



Properties of Sugars

Course: MHOMCC-11

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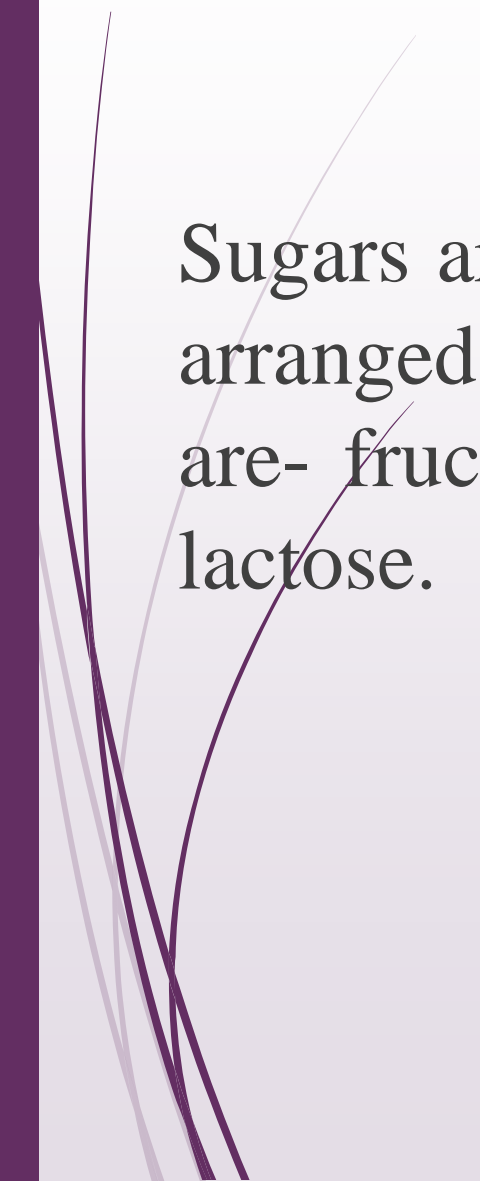
Hygroscopic Nature

Hygroscopic means water attracting. Sugars absorb water on exposure and are known to be very hygroscopic by nature. Therefore, sugars should be stored in a dry place, in air tight containers. Sugar and confectionaries made from sugar tend to absorb moisture and become sticky when exposed.



Solubility

Sugars are soluble carbohydrates. The sugars arranged in descending order of solubility are- fructose, sucrose, glucose, maltose, and lactose.



Flavour

The sugars are mainly prized for their sweet flavour. Sugars vary a great deal in their sweetness. There is no objective test for measuring the degree of sweetness. Fructose is the most sweet and lactose the least sweet of the sugars. Glucose is rated as half to three-fourth as sweet as sucrose. Maltose is less sweet than glucose. Thus the ranking in terms of sweetness is fructose, sucrose, glucose, maltose and lactose. The flavour of unrefined sugars depends on the nature of impurities present. It is sweet combined with other flavours present.

Ease of Crystallization

Sugars crystallize out of solution with ease on concentration. The ease of solubility is inversely related to ease of crystallization. The least soluble sugar crystallizes even at low temperature ,but the most soluble sugar is not easily crystallized.



Crystallization

It is a process where crystals of the solute are obtained from the solvent in which they are dissolved. Crystallization of sugar occurs when a saturated solution of sugar is cooled gradually. Crystals of sugar thus obtained are very desirable in sugar coated preparations like sugar coated nuts, balushahi and other such as icings and candies such as fondants etc.

Inversion of Sugar

Sugar is hydrolyzed by acids to glucose and fructose. This retention is called **'Inversion of Sugar'** and the **glucose and fructose** formed are referred to as **'Invert Sugar'**. Invert Sugar is more soluble in water than sucrose, and therefore does not crystallize as readily as sucrose. Inversion of sugar in food preparation is observed when lemon juice is added to sugar preparations which are subsequently heated. Inversion of sugar can also be brought about by hydrolyzing enzymes present in foods.

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THANKS