

DECORTICATED RAGI

1. Introduction

Finger millet or ragi is one of the popular minor cereals cultivated for food in several parts of South-East Asia and Africa. In India it is cultivated in Karnataka, Tamil Nadu, Andhra Pradesh, Maharashtra, Orissa, Chattisgarh and Uttaranchal. Karnataka has the distinction of producing nearly 40% of the millet harvested in the country. Ragi is a small seeded grain with brick red to dark colored fibrous seed coat. The millet is considered as ‘nutri-cereal’ because of its good nutritional qualities, especially with respect high level of calcium, micronutrient contents and sulphur amino acids rich proteins.

The seed coat being colored and fibrous in nature, it affects the eating qualities of the ragi foods. Moreover, ragi is always pulverized of flour and the flour is used for various food preparations. This also limits its diversified uses, because it cannot be cooked similar to rice or wheat semolina.

These limitations have been over come by the technology recently developed at CFTRI Mysore. It is possible to decorticate or separate the seed coat (husk and bran). By practicing the process, the decorticated or milled ragi in shape and size with very light brown colour. The product retains most of the nutritional and technological characteristics of ragi except malting.

2. Uses

The decorticated ragi cooks within 5 min. in boiling water and the grains retain their shape with soft texture even after cooking. The cooked grains will be slightly brick red and spherical in shape suitable for consumption similar to rice along with sambar, rasam, curd etc., or can be seasoned with spice to prepare chitranna or tamarind rice. It can be used to prepare traditional sweets also. Alternately, the decorticated millet could be cracked to soji or semolina to prepare upma, idli, dosa and such other products. The flour from the millet may be utilized for preparation of traditional millet foods and bakery products.

3. Market

The process know-how for preparation of Decorticated Finger Millet (Ragi-Rice) has been tested successfully on industrial scale. The product is unique, as it enables utilization of ragi similar to rice or to wheat, which was not possible hitherto.

The decorticated millet can be popped to prepare the product similar to ‘rice poori’ or expanded rice or could be flaked for use as breakfast cereal. It can find application as adjunct in confectionery also.

4. Raw Material - Fresh Ragi

5. PLANT AND MACHINERY

Principal equipments: Cleaner, De-stoner, Magnetic separator, Parboiling tank, Dryer, Sifter-cum-grader, Dampner, Decorticator, Cyclones, Aspirator, Pneumatic lifts, Packing spouts, Boiler

5.1 Auxiliary equipments: Rotameter, Trolleys, Weighing machinery, Containers.

6. PROJECT COST – FIXED COST – WORKING CAPITAL (in Rs.‘000)

(Estimate for a model project)

a) Land & Land development (500 m ²)	68.00
b) Building and civil works (250 m ²)	1058.00
c) Plant and machinery	5076.00
d) Miscellaneous fixed assets	130.00
e) Pre-operative expenses	577.00
Total Fixed Capital	6909.00
Working capital margin	527.00
Total Project cost	7436.00
Total working capital required at 7% of turnover	1348.00

Means of Finance

Promoter’s contribution	2254.25
Term loan	5181.75

7. PRODUCTION CAPACITY- (estimate)

- a. Product : 8.5 Tons / day
- b. 300 working days/annum
- c. Optimum capacity utilization : 70%