

# **Neera – the Global Health drink**

**Coconut Development Board**  
(Ministry of Agriculture, Govt. of India)  
[www.coconutboard.gov.in](http://www.coconutboard.gov.in)





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# 1. What is Neera ?



- *Sweet oyster white coloured juice obtained from the unopened coconut inflorescence*
- ***Sugar containing delicious health drink with 0% alcohol***
- *Rich source of sugars, vitamins and minerals*
- *Rich in iron, phosphorus and ascorbic acid*
- *Low in Glycemic Index (GI 35)*



## 2. Nutritional Composition of Neera

|                                  |                    |
|----------------------------------|--------------------|
| <b>Total solids (g/ml)</b>       | <b>15.2-19.7</b>   |
| <b>pH</b>                        | <b>3.9-4.7</b>     |
| <b>Specific gravity</b>          | <b>1.058-1.077</b> |
| <b>Total sugars (g/100 ml)</b>   | <b>14.40</b>       |
| <b>Total ash (g/100 ml)</b>      | <b>0.11-0.41</b>   |
| <b>Citric acid (g/100 ml)</b>    | <b>0.50</b>        |
| <b>Alcohol in %</b>              | <b>Nil</b>         |
| <b>Iron (mg/100 ml)</b>          | <b>0.15</b>        |
| <b>Phosphorus(mg/100 ml)</b>     | <b>7.59</b>        |
| <b>Ascorbic acid (mg/100 ml)</b> | <b>16-30</b>       |
| <b>Total protein (g/100 ml)</b>  | <b>0.23-0.32</b>   |
| <b>Glycemic Index (GI)</b>       | <b>35</b>          |

Source: CFTRI



### **3. Preservation of Neera production –DFRL technology**

**Collection of sap**



**Filtration**



**Preservation & Chilling to 4 deg C**



**Treatment using clarifying agents**



**Deodorization using activated carbon/bentonite**



**Filling in glass bottles/Al cans/flexible packages**



**Pasteurization in boiling water at 95 deg C**

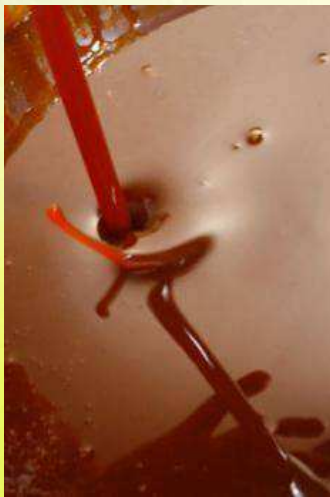


## 4. Uses of Neera

- **Wholesome, cool and good for improving the general health**
- **Supplement for iron and vitamin deficiency**
- **Clinical studies indicate medical applications for asthma, tuberculosis, bronchial suffocation and piles**
- **Believed to facilitate clear urination and prevent jaundice.**
- **High amount of glutamic acid which is the amino acid used by the body to build proteins**
- **High in inositol which is beneficial for the treatment of eye abnormalities, eczema etc**



## VALUE ADDED PRODUCTS FROM NEERA



*Coconut palm syrup*



*Coconut palm jaggery*



*Coconut palm sugar*



***Nutritional composition of coconut palm jaggery  
(in 100g)***

|                       |                |
|-----------------------|----------------|
| <b>Thiamine</b>       | <b>21 mg</b>   |
| <b>Riboflavin</b>     | <b>432 mg</b>  |
| <b>Nicotonic Acid</b> | <b>5.24 mg</b> |
| <b>Ascorbic Acid</b>  | <b>11.0 mg</b> |



### ***Nutritional composition of coconut palm sugar (in 100g)***

|                |         |
|----------------|---------|
| • Carbohydrate | 11.0 mg |
| • Protein      | 4.32 %  |
| • Minerals     | 5.24 %  |
| • Calcium      | 18.9 mg |
| • Phosphorous  | 1.9 mg  |
| • Iron         | 5.2 mg  |
| • Moisture     | 0.06 %  |



