



SUGAR

“Unrefined brown sugar offers bright, clear color and rich taste with delicious underlying spice, butter, and caramel flavor . . .

Unrefined sugar from the tropical island of Mauritius in the Indian Ocean is the finest quality.”

Rose Levy Beranbaum
The Pie & Pastry Bible



Sugar Cane Fields - Mauritius

● **What is sugar?**

The term “sugars” in the plural refers to a class of sweet-tasting carbohydrates, formed naturally in the leaves, roots, stems, and fruits of numerous plants--and in milk--as a way of storing energy.

- Galactose or lactose (milk)
- Fructose or levulose (fruits/honey)
- Glucose or dextrose (grain)
- Sucrose (compound of fructose & glucose)

Sweetness is one of the five basic flavors that we detect with our sense of taste rather than our sense of smell. The other four are bitter, sour, salty, and umami, or savoriness. Mother’s milk contains sugar. We are virtually born with a sweet tooth.

● **What are the sources of sucrose?**

The sugar we most often refer to, the one in our sugar bowl, is sucrose. Sucrose is found in: sugar cane, a giant grass native to India’s Ganges delta; sugar beet, first noticed as a source of sugar in 1575; and sugar maples, “Indian sugar” trees native to North America.

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SUGAR – *continued*

- ***What is the history of sugar?***

Cane sugar was cultivated in India at least 3,000 years ago. Later its use spread to China. It is mentioned by the Persian king Darius in 500 BC, as “a reed that gives honey without the aid of bees.” Cane sugar found its way to the Near East through invasion and by trading caravans. It spread to Europe during the Moorish conquest around 1000 AD.

The first industrial refineries were established on the island of Crete. “Quandi” is the Arab word for crystallized sugar. From this word was derived the words Candia or Candi for Candy. The capitol city of Crete came to be known as Hania or Chania, the names it bears to this day.

During the European Renaissance, refined sugar was displayed as a sign of wealth and used to create fantastic objects in the shape of buildings, fruits, and figurines as table decorations. Even goblets and plates were made of sugar and painted and gilded with gold for special occasions known as “banquets.”

Many of the plantations were in far away colonies such as Mauritius, the West Indies, and North and South America. By 1518, there were eight plantations in the West Indies. Labor was provided first by the Carib Indians, the European peasants, and finally by African slaves. Later Asian immigrants were used to work the fields in Hawaii, first the Chinese, next the Japanese, and then the Filipinos.

In the 18th century, sugar was paired with beverages, e.g., coffee, chocolate, and tea. Beet sugar began to rival cane sugar in the 18th century when France was cut off from its colonies by the Napoleonic Wars and had to resort to the growing of sugar beets to supply its population’s demand for sugar.

- ***What are the requirements for cultivation?***

Beet sugar can be grown in drier climates, e.g., the mountain states and provinces of the United States and Canada. Cane sugar must be grown in the tropics and subtropics, usually on rich volcanic soil, where there are tropical storms and trade winds blowing, e.g., Mauritius, Hawaii, the West Indies, India, Central America, and parts of South America and the American South.

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SUGAR – *continued*

● ***How is cane sugar harvested?***

It is safe to say that most cane sugar crops throughout the world are still harvested by hand, using a machete-like tool. On the island of Mauritius, however, at least 40% of the fields are fully mechanized. In this case, large two-story high “combines” are used to cut off the cane near the root. The cane is then chopped mechanically into smaller pieces and loaded directly onto trucks for transport to a nearby mill or weigh station.

Harvesting takes place after the cane has come into full bloom during the months of September through December before the rainy season sets in. The fields are burned first, then the cane is cut and hauled to the mill. It is important that the mills are close to the fields, for the cane needs to be processed soon after harvesting. During the harvesting season, the narrow back roads throughout Mauritius are clogged with trucks carrying cane.



Trucks loaded with cane at weigh station

● ***How is it milled?***

Once the cane reaches the mill, it is cut, washed, and crushed to extract juice. Calcium and other safe compounds are added to the juice in big vats.

The calcium bonds with impurities to form a scum which is skimmed off. Then the juice is heated in an evaporator. The juice forms crystals as it gives off steam. The steam is recycled to supply energy to the plant.

The moist brown sugar then goes to a conditioning tower, where it is blasted with air to dry it out and make it free flowing. It is then bagged and stored for shipment, or sent to a refinery where it is further processed to create white refined sugar.

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SUGAR – *continued*

- ***Sugar's culinary contribution:***

- Increases/Decreases:
 - Increases Moisture Retention (Baked Goods)
 - Increases Boiling Point (Custards)
 - Lowers Freezing Point (Ice Cream)
- Assists in:
 - Tempering Acidity (Tomatoes, Lemons)
 - Enhancing Natural Sweetness (Corn, Carrots, Peas, Onions)
 - Emulsification (Chocolate, Baked Goods, Ice Cream)
 - Fermentation (Bread, Alcoholic Beverages)
 - Preserving Color (Fruit)
 - Coagulation (Egg Dishes)
 - Preventing Mold (Jams, Conserves)
 - Crystallization (Candy Making, Ginger, Flowers)
 - Improving Texture (Bread, Cookies, Pie Crusts, Pastries, Cakes)
- Provides flavor as well as sweetness:
 - This especially true of INDIA TREE milled sugars from Mauritius, perhaps best expressed in this passage from Rose Levy Beranbaum's *"The Pie & Pastry Bible"*:

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Readings:

Journey to Mauritius. **Gretchen Goehrend**, 2010. On this website.
Sweet!: From Agave to Turbinado, Home Baking with Every Kind of Natural Sugar and Sweetener. **Mani Niall**, 2008.
Pure Dessert. **Alice Medrich**, 2007.