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INFRARED HEATING OF CASHEW KERNEL FOR TESTA REMOVAL

1. Introduction

Cashew kernels have been known for their sweet, pleasant and bland palatability. In the healthy, sophisticated scenario of eating habits, cashew kernels have become a part of every munching session because of its 'well balanced' fat composition, high degree of vitamins and rich protein and mineral content. Being a good appetizer, an excellent nerve tonic and a steady stimulant, cashew kernel has found its place in Ayurvedic medicines. Cashew kernel has got a mild and pleasant taste on roasting, the characteristic aroma and texture improves. The 'white wholes' are in great demand in both domestic and international market. Usually the whole cashew kernels are consumed as roasted, salted or sugar coated kernels. It is also widely used in confectionery and bakery industries for preparation cashew based products.

Salient features:

a. During infrared heating only the surface heating of the kernel takes place, resulting in minimum kernel damage and higher percentage of whole kernels.
b. The process is easy to scale up and can easily be adopted by the industry.
c. The heating time could be reduced significantly compared to the conventional process
d. Due to uniform heating scorching of kernels could be avoided.
e. The longer cooling step following the conventional drying of kernels, could be eliminated as only cooling of kernels to room temperature is required in the process.

2. Market

Cashew nut is one of the important crops of coastal India and in recent years, India has emerged as one of the leading producer, processor and exporter of cashew kernels in the world. In the field of cashew nut processing, the challenge of meeting with the standards and specifications of importers has spurred improvements in production practices. However, in most of the processing industries in the country, the technologies adopted are old, labour intensive and time consuming ones. This necessitates development of new technologies, which can obviate the drawbacks of existing technologies and result in better quality product. The IR heating process can overcome the drawbacks of conventional 'Bourma' drying and results in better quality product.

3. Materials and Process

A shelled cashew kernel with testa is the basic raw material required in this process. The raw material should have moisture content of 5 – 6% (d.b) and be free from infested kernels.

The process consists of continously loading cashew kernels with testa uniformly over the conveyor of the dryer and exposing the kernels to IR radiation for a known period at preset temperature.

4. Plants and Machinery

Principal equipments: IR heat source, exhaust fans, motor with speed variator

5. Project Cost – Fixed Cost- Working Capital (in Rs.'000)

(Estimate for a model project)

a.	Land and building	Nil
b.	Plant and machinery	600.00
c.	Power	51 kW

6. Production capacity – (estimate)

Dried cashew kernels	85 Kg/h
Hours per day	24 h/day
Days per annum	200 days/annum

7. Technology/ Manufacturing process – Availability

CFTRI has standardized the technology and general methods of processing infrared heating of cashew kernels for testa removal. Apart from this procedure for quality control, packaging and packaging material specifications, the institute also provides equipment details.