



SUGARCANE



SUGAR BEET



DATE PALM



SORGHUM



SUGAR MAPLE

Sugar-coated

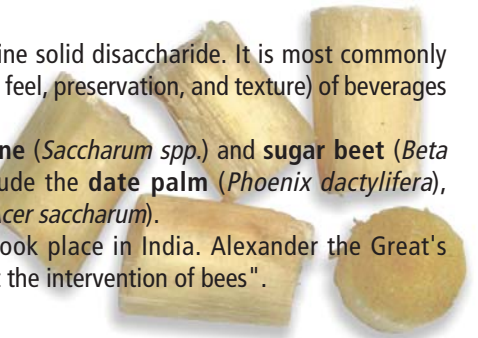
What is the first thing that comes to your mind when you hear the word 'sweet'? I know the answer... it's sugar!

May it be chocolates or candies or juices or biscuits or ice cream or even our daily meals, sugar is a must-have. Want to have a taste of these crystals that define "sweetness"? Read on...

Sugar in general use means sucrose, a white crystalline solid disaccharide. It is most commonly used to change the taste and properties (such as mouth feel, preservation, and texture) of beverages and food.

The two most important sugar crops are **sugarcane** (*Saccharum spp.*) and **sugar beet** (*Beta vulgaris*). Some minor commercial sugar crops include the **date palm** (*Phoenix dactylifera*), **sorghum** (*Sorghum vulgare*), and the **sugar maple** (*Acer saccharum*).

The first production of sugar from sugar cane took place in India. Alexander the Great's companions reported seeing "honey produced without the intervention of bees".

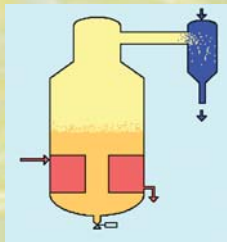


PROCESS

Extraction: Cane juice is extracted by either crushing the cane in a series of roller mills or by using a diffuser (especially for beet sugar). The juice is separated from the cane fibre. Either way the juice is unclear.

Evaporation: The juice is cleaned with slaked lime (a relative of chalk), which settles out the dirt. Then the juice is thickened up into syrup by boiling off the water using steam (evaporation).

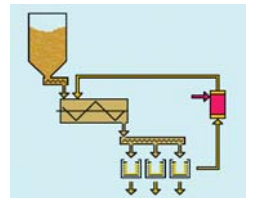
Boiling: The remaining water in the syrup is boiled off. Some sugar dust is thrown in to initiate crystal formation. The resulting mixture is spun in an apparatus that separates the lighter from the heavier substance by rotating the mixture around a fixed axis (Centrifuge). The crystals are then given a final dry with hot air.



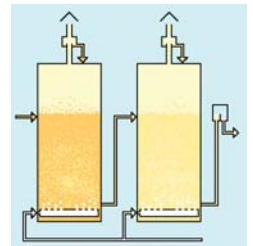
The final raw sugar is sticky brown, and it usually gets dirty in storage. Thus it needs to be refined.

REFINING

Affination: The raw sugar is mixed with warm, concentrated syrup of slightly higher purity than the syrup layer so that it does not dissolve the crystals. The resulting mixture is centrifuged to separate the crystals from the syrup thus removing the greater part of the impurities.



Carbonatation: Small clumps of chalk are grown in the juice that collect the non-sugars. Filtering out the chalk removes the non-sugars. Phosphate formation is also used.



Decolourisation: Colour is removed by either granular activated carbon [GAC] that burns off the colour from the carbon or by using an ion exchange resin. The clear, lightly coloured liquor is evaporated before crystallisation.

Sugar is finally ready to eat! I mean to be sold.