

PROJECT REPORT
ON
EXPANSION STRATEGIES FOR EXPORT OF JAGGERY



Submitted By:

Dr. RAVI GAUTAM

Head, Department of Journalism & Mass Communication

Shri Ram College, Muzaffarnagar

Submitted to:

Indian Industries Association (IIA)- Muzaffarnagar Chapter

2018-2019

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INDIAN INDUSTRIES ASSOCIATION

AN APEX BODY OF MICRO, SMALL & MEDIUM ENTERPRISES

(IN THE SERVICE OF MSME SINCE 1985)

Muzaffarnagar Chapter : 159/A-8, 15, Prakash Market, Lala Lajpat Rai Chowk, Muzaffarnagar-251001 (U.P.)
Tel. : 0131-2623762 • E-mail : iia.mznchapter@gmail.com

Ref. No. IIA/ RD/ 2019/126

Date: 01.02.2019

To

Dr Ravi Gautam
Head
Department of Journalism & Mass Communication
Shri Ram College
Muzaffarnagar

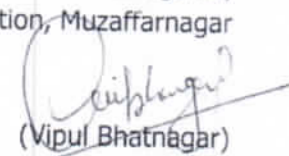
Dear sir,


This is with reference to your research proposal on "**Expansion Strategies for Export of Jaggery**" and our letter of interest on the subject. We are herewith sanctioning an amount of Rs. 30,000/- as fund to conduct research work.

Kindly note that you have to fulfil all the conditions mentioned in our earlier letter dated 24.12.2018 and complete the work within stipulated time.

Thanks & regards,
For Indian Industries Association, Muzaffarnagar

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(Vipul Bhatnagar)
Chairman


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Utilization Certificate

S.N.	Detail of sanction of Fund with Project name and Duration	Amount
1.	90-Days project on Expansion Strategies for Export of Jaggery, Date of Sanction of Fund- 24.12.2018 as per Sanction Letter	30000.00/-
	TOTAL	30000.00/-

It is Certified that out of Rs. 30000.00/- (Thirty Thousands Only) of grants sanctioned by IIA, Muzaffarnagar during the year 2018-19 in favor of Shri Ram College, Muzaffarnagar, a sum of Rs. 30000.00 has been utilized for the purpose of the project for which it was sanctioned and that the balance of Rs. Nil remaining unutilized at the end of the year has been surrendered. The Extra amount (If any) is met out by Shri Ram College.

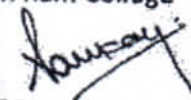
2. Certified that we have satisfied our self that the conditions on which the grant was sanctioned have been duly fulfilled/are being fulfilled and that we have exercised the following checks to see that the money was actually utilized for the purpose for which it was

sanctioned.


Kinds of checks exercise-

- 1 Checking of cash book
- 2 Checking of payment vouchers.
- 3 Checking of expenses bills.

For Shri Ram College


Secretary

Place: Muzaffarnagar
Date: 16.05.2019


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For Goel Rakesh & Co.
Chartered Accountants



M.NO. : 071858
FRN : 003374C

Objectives of the study

The study was conducted with some specific objectives.

1. To setup packaging and labeling parameters for export of Jaggery
2. To provide market information on how to export and expand good quality Jaggery.

Duration of Study

One year (Dec 2018 to November 2019)

Sanctioned Amount of Project

Rs. 30,000/-

Supervisor

Dr. Pankaj Kumar, Professor, Department of Business Administration

Dr. Sourabh Jain, HoD, Faculty of Bioscience, Shri Ram College

Students engaged in project

2 students were involved in research and data collection for the project.

Internship paid to them = Rs. 10,000/- each

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Background




Government of Uttar Pradesh has launched One District One Product scheme to promote visibility and sale of indigenous and specialized products/crafts of Uttar Pradesh. Under this scheme Uttar Pradesh government has decided to set up Common Facility Centers (CFC) in each of 75 districts of the state. The CFC is ODOP targeted scheme and is likely to benefit the micro and small entrepreneurs. Muzaffarnagar has been assigned 'Jaggery' as selected product as part of One District One Product scheme.

