GLUCOSE SYRUP PLANT FROM RICE BRAN
BY ENZYME HYDROLYSIS PROCESS

Name : Aristia Anggraeni Santoso (2310 030 017)
Name : Aulia Kartika Dewi (2310 030 037)
Department : D III Teknik Kimia
Supervisor : Prof. Dr. Ir. Danawati Hari Prajitno, M.Pd

Abstract
Glucose syrup is clear and viscous liquid. In general, glucose syrup can be used as a substitute for sugar in the food industry. Therefore, glucose syrup plant was established to meet the needs of industry and consumers.

Production of glucose syrup consists of three stages. The first stage is pretreatment to make the starch slurry 30% of rice brand. The second stage is the hydrolysis process. Hydrolysis stage is divided into two stages, namely liquification and saccharification. Liquification is a breakdown of starch into dextrin by α-amylase enzyme at a temperature of 95°C. While the saccharification is decomposition of dextrin into glucose by the enzyme glucoamylase at a temperature of 60°C. The third stage is the purification of glucose syrup to achieve the viscosity standard which is 75%.

Glucose Syrup plant will be planned in the Kuningan Regency, West Java, with a production capacity of 44,000 ton/year. To achieve the production capacity, raw material used of rice bran 23,411.88 kg/day, α-amilase 99.24 kg/day, and glukoamilase 50.61 kg/day. This plant needs water utilities include sanitary water, water process, cooling water and boiler feed water, each for 17.35 m³/day, 463.78 m³/day, 3272.09 m³/day and 7779.89 m³/day. Waste from this industry is solid waste (cake) and liquid waste.

Key Word : Rice Bran, Glucose Syrup, Enzyme Hydrolysis