

Sugar: Sources and Uses

Monosaccharides and disaccharides are crystalline, water-soluble, and sweet compounds. In food preparation, they are referred to as sugars.

Monosaccharides- Fructose, Glucose, Galactose (Does not occur in free form in nature)

Disaccharides- Sucrose, Lactose, Maltose.

Sugar-Natural Sources and their Components

Sugar	Natural Sources	Components
Glucose or Dextrose	Honey, fruit and plant juices, is a part of cane and beet	-
Fructose or Fruit sugar	Honey, fruit juices, is a part of cane and beet sugar	-
Galactose	Does not occur in free form in nature Occurs as a part of Lactose	-
Sucrose	Sugarcane Sugar beet Sugar palm Sugar maple In fruit and plant juices	Glucose and Fructose
Lactose	Milk	Glucose and Galactose
Maltose	Germinated or Malted grains Formed by hydrolysis of corn starch	Glucose and Glucose

Uses of Sugar

- Sugars supply energy to our body. Each gramme of sugar supplies 4 calories. Sugar can be metabolized quickly to meet energy needs of our body.
- It is mainly used as a **sweetening agent** in beverages such as tea, coffee, fruit drinks, in cereals and porridge, pies, cakes, biscuits, and frozen desserts such as ice cream.
- When used in higher concentration, sugar acts as a **preservatives** as well as a sweetening agent, e.g., jams, jellies, marmalades, squashes, sweetened condensed milk, ladus etc.
- **Confectioneries sugar** is the major ingredient responsible for its shape and structure.
- **Brown Sugar** is prepared by concentrating sugarcane juice. It is not refined and has a light to dark brown color, due to impurities present. It contains about 96% sugar, about 2% moisture and traces of minerals and protein. The presence of other substances imparts a characteristic rich flavor to brown sugar.
- **Honey** is concentrated nectar of flowers, sweet exudates of leaves and plants manufactured by honeybee. Chemically honey is concentrated solution of fructose and glucose in which small amounts of sucrose, dextrans, mineral matter, proteins (trace) and organic acids are present. It contains about 18% water, 40% fructose, 35%

glucose and 5% sucrose. Honey is used as spread for bread with butter. It is also used in a number of baked products, to impart a light texture and a moist feel to the product.

- **Glucose or Dextrose** is widely distributed in nature. It is found in fruits, honey and some vegetables. Commercially, glucose is made from corn starch by hydrolysis. Glucose is formed in sugar syrup if an acid is present.
- **Fructose** is mainly found in honey with glucose. It is present in fruits and molasses. It is the most soluble of all sugars and is also the sweetest of all natural sugars.
- **Maltose** when starch is hydrolyzed with an acid, maltose is formed as an intermediate product. It is prepared commercially by enzymatic hydrolysis of starch. It is present in germinating cereals and malted products.
- **Lactose or Milk Sugar** is the sugar present in milk secreted by females of mammals. Cow's and buffalo's milk contains on an average 5% lactose while human milk contains about 7%.
- **Sucrose** is common sugar available in the market. In India, it is made from sugarcane and is 99.9% pure sucrose. In the temperate zone, it is obtained from sugar beet.