About Jaggery (Gur)

Gur or Jaggery means the product obtained by boiling of sugarcane juice pressed out of sugarcane or extracted from palmyra palm, date palm or coconut palm. Jaggery /Gur is the most ancient sweetening agent in India. This is a low

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grade non-centrifugal sweetener consumed in India, Pakistan, Bangladesh, Africa, Myanmar, China and other countries.

Jaggery (Gur) is a pure, traditional, unrefined form of sweetener and is mostly confined to rural areas. Jaggery (Gur) contains total sugar (Glucose, fructose and sucrose) not less 90% and sucrose not less than 60% other minerals like Calcium, Iron, Phosphorous and Protein are also present. This product is seasonal in nature i.e. it's production takes place only during November to April in a year but its consumption takes place throughout the year. Most of the Gur business suffers from losses due to poor quality of product.

The development of different value added products from Gur like confectionary products, liquid gur, Aurvedic Jaggery, Jaggery Powder, Gur-Patti, Gur-Chocolate, Gur Burfi and Gur containing Nutritional and Medicinal substances may be prepared to enhance the profit of the unit.

Main Problems of Muzaffarnagar Jaggery Cluster

- ❖ The improper Moulding and Packaging of Jaggery is imposing problems of reduced shelf life and poor aesthetic.
- ❖ Non homogenous granular and powder jaggery with improper drying due to lack of automatic dryers has reduced shelf life.
- ❖ Improper packaging of the powder and liquid jaggery leads to reduced shelf life, and poor aesthetic look.
- ❖ The product is facing stiff competition from sugar industries.
- ❖ The cluster members are not scientifically equipped with the testing machineries as a result is not able to upgrade the quality of the product to match the BIS and EU standards for export.

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- ❖ The dominance of traders is resulting in reduced profit to the cluster units.
- ❖ The lack of storage facility locally in the cluster region is leading to degradation of the jaggery.
- ❖ There is very little value addition taking place, though there is good scope of value added products that can be produced using the jaggery.
- ❖ There is no branding taking place.
- ❖ There is no training and skill upgradation taking place in the Cluster as a result there is continuous migration of work force.

Justification for Export quality Jaggery

The issues of productivity and efficiency of production needs to be addressed in a systematic manner.

- ❖ There could be scope for direct supplies to bulk jaggery for segments such as organized large retail, confectionery industry, and also ayurvedic and health foods industry among others.
- ❖ The potential for direct exports and futures trading has also to be considered in the growth plan.
- ❖ Promotion of product quality-testing and certification facilities could be a useful intervention contribution both to quality and marketing efforts.
- ❖ With the support of technology upgradation the jaggery industry in the cluster will be able to compete globally and will be able to further progress and provide huge employment.
- ❖ The Establishment of export center is expected to bring about holistic change in the cluster and will be a factor of Socio economic Development of Region.

