Central Food Technological Research Institute,
Mysore – 570 020

Cultivation of Dunaliella β-carotene rich micro algae

1. Introduction:

The genus *Dunaliella* belonging to Family Chlorophyceae includes halotolerant, unicellular, motile green algae with exceptional morphological and physiological properties. It is devoid of rigid cell wall & contains a single, large cup shaped chloroplast. *Dunaliella sp* accumulate massive amount of β-carotene, primarily in response to high light intensity.

2. Use:

β-carotene rich Dunaliella as a source of the carotenoids, which could be used in the food and health food formulations.

3. Raw Material:

Dunaliella can be cultivated in open raceway ponds with simple requirements..

4. Process:

Algal slants ⟶ Conical flasks ⟶ Carboy culture ⟶ Outdoor tanks Cartoon genesis ⟶ Harvesting ⟶ β-carotene rich Biomass ⟶ Drying ⟶ Packing

5. Plant & Machinery:

Raceway ponds with Paddle wheels, Harvester, Spray drier.

6. Project Cost – Fixed Cost – Working Capital (in Rs. '000) (Estimate for a model project):

a)	Land & Land development (6000 m^2)	900.00
b)	Building and civil works (1200 m^2) including ponds	1425.00
c)	Plant and machinery	1247.00
d)	Auxiliary equipments	929.00
e)	Other fixed assets	113.00
f)	Pre-operative expenses	614.00
	Total fixed capital	5228.00
	Working capital margin	184.00
	Total Project cost	5412.00

Means of finance:

- Promoters contribution	1813.50
- Term loan	3598.50

7. Production Capacity- (estimate):

Suggested economic capacity: 1500 kg of β-carotene rich Dunaliella biomass
Working: 300 days per annum
Production per day: 5 kg of Dunaliella biomass

8. Technology/Manufacturing Process – Availability:

The technology for the manufacture of Cultivation of Dunaliella β-carotene rich micro algae has been developed at CFTRI, Mysore, using appropriate equipment for optimal product recovery of right quality. The CFTRI has the necessary expertise to provide technical assistance and guidance for setting up the project. The CFTRI can offer further technical assistance for project implementation under technical consultancy arrangements.