MINISTRY OF FOOD PROCESSING INDUSTRIES
GOVERNMENT OF INDIA

सत्यमेव जयते

Reading Material for

Gajak Processing

Under PMFME Scheme

National Institute of Food Technology Entrepreneurship and Management
Deemed to be University (De-novo Category) under Section 3 of the UGC Act, 1956
An Autonomous Institution under Ministry of Food Processing Industries, Government of India
Plot no 97, Sector 56, HSIIDC, Industrial Estate, Kundli, Sonepat, Haryana – 131028
Website: www.niftem.ac.in, Email: pmfmecell@niftem.ac.inContact:0130-2281089

CONTENTS

Abbreviations & Acronyms

Sr:No.	Abbreviations &Acronyms	Full Forms
1.	PM FME	Prime Minister's Formalisation of Micro Food Processing Enterprises Scheme
2.	EVA	Ethylene Vinyl Acetate
3.	EMAA	Ehylene Metha Acrylic Acid
4.	PVC	Poly Vinyl Chloride
5.	PET	Polyethylene terephthalate
6.	LLDPE	Linear Density Polyethylene
7.	HACCP	Hazard Analysis and Critical Control Point
8.	GAP	Good Agricultural Practices
9.	GMP	Good Manufacturing Practice
10.	SOP	Standard operating procedure
11.	FSSAI	Food Safety and Standards Authority of India
12.	FoSCos	Food Safety Compliance System

CHAPTER – 1

INTRODUCTION

1.1 INTRODUCTION

Gajak (also gachak) is a dry sweet dessert or confection made up of peanut or sesame and Jaggery. This confection is a well-known originating in north-central India. This Dry Sweet is very popular in all over the India with slight change in recipes and mainly identified with different names.

In regions of North India, especially Bihar and Uttar Pradesh, this sweet is called layiya patti. In Sindh and Sindhi regions of India, it is called layee or lai and in other north Indian states, it is also known as gajak or maroonda. In West Bengal and other Bengali-speaking regions, it is known as gur badam. In the South Indian states of Telangana and Andhra Pradesh, it is called palli patti. In Kerala it is called Kappalandi muthai.

Now a days there are different modified types of Gajak is prepared in different parts of the country. Example- Kaju Til Gajak, Pista Gajuak, Gunimal Gajak etc.

This Product, Gajak falls under the category of Confectionary product (5.2) under the Indian Food Code.

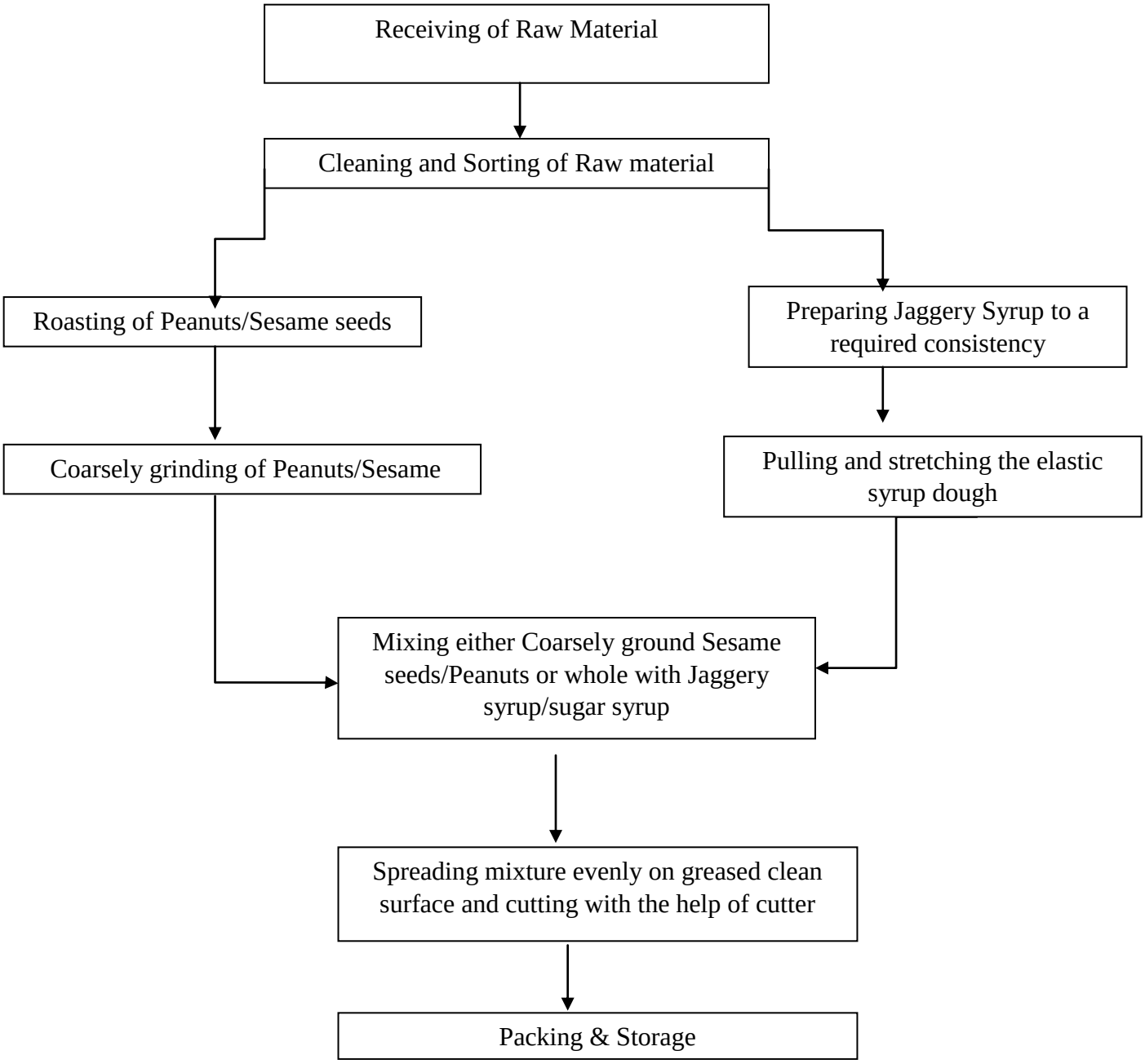
1.2 TRADITIONAL TYPES/VARIETIES OF GAJAK

Types/Variety	Characteristic
Gud-Til Gajak	Mainly prepared with jaggery-Sesame seeds.
Til-Revadi Gajak	Mainly prepared with Jaggery with Sesame seeds.
Peanut-Jaggery Gajak	Mainly prepared with Jaggery-Peanut.
Til Mawa Gajak	Mainly prepared with Sugar, Mawa and Sesame seeds.

