

SUGARCANE MOLASSES: NUTRITION, PROCESSING AND APPLICATION

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SUGARCANE MOLASSES

Molasses is the concentrated solution obtained by concentrating juice from sugarcane or sugarbeet, or raw cane sugar in which varying amounts of sucrose has been removed. Molasses is termed as 'black treacle' in British English. It is a viscous product resulting from refining sugarcane or sugar beets into sugar. It varies by the quantity of sugar, method of extraction, and age of plant.



Sugarcane



Molasses

NUTRITIONAL CONTENT IN CANE MOLASSES

Molasses, the honey-like viscous syrup, is the most valuable by-product from the sugar industry. It is residual syrup from which no more crystalline sucrose is often obtained by simple techniques. The composition varies counting on the source and sort of refining (cane molasses, beet molasses, sulfured, and unsulfured); however, the sugar content is about 50% (predominantly sucrose with less amount of glucose and fructose). It is estimated that from about 100 tons of processed cane, 10 tons of sucrose, and 4 tons of molasses is extracted.

Unlike highly refined sugars, it contains significant amounts of vitamin B6, thiamine, riboflavin

and minerals, like calcium, magnesium, phosphorus, potassium, sodium, iron, and manganese. One tablespoon provides up to twenty per cent of the recommended daily value of every of these nutrients. Blackstrap molasses is also a good source of potassium and it has long been sold as a dietary supplement.

DIFFERENT TYPES OF MOLASSES

Blackstrap molasses

- Byproduct from a sugarcane factory or raw sugar refinery
- Dark viscous liquid
- Obtained after final stage of sugar crystallization
- Bitter Flavour
- Subjected to high heat and contains sugar decomposition products
- Used for feed grade material
- Application depends upon the quality grade

High-Test Molasses

- Produced from cane juice instead of sugar, not as a byproduct of sugar production
- Product obtained by concentrating clarified cane juice to approximately 85 ° Brix
- Partially inverted with either acid or invertase enzyme
- Known as FANCY MOLASSES, cane invert syrup, or cane juice molasses
- Premium product, higher in sugars content
- More aromatic flavor
- Subjected to less heat, contains relatively fewer sugar decomposition products, which can add bitter flavor

Sulfured Molasses

- Byproduct of raw sugar manufacture in which sulfur dioxide has been added to the molasses to bleach color
- Lighter in color
- Higher in ash of the insoluble sulfate type
- The term 'unsulfured' is more common

PROCESSING OF MOLASSES

The processing of molasses includes several steps in which sugar cane is harvested and leaves are stripped off. Its juice is extracted, usually by cutting, crushing, or mashing. The juice is boiled to concentrate it, promoting sugar crystallization.

- The result of this first boiling is called **FIRST SYRUP** ('A' MOLASSES), and it has the highest sugar content. First syrup is usually referred as cane syrup, as opposed to molasses.



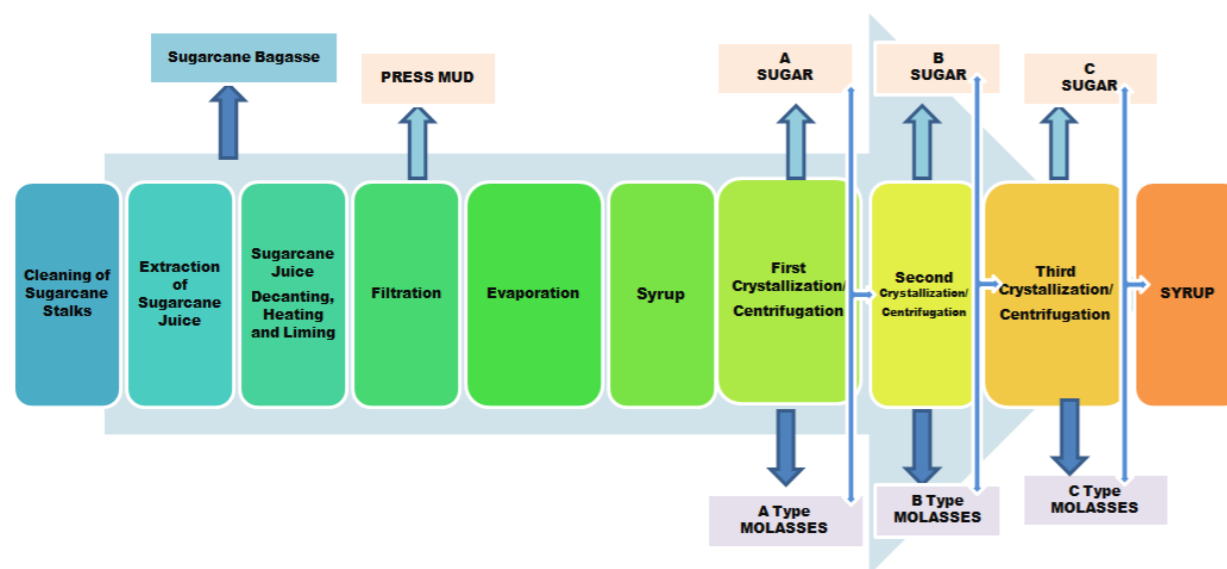
First Syrup

Grade 'B'

Blackstrap

- **SECOND MOLASSES ('B' MOLASSES)** is created from a second boiling and sugar extraction, and has a slightly bitter taste.
- The third boiling of the sugar syrup yields dark, viscous **BLACKSTRAP MOLASSES ('C' MOLASSES)**, known for its robust flavor. The majority of sucrose from the extracted juice has been crystallized and removed. The caloric content of blackstrap molasses is mostly due to the small remaining sugar content.

Flow Chart of Molasses Processing



BENEFITS OF MOLASSES

Maintain Healthy Bones, Manages diabetes, Rich in antioxidants, Weight loss, Speeds up healing, Prevents fatigue, Relieves acnes, Maintain healthy nervous system and hemoglobin levels.

APPLICATION OF MOLASSES

Sugarcane molasses is the major food molasses. It is primarily used for sweetening and flavoring foods. It is an ingredient used in baking and cooking. It is also used for animal/cattle feed, ethyl alcohol production and other chemicals by a process of fermentation. Molasses is a defining component of fine commercial brown sugar and provides rich, dark texture and flavor to brown sugar. It is also one of the primary ingredients used for distilling rum and beer. Blackstrap molasses is significantly bitter than “regular” molasses. It is considered as a low-value product which can be employed as a soil fertilizer, a cattle feed supplement, in specialized yeast fermentations (production of citric acid, glutamate, and acetone), as a flavoring agent in some foods, or as a feedstock for ethanol production.

- **ANIMAL FEED**
- **ETHYL ALCOHOL**
- **FOOD INDUSTRY**
- **SUPPLEMENTS**
- **CHEMICALS**

Benefits of Black Molasses

- ✓ Antioxidants
- ✓ Anti-Inflammatory
- ✓ Provides Energy
- ✓ Reduces Risk of Cancer, Heart Attack & Stroke
- ✓ Rich in Iron
- ✓ Helps With Anemia
- ✓ Good For Diabetics
- ✓ Aids Weight Loss
- ✓ Low Calorie
- ✓ Helps With Digestive Issues
- ✓ Provides Healthy Skin & Reduces Aging
- ✓ Supports Healthy Hair
- ✓ Reduces Gray Hair
- ✓ Laxative Properties
- ✓ Heart, Bone & Colon Health
- ✓ Aids the Immune & Nervous Systems
- ✓ Prevents Osteoporosis

