

## DESIGN OF ANNATTO SEED SEPARATOR

### 1. Introduction:

A small, continuous power operated machine was designed and developed for the separation of annatto seeds from pods. The machine was tested and evaluated for its working performance. The annatto seed separator consists of a hopper, shaker, aspirator, frame, two cylindrical drum (inner and outer) having 12mm diameter and fins are attached to the peripheral inner and outer cylindrical to act like beaters. The machine was conceived as a low-cost, easy-to-dismantle and easy-to-fabricate device for removing the seed from the annatto pod.

### 2. Features of the machine:

- Machine Capacity: 100 kg/hr
- Motor specifications: Single phase, 2HP, 1440 rpm
- Critical speed of the machine: 2393 rpm
- Output of material (seeds): 40 kg/hr
- Dehulling efficiency: 92.55%
- Specific energy consumption: 4.03 KJ/kg

**Suggested capacity of the fabrication unit:** 24 machines per annum working 300 days/ annum

### 3. Project Economics- Fixed Cost – Working Capital (in Rs.'000)

(Estimate for a model project)

a)	Land & land development (12 Sq. M)	120.00
b)	Building & civil construction (250 Sq. M)	337.50
c)	Plant and machinery	1072.50
d)	Miscellaneous fixed assets	115.00
e)	Pre-operative expenses	167.10
	Total fixed capital	<b>1812.10</b>
	Working capital margin	200.00
	<b>Total Project cost</b>	<b>2012.10</b>

### 4. Technology/Manufacturing Process – Availability:

The design drawing for **Annatto Seed Separator** has been developed at CFTRI, Mysore. The CFTRI has the necessary expertise to provide technical assistance and guidance for setting up of fabrication unit of this machine (the facilities can also be used for fabrication of other food processing equipments also). The CFTRI can offer further technical assistance for development and problem solving under technical consultancy arrangements.