CHAPTER – 2

PROCESSING AND MACHINERY

2.1 GENERAL FLOW CHART OF GAJAK PROCESSING



Flow Chart (a): General Flow chart of Gajak Processing

2.2 Processing of different types of Gajak

2.2.1 Jaggery Sesame Gajak (Gud Til Gajak)

This product is made up of Sesame seeds, Jaggery, Ghee/Vegetable oil.

2.2.1.A. Ingredients

2.2.1.A.i- Sesame Seeds

Good Quality of Whole mature Sesame Seeds is received from the Supplier holding valid FSSAI license. It should be White clean and sounds seeds of Til (Sesamum indicum),. It shall be free from rancidity, other foreign matter.

2.2.1.A.ii – Jaggery

GUR OR JAGGERY means the product obtained by boiling or processing juice pressed out of sugarcane. It shall be free from substances deleterious to health and shall conform to the following analytical standards, on dry weight basis :-

Total sugars expressed as invert sugar	Not less than 90 percent and sucrose not less than 60 percent
Extraneous matter insoluble in water	Not more than 2 %
Total ash	Not more than 6 %
Ash insoluble in hydrochloric acid (HCl)	Not more than 0.5 %

Gur or jaggery other than that of the liquid or semi liquid variety shall not contain more than10%moisture. Sodium bicarbonate, if used for clarification purposes, shall be of food grade quality

2.2.1.B. Processing

Receiving of Raw Material (White Sesame seeds, Jaggery, Refined Vegetable Oil for greasing only)	 Sesame Seeds  Jaggery/Gur

Cleaning & Sorting: White Sesame Seeds are Cleaned and sorted manually or with the help of blower/sieve to remove extraneous matter, if any. . Jaggery is cleaned and visually inspected for extraneous matter.	
Roasting: White sesame seeds are roasted in a roaster. No Oil is added. This will be an dry roast.	 
Syrup Preparation: Then Jaggery and some quantity of water is added, once the jaggery is melted then it is passed through screen mesh so that to remove foreign impurities and then this syrup is further cooked to make at a required consistency. Drop test is conducted for jaggery so that required consistency jaggery syrup will obtained (final consistency should be crunchy after dropping in the water). NOTE: Continuous stirring is required to avoid the burning of syrup.	 
Once the resting period is completed and temperature of syrup is drop to down then it is pulled and stretched on taffy puller machine.	

Then the pulled mixture is then mixed with roasted Sesame seeds in a blender/coating machine so that sesame seed will get mixed with jaggery syrup.	
Then thick sheet is prepared by an sheet maker or manually before the mixture become cooled down and then cut the sheet into square or rectangles pieces with the help of cutter.	 
Once the Gajak become cooled down, packing is done and products are stored at clean and dry place.	

2.2.2 Til Revadi Gajak

This product is made up of Sesame seeds, Jaggery/sugar, Ghee/Vegetable oil. Sugar can be an common sugar or refined sugar. Also sugar and Jaggery can be used in the 1:1 ratio instead of using complete either sugar or jaggery.

2.2.2.A. Ingredients

2.2.2.A.i- Sesame Seeds

Good Quality of Whole mature Sesame Seeds is received from the Supplier holding valid FSSAI license. It should be White clean and sounds seeds of Til (Sesamum indicum),. It shall be free from rancidity, other foreign matter.

2.2.2.A.ii – Jaggery

GUR OR JAGGERY means the product obtained by boiling or processing juice pressed out of sugarcane. It shall be free from substances deleterious to health and shall conform to the following analytical standards, on dry weight basis :-

Total sugars expressed as invert sugar	Not less than 90 percent and sucrose not less than 60 percent
Extraneous matter insoluble in water	Not more than 2 %
Total ash	Not more than 6 %
Ash insoluble in hydrochloric acid (HCl)	Not more than 0.5 %

Gur or jaggery other than that of the liquid or semi liquid variety shall not contain more than10%moisture. Sodium bicarbonate, if used for clarification purposes, shall be of food grade quality.

2.2.2.A.iii-Sugar

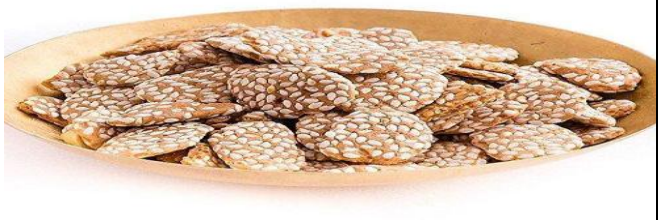
Sugar is the crystallised product obtained from sugarcane or sugar beet. It shall be free from dirt, filth, iron filings, and added colouring matter. Extraneous matter shall not exceed 0.1 per cent by weight. It shall also conform to the following standards, namely-

Moisture (when heated at 105 degree ± 1° degree C for 3 hours)	Not more than 0.5 per cent by weight.
Sucrose	Not less than 98 per cent by weight.

2.2.1.B. Processing

Receiving of Raw Material (White Sesame seeds, Jaggery/Sugar, Refined Vegetable Oil/Ghee for greasing only)	 Sesame Seeds  Jaggery/Gur
Cleaning & Sorting: White Sesame Seeds are Cleaned and sorted manually or with the help of blower/sieve to remove extraneous matter, if any. Jaggery is cleaned and visually inspected for extraneous matter.	
Roasting: White sesame seeds are roasted in a roaster/cooking kettle. No Oil is added. This will be an dry roast.	
Syrup Preparation: Then Jaggery and some quantity of water is added, once the jaggery is melted then it is passed through screen mesh so that to remove foreign impurities and then this syrup is further cooked to make at a required consistency. Drop test is conducted for jaggery so that required consistency jaggery syrup will obtained (final consistency should be crunchy after dropping in the water).	