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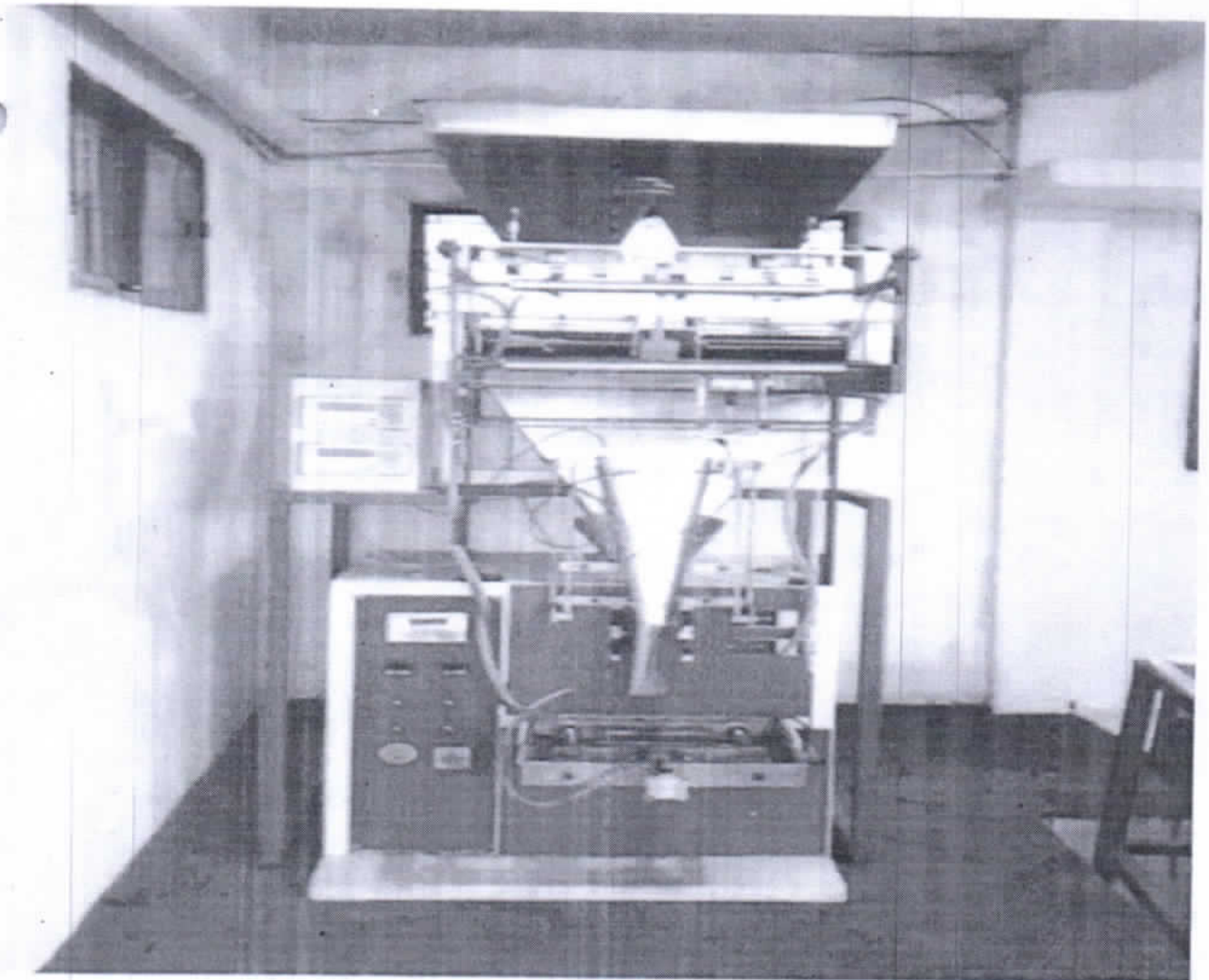

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About the Project-report

The project-report envisages the implementation of three main aspects:

