

# COCONUT NECTAR AND SUGAR

## **Coconut Palm Nectar And Sugar Is Nature's Perfect Sweetener™.... With Nothing To Hide.**

"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." 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.

After introducing the world's first certified organic coconut palm sugar to the global market in 2008, Big Tree Farms continues to be the leading supplier for high quality coconut palm sugar and now liquid nectar. We stand behind our product unconditionally and can say with integrity and honesty, we produce the highest quality coconut palm sweeteners in the world and we hope you enjoy using it as much as we enjoy making it!

Made from the sweet nectar of the coconut tree flower blossoms, coconut palm sugar is a pure and simple low-glycemic cane sugar and agave syrup alternative that provides the energy and nutrition your body needs for a long healthy lifestyle. With a 6,000 year history, palm sweeteners have a proven track record for providing nourishing sweetness for the human body. They are rich in nutrients, minerals and sweetness that you can feel good about putting into your body and even your children's body.

Coconut palm sugar is made from the nectar produced from the coconut tree (*coco nucifera* - not the same palm tree that produces Palm Oil). Once collected, it is boiled and processed into a granule. It's a very simple process and a very simple and pure product. Coconut palm Sugars produce slow release energy, which sustains the human body through your daily activities without regular sugar "highs", and "lows".

Coconut palm Sugar is naturally low on the Glycemic Index (GI), which has benefits for weight control and improving glucose and lipid levels in people with diabetes (type 1 and type 2). Coconut palm sugars are rated as a GI 35. By comparison, most commercial Agaves are GI 42, Honeys are GI 55 and Cane Sugars are GI 68.

The major component of coconut sugar is sucrose (70-79%) followed by glucose and fructose (3-9%) each. Minor variations will occur, due to differences in primary processing, raw material source, tree age and variety of coconut.

For more general info, please check out [FAQs](#) on coconut palm sugar.

Coconut palm nectar has a nutritional content far richer than all other commercially available sweeteners. It is especially high in Potassium, Magnesium, Zinc and Iron (similar to coconut water) and is a natural source of the vitamins B1, B2, B3, B6 and C. It's also very rich in other minerals and enzymes which aid in the slow absorption into the bloodstream.

\* Please note that some coconut palm sugar on the market is also mixed with cane sugar and other malt-based ingredients. Our coconut palm sugar is PURE coconut palm nectar. No cane sugar added. No maltodextrin added. Just pure, unadulterated coconut palm sugar made from 100% coconut palm nectar from *Coco Nucifera*, the green coconut tree.

## **Nutritional Information**

Here is a comparison to popular sweeteners:

Macro-nutrients (mg / 100gm)	Coconut Palm Sugar	Agave Syrup	Honey	Maple Syrup	Brown Sugar	Refined, White Sugar
Nitrogen (N)	202	NA	NA	NA	10	0
Phosphorus (P)	79	7	4	2	3	0
Potassium (K)	1,030	1	52	234	65	2.5
Calcium (Ca)	8	1.5	6	67	24	6
Magnesium (Mg)	29	1	2	14	7	1

Sodium (Na)	45	1	4	9	2	1
Chloride (Cl)	470	NA	NA	NA	16	10
Sulfur (S)	26	NA	NA	NA	13	2
Boron (B)	0.6	NA	NA	NA	0	
Zinc (Zn)	2	0.2	0.2	4.2	0.2	0.1
Manganese (Mn)	0.1	0.1	0.1	3.3	0.2	0
Iron (Fe)	2	1	0.4	1.2	1.26	0.1
Copper (Cu)	0.23	0.1	0	0.1	0	0
Thiamine	0.41	0	0	0	0	0
Vitamin C	23.4	0.5	0.5	0	0	0

Source: The Philippine Food and Nutrition Research Institute, COMPARISON OF THE ELEMENTAL CONTENT OF 3 SOURCES OF EDIBLE SUGAR - Analyzed by PCA-TAL, Sept. 11, 2000. (MI Secretaria et al, 2003) in parts per million (ppm or mg/li), USDA, [www.nutritionaldata.com](http://www.nutritionaldata.com)

## Health Attributes of Coconut Palm Sugar Nutrients:

Macro-nutrients	Health benefits provided by these nutrients
Nitrogen (N)	help treat cardiovascular diseases
Phosphorus (P)	important for bone growth, kidney functions and and cell growth
Potassium (K)	reduces hypertension, helps regulate blood sugar, helps control cholesterol levels and weight
Calcium (Ca)	vital for strong bone and teeth, and for muscle growth
Magnesium (Mg)	essential for metabolism, nerves and stimulates the brain (memory)
Sodium (Na)	plays a key role in the functioning of nerves and muscles
Chloride (Cl)	corrects the pressure of body fluids and balance the nervous system