NOTE: Continuous stirring is required to avoid the burning of syrup.	
Once the resting period is completed and temperature of syrup is dropped down and then it is pulled and stretched on pulling machine so that it will be cooled further and get the required fluffy structure.	
Then mixed dough is stretched to a thin sheet with mould installed on the sheet maker so that small candy types products are obtained.	
Then Break the candies into pieces and add them with sesame seed in the blender/mixer for 3-5 min. So that Sesame seed will get stick on the candy surfaces.	
Then Remove the Revadi from blender and keep it on clean table to cool down. Once the Revdi became cooled down, texture become hard.	

Then Pack the Revdi in the package and store at clean and dry place.	

2.2.3 Peanut Jaggery Gajak /Chikki

This product is made up of Peanuts, Jaggery/sugar. This Peanut Jaggery Gajak is also known as Chikki in various regions of India.

2.2.3 .A. Ingredients

2.2.3.A.i- Peanuts/Ground Nuts

Groundnut kernel (deshelled)/Peanuts for direct human consumption commonly known as moongphali are obtained from the plant arachis hypogols. the kernels shall be free from non edible seeds such as mahua, caster, neem or argemone etc.

It shall be free from colouring matter and preservatives. It shall be practically free from extraneous matter, such as stones, dirt, clay etc. The kernels shall conform to the following standards, namely:

Moisture	Not more than 7.0 per cent
Damaged kernel including slightly damaged kernel	Not more than 5.0 per cent by weight
Aflatoxin content	Not more than 30 parts per billion.

2.2.3.A.ii – Jaggery

GUR OR JAGGERY means the product obtained by boiling or processing juice pressed out of sugarcane. It shall be free from substances deleterious to health and shall conform to the following analytical standards, on dry weight basis :-

Total sugars expressed as invert sugar	Not less than 90 percent and sucrose not less than 60 percent
Extraneous matter insoluble in water	Not more than 2 %
Total ash	Not more than 6 %
Ash insoluble in hydrochloric acid (HCl)	Not more than 0.5 %

Gur or jaggery other than that of the liquid or semi liquid variety shall not contain more than10%moisture. Sodium bicarbonate, if used for clarification purposes, shall be of food grade quality.

2.2.4.A.iii-Sugar

Sugar is the crystallised product obtained from sugarcane or sugar beet. It shall be free from dirt, filth, iron filings, and added colouring matter. Extraneous matter shall not exceed 0.1 per cent by weight. It shall also conform to the following standards, namely-

Moisture (when heated at 105 degree ± 1° degree C for 3 hours)	Not more than 0.5 per cent by weight.
Sucrose	Not less than 98 per cent by weight.

2.2.3.B. Processing

Receiving of Raw Material: (Deshelled Ground Nuts (Moong-phali), Jaggery/Sugar, Refined Vegetable Oil/Ghee for greasing)	 
Cleaning & Sorting: Ground Nuts are Cleaned and sorted manually or with the help of vibratory sieves to remove extraneous matter, if any. Refined Vegetable Oil is screened through mesh to remove foreign particles, if any. Jaggery is cleaned and visually inspected for extraneous matter.	

Roasting: Groundnuts are roasted in a roaster/cooking kettle. No Oil is added. This will be a dry roasting. After roasting outer peels of ground nuts are removed.	 
Syrup Preparation (chachani): Then Jaggery and some quantity of water is added, once the jaggery is melted then it is passed through screen mesh so that to remove foreign impurities and then this syrup is further cooked to make at a required consistency. Drop test is conducted for jaggery so that required consistency jaggery syrup will obtained (final consistency should be crunchy after dropping in the water). NOTE: Continuous stirring is required to avoid the burning of syrup.	 
Once the required consistency syrup is prepared, roasted peanuts are added to it with continuous stirring. Then Hot jaggery syrup is place in a greased pan and rested for few minutes.	
After proper mixing the mixture is taken into the greased pan. And mixture is rolled out manually/ by sheet maker to a thick sheet.	

Then sheet is cut into pieces with the help of cutter.	
After cooling to ambient temperature pack the Peanut-Jaggery Gajak and store at clean and dry place.	 

2.2.4 Til Mawa Gajak

This product is made up of Sesame seeds, Khoya (Mawa), Powdered Sugar and Ghee.

2.2.2.A. Ingredients

2.2.2.A.i- Sesame Seeds

Good Quality of Whole mature Sesame Seeds is received from the Supplier holding valid FSSAI license. It should be White clean and sounds seeds of Til (Sesamum indicum),. It shall be free from rancidity, other foreign matter.

2.2.2.A.ii Sugar

Sugar is the crystallised product obtained from sugarcane or sugar beet. It shall be free from dirt, filth, iron filings, and added colouring matter. Extraneous matter shall not exceed 0.1 per cent by weight. It shall also conform to the following standards, namely-

Moisture (when heated at 105 degree ± 1° degree C for 3 hours)	Not more than 0.5 per cent by weight.
Sucrose	Not less than 98 per cent by weight.

2.2.4.A.iii- Khoya (Mawa)

Khoya by whatever variety of names it is sold such as Pindi, Danedar, Dhap, Mawa or Kava means the product obtained from cow or buffalo or goat or sheep milk or milk solids or a combination thereof by rapid drying. The milk fat content shall not be less than 30 percent

on dry weight basis of finished product. It may contain citric acid not more than 0.1 per cent by weight. It shall be free from added starch, added sugar and added colouring matter.

2.2.4.A.iv. Ghee

Ghee is a pure clarified fat derived solely from milk or curd or from desi (cooking) butter or from cream to which no colouring matter or preservative has been added.

2.2.4.B. Processing

Receiving of Raw Material (White Sesame seeds, Khoya (Mawa), Powdered Sugar, Ghee)	  
Cleaning & Sorting: White Sesame Seeds are Cleaned and sorted manually or with the help of blower/sieve to remove extraneous matter, if any. Powdered sugar and Ghee is screened through a screen mesh to remove foreign matter, if any. Khoya is checked visually for foreign matter.	 
Roasting: White sesame seeds are roasted in a roaster/cooking kettle. No Oil is added.	
Take a Ghee in a Pan/cooking kettle and add Khoya (Mawa) into it. Mix it properly on low flame with continuous stirring. Add Powdered sugar into it, melt it completely.	

NOTE: Continuous stirring is required to avoid the burning of mixture.	 
After proper mixing add roasted Sesame seed into the mixture, keep stirring continuous on low heat for 2-3 minutes.	
Now switch off the flame/heat and keep mixture for cooling. And make a sheet of the mixture on the greased surface with help of sheet maker or manually.	
After rolling out the mixture, cut sheet in to the pieces with the help of cutter/knife and let the pieces set.	
After cooling, pack the Gajak in desired packaging material and store it at clean and dry place.	

