



ಶ್ರೀ ವೀರಪುಲಿಕೇಶಿ ವಿದ್ಯಾವರ್ಧಕ ಸಂಸ್ಥೆಯ

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# DEPARTMENT OF CHEMISTRY

## Industrial Visit Report

### 2023-2024

BADAMI SUGARS LTD (MRN) @YARGOPPA.S,B

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BADAMI SUGARS LTD (MRN) @ YARAGOPPA

DATE OF VISIT: 7/8/2024

By

DEPARTMENT OF CHEMISTRY  
SSBM ARTS, COMM, & SCIENCE COLLEGE  
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## BADAMI SUGARS LTD (MRN) YARAGOPPA

DATE : 7-8-2024  
SECTION : BSc Final Year Students, 2023-2024 Batch  
EVENT : Industrial Tour

Faculty Coordinators:

S.S.Aland, Associate.Prof.

H.B. Talawar Lab attender

### EVENT DESCRIPTION:

An industrial visit has been organized by department of Chemistry for VI students on 7<sup>th</sup> Aug 2024. The main objective of the visit was to provide a technical exposure to the students about the manufacturing process and technology.

Totally 12 students of Final year SSBM ARTS, COMM, & SCIENCE COLLEGE

### SESSION ACTIVITIES:

The students were accompanied by 2 faculty members. The Tempo with students have started from our college at 11.30AM on 7-8-2024 and reached BADAMI SUGARS LTD (MRN) @ Yaragoppa S.B at 12.00pm

#### **Cane Carrier**

This is used to transport cane to the milling tandem and consists of chains and slats. Its width is normally equal to the mill size. Mill cane-crushing unit having normally consisting rollers in a heavy steel housing. Cane first passes between the top and front rollers, then between the top and back rollers, to extract the juice. Cane Crushing unit, preceding the first mill to crush the cane prior to extraction of juice, for the purpose of improving the quantity of juice extracted. Normally consists of two rollers. Shredder has the same purpose as the crusher, but a different principle. Consists of a drum, with a concentric shaft, on which hammers are mounted on arms.

#### **Mill Tandem**

A complete mill is complex, consisting of crusher (or shredder) and all mills, together with drives and reducing gears.

### **Cane Knives**

These are mounted on cane carriers prior to entrance to mills, for preventing entire cane stalks from entering the mills, straightening and pre-cutting the cane, for the purpose of improving juice extraction and saving driving power at the same time.

### **Intermediate Carriers**

These transport the milled cane (bagasse) from one mill to the next. Baggage Carrier, this carries the bagasse from the last mill to the boilers, and its excess to storage

### **Power Plant**

This produces electricity by means of non-condensing steam turbines, which drive generators. For the off-season diesel-driven generators are mainly used, to produce a limited quantity of electricity.

### **Juice Heater**

A heat exchanger in which juice is heated by using steam as a medium, normally a multi-pass system. Juice flows through tubes, while steam passes along the outside of the tubes, in the cylindrical body. They can be used horizontally as well as vertically.

### **Clarifier**

It is a large vertical cylindrical tank, where juice is given time for decantation, to separate the clear juice from the turbid, which still contains the mud. Juice flow is continuous.

### **Filter**

A device to separate the mud from the turbid juice; normally of the rotary vacuum type. Can also be any kind of pressure filter, provided with filter cloth, to let the juice pass and retain them on its surface.

### **Evaporator**

A series of vessels, in which excess water from the juice is evaporated to form a more concentrated liquid, now called syrup. The vessels work in series under increasing vacuum conditions, to reduce the boiling temperature gradually as the concentration increases step-wise. This prevents overheating of juice and loss of sucrose. The vessels together form a triple-, quadruple- or quintuple-effect evaporator.

### **Vacuum Pan**

Like an evaporator vessel, a continuation of the evaporating process, but carried so far that crystallization occurs. Also boils under vacuum for reduced boiling temperature. The syrup is now transformed into massecuite (fill mass-strike-skipping), which is a mixture of grain (crystals) and mother liquor (molasses).

### Crystallizer

A strike receiver in which the charge from the vacuum pan is stored before going to the centrifugals. Its purpose is cooling, to increase grain size and reduce sucrose left in molasses.

### Centrifugal

A machine with a fast spinning drum and a screen, inside, through which the molasses can pass while the crystals are retained. Separation is based on the difference in specific gravity, amplified by centrifugal force.

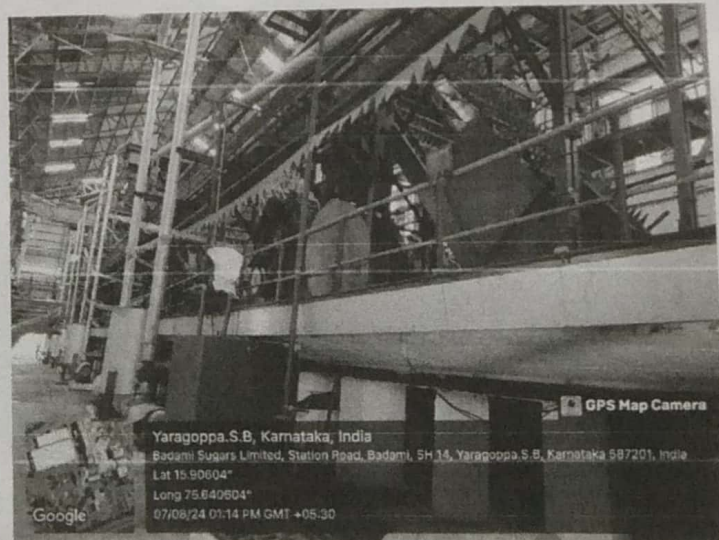
### Dryer

A long drum- like rotating cylinder, where sugar is brought in contact with heated air, to reduce its moisture content.

### Cooler

Same as a dryer, but air is dry and cooled to reduce temperature of sugar, heated by the dryer. This is to prevent caking during storage. The combination of dryer and cooler into one body is often called a Granulator.

The below picture had been taken during the visit. All over India MRN has manufacturing and marketing of Rectified Spirit, Extra Neutral Alcohol, Ethanol, Incidental Cogeneration of Power, Organic Manure Calcium Lactate and CO<sub>2</sub>. Company has 11 sugar factories in Karnataka



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