

## PENGARUH LAMA WAKTU FERMENTASI TERHADAP KADAR ETANOL PADA FERMENTASI PATI SAGU (*Metroxylon sagu* Rottb.)

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### ABSTRAK

Sagu (*Metroxylon sagu* Rottb.) merupakan tanaman penghasil pati yang cukup tinggi dengan jumlah pohon yang tersebar luas di daerah Maluku dan Papua. Sagu memiliki kandungan karbohidrat cukup tinggi yaitu sagu 84,70%. Adanya kandungan karbohidrat yang tinggi dan jumlahnya yang banyak maka, pati sagu berpotensi untuk dijadikan bahan baku pembuatan biotanol. Tujuan penelitian ini adalah mengetahui pengaruh lama waktu fermentasi terhadap kadar etanol yang dihasilkan dan pH akhir fermentasi pati sagu dan mengetahui lama waktu fermentasi pati sagu yang menghasilkan kadar etanol tertinggi.

Pada penelitian ini pati sagu dimasak kemudian difermentasi menggunakan ragi roti (*Saccharomyces cerevisiae*) dengan perlakuan lama waktu fermentasi yaitu 2 hari, 3 hari, 4 hari, 5 hari dan 6 hari. Masing-masing perlakuan diulang 3 kali. Pada akhir fermentasi dilakukan pengukuran pH dengan indikator universal dan kadar etanol dengan metode spektrofotometri. pH akhir fermentasi dianalisis secara deskriptif sedangkan kadar etanol dianalisis dengan uji Anova dan uji Duncan.

Hasil penelitian menunjukkan bahwa semakin lama waktu fermentasi maka pH akhir yang terukur semakin meningkat. Lama waktu fermentasi berpengaruh nyata terhadap kadar etanol yang dihasilkan. Kadar etanol tertinggi dihasilkan pada perlakuan hari ke 5 yaitu 0,60%.

Kata kunci: Sagu (*Metroxylon sagu* Rottb.), kadar etanol, *Saccharomyces cerevisiae*, lama waktu fermentasi, pH.

## EFFECT OF LONG FERMENTATION TIME ON ETHANOL LEVELS FROM THE FERMENTATION OF SAGO STARCH (*Metroxylon Sago Rottb*)

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### ABSTRACT

Sago (*Metroxylon sago* Rottb.) is a starch-producing plant that is quite high with a number of trees that are widely distributed in Maluku and Papua. Sago has a fairly high carbohydrate content, namely 84.70% sago. With its high carbohydrate content and large amount, sago starch has the potential to be used as raw material for bioethanol production. The purpose of this study was to know the effect of the length of fermentation time on the levels of ethanol produced and the final pH of sago starch fermentation and to know the length of fermentation time of sago starch which produces the highest ethanol levels.

In this study, sago starch was cooked and then fermented using baker's yeast (*Saccharomyces cerevisiae*) with the length of fermentation time being 2 days, 3 days, 4 days, 5 days and 6 days. Each treatment was repeated 3 times. At the end of the fermentation, the pH was measured with universal indicators and the ethanol content was measured using the spectrophotometric method. The final pH of the fermentation was analyzed descriptively while the ethanol content was analyzed by the Anova test and Duncan's test.

The results showed that the longer the fermentation time, the higher the final measured pH. The length of fermentation time has a significant effect on the ethanol content produced. The highest ethanol content was produced on the 5th day of treatment, which was 0.60%.

**Keywords:** Sago (*Metroxylon sago* Rottb.), ethanol levels, *Saccharomyces cerevisiae*, length of fermentation time, pH.