Sulfur (S)	important for healthy hair, skin and nails, also helps maintain oxygen balance for proper brain function.
Boron (B)	essential for healthy bone and joint function, enhances body's ability to absorb calcium and magnesium
Zinc (Zn)	called the "nutrient of intelligence" is necessary for mental development
Manganese (Mn)	has antioxidant, free-radical-fighting properties, is important for proper food digestion and for normal bone structure
Iron (Fe)	vital for the quality of blood, mental development and the immune system
Copper (Cu)	helps to release energy, helps in melanin production in the skin, helps in the production of red blood cells and aid in the absorption and transport of iron.

## **Glycemic Index Explained**

Coconut palm sugar is GI-35. The [Philippine Food and Nutrition Research Institute](#) used the following procedure to determine the Glycemix Index (GI) value of palm sugar:

- Fifty grams (240 ml) standard glucose tolerance test beverage (Medic Orange 50, Product no. 089) and fifty (50) grams of coconut palm (*Cocos nucifera*) sugar was fed in random order to ten (10) human subjects.
- Blood samples (0.3-0.4 ml) were collected after feeding through finger prick using a 7ml Vacutainer at zero (0) hour, and thereafter at every 15 min interval for 1 hour, and every 30 min or the next hour.
- The serum was separated from the blood using a refrigerated Effendorf centrifuge, and analyzed for glucose levels on the same day using a Clinical Chemistry Analyzer after calibration with the glucose standard (Glucofix Reagent1: Menarini Diagnostics, Firenze, Italy).
- The blood sugar levels of the ten (10) healthy human subjects given coconut palm sugar and reference glucose food samples were graphed against the time of study. The incremental area under the glucose response curve (IAUC) of the coconut palm sugar was calculated geometrically ignoring the area below the fasting level (Wolever et al.,1991). The Glycemic Index (GI) of the coconut palm sugar was calculated as  $GI = \text{IAUC of the test food} / \text{IAUC of standard glucose}$  multiplied by 100. It's index value is 35.

## **Glycemic Index and Glycemic Load:**

Glycemic Index takes into account the quality of the carbohydrate in a food and ignores its quantity. A glycemic index value therefore tells us only how rapidly a particular carbohydrate turns into sugar. It doesn't tell how much of that carbohydrate is in a serving of a particular food. Both the things are important to understand a food's effect on blood sugar.

Glycemic load considers the quality and the quantity of carbohydrate content of the foods.

The following table gives a values for low, medium and high glycemic load for foods.

- Low GI = 55 or less
- Medium GI = 56 - 69
- High GI = 70 or more

\*Values are with reference to Glucose.

Foods that have a low glycemic index invariably have a low glycemic load, while foods with an intermediate or high glycemic index range from very low to very high glycemic load. Therefore, you can reduce the glycemic load of your diet by limiting foods that have both a high glycemic index and a high carbohydrate content.

According to Dr. Trinidad, a scientist from the Food and Nutrition Research Institute - Department of Science and Technology the Glycemic Index (GI) is the glucose response of an individual from food relative to a standard glucose solution. Low G I food is good for proper control and management of diabetes mellitus (type II diabetes) and has been shown to lower total and LDL cholesterol. It is also good for weight maintenance therefore prevents overweight and obesity.

Their findings indicate the glycemic index of 35 for pure coconut palm sugar. Please note that some coconut palm sugar on the market, in particular palm sugar from Thailand, is also mixed with cane sugar and other malt based ingredients.

The glycemic index value alone does not give accurate picture of the food. The glycemic load (GL) takes both the things into account. The glycemic load is the glycemic index divided by 100 multiplied by its available carbohydrate content

The glycemic load of coconut palm sugar is 1.4, or 1 when rounded off.

## **Who can Benefit from Eating Food Low on the Glycemic Index?**

By helping to maintain lower blood sugar and insulin levels, a low-GI diet may be useful in preventing and treating a variety of the health problems. Here are some examples of how eating low on the glycemic index can help promote excellent health:

**Diabetes** - Substituting low-GI carbohydrates (like thick-cut oats, pasta, and legumes) for high-GI carbohydrates (like processed cereals, white bread, and potatoes) can help lower blood glucose levels in people with diabetes. This is why the GI has been an integral part of medical nutrition therapy for diabetes in Australia, New Zealand, Canada, and Europe for many years.

