

Marketing of Jaggery in India

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Abstract

Sugarcane is an oldest crop known to man, a major crop of tropical and sub-tropical regions worldwide. India is the second largest country in sugarcane production in the world. Sugarcane occupies a pivotal position in agricultural economy of our country. The industry it sustains is the second largest agro-industry of India, coming next to the textiles. Sugarcane is a major source of raw material for sugar industries and other allied group of byproduct industries. The economic importance of the crop is much more that signified by its share in gross cropped area. Gur (Jaggery) is a natural, traditional sweetener made by the concentration of sugarcane juice and is known all over the world in different local names. It is a traditional unrefined non-centrifugal sugar consumed in Asia, Africa, Latin America and the Caribbean. Containing all the minerals and vitamins present in sugarcane juice, it is known as healthiest sugar in the world. India is the largest producer and consumer of jaggery. Out of total world production, more than 70% is produced in India. The methods of converting sugarcane and manufacturing sugar, gur and khandsari are different but a great value is added in the manufacturing of these consumable final products. Further it offers employment opportunity to millions of people. Gur is prepared in all parts of the country. It is also known as Gul, gud, Jaggery, Vellum and Bella.)

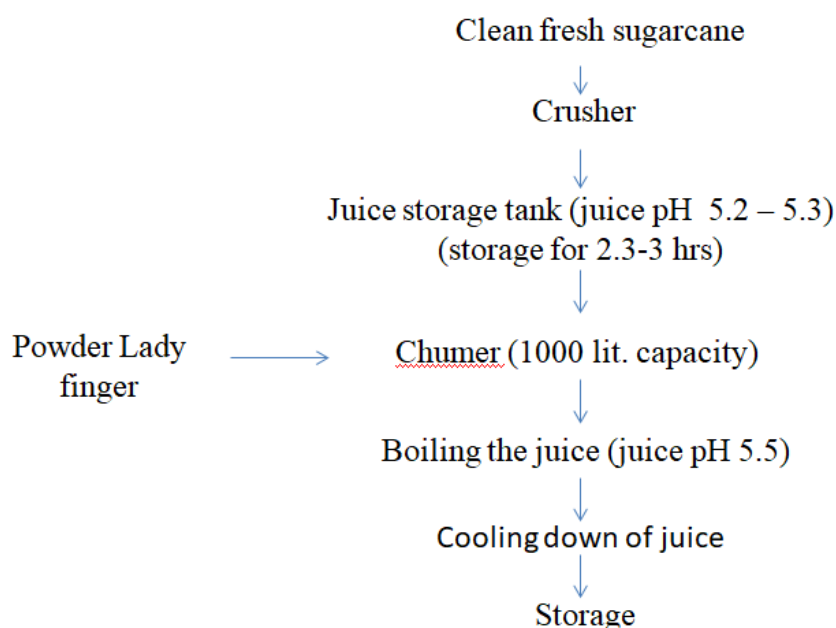
Introduction

Sugarcane (*Saccharum officinarum* L.) is a vegetative propagated, perennial crop which has a high leaf area index and a high photosynthetic efficiency under strong sunshine, more than any other crop in the tropics. Sugarcane is an oldest crop known to man, a major crop of tropical and sub-tropical regions worldwide. India is the second largest country in sugarcane production in the world. Sugarcane occupies a pivotal position in agricultural economy of our country. The industry it sustains is the second largest agro-industry of India, coming next to the textiles. Sugarcane is a major source of raw material for sugar industries and other allied group of byproduct industries. The economic importance of the crop is much more that signified by its share in gross cropped area (Bassham, 1978).

