

**MEMPELAJARI KONDISI OPTIMUM PEMBUATAN BIOETANOL MELALUI
HIDROLISIS ENZIMATIS MENGGUNAKAN *Sacharomyces cereviceae*
DARI PATI SAGU DAN UMBI TALAS**

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ABSTRACT

Sago (*Metroxylon sp*) and umbi talas (*Colocasia gigantea Hook F*) are natural resources that are found in plantyfull Indonesian. However, these potencies are not yet processed to give an optimum value added product. Sago and taro are rich of starch, that could be fermented to form bioethanol for renewable energy. The ethanol were produced by fermenting the hydrolized starch of sago and taro with yeast. The starch of sago and taro were hydrolized enzymaticly by α -amylase and glucoamylase. Sago and taro (15 g each) were grinded and hydrolized by α -amylase and then by glucoamylase at the variation of volume of 4, 5, 6, 7, and 8 mL for 1, 2, 3, 4, and 5 hours. The glucose produced was measured by Somogy-Nelson methods. The product of sago hydrolisis were optimum with 6 mL of α -amylase and 6 mL glucoamylase for 2 hours to give 59.11 g/L of reducing sugar. The product of taro with 6 mL α -amylase and 7 mL glucoamylase for 4 hours which gave 64.22 g/L of reducing sugar. The product of ethanol were analyzed by Gas Cromatography (GC). The maximum bioethanol production obtained optimum after 4 days fermentation of hydrolized sago starch and after 5 days fermentation of hydrolized taro starch which were 3.742% and 4.0123%.

Key words: Bioethanol, sago starch, taro, enzymatic hydrolised, α -amylase and glucoamylase

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