ABSTRACT

MANUFACTURE OF DEKSTROSE
FROM MANIHOT UTILISSIMA WITH THE ENZYMATIC HYDROLYSIS
PROCESS CAPACITY 60,000 TONS/YEAR
(Design Saccarification Reactor -201 (RS-201))

By

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Dekstrose plant produced by reacting manihot utilissima was plan to be in industrial plant in the region of Center Lampung in Lampung Province. Plant was established by considering the availability of raw materials, transportation facilities, readily available labor and environmental conditions.

Plant's production capacity is planned 60,000 tons / year, with operating time of 24 hours / day and 330 working days in a year. The raw materials used are much manihot utilissima 9.166,194 kg / hr.

Provision of utility plant needs a treatment system and water supply, steam supply systems, instrument air supply systems, and power generation systems. Labor needed as many as 186 people with a business entity form Limited Liability Company (PT) which is headed by a Director who is assisted by the Director of Production and Director of Finance with line and staff organizational structure.

From the economic analysis is obtained:

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\begin{align*}
\text{Fixed Capital Investment} & \quad (\text{FCI}) \quad = \quad \text{Rp} \ 258,873,276,032,07 \\
\text{Working Capital Investment} & \quad (\text{WCI}) \quad = \quad \text{Rp} \ 45,683,519,299,78 \\
\text{Total Capital Investment} & \quad (\text{TCI}) \quad = \quad \text{Rp} \ 304,556,795,331,85 \\
\text{Break Even Point} & \quad (\text{BEP}) \quad = \quad 34.96\% \\
\text{Shut Down Point} & \quad (\text{SDP}) \quad = \quad 15.35\% \\
\text{Pay Out Time before taxes} & \quad (\text{POT}_b) \quad = \quad 1.76 \text{ years} \\
\text{Pay Out Time after taxes} & \quad (\text{POT}_a) \quad = \quad 2.11 \text{ years} \\
\text{Return on Investment before taxes} & \quad (\text{ROI}_b) \quad = \quad 39.70\% \\
\text{Return on Investment after taxes} & \quad (\text{ROI}_a) \quad = \quad 31.76\% \\
\text{Discounted cash flow} & \quad (\text{DCF}) \quad = \quad 39.09\% 
\end{align*}
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Consider the summary above, it is proper establishment of dekstrose plant to studied further, because the plant is profitable and has good prospects.