

# Flavoured coconut Juice Innovation par Excellence

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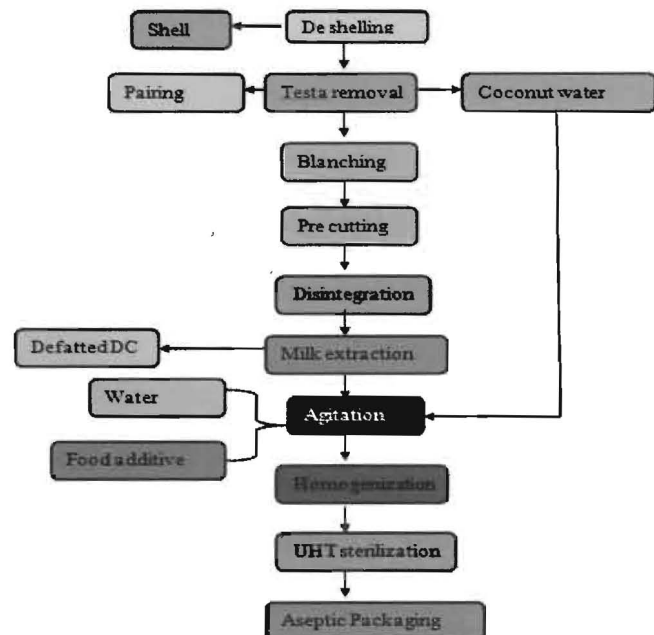
**W**ithin the overall dairy alternative drinks sector, there has been a rising interest and demand for plant based dairy alternative other than soy including cereals and nuts.

A new product in line with non dairy Ready To Drink (RTD) is Flavored Coconut Juice. Coconut milk does not contain lactose and is low in carbohydrates than dairy milk, which can be consumed by people who are lactose-intolerant or those who doesn't like the taste of dairy milk. Coconut milk also has several nutritional advantages and serves as a superior source of several essential nutrients.

## The Process

Nine to ten month old fresh coconuts are dehusked and deshelled semi automatically or manually using hand tools. The deshelled coconut kernels in the form of round balls are pared using scrapers to remove the testa. The pared kernel balls are then cut open to drain off the water and then washed thoroughly in fresh water. The white coconut meat is blanched in hot water/live steam to bring

Processing of flavoured coconut milk using UHT



down the microbiological counts. The kernel is then ground into a fine mass using disintegrator and milk is extracted using a milk extractor. Extracted coconut milk is mixed with coconut water and diluted by adding purified drinking water until it is appropriate for flavored coconut milk production. It is then mixed with sugar and permitted food additives. The flavored coconut milk is then heat treated to desired temperature and packed. The by-products like shell, defatted desiccated coconut and coconut peelings have good market value.

The processing methods adopted for flavored coconut milk production are pasteurization and filling in glass bottles/PP bottles and Ultra High Temperature(UHT) treatment.



In both the processes, the pre-processing like dehusking, deshelling, testa removal, blanching, pre-cutting and milk extraction remains same.

#### **Pasteurization (Glass bottles/PP bottles)**

Heating is done in a double jacketed vat and temperature is raised upto 80° C for 10 minutes. Heating and cooling is done by spraying or circulating hot water /steam of chilled water between the inner and outer jacket of the vessel. The milk is kept gently agitated mechanically to ensure uniform heating/cooling. The temperature is designed to kill viable micro-organisms in coconut milk. This is considered adequate for destroying almost all yeasts, mould, and common spoilage bacteria and also to ensure adequate destruction of common pathogenic heat-resistant organisms.

#### **UHT Sterilization**

In Ultra High Temperature (UHT)

## **Project cost**

The cost for setting up UHT plant for flavored coconut juice with a capacity of 4000 litre/shift is detailed below. The project cost involves the combination of land and building, plant and machinery, pre-operative expenses and working capital. The estimated project cost for the plant is calculated to be Rs.2.01 crores. The detailed broad item-wise breakup of project cost is given below.

Particulars	Amount (Rs. in Lakhs)
Land (50 cents)	----
Building 4000 sq.ft (@ Rs.1000/- per sq.ft)	40.00
Other civil works	8.00
Plant & Machinery	111.00
Electrification	3.00
Effluent treatment plant	10.00
R.O plant	5.00
Preoperative Expenses	5.86
Working capital (margin)	18.40
<b>Total</b>	<b>201.26</b>

Land and Building	
Particulars	Square Feet
Processing area	1200
Raw Material store	500
Finished goods store	600
Office room	600
Lab	500
Workers room	400
Reception	200
<b>Total</b>	<b>4000</b>

Plant and Machinery				
Item	Qty	Unit	Unit Cost (Rs. In lakhs)	Amount (in Lakhs)
Desheller	3	no.s	1.5	4.50
Paring unit	3	no.s	1.75	5.25
Washing	1	no.s	3	3.00
Precutter	1	no.s	2	2.00
Disintegrator	1	no.s	3	3.00
Screw press	1	no.s	3	3.00
Aquatic tank	1	no.s	1.50	1.50
Filter	1	no.s	3	3.00
Homogenizer	1	no.s	5	5.00
UHT	1	no.s	50	50.00
Packaging unit	1	no.s	8	8.00
Pipelines	1	lot	2	2.00
Diesel generator	1	no.s	5	5.00
CIP Unit	1	no.s	5	5.00
Laboratory equipments	1	lot	1	1.00
Plant IT system & networking	1	lot	3	3.00
Installation Charges & Labour	1	lot	5	5.00
Miscellaneous	1	lot		1.75
<b>Total</b>				<b>111.00</b>



treatment, the product is heated at 138°C -140°C for about 15 seconds and rapidly cooled to room temperature. This results in eliminating all the micro -organisms without compromising nutritional value of the product and making it safe. Main highlight of UHT treatment is that the product can be stored in room temperature. The modern technology like UHT saves labour cost and minimises production losses.

### Why UHT?

With pasteurization, coconut milk is heated to 80° C with a holding time of 10 minutes before it is cooled. Along with correct cooling, and chilled distribution, pasteurized milk has a shelf life of five to 15 days. In UHT treatment milk is exposed to brief, intense heating to temperatures in the range of 138-140°C for about 15 seconds. UHT treatment is a continuous process which takes place in a closed system that prevents the product from being contaminated by airborne micro-organisms. The UHT coconut milk passes through heating and cooling stages in quick succession and is immediately put into a sterile packing material (aseptic packaging). This process avoids any re-infection. The end result is a product that lasts up to six months without refrigeration or preservatives.

For a quality product, there is always a market which can be expanded by offering competitive prices. It is recorded that innovation in non-dairy industry increased globally by 29%, while purchase of non-dairy milk instead of dairy milk by 48 %. Hence, it can be concluded that flavoured coconut juice can be the future vehicle of profit to coconut farmers. ■

### Pasteurisation- the process

