

ABSTRAK

Nama	1. Nur Annisa Sunardi / 1141600019 2. Aliska Balqis / 1141600043
Nama Pembimbing	1. Dr. Wahyudin, S.T, M.Sc 2. Agam Duma Kalista Wibowo, S.T, M.T
Program Studi	Teknik Kimia
Judul	PRA-RANCANGAN PABRIK <i>COCOA POWDER</i>

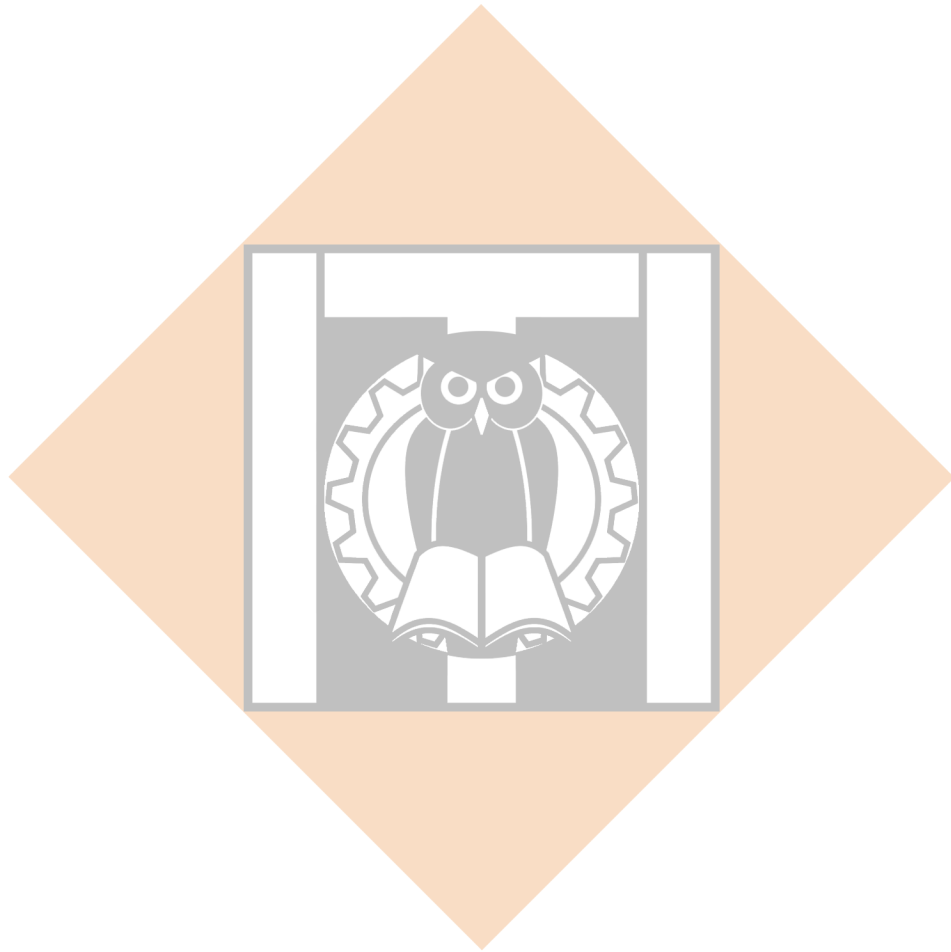
Tanaman kakao (*Theobroma cacao*) merupakan tanaman industri yang sangat terkenal dan memiliki banyak manfaat. Biji kakao dapat diproses menjadi beberapa produk olahan, yaitu *cocoa liquor*, *cocoa powder*, dan *cocoa butter*. Produk olahan kakao yang paling strategis untuk dikembangkan adalah *cocoa powder* karena banyak digunakan sebagai bahan baku utama maupun tambahan pada produk pangan. Pada pra-rancangan pabrik ini juga menghasilkan produk samping, yaitu *cocoa butter*. Kapasitas produksi pabrik *cocoa powder* ini adalah 20.000 ton/tahun. Pra-rancangan pabrik *cocoa powder* ini menggunakan bahan baku utama biji kakao yang terfermentasi. Biji kakao dibersihkan terlebih dahulu kemudian melalui proses *winnowing* untuk memisahkan inti biji (kakao nib) dengan kulitnya. Kemudian kakao nib melalui proses alkalisasi yang berfungsi untuk memperbaiki warna dan cita rasa bubuk kakao, serta untuk meningkatkan daya suspensi bubuk kakao di dalam air. Kakao nib yang telah di alkalisasi kemudian melalui proses *roasting* untuk disangrai. Setelah itu biji kakao dihancurkan dan menghasilkan *cocoa liquor*. Kemudian *cocoa liquor* melalui proses *pressing* untuk memisahkan antara *cocoa cake* dan *cocoa butter*. *Cocoa cake* dihancurkan sehingga menghasilkan *cocoa powder*.

Hasil analisa ekonomi yang telah dilakukan adalah sebagai berikut :

- a. Total Modal Investasi
 - Modal sendiri (75%) = Rp 1.413.091.241.509
 - Pinjaman Bank (25%) = Rp 475.000.000.000
- b. Suku bunga pertahun = 10%
- c. Jangka waktu peminjaman = 5 tahun
- d. IRR (*Internal Rate of Investment*) = 48,46%

e. MPP (*Minimal Payback Period*) = 3 tahun 10 bulan 24 hari

Berdasarkan hasil analisa ekonomi diatas, maka dapat diambil kesimpulan bahwa Prarancangan Pabrik *Cocoa Powder* layak untuk didirikan.



ABSTRACT

Name 1. Nur Annisa Sunardi / 1141600019
2. Aliska Balqis / 1141600043

Thesis Advisor 1. Dr. Wahyudin, S.T, M.Sc
2. Agam Duma Kalista Wibowo, S.T, M.T

Department Teknik Kimia

Title *PRE-PLANT DESIGN OF COCOA POWDER*

*The cocoa plant (*Theobroma cacao*) is a very well known industrial crop and has many benefits. Cocoa beans can be processed into several processed products, they are cocoa liquor, cocoa powder, and cocoa butter. The most strategic cocoa product to be developed is cocoa powder because it is widely used as the main raw material and as an additive in food products. The pre-plant design of cocoa powder also produces a second product, that is cocoa butter. The production capacity of this plant is 20,000 tons / year. The raw material used is a cocoa beans that have been fermented. The cocoa beans are cleaned first and then go through a winnowing process to separate the cocoa nib from their shells. Then the cocoa nib through alkalization process to improve the color and flavor of cocoa powder, as well as to improve the suspension of cocoa powder in the water. Alkalized cocoa beans go through the roasting process to roast. After that, the cocoa nibs are crushed to produce the cocoa liquor. Then the cocoa liquor go through a pressing process to separate the cocoa cake and cocoa butter. The cocoa cake is crushed to produce cocoa powder.*

The results of the economic analysis that have been carried out are as follows:

a. Total Investment Capital

- Own capital (74%) = Rp 1.413.091.241.509

- Bank loan (26%) = Rp 475.000.000.000

b. Annual interest rate = 10%

c. Loan term = 5 years

d. IRR (Internal Investment Rate) = 48,46%

e. MPP (Minimum Payback Period) = 3 years 10 months 24 days

Based on the results of the economic analysis above, it can be concluded that the Pre-Plant Design of Cocoa Powder is feasible to establish.