1. Production/Processing
2. Lab Testing
3. Packaging and labeling



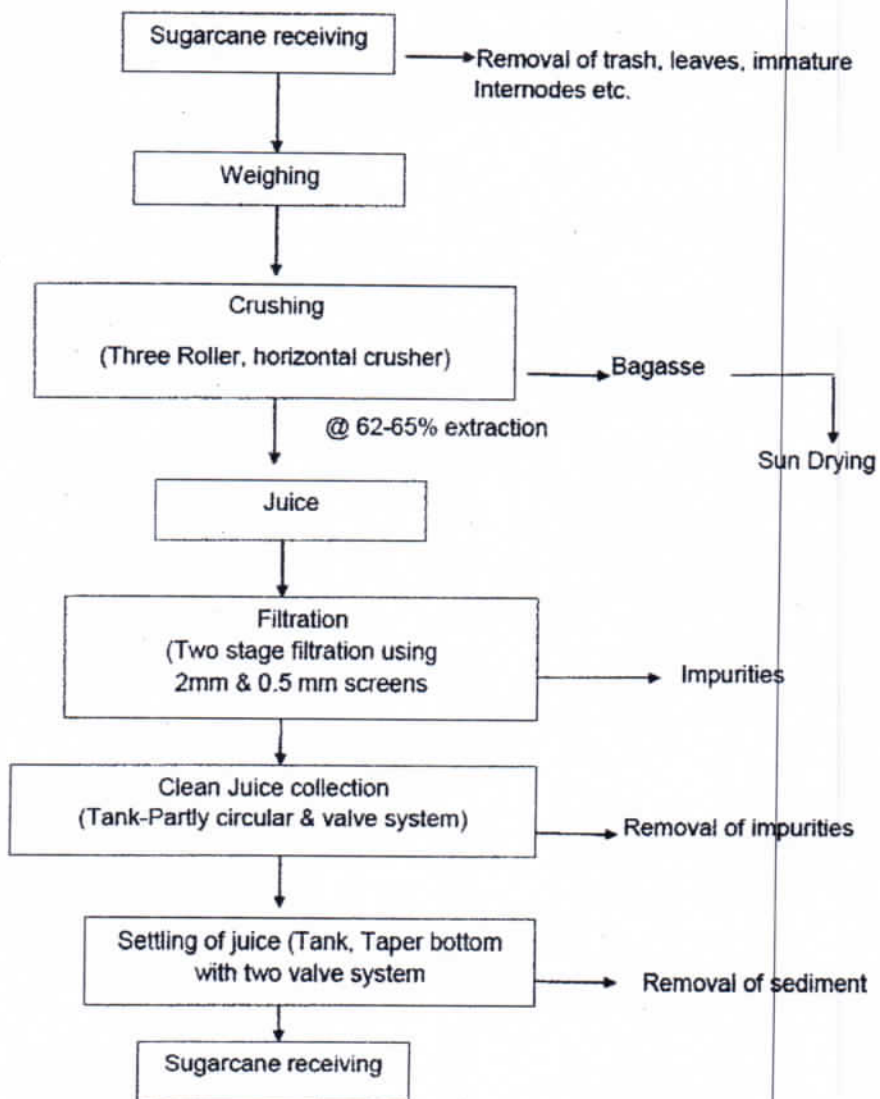
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Production/Processing