**Unopened inflorescence**



**Tapping of unopened inflorescence**



**Bottled Neera**

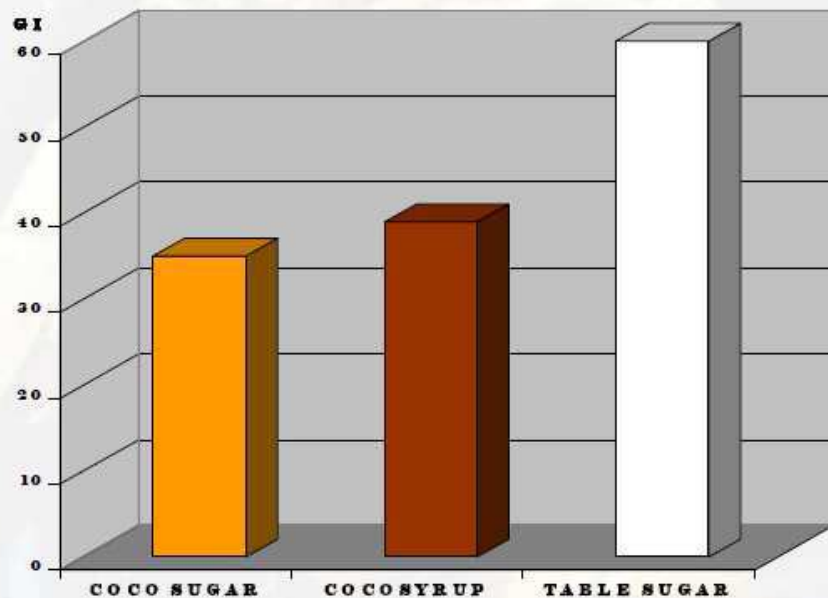


**Neera exuding from tapped inflorescence**



## Comparative GI's of Sugars

**Glycemic Index (GI) below 55 is considered low.**

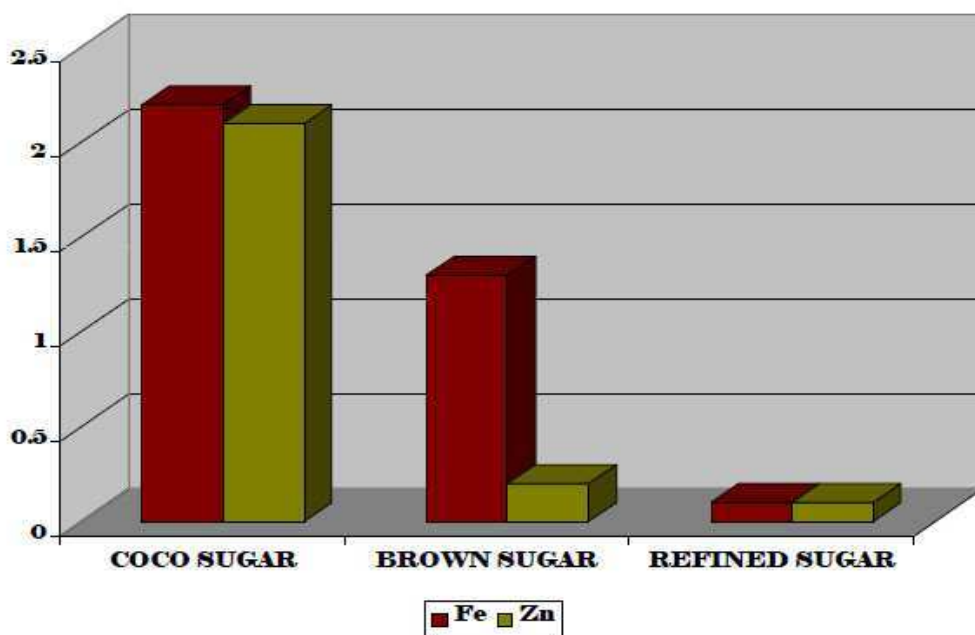


Source: FNRI GI Results (Trinidad, 2011)



## IRON (Fe) AND ZINC (Zn) CONTENT OF SUGARS\*

(mg/100 g Sample)





## Gandhiji as brand ambassador for Philippine coconut palm sugar



According to Gandhi, coconut blossom sugar provides a way to solve the world's poverty, as an antidote against misery.

