MALTOSE PLANT FROM TAPIOCA STARCH WITH HIDROLYSIS ENZYMES PROCESS

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Abstract
Maltose is a sugar alternative derived from starch hydrolysis. Maltose plant uses raw material in the form of tapioca flour. The plant is located in the Gunung Terang, Tulang Bawang, Lampung and operate semi-batch for 24 hour/day and 330 days/year. Production capacity is 60.000 tons/year and the manufacture process of enzymes hydrolysis to produces maltose.

Maltose production process consists of three stages. The first stage is the gelatinization tapioca flour. The second stage is the hydrolysis of starch into dextrin, maltose, and glucose in the dextrination reactor with α-amylase at 95°C and atmospheric pressure for 3 hours and then dextrin further processing in the saccharification reactor by β-amylase, and pullulanase into maltose at 65°C for 48 hours. After that, maltose solution enter through the refining step of carbonization process, filtration and ion exchanger. The final stage maltose solution was concentrated to 75% in triple effect evaporator.

To achieve production capacity, raw materials used 5557.9 kg/h. Maltose plant water needs, includes sanitary water, cooling water, boiler feed water and process water, each for 15 m³/hr, 6255 34.5435 m³/hr, 232.296 m³/hr, and 48.225 m³/hr.

Key words: maltose, hydrolyzing enzymes, tapioca flour.