

Product Quality Standards

- Every product should have a standard system of grading and classifying based on its quality for the purpose of commercialization.
- The Philippine National Standard (PNS) for coconut sap sugar was finalized by the Bureau of Agricultural Foods and Product Standards in collaboration with PCA.

Physical Properties

- Color: light yellow to dark brown
- Odor: free of burnt odor
- Taste: free of burnt taste

Chemical Properties

• Moisture Content (%)	:	≤ 4.0
• Glucose Content	:	2.8– 3.0
• Fructose Content	:	1.0– 4.0
• Sucrose	:	78.0– 89.0
• Ash	:	≤ 2.4

Microbiological Properties

• Salmonella	:	Negative
• <i>E. coli</i>	:	Negative
• Coliform Count	:	< 10 cfu/g
• Total Plate Count	:	< 10 cfu/g
• Mold and Yeast	:	< 10 cfu/g

Comparative nutritional values of the coconut sap sugar vs. brown sugar

Element (ppm or mg/L)	Coconut Sap Sugar	Brown Sugar
Nitrogen	2,020	100
Phosphorus	790	35
Potassium	10,300	650
Magnesium	290	None
Chloride	4,700	180
Sodium	450	None
Sulfur	260	None
Copper	2.3	None
Manganese	1.3	None
Boron	6.3	None
Zinc	21.3	2.0
Iron	21.9	12.6



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>

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Graphics Layout & Design by Lito Tan Francisco

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

Introduction

- The nutritious coconut sap sugar is a novel product and an important addition to the numerous products that can be derived from the coconut tree.
- It is made purely from coconut sap or toddy, locally known as 'tuba', the oyster-white liquid oozing out from the unopened inflorescence technically termed as "spathe".
- The sap contains 12-18% sugar in its natural form with important vitamins and amino acids.
- It has very low Glycemic Index (GI) of 35, making it an important functional food – a natural sweetener for diabetics and those who have family history of diabetes.
- The spathe of coconut trees in good stand can yield an average of two (2) liters of sap per tree per day. An average of one (1) kg of sugar can be produced from four (4) coconut trees per day.
- Eight (8) liters of coconut sap is equivalent to one (1) kg coco sugar.
- The production volume and the sugar content of the sap, however, is dependent on the location and variety of the tree, season, nutrition, as well as the tapping time and method.
- Transforming the coconut sap to sugar granules is simple and requires basic equipment that is why it is appropriate and best adapted to farm-level or medium-scale enterprise.
- It is an immediate source of income for coconut farmers and at the same time the demand is getting bigger both in the local and international markets.
- An initial investment of P1.42 M can yield an average annual net profit amounting to P203,762.48.
- Based on the projected 10-year income statement and cash flow, before financing, income is realized on the first year of operation.
- The initial investment can be fully recovered in 3.64 years.
- In addition, the estimated internal rate of return (IRR) is 28% while the net present value (NPV) is at P648,676.86 at the discount rate of 15%.

➤ Initial Capital	P1.42M
➤ NPV (based on a 10-year cash flow projection at 15% discount rate)	P648,676
➤ IRR (based on a 10-year cash flow projection)	28%
➤ Payback Period	3.64 years