A low-GI diet may also help prevent diabetes from ever developing in the first place. Harvard University researchers who tracked the eating habits of over 100,000 men and women found that people whose diets are low in fiber and high in refined and high-GI carbohydrates are more than twice as likely to develop type 2 diabetes, as are people who eat a fiber-rich diet with a low glycemic load.

**Cancer** - Insulin is a cellular growth factor. Many studies have shown an association between high insulin levels and a variety of cancers including breast, colorectal, prostate, and pancreas. Other studies have shown links between diets high in sugar, refined carbohydrates, glycemic load, and cancer. This suggests that lifestyle changes like maintaining a healthy body weight, exercising, and eating a healthy low-GI diet may help protect against cancer at least partly by lowering insulin levels.

**Cardiovascular disease** -As with type 2 diabetes, researchers have found that a diet high in refined and high-GI carbohydrates may substantially raise the risk for heart disease. These foods increase blood insulin levels, which in turn contribute to a higher blood pressure, higher levels of blood fats (triglycerides), lower levels of HDL (good) cholesterol, and an increased tendency for dangerous clots to form and linger in the blood.

Hypoglycemia - People who have meal-related reactive hypoglycemia secrete too much insulin after eating. This causes the cells to remove so much sugar from the blood that they feel weak, shaky, irritable, headach-y, unable to concentrate, and very hungry with a few hours of eating. Choosing low-GI carbohydrates can help prevent this type of hypoglycemia because eating foods that promote a gradual rise in blood sugar and a lower insulin response reduces the likelihood that blood sugar levels will drop too low.

Obesity - Since low-GI foods are slowly digested, they provide a gradual and sustained rise in blood sugar. This keeps you feeling full and satisfied and delays the return of hunger between meals. Conversely, high-GI carbohydrates provide short bursts of energy that satisfy you in the short term but soon leave you hungry. Many of the fat-free and low-fat foods that have become popular over the last decade—such as bagels, processed cereals, rice cakes, crackers, snack chips, and cookies—tend to rank high on the glycemic index and may actually contribute to a pattern of overeating in some people.

\*These statements have not been approved by the FDA.

## **Environmental Attributes Of Coconut Palm Sweeteners**

Tropical palms are an ecologically beneficial tree crop that grows in diverse, wildlife supportive agro-ecosystems, restore damaged soils and require very little water. Coconut palms are considered the “Tree of Life” by many traditional communities throughout the world, as one tree can provide a multitude of usable goods, such as; roofing material, food, coconut water, building material and shade for crops.

Other key Eco-points:

- Reports by the Food and Agriculture Organization (FAO) of the World Bank show that Coconut Palms and other nectar producing species of palms are likely the world’s most sustainable sweetener. Why?
  - Coconut Palms and other sugar producing tropical palms are nearly twice as productive per hectare as sugarcane and are a far more sustainable source of sweetener because they grow in diverse, wild-life supportive ecosystems as opposed to huge mono-crop plantings.
  - Coconut Palms can grow in severely depleted soil (think of a sandy beach!) and use very little water; In fact, not only do they require such little maintenance, but they actually improve soil structure,

fertility and water conservation, thereby allowing marginalized land to become lush jungle over time. Many traditional communities throughout the world consider coconut palms the "Tree of Life", as they provide a variety of accessible products from which they earn their livelihoods.

- The production of SweetTree organic coconut sugar has the single highest potential for lifting these farmers into a better life while creating a net benefit to their surrounding environment.
- Coconut palm sugar is not produced from the same palm species as is used for the production of palm oil.
- Coconut palms produce an average of 50-75% more sugar per acre than sugar cane and use less than 1/5th the soil nutrients for that production.

## **Farmer Partners**

We work with over 1,000 farmers on the island of Java for our coconut palm sugar production and have been directly involved with the creation of farmer cooperatives, internal control systems and organic certificates for them and their product.

We oversee a number of small cooperative maintained sugarhouses and directly own and operate a processing facility for ensuring final quality assurance for all final coconut palm sugar products. The sugarhouses are small commercial kitchens, allowing producers to continue the tradition of small batch coconut palm sugar production and at the same time have a product that is clean, free of any contamination, and consistently of the highest quality.

Other key community points:

- 100% of the money from growing, harvesting and primary processing of this ingredient stays in the local communities and we work directly with international NGO's in order to maintain transparent, socially equitable supply chains.
- Our sustainable supply chain manages direct producer programs in value addition education and practice, market access and small business/ cooperative management.
- Through market access and production training, smallholder sugar-tappers have risen well above the poverty line and are able to earn an increase in personal income of close to 200% while maintaining a competitive market price as a cane sugar alternative!

Coconut palm sugar has the single highest potential for lifting these farmers into a better life while creating a net benefit to their surrounding environment.