

CASE OF INDIAN JAGGERY INDUSTRY: BHAGIRATHI GUR MANUFACTURERS

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Abstract A Quality conscious Gur (Jaggery) Manufacturer Mr. Harivansh Bahgat, owner manager of Bhagirathi Gur Manufacturers (BGM), is very much worried about the costing of his four main products, manufactured at BGM. This is a family owned business which has sustained till the third generation of Mr. Harivansh. BGM has earned its name and reputation in the Jaggery manufacturing and allied products in Eastern Uttar-Pradesh and Western Bihar. Also, this group is recognized for its quality and timely delivery in the region. In recent times, the Eastern Uttar-Pradesh has become famous for Jaggery production, and so several Gur manufacturing units have been established. In the region more than 50 clusters are in working condition, and in turn a competitive scenario has emerged.

Currently, BGM is producing four products Jaggery –Block, Jaggery-Powder, Jaggery Syrup and Jaggery-Candy. All these products have a common raw-material of Jaggery which is easily available in the north-eastern part of Uttar-Pradesh. BGM is using traditional method of production and costing the products.

They keep direct material, expenses and labour to calculate direct cost of products and then add equal amount of indirect cost to each product. According to BGM per Kg. cost of products are Rs. 117.75, Rs. 113.37, Rs. 91.26 and Rs. 174.12 for Jaggery-Block, Jaggery-Powder, Jaggery-Syrup, and Jaggery Candy respectively.

Although BGM produces all four products regularly, Jaggery-Block is the most popular product with a sound customer base. This year due to huge supply from other Gur Manufacturers in the local market the prices have gone down which is a matter of weighty concern for BGM management. BGM is producing Jaggery-Blocks at Rs. 117.75 and charge 15% profit approximates (Cost plus profit) which comes out around Rs. 141.00. Currently market price of Jaggery Block is varied from Rs. 120.00 to Rs. 125.00, which is not affordable by BGM, since they have a cost of Rs. 117.75 per Kg.

Keywords: Rural Industry, Gur Manufacturing Units, Activity Based Costing and Cost Management Systems

MARKET POTENTIAL

The demand for jaggery is steadily growing manyfolds in the urban, rural and semi-urban areas. There are various uses of jaggery and almost all Indian households use it on day-to-day basis. Market demand for jaggery is round the year whereas its production is only during the sugarcane season and thus a normal jiggery factory works for around 6, 7 to 8 months every year. Apart from individual households, it is used in large quantities in restaurants, road-side dhabas, other eateries, hostels, clubs, and by suppliers. It has shelf-life of more than a couple of months. The leading manufacturing states of jiggery goods in India are: Maharashtra, Uttar Pradesh, Bihar and Tamil Nadu. As jaggery products are famous and made in almost all parts of India, it has a rich market. In fact, it is not difficult for a new entrant to enter and capture the market.

MANUFACTURING PROCESS

In the Gur manufacturing units, generally entrepreneurs use vertical roller type crusher for juice extraction which is operated by diesel engines (8-20 Hours Power depend on plant size). For boiling of juice, the manufacturers use round furnace which are made of ordinary bricks. They use dried bagass for charging the furnace. Recently a team from Indian Institute of Petroleum (IIP), Dehrahdun has done realistic work on its furnace formation and fuel consumption, and the same technology has been adopted at BGM. However, in this high time of technology, BGM is still using their traditional way of processing Gur in their manufacturing unit, having a hope of quality production and traditional taste.

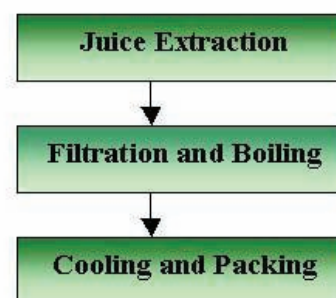
Jaggery is a natural, traditional sweetener made of the concentration of sugarcane juice. Jaggery, consumed mostly

by the rural population in India, is a natural mixture of sugar and molasses's. With enhanced standard of living and higher income, consequently, the Jaggery demand has been replaced by the white sugar. In some of the South American countries it is known as Panela. At the time of production of sugar it requires a mix up of chemicals like sulphure-dioxide, lime, phosphoric-acid, formic-acid and bleaching agents, and that is why all the contents of sugarcane cannot be found in sugar, whereas Jaggery has all the contents and even the scientists have proved that all the essential vitamins and minerals are missing from sugar as compared to Jaggery.

Jaggery making is a simple process comprising crushing of sugarcane for juice extraction, filtration and boiling of juice for concentration and then cooling and solidifying to form jaggery blocks. The juice is extracted in conventional crusher; then filtered and boiled in shallow iron pans. During the boiling process, the chemical bleaching agents or natural vegetable items like Bhindi (Lady finger) are added to clean the juice and the extraneous matter is constantly removed to provide a bright golden colour to jaggery. While boiling, brownish foams come at the top which are continuously removed to get golden yellow colour of jaggery. Additionally, Jaggery can be used for Jaggery Powder preparation. In fact, for Jaggery-Syrup, manufacturers are diverting the Cane-syrup after two hours of boiling into different sizes of pans and bottles. Jaggery Candy is another product which is

made of Jaggery-syrup in different flavours with the help of required chemicals, which are helping to improve the life of Candy.

