Goverment Of India
Office of Principle Scientific Adviser

Food Processing

MANGO SEED DECORTICATOR

APPLICATION :

Decorticating mango stones is crucial for utilizing this waste efficiently. Manual decortication is labor-intensive and time-consuming due to the size, shape, and tough shell wall of mango seeds. The abundance of stones at factory sites necessitates a mechanical device to separate the pericarp from the kernel. Currently, no commercially available mango seed decorticator exists in India.

ORGANISATION/INSTITUTION : RUTAG IIT MADRAS

TECHNOLOGY READINESS LEVEL : Successful trials using mango seeds have yielded a success rate of 90-95%, paving the way for business development.

PRINCIPAL INVESTIGATORS : Prof. Shankar Krishnapillai, IIT-Madras
Mr. Biju Kumar, Senior Technician

PROBLEM ADDRESSED :

A number of locations in India process mangoes as raw material, for example pulp factories. Factories producing mango pulp, throw away the mango seeds which are usually dumped in the environment after pulp extraction. The mango kernel which is located inside the mango seeds has advantages in the soap and cosmetic field. Therefore, it has economical value as well as commercial benefits. and is a useful by-product of the mango fruit. The main purpose of the project is to separate the mango seed (kernel) from the hard mango shell either in pulverized or in original state by using a decortication machine.

ABOUT THE TECHNOLOGY :

This technology comprises a rotor with rows of steel pegs encircling its periphery, along with two rows of fixed pegs attached to a stand. As the rotor rotates, the pegs create a shearing action on the mango seeds by passing between the fixed pegs. An outer cover encloses the rotor. Mango seeds are fed through a hopper onto the rotor, where the shell is sheared off between the pegs. A separator, acting as a sieve, separates the shell and the kernel, with decorticated kernels collected through a wide-mouthed funnel called the collector.

END USERS/CUSTOMERS

Various Food Processing and Cosmetic Units

PRODUCT IMAGE

USP

- Improvement in productivity is obtained
- Provides extra income in rural societies, value from agri-waste and human safety while peeling.
- The kernels are separated and thrown separately thus reducing drudgery.
- Low cost and high power machine.
- The device is easy to install and maintain.

SOCIAL IMPACT

- Provides livelihood opportunities by removing agri waste.
- Mango kernel oil used in cosmetic and confectionery industries has good export potential.
- Woody part of the Mango seed used in briquette making.
- This technology provides Sustainability as a result of clean environment as well as value addition of the Mango kernels results in livelihood opportunities for rural population.