*"The juice of the coconut tree can be transformed into a sugar as soft as honey... Nature created this product such that it could not be processed in factories. Palm sugar can only be produced in palm tree habitats. Local populations can easily turn the nectar into coconut blossom sugar. It is a way to solve the world's poverty. It is also an antidote against misery."*

Mohan das K. Gandhi 3.5.1939

Mahatma Gandhi largely experimented with food; it was important to him. His personal diet was vegetarian and consisted of 1 litre of goat's milk; 150g wheat and rice; 75g leaf vegetables; 125g other vegetables; 25g lettuce; 40g ghee and 40-50g coconut blossom sugar.

Excerpts from Internet: <http://www.noble-house.tk>

Technology Series No. 1 (January 2012)  
A monthly techno-info release of PCA-RDEB

## COCONUT SAP SUGAR



*A natural sweetener  
from Coconut Sap*  
**GI is 35**



Department of Agriculture  
Philippine Coconut Authority

Research, Development & Extension Branch



## 5. Neera in Abkari Act

The Kerala Abkari Act (Act 10 of 1967) adapted from Cochin Abkari Act (Act 1 of 1077 Malayalam era ie., AD 1902) defines

### Section 3(8)

- *“Toddy means fermented or unfermented juice drawn from a coconut, palmyra, date or any other kind of palm tree”.*

### Section 3(10)

- *“Liquor includes spirits of wine, arrack, spirits, wine, toddy, beer and all liquid consisting or containing alcohol.”*

### Section 3(12)

- *“Country Liquor means toddy or arrack”*



## **Illogical and irrational inclusion of Neera in Abkari Act**

- As per Section 3(8) Neera, which does not contain alcohol, included as Toddy.
- As per Section 3(8) plus 3(10) Neera is classified as “Toddy” and thus as “Liquor.”
- As per Section 3(8) plus 3(12) Neera is classified as “Toddy” and thus as “Country Liquor”

***In order to remove anomalies and bring about justice, Amendment in Abkari act to exclude Neera from its definition is the need of the hour. CDB strongly recommends this to State Government.***



## 6. If amendment is delayed

- *Separate definition may be made for Neera as a “nutritious health drink”*
- *Separate Rules for production of Neera as a “nutritious health drink” and for further processing in to Jaggery, Syrup and Sugar.*
- *The ceiling fixed in the rules on number of palms that can be tapped may be removed. (at present only 5 palms per individual are allowed)*



## If amendment is delayed

### Suggestions of CDB are:

- *Issue permission to Federated Coconut Producers Societies (CPS) registered with CDB to tap Neera.*
- *Federated CPSs can produce Neera and Producer Companies can process and market Neera as a nutritious health drink*
- *Conversion of Neera for value added products like palm syrup, coconut palm jaggery and coconut palm sugar can be taken up by Producer Companies*
- *The ceiling fixed in the Act on number of palms that can be tapped may be removed from the existing provisions (at present only 5 palms per individual).*





