

ABSTRACT

PREDESIGN OF DEXTRIN PLANT FROM PALM OIL STARCH WITH 30.000 TONS/YEAR CAPACITIES (Special Task Design of Spray Dryer 301 (SD-301))

By
JENNIFER MENTARI TOGATOROP

Dextrin is a starch hydrolysis product made by cutting the main chains of starch. Dextrin has many benefits, including: as a constituent component of baby food, improving the texture of food ingredients, color mixing materials in textile printing, as a substitute for natural glue, and others. Dextrin can be produced by 2 ways, they are: Acid Hydrolysis and Enzyme Hydrolysis. After reviewing from the aspect of thermodynamic, economic and other aspects, the enzyme hydrolysis process was chosen.

The plant's production capacity is planned at 40,000 tons / year with 330 working days in a year. The location of the plant is planned to be established in the Ujung Batu area, Rokan Hulu district, Riau. Labor needed as many as 186 people with a business entity form Limited Liability Company (PT) which is led by a Director who is assisted by the Director of Production, Director of Commercial, and Director of Human Resources and General. with line and staff organizational structure.

From the economic analysis obtained:

<i>Fixed Capital Investment</i>	(FCI)	= Rp 329.858.779.579
<i>Working Capital Investment</i>	(WCI)	= Rp 58.210.372.867
<i>Total Capital Investment</i>	(TCI)	= Rp 388.069.152.446
<i>Break Even Point</i>	(BEP)	= 37,08 %
<i>Shut Down Point</i>	(SDP)	= 22,68 %
<i>Pay Out Time before taxes</i>	(POT) _b	= 1,44 years
<i>Pay Out Time after taxes</i>	(POT) _a	= 2,02 years
<i>Return on Investment after taxes</i>	(ROI) _b	= 56,24 %
<i>Return on Investment after taxes</i>	(ROI) _a	= 42,18 %
<i>Discounted cash flow</i>	(DCF)	= 50,12 %

Based on some of the above explanations, then the construction of this dextrin plant is worthy of further study, because the plant is profitable from an economic aspect and has good prospects future.

ABSTRAK

PRARANCANGAN PABRIK DEKSTRIN DARI PATI KELAPA SAWIT KAPASITAS 30.000 TON/TAHUN (Tugas Khusus Perancangan Spray Dryer 301 (SD-301))

Oleh
JENNIFER MENTARI TOGATOROP

Dekstrin merupakan produk hidrolisis pati yang dibuat dengan cara pemotongan rantai utama pada pati. Dekstrin memiliki banyak manfaat, antara lain: sebagai komponen penyusun makanan bayi, meningkatkan tekstur bahan pangan, bahan pengaduk warna pada percetakan tekstil, sebagai pengganti lem alami, dan lain-lain. Dekstrin dapat diproduksi dengan 2 cara yaitu: Hidrolisis Asam dan Hidrolisis Enzim. Setelah meninjau dari aspek termodinamika, ekonomi dan aspek lainnya, dipilihlah proses Hidrolisis Enzim.

Kapasitas produksi pabrik direncanakan 40.000 ton/tahun dengan 330 hari kerja dalam 1 tahun. Lokasi pabrik direncanakan didirikan di daerah Ujung Batu, kabupaten Rokan Hulu, Riau. Tenaga kerja yang dibutuhkan sebanyak 186 orang dengan bentuk badan usaha Perseroan Terbatas (PT) yang dipimpin oleh seorang Direktur Utama yang dibantu oleh Direktur Produksi, Direktur Pemasaran dan Direktur Keuangan, serta Direktur SDM dan Umum dengan struktur organisasi *line and staff*.

Dari analisis ekonomi diperoleh:

<i>Fixed Capital Investment</i>	(FCI)	= Rp 329.858.779.579
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Berdasarkan beberapa paparan di atas, maka pendirian pabrik dekstrin ini layak untuk dikaji lebih lanjut, karena merupakan pabrik yang menguntungkan dari sisi ekonomi dan mempunyai prospek yang baik.