FLOW PROCESS CHART FOR JAGGERY (GUR) PRODUCTION

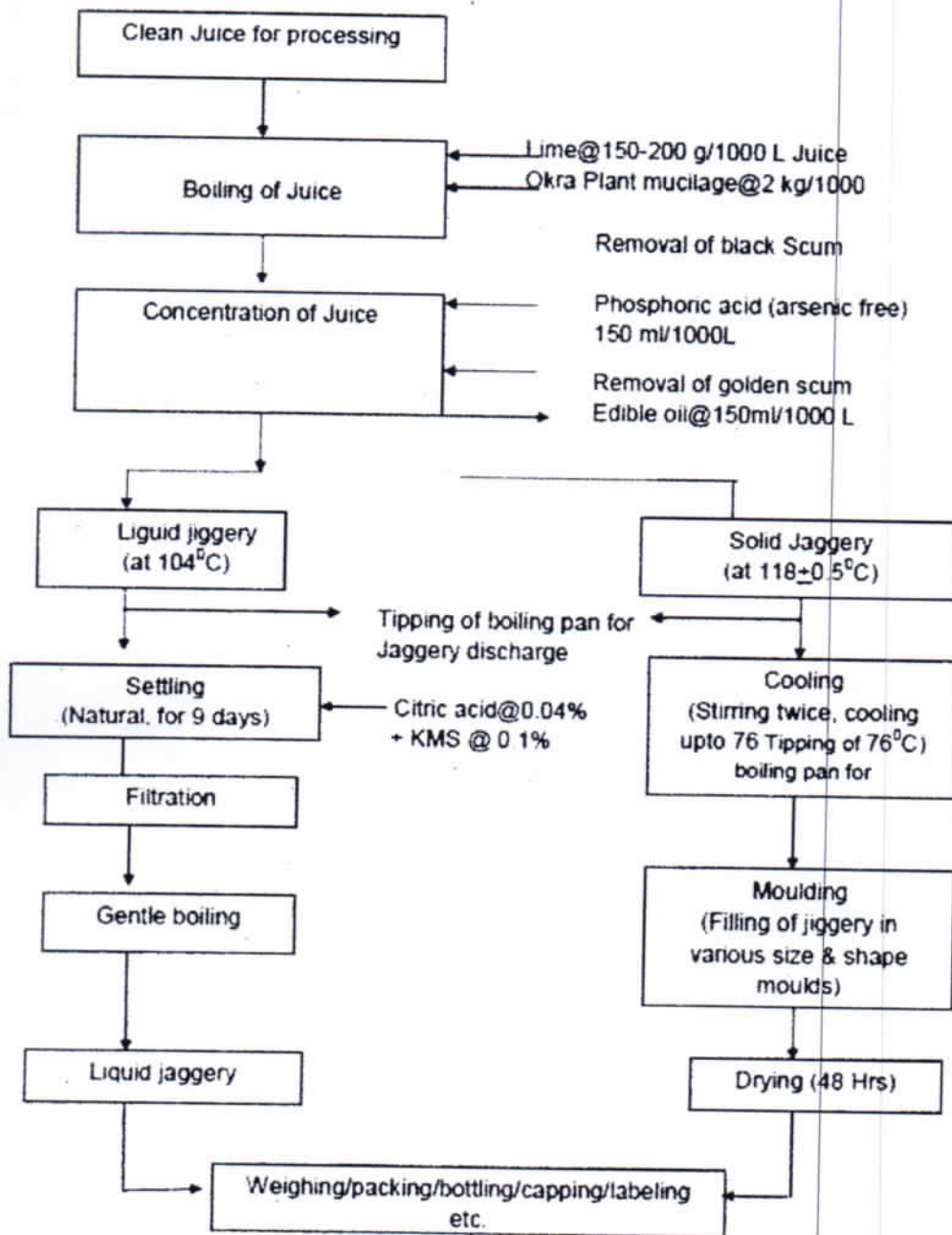


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Production/Processing Set-up CERTIFIED


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- ❖ Steam Generator Boiler and Setup 5000 kg/Hour
- ❖ Turbo Alternator and Power Generation Setup
- ❖ Slurry Jaggery-Steam Treatment-Purification-150KLD Tubular Slurry Heater, Gravity Settler, Floation Clarifier, Micro – Filter
- ❖ Slurry Concentrator Setup for Jaggery Molding/Powder Jaggery/Liquid - 150KLD Evaporator – Boilers, Jaggery Concentrator for Small Jaggery Injection Molding Vapour Extractor, Receiving Tanks with accessories
- ❖ Powder Jaggery Processing Equipments-5 tons/day Jaggery Powder Miller, Powder Jaggery Jacketed Tray, Jaggery powder dryers, Re-circulation conveyors, Air Heaters, Blower Fan, Instrumentation and Control
- ❖ Automatic Jaggery Injection Moulding, Demoulding and packing machine- 18tons/day
- ❖ Jaggery Enrober-Machine for Jaggery Coated Dry Fruits processing- 1Ton/day
- ❖ Chikki Roller and Cutting Machine-4 tons/day

Testing Facilities

Setting up of common testing facilities is very important issue. For holistic quality checks, there is need to have the complete facilities of quality evaluations. The basic requirements of the laboratories are given below:

1. Sensory Laboratory
2. Physical Laboratory
3. Chemical Laboratory
4. Microbiological Laboratory
5. Toxic substance analysis Laboratory
6. Pesticides residues Laboratory