Jaggery

Gur (Jaggery) is a natural, traditional sweetener made by the concentration of sugarcane juice and is known all over the world in different local names. It is a traditional unrefined non-centrifugal sugar consumed in Asia, Africa, Latin America and the Caribbean. Containing all the minerals and vitamins present in sugarcane juice, it is known as healthiest sugar in the world. India is the largest producer and consumer of jaggery. Out of total world production, more than 70% is produced in India. The methods of converting sugarcane and manufacturing sugar, gur and khandsari are different but a great value is added in the manufacturing of these consumable final products. Further it offers employment opportunity to millions of people. Gur is prepared in all parts of the country. It is also known as Gul, gud, Jaggery, Vellum and Bella.

Manufacturing process of Jaggery



Stages of Jaggery Making

It is important to note the fact that even though Jaggery making starts with the extraction of cane juice, it is necessary to cut and to bring the cane at the place of jaggery making unit. Therefore sugarcane cutting and transportation are the two basic steps before cane crushing. The other steps in jaggery making are as follows:

- Extraction of juice from sugarcane This is done with the help of a cane crusher presently improved designs of cane crushers are used which are by oil engine or electric motors. About 1.5 or 2 tonnes of sugarcane is required to make a single pan of jaggery. A pan of jaggery requirement depends upon the quality of cane and its sucrose content.
- Boiling of juice Once the juice is extracted from the sugarcane it is taken for boiling. In all the villages of Kolhapur district open pan method is used for jaggery making. Hence juice is boiled in open pans. These pans are made up of iron sheets and are of 210 to 270 cms of diameter and about 45 cm deep. For better colour of jaggery even galvanized iron pans or copper pans are used. After the juice is boiled, it is heated on the furnace. Generally the baggasse is used as a fuel.
- Purification of juice The juice which is heated and boiled releases out many impurities that needs to be removed. Thus purification of juice is the main deciding factor for colour, texture, test and durability of jaggery. For purification of juice the most common purificants are used like lime, sucrate, sodium carbonate, sodium bicarbonate, sujji, super phosphate, alum, sodium hydrosulphate, etc. Generally bhendi (ladies finger) is used along with other purificants while juice is boiled at low temperature. It helps to bring the impurities scum to the surface of the pan. This scum is skimmed out and thus the juice is purified.
- Concentration of juice Next step after purification of juice is concentration of juice which is boiled at the striking point of temperature that normally ranges between 11.80 c to 12.30 c. The proper concentration of juice is judged by applying one of the following methods:
 - ✚ A small quantity of concentrated juice is taken from pan and is thrown into cold water. If it takes the shape of a ball with the metallic sound it is considered to be complete i.e. completion of the process of boiling of juice.
 - ✚ At the striking point, if the boiling mass is stirred, it does not stick the pan.
 - ✚ At the striking point the sticking mass forms a long silky thread which does not fall in drops. Thus, by applying one of the above methods to find the striking point or and appropriate point of concentration of juice, the pan is then removed immediately from the furnace and is stirred for some time. The

boiled liquid jaggery (kakavi) is transferred into a cooling pan. As the temperature falls, the jaggery begins to crystallize. By stirring the juice slowly and intermittently to avoid the loss of granular structure, the semi solid mass is then put into moulds when the jaggery solidifies it is removed by inverting the moulds. These lumps or moulds are made to take the shape of a bucket of different weights. These buckets are of 30 kg, 20, 19, 10, or 5 kg etc. these buckets are of different size but uniform shape having different weights of jaggery lumps. Even very small sizes of jaggery lumps is available in the shape of small balls locally called modak or laddoes but are not very famous as other heavy weighing lumps or moulds.