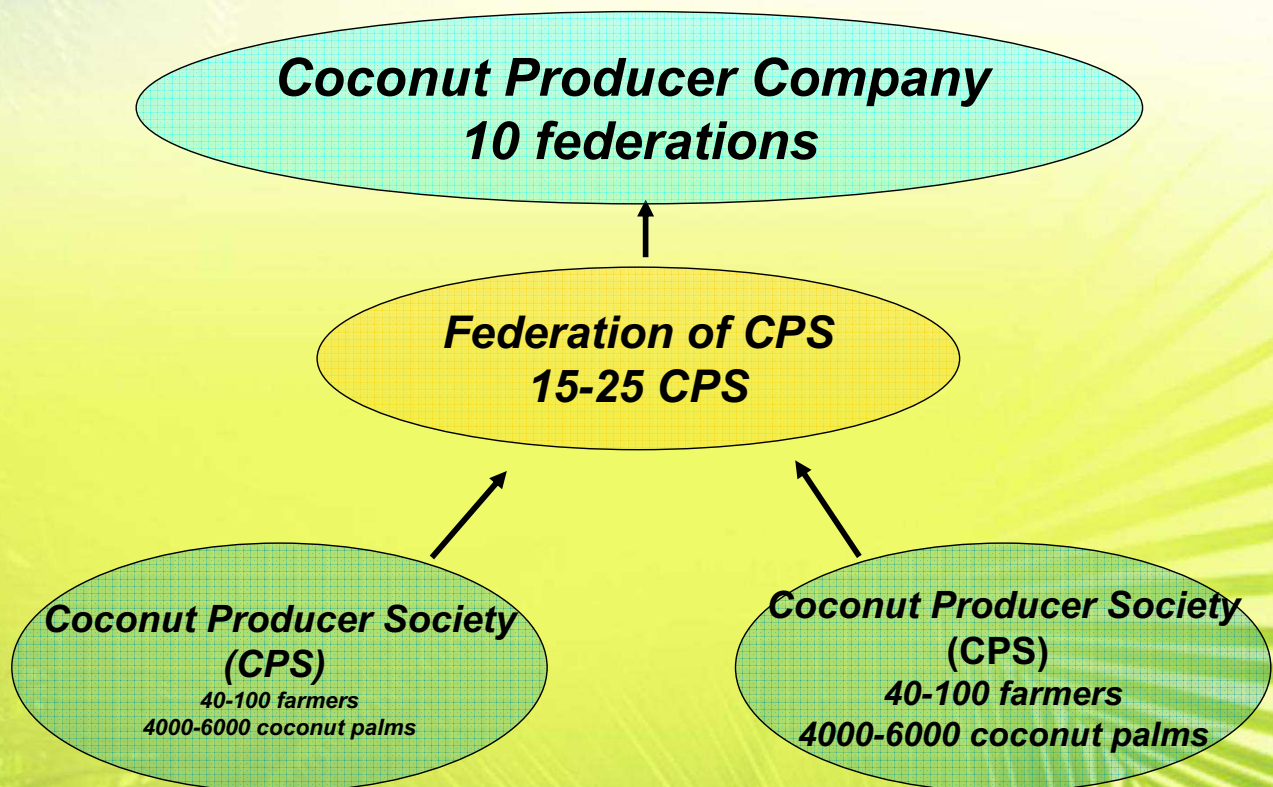
## **7. Collectives of farmers – the Coconut Producer Societies (CPS)**

**Board has facilitated the formation of Coconut Producer Societies (CPS) by associating 40-100 coconut growers in a contiguous area with a consolidated minimum of 4000-6000 palms**

**Objective is socio economic upliftment of the farmers through productivity improvement, cost reduction, efficient collective marketing, processing and product diversification**

**It is planned to form 10,000 societies in a span of three years of which 3000 have already been formed**

## ***Forward integration***





## CPS – Federation – Producer Company

- **Coconut Producers' Society (CPS) – (40 – 100 farmers)**  
**(4000 – 6000 yielding palms) (average 5000 yielding palms).**
- **Federation - 15 – 25 CPSs (average 20 CPSs)**  
**(average 1 lakh palms)**
- **Producer Company – Average 10 Fedns (10 lakhs palms)**





