

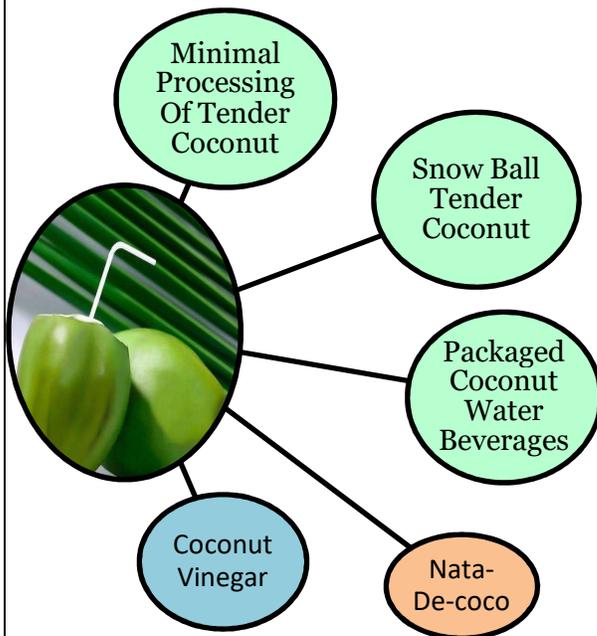
VALUE ADDED COCONUT PRODUCTS

COCONUT – THE KALPAVRIKSHA- TREE OF LIFE

T. Bala Sudhahari, Director i/c;
 R. Subhathra, FC (Contract); T. Kavya, FPE (Contract)
 Coconut Development Board,
 (Ministry Of Agriculture and Farmer Welfare, Government of India)
 Regional office, Chennai

Coconut Is Versatile, Predominant, Nutritious Gift From Mother Nature. Each And Every Part Of The Tree Is Beneficial To Human Kind. It Is Rich In Fats, Minerals And Vitamins.

COCONUT AND ITS DIVERERSIFICATION INTO DIFFERENT PRODUCTS



TENDER COCONUT WATER AND ITS PRODUCTS

Tender coconut water is natural gift from Mother Nature; it is filled with nutrients, minerals, proteins and neutral pH. It is the 'fluid of life' that promotes anti-aging, healthy cell growth and rehydration.

Tender Coconut Water Is Replacement For

- Soft Drinks
- Sports Drink For Instant Energy
- Dehydration Drink
- Injected Intravenously During Emergency
- Good For Pregnant Women And Child



Minimally processed tender coconut

Tender coconut is perishable and starts to lose its freshness within 24-36 hrs. Some technologies are developed to increase the shelf-life to around 24 days. This can be done by dipping the dehusked coconut in citric acid 0.5% and potassium bisulphate 0.5% for 3 mints.



Snow ball tender coconut (SBTC)

Snow ball coconut is the whole round soft kernel pulled out from shell with the water intact in it. SBTC is completely edible and natural packed. LLDPE polythene is used to pack SBTC. It can be stored for 15 days in refrigerated conditions.



Packaged coconut water and Flavored beverages

Many types of Fruit Juices (Orange, Pineapple, Lemon, Mango, Grapes, Blueberry, Etc) can be mixed with tender Coconut water and processed with ultra high treatment to increase their shelf life and acceptability.



Coconut vinegar

Coconut water can be converted to natural vinegar due to presence of natural sugars in it. Process involves fermentation, inoculation of mother culture, oxidation and acidification. Coconut vinegar has natural flavor and has export potential as well.



Nata-De-Coco

Nata de -coco is a gelatinous product prepared from matured coconut water by the action of cellulose forming bacteria namely *Acetobacter aceti* subspecies *xylinium*. Sugar is added to coconut water and inoculated with acetobacter; and is left as such in a deep tray about 2 inch of depth for 13-14 days, later the thick white translucent layer is harvested, washed and kept in sugar solution for 12 hrs and packed in glass bottles.



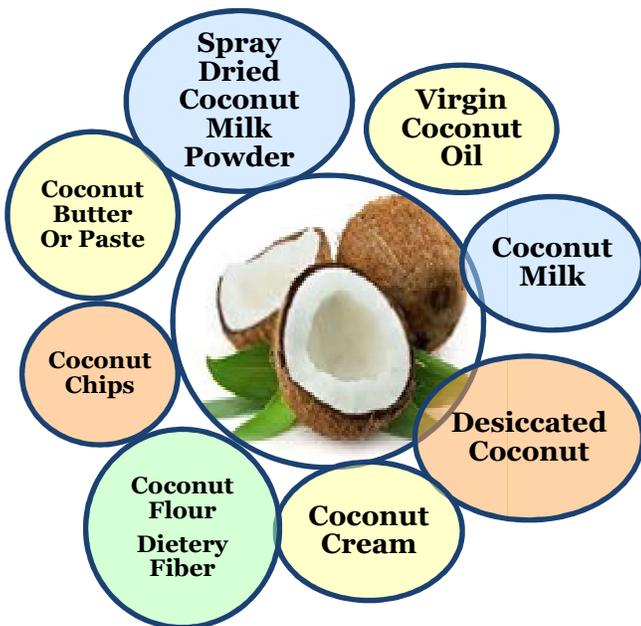
COCONUT KERNEL BASED PRODUCTS

Coconut kernel

Kernel is the meat of coconut; it has all the nutrients to boost human body. After removing husk and brown testa we will get white meat of coconut (kernel). **Virgin coconut oil (VCO)**

This oil which is extracted from coconut without application of heat is called virgin coconut oil. It is a booming product in food and lifestyle sector. VCO is rich in vitamin E, anti-oxidants, middle chain fatty acids, and has more shelf life naturally.

