

CGA enriched instant coffee cubes

1. 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%. 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, alteration in glucose metabolism. This coffee cube is handy product filled with wellness of green coffee along with the aroma and flavor of roasted coffee. Cube can be dispersed in hot water for black coffee, in hot milk for traditional coffee, in cold water/milk for cold coffee and in soda for fizzy coffee with health benefits.

2. Raw material

As India is one of the major coffee growing countries, Green coffee is available throughout the year. Spray drier green coffee extract, caster sugar and instant coffee powder is all you need.

3. Storage/ packing material

The CGA enriched instant coffee cubes can be stored in cool and dry environment away from humidity and sunlight.

4. Equipment

The major equipment required are Spray dryer, Planetary mixer, 24 Tray drier, moulds, horizontal pillow pouch packing line, dehumidifying and cooling facility and cooling conveyor.

5. Process description

Preparation of CGA enriched instant coffee cubes

For the best formulation of coffee cubes 7g of sugar per cube was fixed as optimum level based on sensory evaluation to achieve the optimum sweetness. The instant coffee (1.5g) was used for the coffee flavor and aroma. GCE extract powder (as per process know-how from CFTRI) was used on the basis of safe consumption limits of CGA. R.O. water is added in sufficient quantity so as to bind the ingredients together. The ingredients are mixed well, added to the mould and molded in form of a cube and then kept for drying in the oven for 30-40 min at 50°C and cooled immediately. The final product can be packed in metalized polyethylene terephthalate (MET-PET-PE) packaging material. The size of each cube is 2cmX1.2cmX2cm whereas the weight of the cube ranges between 8-9g.

Drop a cube into boiled water/soda/milk stir, enjoy.

6. PROJECT COST – FIXED COST – WORKING CAPITAL

Estimate for a model project	Rs(lakhs)
a) Land & Land development (625 m ²)	16.00
b) Building and civil works (350 m ²)	52.00
c) Plant and machinery	62.00
d) Pre-operative expenses	11.00
Total Fixed Capital	
Working capital margin	15.00
Total Project cost	160.00
Means of Finance	
- Promoter's contribution	60.00
- Term loan	100.00

7. Production cost **Rs. 6.00 per cube**

Suggested economic capacity: **10000 cubes/8h shift**
Working: **250 days/year**

8. Technology / Manufacturing Process -Availability

The technology for manufacturing CGA enriched instant coffee cubes has been optimized, standardized and validated at CFTRI. The institute has the necessary expertise to provide technical assistance and guidance for setting up the project and implementation, under technical consultancy arrangements.

9. Any other special feature

The cubes are an innovative approach in the convenience products market. Keep some in your backpack, purse, pocket handy to carry, easy to prepare and saves time.