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Requirements

i. Chemicals and Glassware

All the laboratories need laboratory/analytical grade chemicals, Glassware and other essential materials needed in the laboratory.

ii. Instruments

Khandsari and gur products may have elements contamination due to many stages of processing of the end products. This contamination may also occur due to agro practices of cultivation. To carry out the instrumental testing specially metal, microbiological, pesticides residual etc. needs highly sophisticated instruments (chromatographic and spectroscopy etc.) with PPB level accuracy.

iii. Traceable Standards for Testing

To maintain the credibility of the testing laboratory, accuracy is the prime factor for which laboratory need to have NIST / or other standards for in house calibration as per the accreditation body norms is mandatory.

iv. Requirements of Calibration

Laboratory can get their equipments/ instruments and glassware etc, calibrated from the National Metrological Laboratory in the knowledge that the calibration is of internationally traceable.


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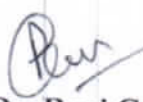

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Packaging and Labelling


Jaggery is packaged traditionally under different packaging materials like paddy straw, banana leaves, gunny bag, polythene sheet, etc. which possess poor barrier properties against moisture, light, air, etc. leading to spoilage or deterioration of Jaggery quality. Now a days Jaggery is packed in food grade material which guarantees the safety and integrity of the product. In case of smaller consumer packs, the product need to be packed in food-grade plastics conforming to relevant Indian Standard or any other suitable non-toxic material. The fill of each package shall comply with weights and measures legislation and legal metrology.


(Dr. Sourabh Jain)
Co-supervisor


(Dr. Ravi Gautam)
Supervisor

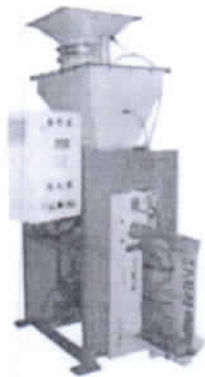
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Packaging Machinery

- ❖ Chikki packing machine
- ❖ Pillow pack machine for coated dry fruits
- ❖ Automatic Liquid Jaggery Bottle Filling setup with rotary capping system
- ❖ Liquid Jaggery Bottle Labeling Machine and Sealing Setup-2 tons/day
- ❖ Automatic Powder Jaggery Packing Machine-5 tons/day



Bag filling machine




Automatic FFS machine



Automatic double head power filling machine

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Fig: Labelling of Jaggery

- Veg or Non-Veg Symbol
- Net weight, number or volume of contents
- Distinctive batch, lot or code number
- Month and year of manufacture and packaging
- Month and year by which the product is best con
- Maximum retail price

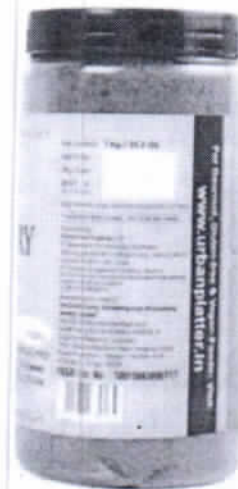


Fig: FSSAI Labelling Requirements

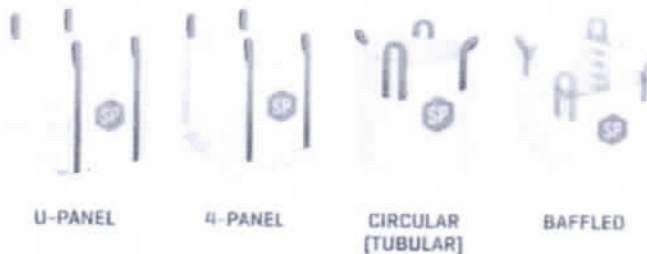
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BULK PACKAGING

- Women plastic bags which may be laminated or provided with a lose liner bag and multiwall paper sacks with a plastic liner bag.
- The plastic based alternate packaging materials are used to overcome the contamination problems associated with jute.
- Moreover, plastic bags/liners also help in retaining the quality of the jaggery packed inside for a longer time.



