

### **Purified wax from rice bran wax sludge**

**Introduction:** Rice bran wax has a number of industrial applications, such as for polishes, ingredients in cosmetics and food applications. Rice bran wax has a potential of 20,000 tonnes and the present production of unpurified wax is around 10,000 tonnes which has no market. The unpurified wax is sold at Rs.20-35/kg whereas the purified one is sold at Rs.80-200/kg depending on the purity and colour. Handling and disposal of unpurified wax (wax sludge) is therefore an industrial problem. Bleaching of wax involves use of toxic materials such as chromium trioxide, hypochlorites and other powerful oxidizing agents added at high concentrations which may create toxic residue problem for use in foods and other applications. Therefore, a process has been developed at CFTRI in which the sludge is purified (30-70% oil and 70-30% wax) to >95% wax with the following characteristics, wax content as acetone insoluble matter: 97.5%, melting point: 78-82°C, acid value: 0.2 (equivalent to 0.1% ffa as oleic acid), hexane insoluble matter 98%, saponification value: 77.3 mgKOH/g, iodine value: 37.3 cgI<sub>2</sub>/g, colour: dull-white, texture: porous mass becomes dull yellow compact mass on melting, hardness: 5-6 times harder than starting wax sludge.

Shelf life of the product is about 12 months.

Raw material : Rice bran wax sludge

**EQUIPMENTS REQUIRED:** Jacketed Percolators, Desolventizer, Steam Generator etc.

**PROJECT REQUIREMENT** (an estimate) :

Land (Approx. in Sq. metres)	1000
Building (Approx. in Sq. metres)	500
Plant & Machinery (Approx. Rs. in '000)	3900
Total Project cost (Approx. Rs. in '000)	6400

**CAPACITY :**

Suggested economic capacity: 500kg rice bran wax/day/shift  
Working : 300 working days/ year