Types of Jaggery



Solid Jaggery



Liquid Jaggery



Granular or Powder Jaggery



Value addition in jaggery

✚ Value added with different natural flavour:-

- ✓ Ginger
- ✓ Blackpepper
- ✓ Cardamom
- ✓ Lemon

✚ Value added with different nutrition:-

- ✓ Protein
- ✓ Vitamins
- ✓ Phytochemicals

✚ Traditional value added products:-

- ✓ Rosagolla
- ✓ Pedda
- ✓ Curd
- ✓ Laddu(puffed cereals)

✚ Other products:-

- ✓ Toffee
- ✓ Cake

Packaging and storage life of jaggery

In India, the traditional methods of jaggery storage prevalent in western and eastern regions like open storage, matka, gunny bags etc. These methods don't work in Tarai regions because climatic conditions are not favorable for keeping quality of jaggery as there is very high humidity in these areas. During monsoon period, due to high humidity range, jaggery samples get infected with microbial activity and thus keeping quality of jaggery goes down. Jaggery



samples could be stored in cold storage but sometimes it is difficult to store the samples for small scale farmers as cost involved is the main constraint for that. Jaggery from cold storage is used in off-season at high cost.

Market Risk

Marketing risk is defined as the danger of loss from unforeseeable circumstances in future. In the context of jaggery marketing, risks are involved from the stage of making jaggery, till delivering into the market. Even after reaching the market place, the risk are involved such as theft, fire, destruction, deterioration in the quality loss in storage and transportation, on the losses due to price fluctuations, competition etc. on the part of traders in the market. Thus, the risk is to be borne by the producer and the middlemen at different stages of marketing of jaggery. There is no protection provided by market yard to the goods against rains, sun heat, winds etc. Traders/merchants are bearing the risk of deterioration in weight, and quality of the product if stored for a long time, loss during transportation etc. Middlemen bear higher risk on account of price fluctuations. However, some risk can be reduced by insurance coverage and some by proper planning monitoring on the part of middlemen and traders, Hedging and forward trading on the important methods to overcome the above mentioned risks. Forward trading is trading in future or it is on agreement between two parties who agree to sell and deliver and other who agrees to purchase and receive ascertain kind of quality of commodity at same specified future date and time, at a specified price and according to the conditions of trading prescribed by the organized producer or commodity exchanges.

Market Information

Market information is a pre-requisite for the consumers, producers as well as for the middlemen and merchants to develop the business. In context of jaggery, appropriate information is not available to the farmers and jaggery producers in villages. Whatever information is made available through research stations or markets is not followed entirely. The producers rely on commission agents or merchants for information. Market committees give low priority in collection and dissemination of market information. The government should initiate proper steps to provide market information to all the marketing channels involved in marketing of jaggery at the right time. This can be achieved with help of association and agencies running through the market committees in the regulated markets.

Market Potential

The demand for jaggery is steadily growing many folds in the urban, rural and semi-urban areas. There are several applications of jaggery and almost all Indian households use it on day-to-day basis. Market for jaggery is round the year whereas its production is only during the sugarcane season and thus factory works for around 6 to 7 months every year. Apart from individual households, it is used in large quantities in restaurants, road-side dhabas, other eateries, hostels and clubs and by caterers. It has shelf-life of more than couple of months. Its production is undertaken at several places but Maharashtra, Uttar Pradesh, Bihar and Tamil Nadu are the leading manufacturers. In view of constantly growing market, it should not be difficult for a new entrant to enter and capture the market.

Institute and Research Stations working on jaggery processing

- AICRP (All India Coordinated Research Project) on Post harvest Technology,
- RSJRS (Regional Sugarcane and Jaggery Research Station), Kolhapur
- IISR (Indian Institute of Sugarcane Research), Lucknow
- RARS (Regional Agricultural Research Station), Anakapalle
- GBPUAT, Pantnagar
- VC Farm Mandya
- TNAU, Coimbatore.

Conclusion

Indian jaggery industry is the largest unorganized sector which has been one of the most ancient and important rural-based cottage industries in the country. The majority of the sugarcane growers are manufacturing jaggery with minimum capital investment which provides jobs to the unemployed rural people. The jaggery manufacturers are mostly small and marginal farmers relying on quick returns from jaggery. It is, therefore, essential to safeguard the sugarcane growers to earn more profit from their jaggery manufacturing unit by improving its qualities through value addition and packaging of jaggery and jaggery based products with modern technologies.

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