microorganisms so that it can produce optimal bioethanol with the highest distillation rate and bioethanol content in each variation of the concentration of added yeast. The highest score for the effectiveness test was found in A4B4 treatment, namely 0.86 with a distillation rate (23.67 ml / hour) and ethanol content (58.92%).

Keywords: *Coconut Water, Yeast, Urea, Bioethanol.*