2.3 NUTRITIVE VALUE OF GAJAK

2.3.1 Gajak is very nutritious product and mostly consumed in the winter season.

2.3.2 Til, jaggery and other healthy foods present in gajak keeps the body warm in winter and help to combat side-effects of winter and cold wave.

2.3.3 Sesame seeds and jaggery are both great for digestion and ensure regular bowel movements due to fibrous content present in them.
2.3.4 The presence of jaggery in gajak makes it a great energizer. Even sesame seeds are great for boosting energy levels, due to the presence of high levels of good fats in them. Eating a small piece of gajjak before or after your workout boosts energy levels.
2.3.5 Sesame seeds have anti-inflammatory properties that are good for the skin, which tends to become dry and flaky during winters.
2.3.6 Calcium present in til and jaggery makes the muscles strong. Til and jaggery present in gajak is a good source of iron,it is helpful for anemic persons also. Combination of healthy til and jaggery is rich in minerals like potassium and magnesium keeps the liver healthy.

2.4 QUALITATIVE ASSESSMENTS OF THE FINISHED PRODUCTS.

As this Product falls under the category of Proprietary food, there are no specific quality standards are set. So it is very necessary to establish the Internal physical and chemical standards e.g. Moisture, Appearance, colour, Flavour, Texture, to avoid the quality deviation and to offer the best quality products to the consumer.

Following are the characteristics of Gajak.

2.4.1 It shall have characteristic flavour, free from foreign odour, mustiness and rancidity.

2.4.2 It shall be free from mould, living and dead insects, insect fragments, rodent contamination.

2.4.3 The product shall be free from added colouring matter and any harmful substance. All the Food additive used should be as per the Appendix A of Food Products Standards & Food Additives regulations, 2011.

2.4.4 It shall conform to Microbiological criteria as per the Appendix B of Food Products Standards & Food Additives regulations, 2011.

2.4.5 As per the Food Products Standards & Food Additives regulations, 2011, this product falls under the category of proprietary food. Proprietary food means a food that has not been standardized under these regulations. In addition to the provisions including labelling requirements specified under these regulations, the proprietary foods shall also conform to the following requirements, namely:—

- the name describing as clearly as possible, the nature or composition of food and/or category of the food under which it falls in these regulations shall be mentioned on the label.

2.5 EQUIPMENTS AND MACINERIES

2.5.1General Requirement

i. Equipment and containers that come in direct contact with food and used for food handling, storage, preparation, processing, packaging and serving shall be made of corrosion free materials which do not impart any toxicity to the food material and should be easy to clean and /or disinfect (other than disposable single use types).

ii. All the Equipment and Containers should be in Good condition, repair and in a clean and sanitary condition. Such utensil or container shall not be used for any other purpose.

iii. Every utensil or container containing any food or ingredient of food intended for sale shall at all times be either provided with a properly fitted cover/lid or with a clean gauze net or other material of texture sufficiently fine to protect the food completely from dust, and flies and other insects.

iv. Direct contact parts of machines should be made up of food grade material. Eg. Preferably SS 304, SS 316, Teflon sheet etc.

2.5.2 List of Machineries and equipments;

i. Storage containers
ii. Cooking Kettles
iii. Roaster
iv. Sorting tables
v. Coating Machine
vi. Taffy Pulling machine
vii. Cutter and SS trays
viii. Inkjet printer
ix. Heat Sealer
x. Packing machine

SS Containers with Lid

SS Trays

Sorting Table

Sorting machine

Steam based Cooking Kettle

Cooking kettle on gas

Cutter

Hand Roller

Ink jet printer

CHAPTER – 3
PACKAGING & LABELLING

3.1 INTRODUCTION

"packaging material" means materials such as cardboard, paper, glass, metal, plastic, multi-layer packaging material used for packaging of food products. The selection of packaging materials should take care of functional as well as market requirements. Packaging material plays an important role in quality of food product.

Functions of Packaging material:

3.1.1 To contain the product- For the Packaging to contain the product, it must have the following characteristics:

- An adequate size to hold the product
- Paper constructural features
- Strong enough to withstand hazards, and
- Useful for distribution and sale

3.1.2 To protect the product against:

- Physical damages during transportation, distribution and storage
- Environmental factors such as humidity, dust and contaminants, and
- Water vapour and oxygen interactions, light rays and heat.

3.1.3 To assist in marketing by aiding in identifying the product and ensuring that it conform to laws, regulations and specifications.

3.1.4 To Increase the shelf life

3.1.5 To provide for consumer convenience

3.1.6 To provide the facility for ease of usage, dispensing and disposing off.

3.2 General Requirements

General requirements should be as per the guild line laid down in Food Safety and Standards (Packaging) Regulations, 2018.

3.2.1 Any material which comes in direct contact with food or likely to come in contact with food used for packaging, preparation, storing, wrapping, transportation and sale or service of food shall be of food grade quality.

3.2.2 Packaging materials shall be suitable for the type of product, the conditions provided for storage and the equipment for filling, sealing and packaging of food as well as transportation conditions.

3.2.3 Packaging materials shall be able to withstand mechanical, chemical or thermal stresses encountered during normal transportation. In case of flexible or semi-rigid containers, an overwrap packaging may be necessary.

3.2.4 Food products shall be packed in clean, hygienic and tamper-proof package or container.

3.2.5 The sealing material shall be compatible with the product and the containers as well as the closure systems used for the containers.

3.2.6 Tin containers once used, shall not be re-used for packaging of food.

3.2.7 Plastic containers of capacity 5 litre and above and Glass bottles, which are reused for packaging of food, shall be suitably durable, easy to clean or disinfect.

3.2.8 Printing inks for use on food packages shall conform to IS: 15495.

3.2.9 Printed surface of packaging material shall not come into direct contact with food products.

3.2.10 Newspaper or any such material shall not be used for storing and wrapping of food.

3.3 PACKAGING MATERIALS USED FOR GAJAK

- Metal Containers with plastic polypropylene (PP) caps or metal or plastic lid Plastic based multilayered laminated Heat sealed pouches.
- Composite containers made up of Paper Board or Aluminium foil or plastic base films with plastic or metal lids.
- Plastic based rigid containers.
- Foil wrap.
- Plastic film based twist wraps (Polyethylene terephthalate (PET) or polypropylene (PP) or Poly Vinyl Chloride (PVC)).
- Thermoformed tray and punnet with lid.
- Glass bottle with metal or plastic caps.
- Plastic cups with film lid.

