

Sugarcane Juice & Jaggery; An Immunity Booster in COVID-19 Pandemic Situation

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Introduction:

Sugarcane or Ikkshu or Aakh is poverty reducing traditional and also industrial crops. Apart from industrial use, it is also utilized for the production of jaggery. It can also be eaten as is or consumed in the form of juice, which contains high polyphenols, which are powerful phytonutrients with the qualities of antioxidants and loaded with vitamins & minerals. The jaggery industry has been one of the most ancient and important rural based cottage industries in India. As these are rich in antioxidants, sugarcane juice and Jaggery are very much important in boosting immunity. It is produced almost in 25 countries under different names with an estimated production of 13 million tonnes per year. India is the largest producer of jaggery under the unorganized agro-processing sector, sharing 55% of the world production, while Colombia is the second-largest producer contributing 11% of the world production. Region-wise common names of solid jaggery are presented in table 1.

Table 1. Region-wise common name of solid jaggery

| Type of Jaggery | Common Name | Region |
|-----------------|-------------|---------------------|
| Solid Jaggery | Gur | North India |
| | Gul | Maharashtra |
| | Bella | Karnataka |
| | Vellum | Tamil Nadu, Malabar |
| | Bellam | Andhra Pradesh |
| | Akher Gur | West Bengal |

Nutritional value of Sugarcane Juice:

Sugarcane juice contains high polyphenols, which are powerful phytonutrients with the qualities of antioxidants. It is also loaded with vitamins and minerals such as calcium,

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potassium, magnesium, manganese, and iron; along with a complete profile of essential amino acids that help burn fat and build muscle. Some of these include pipercolic acid, methionine, tryptophan, β -alanine, and arginine; along with basic amino acids like histidine, lysine, arginine, and tryptophan. Sugarcane juice is alkaline to the body and most diseases cannot live in an alkaline environment. The juice Sugarcane per serving (28.35 grams) contain Energy-111.13 kJ (26.56 kcal), Carbohydrates-27.51 g, Protein-0.27 g, Calcium11.23 mg (1%), Iron 0.37 mg (3%), Potassium 41.96 mg (1%), Sodium 17.01 mg (1%).



Benefits of Sugarcane Juice:

It contains a high amount of Vitamin B1, Vitamin B2, Vitamin B6, Vitamin C and inorganic salts such as iron, phosphorus, calcium and organic acids such as fumaric acid, succinic acid, citric acid and malic acid. It can be consumed as an energy drink, prevent cancer-especially prostate and breast cancer as flavonoids in sugarcane juice inhibits the growth of cancer cells in the milk glands and safe against pregnancy (Mahata G, 2019). It is used to prevent several diseases mainly jaundice, constipation and stomach burn, heart and kidney diseases and also use as a digestive tonic. Apart from the above benefits, in COVID 19 Pandemic situation, the most important benefits of sugarcane juice consumption are-

1. Improve immunity- As it is rich in antioxidants, sugarcane juice is very important in boosting immunity. This drink works against diseases such as digestive diseases and liver problems. In addition, these antioxidants are also useful for neutralizing bilirubin.
2. Treating Sore Throat- Feeling itchy in the throat, you can drink a glass of sugarcane juice that has been mixed with black salt. The high vitamin C content is a strong reason for treating sore throats



Jaggery:

Jaggery, which is a natural sweetener, traditionally referred to as sugarcane jaggery, is prepared by the concentration of sugarcane juice without any use of chemicals and is available in the form of solid blocks and semi-liquid form. Besides sugarcane juice, jaggery is being made from other sources, like sap collected from different palm trees. All these jaggeries have their characteristic taste and aroma. 60-70% of the total jaggery comes from sugarcane.

**Nutritional Value of Jaggery:**

Mostly jaggery is produced organically in West Bengal as well as in India. Organic Jaggery(Gur) has more nutritional value and has a characteristic flavor of natural compounds. Compared to Sugar, it is a better sweetener by virtue of it having all the ingredients of sugarcane juice in addition to sucrose but white crystal sugar is only sucrose and all the ingredients go in the by-products in the sugar industry (Keshavaiah, K.V, Swamygowda, S.N &Thimmegowda, P, 2018). The nutritional value of jaggery is presented in Table 2.

Table 2: Composition of 100 grams of jaggery.

| | | | |
|------------|------------|------------|-----------|
| Sucrose | 72-78g | Vitamin A | 3.8 mg |
| Fructose | 1.5-7g | Vitamin B1 | 0.01 mg |
| Glucose | 1.5-7g | Vitamin B2 | 0.06 mg |
| Calcium | 40-100mg | Vitamin B5 | 0.01 mg |
| Magnesium | 70-90 mg | Vitamin B6 | 0.01 mg |
| Phosphorus | 20-90 mg | Vitamin C | 7.00 mg |
| Sodium | 19-30 mg | Vitamin D2 | 6.50 mg |
| Iron | 10-13 mg | Vitamin E | 111.30 mg |
| Manganese | 0.2-0.5 mg | Vitamin PP | 7.00 mg |
| Zinc | 0.2-0.4 mg | Protein | 280 mg |
| Chloride | 5.3-0 mg | Water | 1.5-7g |
| Copper | 0.1-0.9 mg | Calories | 312 |

Source: Singh J, Solomon S, Kumar D, 2013.

