Lignoselulosa of Bagasse Bioetanol Sorghum (Shorgum Bicolor l. Moench) with Hidrolysis acid and the fermentation

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Abstract

Sorghum can be utilized as a food and as animal feed. In addition to food ingredient substitutions, the utilization of sorghum as well as low-cost alternative energy biofuel raw materials derived from ethanol. The aim of this thesis is to know the pebandingan the making of a pretreatment with NaOH using bioetanol and the making of a pretreatment without using bioetanol NaOH. Knowing the levels resulting from the manufacture of bioetanol bioetanol lignoselulosa bagasse from sorghum with sulfuric acid and hidrolysis process of fermentation.

This experiment consists of four stages. Phase I process raw material pretreatment by using a solution of NaOH 0,375 N with temperature 121 °C. Phase II acid hydrolysis process by adding sulfuric acid (H2SO4) 0,375 N to change the cellulose into glucose with a temperature of 121 °C. Phase III the fermentation by adding Urea, NPK and yeast that function converts glucose to ethanol with conditions the room temperature for 3 days. Stage IV which is a distillation of ethanol and water purification process based on the boiling point temperature of 78 °C.

Experimental results obtained glucose levels of 9,375 g/l and concentrations of ethanol amounted to 0.17% of the experimental process of pretreatment with NaOH bioetanol. While in the process of with bioetanol experiment without pretreatment obtained glucose levels of 40,7 g/l and ethanol levels of 1.16%.

Key words: Bioetanol, hidrolysis acid, and fermentation