Metal and metal alloys used for the manufacturing of containers for packing or storing the food products shall conform to either of the Indian Standards specifications as provided in Schedule – II of Food safety and standards (Packaging) Regulations, 2018.

SI. No	List of Standards
1.	Cold-reduced Electrolytic Tinplate – IS 1993/ISO 11949
2.	Cold reduced Electrolytic Chromium or Chromium Oxide – Coated Steel - IS 12591/ISO 11950
3.	Wrought Aluminium and Aluminium Alloy Sheet and Strip for General

	Engineering – IS 737
4.	Aluminium and Aluminium Alloy Bare Foil for Food Packaging – IS 15392
5.	Specification for Crown Closures – IS 1994
6.	Specification for Round Open Top Sanitary Cans for Foods and Drinks – IS 9396 (Part 1)
7.	Specification for Round Open Top Sanitary cans for Foods and Drinks – IS 9396 (Part 2)

Plastic materials used for the manufacturing of containers for packing or storing the food products shall conform to either of the Indian Standards specifications as provided in Schedule – III of Food safety and standards (Packaging) Regulations, 2018.

SI. No.	List of Standards
1.	Specification for Polyethylene for its safe use in contact with foodstuffs, pharmaceuticals and drinking water – IS 10146
2.	Specification for Polystyrene for its safe use in contact with foodstuffs, pharmaceuticals and drinking water –IS 10142
3.	Specification for Polyvinyl Chloride (PVC) and its copolymers for its safe use in contact with foodstuffs, pharmaceuticals and drinking water – IS 10151
4.	Specification for Polypropylene and its copolymers for its safe use in contact with foodstuffs, pharmaceuticals and drinking water – IS 10910
5.	Specification for Ionomer Resins for its safe use in contact with foodstuffs, pharmaceuticals and drinking water – IS 11434
6.	Specification for Ethylene Acrylic Acid (EAA) copolymers for their safe use in contact with foodstuffs, pharmaceuticals and drinking water – IS 11704
7.	Specification for Polyalkylene Terephathalates (PET & PBT) for their safe use in contact with foodstuffs, pharmaceuticals and drinking water - IS 12252
8.	Specification for Nylon 6 Polymer for its safe use in contact with foodstuffs, pharmaceuticals and drinking water – IS 12247
9.	Specification for Ethylene Vinyl Acetate (EVA) copolymers for its safe use in contact with foodstuffs, pharmaceuticals and drinking water – IS 13601
10.	Specification for Ethylene Metha Acrylic Acid (EMAA) copolymers and terpolymers for its safe use in contact with foodstuffs, pharmaceuticals and drinking water – IS 13576

11.	Specification for Polycarbonate Resins for its safe use in contact with foodstuffs, pharmaceuticals and drinking water – IS 14971
12.	Specification for Flexible Packaging Materials for packaging of Edible Oils, Ghee and Vanaspati - IS 14636
13.	Specification for Polyalkylene Terephthalates (PET & PBT) for Moulding and Extrusion – IS 13193
14.	Specification for Polyethylene Films and Sheets – IS 2508
15.	Specification for Linear Low Density Polyethylene (LLDPE) Films – IS 14500
16.	Specification for High Density Polyethylene Materials for Moulding and Extrusion – IS 7328
17.	Specification for Melamine-Formaldehyde Resins for its safe use in contact with foodstuffs, pharmaceuticals and drinking water – IS 14999
18.	Low Density Polyethylene Films – IS 2508

3.4 LABELLING

3.4.1 GENERAL REQUIREMENTS FOR LABELLING

3.4.1.1 Every pre-packaged food shall carry a label containing information as required here under unless otherwise provided, namely;

3.4.1.2 The particulars of declaration required under these Regulations to be specified on the label shall be in English or Hindi in Devnagri script: Provided that nothing herein contained shall prevent the use of any other language in addition to the language required under this regulation.

3.4.1.3 Pre-packaged food shall not be described or presented on any label or in any labelling manner that is false, misleading or deceptive or is likely to create an erroneous impression regarding its character in any respect;

3.4.1.4 Label in pre-packaged foods shall be applied in such a manner that they will not become separated from the container.

3.4.1.5 Contents on the label shall be clear, prominent, indelible and readily legible by the consumer under normal conditions of purchase and use;

3.4.1.6 Where the container is covered by a wrapper, the wrapper shall carry the necessary information or the label on the container shall be readily legible through the outer wrapper and not obscured by it;

3.4.2 LABELLING OF PRE-PACKAGED FOOD

3.4.2.1 In addition to the General Labelling requirements specified in General requirement above every package of food shall carry the following information on the label, namely,—

i. The Name of Food: The name of the food shall include trade name or description of food contained in the package.

ii. List of Ingredients: Except for single ingredient foods, a list of ingredients shall be declared on the label in the following manner:—

- The list of ingredients shall contain an appropriate title, such as the term "Ingredients";
- The name of Ingredients used in the product shall be listed in descending order of their composition by weight or volume, as the case may be, at the time of its manufacture;
- A specific name shall be used for ingredients in the list of Ingredient
- Where an ingredient itself is the product of two or more ingredients, such a compound ingredients shall be declared in the list of ingredients, and shall be accompanied by a list, in brackets, of its ingredients in descending order of weight or volume, as the case may be: Provided that where a compound ingredient, constitutes less than five percent of the food, the list of ingredients of the compound ingredient, other than food additive, need not to be declared.
- Added water shall be declared in the list of ingredients except in cases where water forms part of an ingredient, such as, brine, syrup or broth, used in the compound food and so declared in the list of ingredients: Provided that water or other volatile ingredients evaporated in the course of manufacture need not be declared;
- Every package of food sold as a mixture or combination shall disclose the percentage of the ingredient used at the time of the manufacture of the food (including compound ingredients or categories of ingredients), if such ingredient–

3.4.3 **NUTRITIONAL INFORMATION** – Nutritional Information or nutritional facts per 100 gm or 100ml or per serving of the product shall be given on the label containing the following:—

- energy value in kcal;
- the amounts of protein, carbohydrate (specify quantity of sugar) and fat in gram (g) or ml;
- the amount of any other nutrient for which a nutrition or health claim is made:

Provided that where a claim is made regarding the amount or type of fatty acids or the amount of cholesterol, the amount of saturated fatty acids,

monounsaturated fatty acids and polyunsaturated fatty acids in gram (g) and cholesterol in milligram (mg) shall be declared, and the amount of trans fatty acid in gram (g) shall be declared in addition to the other requirement stipulated above

- Wherever, numerical information on vitamins and minerals is declared, it shall be expressed in metric units;
- Where the nutrition declaration is made per serving, the amount in gram (g) or milliliter (ml) shall be included for reference beside the serving measure;
- The compliance to quantity of declared nutrients on the label shall be according to the established practices.
- Health & nutritional claim can be mentioned if the prepared food followed the terms and condition mentioned in the FSS (Packaging & labelling) regulations, 2011.

