BIOETHANOL PLANT FROM MOLLASE WITH FERMENTATION PROCESS

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Abstract

Bioethanol is ethanol produced from biomass feed stock mainly mollase. Bioethanol can be used for alternative fuels. The bioethanol plant will be stablished in the area of Malang, East Java. The plant uses raw materials mollase the glucose content of 21% with the fermentation process.

The process of making bioethanol includes five stages, the first stage is the process off iltering and sterilization. The second stage is the pre-fermentation process preparation of starter with the addition of nutrients and Sacharomyces cerevisae. The third stage is the process of fermentation for 40 hours with the addition of starter in oculum of the manufacturing process and the addition of antifoam. The fourth stage is distillation. The fifth stage shieve molecular dehydration.

Bioethanol factory work and semi-continuous operation for 300 days/year with a production capacity of 26,000 tons/year. Mollase required 92 340 tons/year. Supporting the use of raw materials (NH₄)₂SO₄, anti-foam and bacteria saccharomyces cerevisae utility requirementi scooling water, boiler feed water and process wate reach 1567 m³/year, 1 879 m³/year and 657 m³/year. Waste generated from this industry that cake fermentation and CO₂ gas.

Key words: Bioethanol, Fermentation, Mollase