

ANNATTO DYE

(Process code: CPS-1500)

INTRODUCTION

Annatto food colours are natural carotenoid colourants derived from the pericarp of the seeds of the tropical annatto tree (*Bixa orellana* L.). The surface of the seed contains a highly coloured resin consisting primarily of the carotenoid, Bixin. The bixin is extracted from the seed by a special process resulting in the present form for use in formulation of different food products.

A safe and convenient food colourant, annatto is one of the oldest colours known to man which has been extensively used to colour cheese, butter and other dairy products, it is also used world wide in foods like soft drinks, sugar confectionery, margarine, ice cream, fish products etc.

MARKET POTENTIAL

The principle consumers are the United State of America (33%), Western Europe and mainly United Kingdom and France (25%), Japan (18%) and Latin America (14%).

Within Western Europe, the United Kingdom is the largest consumer of annatto seeds. The major consumers of annatto seeds in Latin America are Brazil (two thirds of total consumption), Venezuela, Argentina and Peru.

CFTRI process for Annatto Dye in the crystal like pure form involves the batch type percolation technique using counter current extraction of annatto seeds with selective solvents and further solvent recovery and vacuum dehydration of concentrated dye to a crystal like form. The crystal like dye can be further used in the formulations in the form of water soluble, oil soluble and refined powder.

RAW MATERIAL

The raw material requirements are: Annatto seeds, Hexane, Acetone etc.

PLANT AND MACHINERY

SS percolators, Distillation units, Chill water plant, Vacuum shelf drier, Cold storage, Boiler, Holding tanks, Homogenizers, Grinder / Pulverizer etc.

PROJECT COST – FIXED COST – WORKING CAPITAL (in Rs. '000)
(Estimate for a model project)

a)	Land (4000 m ²)	550.00
b)	Building and civil works (500 m ²)	1672.50
c)	Plant and machinery	3017.00
d)	Miscellaneous fixed assets	500.00
e)	Pre-operative expenses	1262.00
	Total fixed capital	7001.00
	Working capital margin	1400.00
	Total Project cost	8401.00

Means of Finance

- Promoters contribution	3150.25
- Term loan	5250.75

PRODUCTION CAPACITY- (estimate)

Suggested economic capacity	: 500 Kg/ day of raw material / shift
Working	: 1 shift/day, 300 days
Capacity of finished product	: 15 Kg / day
Optimum capacity utilization	: 70%

TECHNOLOGY/MANUFACTURING PROCESS – Availability

The technology for production of natural colour from annatto seeds has been developed at CFTRI, Mysore, using appropriate equipment for optimal product recovery of right quality. The Institute has the necessary expertise to provide technical assistance and guidance for setting up the project and can offer further technical assistance for implementation, under technical consultancy arrangements.