3.4.4 Every package of Vegetarian food shall bear Vegetarian logo should be displayed on principle display panel

3.4.5 **DECLARATION REGARDING FOOD ADDITIVES-**

3.4.5.1 For food additives falling in the respective classes and appearing in lists of food additives permitted for use in foods generally, the following class titles shall be used together with the specific names or recognized international numerical identifications: Acidity Regulator, Acids, Anticaking Agent, Antifoaming Agent, Antioxidant, Bulking Agent, Colour, Colour Retention Agent, Emulsifier, Emulsifying Salt, Firming Agent, Flour Treatment Agent, Flavour Enhancer, Foaming Agent, Gelling Agent, Glazing Agent, Humectant, Preservative, Propellant, Raising Agent, Stabilizer, Sweetener, Thickener:

3.4.5.2 Addition of colours and/or Flavours—

i. Extraneous addition of colouring matter to be mentioned on the label – Where an extraneous colouring matter has been added to any article of , there shall be displayed one of the following statements in capital letters, just beneath the list of the ingredients on the label attached to any package of food so coloured, namely:

CONTAINS PERMITTED NATURAL COLOUR(S)

OR

CONTAINS PERMITTED SYNTHETIC FOOD COLOUR(S)

OR

CONTAINS PERMITTED NATURAL AND SYNTHETIC FOOD COLOUR(S)

Provided that where such a statement is displayed along with the name or INS no of the food colour, the colour used in the product need not be mentioned in the list of ingredients.

ii. Extraneous addition of flavouring agents to be mentioned on the label.

Where an extraneous flavouring agent has been added to any article of food, there shall be written just beneath the list of ingredients on the label attached to any package of food so flavoured, a statement in capital letters as below:
CONTAINS ADDED FLAVOUR (specify type of flavouring agent as per Regulation 3.1.10(1) of Food Safety and Standards (Food product standards and food additive) Regulation, 2011

- In case both colour and flavour are used in the product, one of the following combined statements in capital letters shall be displayed, just beneath the list of ingredients on the label attached to any package of food so coloured and flavoured, namely:

CONTAINS PERMITTED NATURAL COLOUR(S) AND ADDED FLAVOUR(S)

OR

CONTAINS PERMITTED SYNTHETIC FOOD COLOUR(S) AND ADDED FLAVOUR(S)

OR

CONTAINS PERMITTED NATURAL AND SYNTHETIC FOOD COLOUR(S) AND ADDED FLAVOUR(S)

Provided that in case of artificial flavouring substances, the label shall declare the common name of the flavours, but in case of the natural flavouring substances or nature identical flavouring substances, the class name of flavours shall be mentioned on the label and it shall comply with the requirement of label declaration as specified under the regulation 2.2.2 (5) (ii).

Note: — When statement regarding addition of colours and/or flavours is displayed on the label in accordance with regulation 2.2.2(5) (ii) of Food Safety and Standards (Packaging and Labelling) Regulation, 2011 and regulation 3.2.1 of Food Safety and Standards (Food Product Standards and Food Additive) Regulation, 2011, addition of such colours and/or flavours need not be mentioned in the list of ingredients. Also, in addition to above statement, the common name or class name of the flavour shall also be mentioned on label.

Provided further that when combined declaration of colours and flavours are given, the International Numerical Identification number of colours used shall also be indicated either under the list of ingredients or along with the declaration.

Provided also further that every package of synthetic food colours preparation and mixture shall bear a label upon which is printed a declaration giving the percentage of total dye content

3.4.6 **NAME AND COMPLETE ADDRESS OF THE MANUFACTURER**

3.4.6.1 The name and complete address of the manufacturer and the manufacturing unit if these are located at different places and in case the manufacturer is not the packer or bottler, the name and complete address of the packing or bottling unit as the case may be shall be declared on every package of food;

3.4.6.2 Where an article of food is manufactured or packed or bottled by a person or a company under the written authority of some other manufacturer or company, under his or its brand name, the label shall carry the name and complete address of the manufacturing or packing or bottling unit as the case may be, and also the name and complete address of the manufacturer or the company, for and on whose behalf, it is manufactured or packed or bottled;

3.4.6.3 Where an article of food is imported into India, the package of food shall also carry the name and complete address of the importer in India.

Provided further that where any food article manufactured outside India is packed or bottled in India, the package containing such food article shall also bear on the label, the name of the country of origin of the food article and the name and complete address of the importer and the premises of packing or bottling in India.

3.4.7 **NET QUANTITY**

3.4.7.1 Net quantity by weight or volume or number, as the case may be, shall be declared on every package of food; and

Explanation – 1: In declaring the net quantity of the commodity contained in the package, the weight of the wrappers and packaging materials shall be excluded:

3.4.8 Where a package contains a large number of small items of confectionery, each of which is separately wrapped and it is not reasonably practicable to exclude from the net weight of the commodity, the weight of such immediate wrappers of all the items of the confectionery contained in the package, the net weight declared on the package containing such confectionary or on the label thereof may include the weight of such immediate wrapper if the total weight of such immediate wrapper does not exceed –

i. eight per cent, Where such immediate wrapper is a waxed paper or other paper with wax or aluminium foil under strip; or

ii. six per cent. In case of other paper of the total net weight of all the items of confectionery contained in the package minus the weight of immediate wrapper.

3.4.9 **LOT/CODE/BATCH IDENTIFICATION**

A batch number or code number or lot number which is a mark of identification by which the food can be traced in the manufacture and identified in the distribution, shall be given on the label.