Virgin coconut will give out skim milk and defatted coconut meat as by products which can be used to make desiccated coconut, flour, skim milk can be used to make beverage, protein isolates and can be commercially used to make beauty soap etc.



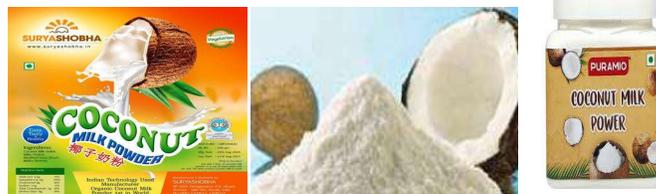
Coconut milk and products

Coconut milk is a supreme quality product obtained by mature coconut kernel using expellers or hand press after disintegrating the kernel with the help of a mill. Coconut milk is free of lactose and can be easily digested. Coconut milk can be used to make **coconut cream** (Thick condensed coconut milk), **sweet condensed milk** (Add sugar, corn, milk and flavor to coconut milk), **coconut syrup and coconut honey** etc.



Coconut milk powder

Coconut milk and skimmed coconut milk can be converted into convenient powder form by using spray drying technology. They have more shelf life and easy to mix with other ingredients and products. The process involves de-shelling, paring disintegration of the kernel, squeezing the comminuted kernel in a screw press, standardization of coconut milk with maltodextrin and sodium caseinates, pasteurization spray drying and packing in aluminum packets.



Desiccated coconut (DC)

Desiccated coconut is disintegrated and dried product of coconut kernel to a moisture content less than 3%. The process involves dehusking, deshelling, paring (removing the testa), slicing/ shredding and drying them in automated dryers. Later they are packed sealed and transported to both domestic and international market. DC completely dried can be used **as dietary fiber** in most of bakery & confectionary business. It is also called **coconut flour**



Coconut chips

Chips are investment friendly and natural products of coconut. Osmotic dehydrated chips are made by deshelling and paring the kernel, slicing them into desired thickness and dipping the slices in osmotic solution (brine or sugar solution).



Coconut yoghurt

Coconut yoghurt can be made by mixing 50% dairy milk and 50% coconut milk. Process involves extraction of milk, pasteurization, inoculation of lactic acid bacteria, incubation, and packing. Dairy free yoghurt can also be made which is suitable product for lactose intolerance people.



Coconut margarine/ bread spread

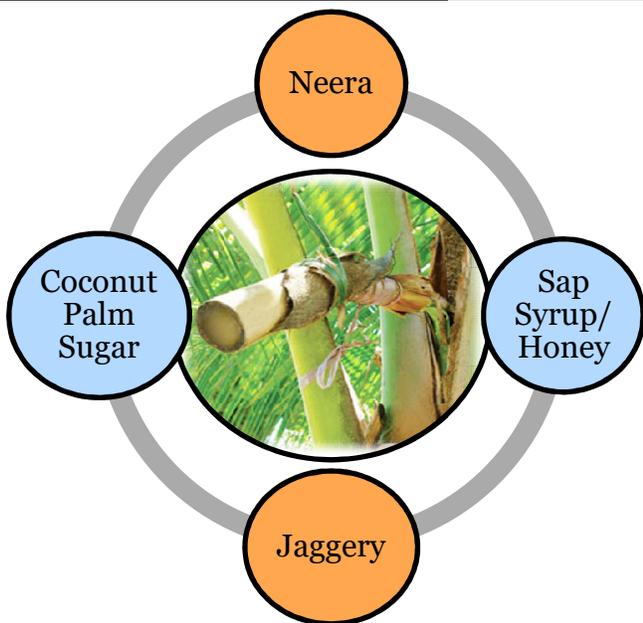
Virgin coconut oil is mixed with emulsifiers, stearin, antioxidants, β -carotene, water and salt. Blending and cooking for 60°C for 10 min & packed chilled at 16°C.



Coconut cheese (A replacement for cow milk)

Primary step is to separate cream and skim milk from coconut milk. The skim milk is coagulated with vinegar and heat later cream is added and kneaded with salt.





COCONUT SAP BASED PRODUCTS

Coconut sap is the white sweet liquid which collected from coconut inflorescence. Coconut sap can be used to make various products like Neera, coconut sap jaggery/syrup, sugar, toffees. Sugar made from sap is having low glycemic index, which make it ideal for diabetics and health conscious people.

Coconut sap is nutritious and has micro and macro mineral content.

Jaggery & Sugar

Unfermented sap Neera is heated and boiled; frothing is avoided by adding coconut oil. The hot mixture is molded to give jaggery, or clarified and crystallized to give sugar.



Neera (wholesome natural drink)

Liquid sap from unopened inflorescence of coconut is called **Neera**

Neera is popular as a **delicious health drink**. The nutrient rich sap has **low Glycemic index**. It is good for people suffering from diabetes, cancer, dehydration, and liver disorders.

It is an abundant source of minerals, amino acids, vit-A, C, B2, B3 and B6. Neera contains **inulin- a probiotic** that promotes **digestive health**, and it can be used as a **natural sweetener**.



Other Coconut Based Value Added Products

- ✓ Coconut Biscuits
- ✓ Coconut Burfie
- ✓ Coconut Paneer
- ✓ Coconut Chutney
- ✓ Coconut Paste
- ✓ Coconut Curry Mix
- ✓ Coconut Vegetable Gravy
- ✓ Other Bakery And Confectionary Products

COCONUT SHELL PRODUCTS



ACTIVATED CARBON