The process flow chart is as under:



Land and Buildings: BGM has established the plant on their own land near Sugar-cane field. They have made tin shade for furnace area and a separate storage house for finished products. Recently a local market has been developed near the plant area.

Plant and Machinery: Some assets like, Diesel Engine, Cain Crusher-Plant, Bag sealing machine, Packaging Machine etc. are included in the machinery cost which has a collective life of 4800 Hours.

Exhibit 1: Direct Cost of Jaggery –Block, Jaggery-Powder, Jaggery Syrup and Jaggery-Candy

Products		Jaggery-Block	Jaggery-Powder	Jaggery-Syrup	Jaggery-Candy
Production Per Day		20 Kg.	35 Kg.	50 Ltrs.	25 Kg.
Market Sales Price per Kg.		Rs. 125	Rs. 145	Rs. 135	Rs. 195
Direct Material					
Sugar Cane	Rs. 330 Per Quintal	Rs. 660 (2-Quintal)	Rs. 1650 (5-Quintal)	Rs. 1650 (5-Quintal)	Rs. 1320 (4-Quintal)
Bio-Chemicals		Rs. 100 (20x5=100)	Rs. 420 (35x12=420)	Rs. 1000 (50x20=1000)	Rs. 1125 (25x45=1125)
Flavours (Per day)		NA	Rs. 17.5	Rs. 25	Rs. 25
Direct Labour					
Production Workers (Per Day)	150 Per Day per worker	150 (150x1=150)	300 (150x2=300)	150 (150x1=150)	300 (150x2=300)
Direct Expenses					
Dry straw/ bagass to charge Furnace (Per Day)		Rs. 125	Rs. 250	Rs. 400	Rs. 250
Packaging Cost (Per Day)		Rs. 7 (35 Per Quintal)	Rs. 17.5 (50 Per Quintal)	Rs. 25 (50 Per Quintal)	Rs. 20 (80 Per Quintal)
Total Direct Cost		Rs. 1042	Rs. 2655	Rs. 3250	Rs. 3040
Total Direct Cost Per Kg.		52.10	75.86	65.00	121.60

Exhibit 2: Indirect Cost

Indirect Costs	Details	Per Day Cost (in Rs.)
Diesel Expenses Engine for Cain Crushing	25 Ltrs Diesel per Day	1125.00
Depreciation Expenses	Rs. 10,00,000 Plant Cost and Life 4800 Hours, Plant works 8 Hours in a day for Cain crushing.	1666.67
Electricity Expenses	Monthly Bill is Rs. 15000.	500.00
Water Expenses	Monthly Bill is Rs. 1800	60.00
Transportation Cost	Monthly Bill is Rs. 10000	333.33
Manager's Salary	Rs. 7500 Per Month	250.00
Interest on 6,00,000 @ 14%	Rs. 84000 Per annum	233.33
Indirect Labourer (4 Labourers for Packaging and Distribution)	Rs. 27000 per month	900.00
Advertisement	Rs. 6000 Per Year	16.67
Administration Expenses	Rs. 5000 Per Month	166.67
Total Indirect Cost		5251.67

Exhibit 3: Cost Drivers[#]

Indirect Cost	Driver
Diesel Expenses Engine for Cain Crushing	Sugar Cain Crushed
Depreciation Expenses	Sugar Cain Crushed
Electricity Expenses	Finished Goods
Water Expenses	Sugar Cain Crushed
Transportation Cost	Finished Goods
Manager's Salary	Market Sales Price
Interest on 6,00,000 @ 14%	Market Sales Price
Indirect Labourer (4 Labourers for Packaging and Distribution)	Finished Goods
Advertisement	No. of Product
Administration Expenses	No. of Product

[#] One can develop his/her own cost driver but a justification is required.

Basic Utilities: The power requirement is fulfilled by engine, which is commonly used for crushing, additional electricity supply, and tube-well for water supply.

Raw and Packing Materials: The main raw material used at BGM is sugarcane which is locally available. BGM is getting supply of Sugar Cain from nearby villages and has also developed farms for uncertain situations. Other materials like soda/bhindi juice are locally available. In fact, BGM often uses its own Bhindi/Soda for processing.

BGM is not in a position to decide the product portfolio for this season. Mr. Bhagat said that 'Jaggery Block is the umbrella product for his business but due to high cost of

production, he is not in a position to produce it further at the current scale and that is resulting into negative growth in profit'. At this juncture he needs a Cost and Management Accountant who can advise him on the following issues using Exhibit 1, Exhibit 2 and Exhibit 3:

Q.1: How much is the cost of each product if he considers Traditional Costing System?

Q.2: How much will be the cost of each product if BGM follows Activity Based Costing System?

Q.3: How to improve the Cost and management practices in BGM? He also wants a comparison between Traditional Costing and ABC System, with special reference to BGM.

Exhibit 4: Jaggery Manufacturing Photographs

Crushing Sugar Cane



Boiling & Filtering Cane Juice and transferring for Jaggery-Syrup



Transferring Boiled Juice for Candy making



Using Bagass to charge Furnace



Jaggery-Block



Jaggery-Powder and Jaggery-Candy

