

PRODUCTION OF GREEN COFFEE EXTRACT

(Process Code – **CBP 310**)

INTRODUCTION

Green Coffee Beans are the seeds from the fruits of coffee tree, which are unroasted beans. Coffee is one of the most consumed and commercialized food products in the world. A significant source of Chlorogenic acid (CGA) in nature is Green (raw) coffee constituting 5–12%. CGAs are phenolic compounds naturally formed by the esterification of cinnamic acids, such as caffeic, ferulic, and p-coumaric acids, with (–)-quinic acid (QA). They are usually classified into three groups namely, caffeoylquinic acids (CQAs), dicaffeoylquinic acids (diCQAs), and feruloylquinic acids (FQAs). These compounds contribute astringency and bitterness of the final beverage along with health benefit effects. Few researchers enlisted biological effects attributed to CGA present in green coffee. The intake of green coffee extract produces antihypertensive effect and inhibition of fat accumulation and body weight, alternation in glucose metabolism. CGA are nutritionally and functionally associated with the antioxidant activity along with anti-inflammatory, antimicrobial, and antiviral activities. Moreover, their role in the prevention of several diseases allied with oxidative stress, like cancer, premature aging, and strokes. The effect on green coffee extract and chlorogenic acids are multifaceted. Some of the attributed effects of GCB extract are: improved glucose and insulin balance and increased satiety.

INSTALLED CAPACITY

The estimated installed capacity of the unit, when in full operation would be 100 kg green coffee extract per day. The unit can work 250 days in a year. Working: 1 shift/day

AVAILABILITY OF RAW MATERIAL – Sources

There are two main species of coffee, namely, Arabica and Robusta, Robusta is very rich in Chlorogenic acid and yields higher extractives. India produces coffee in quite substantial quantity and is available throughout the year.

TECHNOLOGY/MANUFACTURING PROCESS – Availability

Green coffee extract has become a popular and widely accepted for health benefit. The green coffee extract quality is dependent on the raw material and hence selection of the coffee beans is the first important step. The raw coffee beans are pretreated and used for extraction. The extraction method is completely ecofriendly and zero waste. The final extract is collected and stored in air tight container. The product can be stored at room temperature for 6 months in clean dryplace avoiding direct sunlight.

PLANT AND EQUIPMENT

Principal equipments: Hammer mill, Steam kettele, Thin film evaporator

PROJECT COST – FIXED COST – WORKING CAPITAL (in Rs. '000)

| Estimate for a model project | Rs(lakhs) |
|---|------------------|
| a) Land & Land development (750 m ²) | 250.00 |
| b) Building and civil works (400 m ²) | 16.00 |
| c) Plant and machinery | 16.00 |
| d) Pre-operative expenses | 18.80 |
| Total Fixed Capital | 160.00 |
| Working capital margin | 17.40 |
| Total Project cost | 177.40 |

Means of Finance

| | |
|--------------------------|-------|
| - Promoters contribution | 71.40 |
| - Term loan | 106.0 |

ANY OTHER SPECIAL FEATURE

About 90% of green coffee spent on the weight of green beans is available as a by-product during the manufacture of green coffee concentrate. This spent coffee can be used in preparation of bakery products, coffee oil etc.