3.4.10 **Date of manufacture or packing & FSSAI licence no.**

The date, month and year in which the commodity is manufactured, packed or pre-packed, shall be given on the label:

Provided that the month and the year of manufacture, packing or pre-packing shall be given if the "Best Before Date" of the products is more than three months:

Provided further that in case any package contains commodity which has a short shelf life of less than three months, the date, month and year in which the commodity is manufactured or prepared or pre-packed shall be mentioned on the label.

Also valid FSSAI Licence number should be displayed in the label as per the requirement laid down in FSS act and regulations.

3.4.11 **BEST BEFORE AND USE BY DATE**

3.4.11.1 the month and year in capital letters upto which the product is best for consumption, in the following manner, namely:

"BEST BEFORE ..... MONTHS AND YEAR

OR

"BEST BEFORE ..... MONTHS FROM PACKAGING

OR

"BEST BEFORE .....MONTHS FROM MANUFACTURE

(Note: — blank be filled up)

Note:

a) blanks be filled up
b) Month and year may be used in numerals
c) Year may be given in two digits

3.4.12 **MANNER OF DECLARATION**

3.4.12.1 Any information or pictorial device written, printed, or graphic matter may be displayed in the label provided that it is not in conflict with the requirements of these Regulations.

3.4.12.2 Every declaration which is required to be made on package under these regulations shall be:

i. Legible and prominent, definite, plain and unambiguous
ii. Conspicuous as to size number and colour,
iii. as far as practicable, in such style or type of lettering as to be boldly, clearly and conspicuously present in distinct contrast to the other type, lettering or graphic material used on the package, and shall be printed or inscribed on the package in a colour that contrasts conspicuously with the background of the label

3.4.12.3 Provided that — Where any label information is blown, formed or moulded on a glass or plastic surface or where such information is embossed or perforated on a package, that information shall not be required to be presented in contrasting colours: Where any declaration on a package is printed either in the form of a handwriting or hand script, such declaration shall be clear, unambiguous and legible.

3.4.12.4 Where a package is provided with an outside container or wrapper, such container or wrapper shall also contain all the declarations which are required to appear on the package except where such container or wrapper itself is transparent and the declarations on the package are easily readable through such outside container or wrapper.

3.4.12.5 Labels not to contain false or misleading statements: A label shall not contain any statement, claim, design, device, fancy name or abbreviation which is false or misleading in any particular concerning the food contained in the package, or concerning the quantity or the nutritive value or in relation to the place of origin of the said food.

EXEMPTIONS FROM LABELLING REQUIREMENTS

Where the surface area of the package is not more than 100 square centimetres, the label of such package shall be exempted from the requirements of list of ingredients, Lot Number or Batch Number or Code Number, nutritional information and instructions for use, but this information shall be given on the wholesale packages or multi piece packages, as the case may be.

1. The date of manufacture' or 'best before date' or 'expiry date' may not be required to be mentioned on the package having surface area of less than 30 square centimetres but this information shall be given on the wholesale packages or multi piece packages, as the case may be.
2. In case of food with shelf-life of not more than seven days, the 'date of manufacture may not be required to be mentioned on the label of packaged food articles, but the 'use by date' shall be mentioned on the label by the manufacturer or packer.
3. In case of multi piece packages the particulars regarding list of ingredients, nutritional information, Date of manufacture/ packing, best before, expiry date labelling of irradiated food and, vegetarian logo/non vegetarian logo, may not be specified.
4.

3.5 **STORAGE CONDITION FOR GAJAK**

When Gajak is properly stored, it may last for 2 months to 4 months, depends on the type, variety and processing of Gajak.

Following steps needs to be taken care while storing Gajak:

- Containers should be kept away from sun, rain and moist conditions in covered premises.

- The storage area where the Gajak is to be stored should have dry atmosphere, free from unwanted odour as well as proofed against insects, rodents and vermin entry.
- The room should have controllable ventilation where it could be able to give good ventilation in dry conditions and should have fully closed ventilation in damp conditions. Fumigation facilities should also be there.
- Finished product should always kept on Pallets.

CHAPTER – 4

FOOD SAFETY REGULATIONS AND STANDARDS

4.1 Registration and Licensing of Food Business

All Food Business Operators in the country should be registered or licensed in accordance with the procedures laid down in Food Safety and Standards (Licensing and Registration of Food Businesses) Regulations 2011.

There are mainly three types of Registrations and licensing of FBO based on the nature of the business, processing capacity and Turnover.

- FSSAI Registration-
  - For petty Food Business operators whose turnover is less than 12 lakh
- FSSAI State Licence-
  - For Food Business operators whose turnover is between 12 lakh to 20 crore.
  - Manufacturer whose production capacity is more than 1 MT per day.
- FSSAI Central Licence-
  - All food processing units other than mentioned under (I) to (IV) of schedule I of Food Safety and Standards (Licensing and Registration of Food Businesses) Regulations 2011, including relabellers and repackers having installed capacity more than 2 MT/day except grains, cereals and pulses milling units.
  - 100 % Export Oriented Units.
  - Food Business Operator operating in two or more states.
  - Food Business whose annual turnover is above rupees 20 crore.

Registration of Petty Food Business

a. Every petty Food Business Operator shall register themselves with the Registering Authority by submitting
b. An application for registration in Form A under Schedule 2 of Food Safety and Standards (Licensing and Registration of Food Businesses) Regulations 2011, along with a fee as provided in Schedule 3.
c. The petty food manufacturer shall follow the basic hygiene and safety requirements provided in Part I of Schedule 4 of these Regulations and provide a self-attested declaration of adherence to these requirements with the application in the format provided in Annexure-1 under Schedule 2.
d. The Registering Authority shall consider the application and may either grant registration or reject it with reasons to be recorded in writing or issue notice for inspection, within 7 days of receipt of an application forregistration.
e. In the event of an inspection being ordered, the registration shall be granted by the Registering Authorityafter being satisfied with the safety, hygiene and sanitary conditions of the premises as contained in Part II of Schedule 4 within a period of 30days.

f. If registration is not granted, or denied, or inspection not ordered within 7 days as provided in above subregulation (3) or no decision is communicated within 30 days as provided in above sub regulation (4), the petty foodmanufacturer may start its business, provided that it will be incumbent on the Food Business Operator to complywith any improvement suggested by the Registering Authority even later.
g. Provided that registration shall not be refused without giving the applicant anopportunity of being heard andfor reasons to be recorded in writing.
h. The Registering Authority shall issue a registration certificate and a photo identity card, which shall be displayed at a prominent place at all times within the premises or vehicle or cart or any other place where the person carries on sale/manufacture of food in case of Petty Food Business.
i. The Registering Authority or any officer or agency specifically authorized for this purpose shall carryout food safety inspection of the registered establishments at least once in a year.

