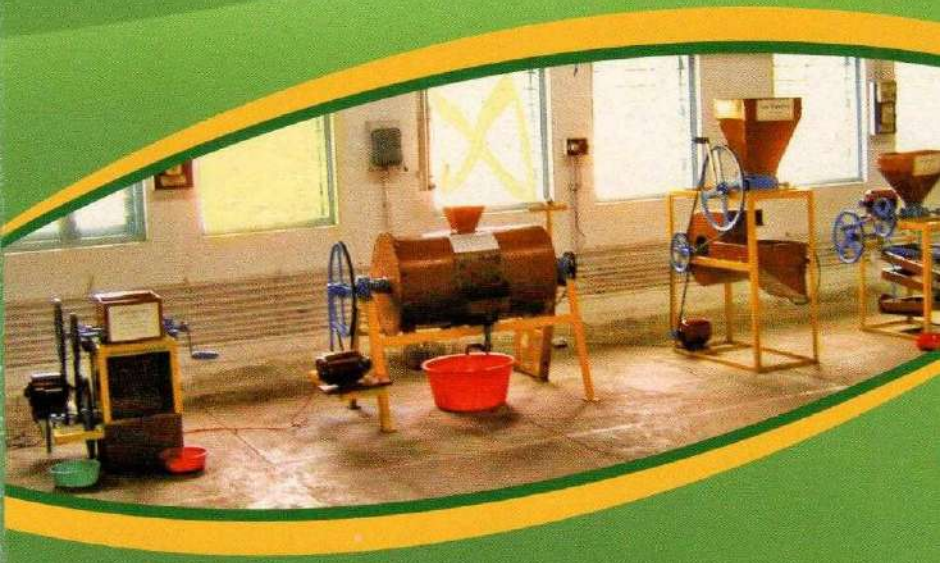
National Agricultural Innovation Project

A value chain on lac and lac based products for domestic and export market

Small Scale Lac Processing Unit for Seedlac

(Capacity-100 kg Sticklac /day)



INDIAN INSTITUTE OF NATURAL RESINS AND GUMS

(Indian Council of Agricultural Research)

Namkum, Ranchi – 834 010 (Jharkhand)

Introduction

Mostly lac growers sell sticklac immediately after scraping due to associated storage problems. Proper storage of sticklac requires large space with adequate ventilation. Such facility is not available in lac growers' houses. If sticklac is stored in bags, it forms lumps which are difficult to crush during processing. Further lump formation leads to deterioration in quality of lac. The sticklac converted into seedlac can be stored like grains in bags or bins. The process of making seedlac from sticklac involves five major unit operations i.e. crushing, washing, drying, winnowing and grading. To address the problem, this Institute has developed a set of four machines *viz.* Lac Crusher, Lac Washer, Lac Grader and Lac Winnower for establishing Small Scale Lac Processing Units (Capacity-100 kg/day). These machines can be driven manually or with electric motor. If the processing unit remains functional for six months in a year, about 750 man-days of employment can be generated from the unit. From such a unit net profit of about ₹25,000 per month can be earned. For establishing the unit, about 0.2 hectare of land is required.

Machines for Seedlac Unit

Lac crusher

Scraped lac is crushed with the help of crusher to break the lac cells and expose them for removing insect dead

Lac Crusher

bodies, lac dye etc. The manual/ power driven lac crusher developed for small scale lac processing unit consists of a pair of crushing rollers, roller gap adjustment mechanism and drive mechanism consisting of electric motor /handle, V-groove pulley and V- belt mounted on M.S. angle (50x50x5mm) frame. Only one person is required to operate the machine.

Capacity : Crushing 15 kg/hr

Power requirement : Power operated - 1 HP single phase AC motor and one person. Hand operated - 1 person.

Lac Washing Machine

Lac washing machine is used for washing of crushed lac to free it from lac dye and impurities *i.e.* lac insect bodies, sand, soil, bark, etc. The pedal/power operated lac washing machine developed for lac washing consists of a cylindrical barrel, having agitators mounted on shaft, drive mechanism consisting of pedal/ electric motor, V-grooved pulley and V-belt mounted on M.S. Angle (50x50x5mm) frame.

Lac Washing Machine

Capacity : 35 kg/batch

Power requirement : Pedal operated- 2 persons, Power operated –1 person and 1 HP single phase AC motor.

Lac Winnower

Washed lac is dried under mild sun or in shade. After drying, lac is further cleaned to remove impurities like wood chips, fine dust, sand etc. using bamboo trays *(soop)*. The lighter wood chips and fine dust can be removed from lac by winnowing with the help of lac winnower. Lac winnower consists of feeding hopper, positive feeding mechanism, blower and drive mechanism consisting of handle / electric motor,

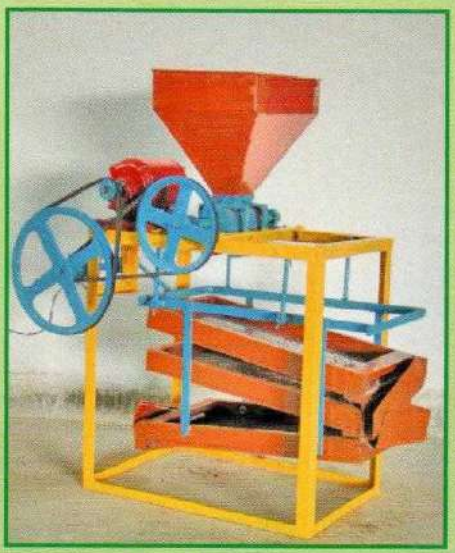
Lac Winnower

V-grooved pulley and V-belt mounted on M.S. Angle (50x50x5mm) frame.

Capacity : 500 kg/hr

Power requirement : Power operated – 1 person and 0.5 HP single phase AC motor, Hand operated -1 person

Lac Grader



Lac Grader

The cleaned lac in granular form is graded manually into different grain size fraction using sieves. To reduce the drudgery involved in manual grading, mostly done by women, a lac grader has been developed. The grader consists of feeding hopper, positive feeding mechanism and drive mechanism consisting of handle / electric motor, V-grooved pulley and V- belt mounted on M. S. Angle (50 x 50 x 5mm) frame.

Capacity : 60 kg/hr

Power requirement : Power operated- 1 person and 0.5 HP single phase AC motor, Hand operated - 1 person

Estimated Unit Cost

Unit capacity	:	100 kg sticklac /day
Building	:	₹ 5,00,000
(Working shed alongwith rooms for raw material & finished product store rooms etc.)		
Equipment, machine, installation of machines etc.	:	₹ 1,00,000
Working capital (3 months)	:	₹ 8,00,000

Daily needs

Workers (in manual unit)	:	5
(in power operated unit)	:	3
Sticklac	:	100 kg
Soda	:	0.5 kg
Water	:	2000 lt
Electricity (in manual unit)	:	Nil
(in power operated unit)	:	12 KWH
Employment generation	:	750 man-days/year
Monthly income	:	₹ 25,000

Contact for further information

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