ADVANTAGES


- Bags are flexible, collapsible and durable
- Can be used for packaging of, powder and any free-flowing material.
- Product wastage/spillage and tampering can be avoided.
- Since the handling is mechanized, less labour is required.
- Saving in time for loading and unloading.
- Bags are light in weight and, therefore, freight costs are reduced.
- Creates eco-friendly, pollution free working atmosphere.

INSTITUTIONAL PACKAGES

- Institutional packs of capacities ranging from 2kg to 10 kg are also used.
- Traditional materials used: tinsplate containers and jute bags.
- Currently used materials: Laminated flexible pouches and plastic woven sacks.
- BOPP multicolor Printed laminated PP Woven bags.

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CONSUMER PACKAGES

- The options available to the traders/exporters in the selection of a consumer pack for domestic and export market are quite wide.
- The selection/choice of the packaging material/system depends upon a number of factors.
- Shelf-life period (the degree of protection required by the product against moisture pick-up, aroma retention and discolouration).
- Climatic conditions during storage, transportation and distribution.
- Type/sector of market.
- Consumer preferences.
- Printability and aesthetic appeal.



GLASS CONTAINERS

- Bottles/Jars are commonly used.
- The glass used for food packaging is soda-lime glass.
- Most bottles and jars are tailor-made specifically for one product or one manufacturer.
- Closures for glass containers are more standardized.
- Glass containers can be reused or recycled.
- Eliminates the risk of potentially harmful chemicals found in some plastics that can leach into food.



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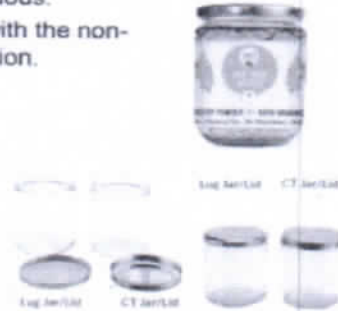

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GLASS CLOSURE AND SEALING JUG JARS

Lug Jars

- Also known as Twist Off (T/O) caps, lug caps are compatible with containers whose threads are non-continuous.
- Lugs on the interior of a lug cap, correspond with the non-continuous threads and close by a partial rotation.



GLASS CLOSURE AND SEALING THREAD JARS

Continuous Tread

- Continuous thread caps can be metal or plastic and have various liner options.
- Categorized by threads which wrap continuously around a given finish, a few products that traditionally use continuous thread caps include peanut butter and m...




FLEXIBLE PACKAGING

The printed flexible pouches are generally laminates of various compositions.

1. Polyester/metallised polyester/ LDPE
2. BOPP/LDPE
3. BOPP/metallised polyester/LDPE.
4. Polyester/AL foil/LDPE



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- Polyester and BOPP materials used for lamination is generally 10 or 12 μ thick.
- PVDC, EVOH and EVAL based material have high barrier properties.



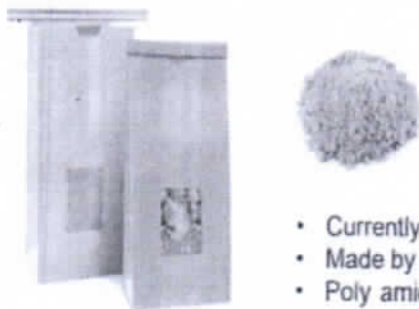
COMPOSITE CONTAINERS

- Composite containers are also used for packaging of Jaggery solid and powder.
- The containers are round and the body (side wall) is made of PE coated foil laminated spirally wound paper.
- The top and bottom ends of the container may be made from metal or plastic.
- The inner face is coated with plastic film or a combination of film and aluminum foil. This ensures optimum barrier properties against moisture and oxygen.



KRAFT PACKAGING

- Has good strength, printability and appearance.
- Other advantages are its low cost, wide availability and low weight.



- Currently very popular material in food packaging.
- Made by sulphate pulping process.
- Poly amide or polyamine resin is used to coat the laminate to improve barrier properties.

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