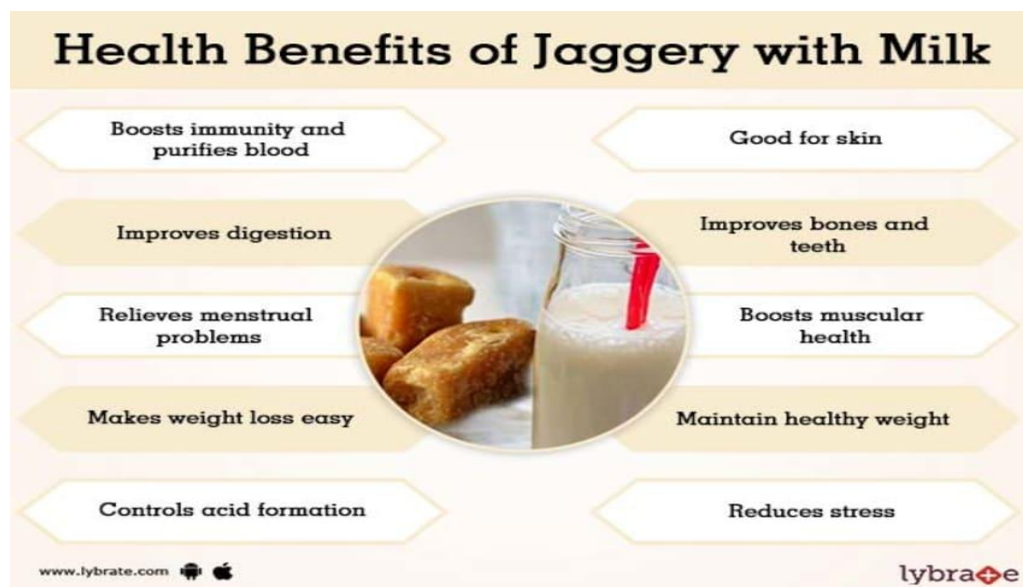
Benefits of Jaggery:

Jaggery is popularly known as the “Medicinal Sugar”. It has been used as a sweetener in Ayurvedic medicine for 3000 years. Indian Ayurvedic medicine considers jaggery to be

beneficial in treating throat and lung infections. The preventive ability of jaggery on soaker'ssoke-induced ling lesions suggest the potential of jaggery as a protective food for workers in the dusty and smoky atmosphere; even for those who are engaged in woolen industries, the wool dust clogged in the food pipe could be cleaned with jaggery, that Ayurved prescribed.

Since it is rich in many vital vitamins and minerals, jaggery boosts immunity, keeps the body warm, helps treat cold and cough and controls the temperature of the body. This natural sweetener has been a great go-to ingredient in India since time immemorial. Its consumption is helpful to prevent constipation, anaemia and boosts intestinal health and Controls blood pressure and many more. Apart from the above benefits, in COVID 19 Pandemic situation, the most important benefits of jaggery consumptions are-

1. Treats flu-like symptoms: Fight symptoms of a [cold and cough](#) with the help of *gur*. All you need to do is mix it with warm water and drink up, or even add it to your [tea](#) instead of [sugar](#) to reap the benefits. Jaggery produces heat in the body, which is why generally people consume it in winters. The warming effect in jaggery makes it an amazing sweet that can treat cold and flu.
2. Boosts immunity: Jaggery is loaded with antioxidants and minerals such as zinc and selenium, which in turn [help prevent free-radical damage](#) and also [boost resistance against infections](#). Jaggery also helps increase the total count of [hemoglobin](#) in the blood.
3. Prevents respiratory problems: By consuming jaggery regularly, you can prevent many respiratory problems such as asthma, bronchitis, etc. Experts recommend eating this natural sweetener with sesame seeds for wonderful benefits for the respiratory system.



In addition to that value addition in jaggery with a natural source of vitamin C may create rural employment to a greater extent. All we know the importance of vitamin C, an antioxidant, in our daily diet and particularly to prevent stress, cataract, heart diseases and fighting against the cold by boosting up our immunity in this Pandemic situation. For this, Amla fruits were cut into small pieces and slice and grated/shredded dried up to 10% were found to be acceptable as per the Anwar SI, Singh RD, J Singh, 2011. Jaggery samples in which dried Amla was mixed in coarse powder form were found to be the best followed by the sample with grated and fine powder form. Jaggery cocktails like Ginger Jaggery, Turmeric Jaggery and other spices jaggery have tremendous scope for boosting immunity.

Conclusion:

The majority of the population suffers during COVID 19 Pandemic situation due to a lack of proper immunity. Sugarcane juice and jaggery provide a lot of minerals, vitamins and antioxidants to boost immunity and the ability to fight against many diseases including COVID 19.

References:

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