## Status of Palms, CPS and CPF In Kerala

| District      | Area (ha)       | Production<br>(in lakh nuts) | No. of palms        | CPS         | CPF        |
|---------------|-----------------|------------------------------|---------------------|-------------|------------|
| Kasargode     | 56174           | 4180                         | 1,31,44,716         | 317         | 9          |
| Kannur        | 76917           | 5290                         | 1,79,98,578         | 282         | 7          |
| Kozhikode     | 121688          | 7700                         | 2,84,74,992         | 364         | 17         |
| Wayanad       | 10043           | 510                          | 23,50,062           | 1           | 0          |
| Malappuram    | 104178          | 9160                         | 2,43,77,652         | 312         | 15         |
| Palakkad      | 57094           | 4080                         | 1,33,59,996         | 223         | 9          |
| Thrissur      | 75364           | 4930                         | 1,76,35,176         | 364         | 16         |
| Ernakulam     | 42894           | 2210                         | 1,00,37,196         | 113         | 4          |
| Idukki        | 17012           | 800                          | 39,80,808           | 25          | 1          |
| Kottayam      | 28410           | 1480                         | 66,47,940           | 11          | 0          |
| Alappuzha     | 39344           | 2640                         | 92,06,496           | 326         | 14         |
| Pathanamthita | 15627           | 1120                         | 36,56,718           | 7           | 0          |
| Kollam        | 56060           | 3780                         | 1,31,18,040         | 336         | 9          |
| Trivandrum    | 69668           | 4990                         | 1,63,02,312         | 332         | 5          |
| <b>TOTAL</b>  | <b>7,70,473</b> | <b>52870</b>                 | <b>18,02,90,682</b> | <b>3013</b> | <b>106</b> |



## **Coconut Producer Companies**

- **Two Coconut Producer Companies formed in Kannur and Palakkad**
- **3 Producer Companies in Malappuram, 3 in Kozhikode, 1 in Alappuzha and 1 in Thrissur are in the final stage of registration.**



## 8. Activities suggested for CPS, CPF and CPC

### CPS

- Primary production of Neera and Jaggery

### CPF

- Transportation of neera from CPS to CPF
- Processing
- Packaging
- Production of Jaggery, Syrup, Sugar and marketing
- Marketing of packed Neera as Health Drink within Kerala

### Producers Companies

- Manufacturing, Packaging, Branding and Marketing of the above products at bigger scales – outside Kerala and for Exports



## 9. Action Plan for immediate future

- Training of Neera Technicians
- Identifying coconut palms suitable for Neera tapping
- Out of the 18 crores coconut palms in Kerala initially 1% may be set apart for Neera tapping.
- 18 lakh palms if tapped would generate additional revenue of Rs.5400 crores in a year (300 days).

| Palms tapped |             | Neera production in 300 days | Revenue from sale of Neera | Revenue to coconut farmer | Revenue to Neera technician | Revenue generation to state by increased purchasing power |
|--------------|-------------|------------------------------|----------------------------|---------------------------|-----------------------------|---|
| %            | No. (lakhs) | (MT)                         | (Rs. in crores )           |                           |                             |   |
| 1            | 18          | 5,40,000                     | 5,400                      | 2,700                     | 1,350                       | 405   |
| 5            | 90          | 27,00,000                    | 27,000                     | 13,500                    | 6,750                       | 2,025   |
| 10           | 180         | 54,00,000                    | 54,000                     | 27,000                    | 13,500                      | 4,050   |



## **Facilitation by Coconut Dev. Board**

- 1. Formation of CPS, CPF and CPCs.**  
(Already done and continuing)
- 2. Submission of detailed project proposals from selected Federated Societies.**
- 3. Training of skilled Neera Technicians.**
- 4. Financial support for enterprises under Technology Mission on Coconut**



**Traditional Neera tapping**





## Neera technicians - a green collar job envisaged by CDB





## Packed Neera

by KAU



by CFTRI





## Packed Neera in Karnataka





**Jaggery by KAU**

**Kerachakkara**



## 10. International products and brands





## Coconut flower syrup in Phillippines





## COCONUT SAP SUGAR PRODUCTION



STEP 1



STEP 2



STEP 3



STEP 4



STEP 5



STEP 6



**Coconut nectar**



**Coconut sugar**



## Coconut sap drink in Phillippines



## Neera in Thailand



**Coconut sugar**



**Coconut nectar and syrup**



**Organic coconut sugar**



## Coconut sugar in sachets



## Coconut syrup



## Coconut nectar



## Coconut sugar



## Coconut palm sugar



## DIFFERENT BRANDS OF COCONUT SUGAR







## THE PHILIPPINE BRANDS





## **If licence is given for Neera production**

- **Branded retail packs of Neera and its value added products in domestic and export market**



Neera the Global Health Drink







Thank you