4.2 GOOD MANUFACTURING PRACTICES (GMP)

4.2.1 LOCATION & SURROUNDING

i. Food Establishment shall ideally be located away from environmental pollution and industrial activities that produce disagreeable or obnoxious odour, fumes, excessive soot, dust, smoke, chemical or biological emissions and pollutants, and which pose a threat of contaminating food areas that are prone to infestations of pests or where wastes, either solid or liquid, cannot be removed effectively.

ii. In case there are hazards of other environment polluting industry located nearby, appropriate measures should be taken to protect the manufacturing area from any potential contamination.

iii. The manufacturing premise should not have direct access to any residential area.

4.2.2 LAYOUT AND DESIGN OF FOOD ESTABLISHMENT PREMISES

i. As far as possible, the layout of the food establishment shall be such that food preparation / manufacturing processes are not amenable to cross-contamination from other pre and post manufacturing operations like goods receiving, pre-processing (viz. packaging, washing / portioning of ready-to-eat food etc).

ii. Floors, ceilings and walls must be maintained in a sound condition to minimize the accumulation of dirt, condensation and growth of undesirable moulds. They should be made of impervious material and should be smooth and easy to clean with no flaking paint or plaster.

iii. Doors shall also be made of smooth and non-absorbent surfaces so that they are easy to clean and wherever necessary, disinfect.

iv. The floor of food processing / food service area shall have adequate and proper drainage and shall be easy to clean and where necessary, disinfect. Floors shall be sloped appropriately to facilitate drainage and the drainage shall flow in a direction opposite to the direction of food preparation / manufacturing process flow.

v. Adequate control measures should be in place to prevent insects and rodents from entering the processing area from drains.

vi. Windows, doors & all other openings to outside environment shall be well screened with wire-mesh or insect proof screen as applicable to protect the premise from fly and other insects / pests / animals & the doors be fitted with automatic closing springs. The mesh or the screen should be of such type which can be easily removed for cleaning.

vii. No person shall manufacture, store or expose for sale or permit the sale of any article of food in any premises not effectively separated to the satisfaction of the licensing authority from any privy, urinal, sullage, drain or place of storage of foul and waste matter.

4.2.3 EQUIPMENTS AND CONTAINERS

i. Equipment and containers that come in contact with food and used for food handling, storage, preparation, processing, packaging and serving shall be made of corrosion free materials which do not impart any toxicity to the food material and should be easy to clean and /or disinfect (other than disposable single use types).

ii. Equipment and utensils used in the preparation of food shall be kept at all times in good order and repair and in a clean and sanitary condition. Such utensil or container shall not be used for any other purpose.

iii. Every utensil or container containing any food or ingredient of food intended for sale shall at all times be either provided with a properly fitted cover/lid or with a clean gauze net or other material of texture sufficiently fine to protect the food completely from dust, dirt and flies and other insects.

iv. No utensil or container used for the manufacture or preparation of or containing any food or ingredient of food intended for sale shall be kept in any place in which such utensil or container is likely by reason of impure air or dust or any offensive, noxious or deleterious gas or substance or any noxious or injurious emanations, exhalation, or effluvium, to be contaminated and thereby render the food noxious.

v. Equipment shall be so located, designed and fabricated that it permits necessary maintenance and cleaning functions as per its intended use and facilitates good hygiene practices inside the premise including monitoring and audit.

vi. Appropriate facilities for the cleaning and disinfecting of equipments and instruments and wherever possible cleaning in place (CIP) system shall be adopted.

vii. Equipment and containers for waste, by-products and inedible or dangerous substances, shall be specifically identifiable and suitably constructed.

viii. Containers used to hold cleaning chemicals and other dangerous substances shall be identified and stored separately to prevent malicious or accidental contamination of food.

ix. If required, a waste water disposal system / effluent treatment plant shall be put in place.

x. All items, fittings and equipments that touch or come in contact with food must be:

- kept in good condition in a way that enables them to be kept clean and wherever necessary, to be disinfected.
- Chipped enameled containers will not be used. Stainless steel /aluminum / glass containers, mugs, jugs, trays etc. suitable for cooking and storing shall be used. Brass utensils shall be frequently provided with lining.

4.2.4 FACILITIES

i. Water

- Only potable water, with appropriate facilities for its storage and distribution shall be used as an ingredient in processing and cooking.
- Water used for food handling, washing, should be of such quality that it does not introduce any hazard or contamination to render the finished food article unsafe.
- Water storage tanks shall be cleaned periodically and records of the same shall be maintained in a register.
- Non potable water can be used provided it is intended only for cleaning of equipment not coming in contact with food, which does not come into contact with food steam production, fire fighting & refrigeration equipment and provided that pipes installed for this purpose preclude the use of this water for other purposes and present

no direct or indirect risk of contamination of the raw material, dairy products or food products so processed, packed & kept in the premise.

- Non potable water pipes shall be clearly distinguished from those in use for potable water

ii. For Cleaning Utensils / Equipments

- Adequate facilities for cleaning, disinfecting of utensils and equipments shall be provided. The facilities must have an adequate supply of hot and cold water if required.

iii. Steam (in case of cooking kettle)

Steam used in direct contact with food shall be made from potable water with appropriate facility of storage and distribution. Steam shall be produced, handled and stored in such a manner that no contamination can happen.

iv. Drainage and waste disposal

- Food waste and other waste materials shall be removed periodically from the place where food is being handled or cooked or manufactured to avoid building up. A refuse bin of adequate size with a proper cover preferably one which need not be touched for opening shall be provided in the premises for collection of waste material. This shall be emptied and washed daily with a disinfectant and dried before next use.

- The disposal of sewage and effluents (solid, liquid and gas) shall be in conformity with requirements of Factory / Environment Pollution Control Board. Adequate drainage, waste disposal systems and facilities shall be provided and they shall be designed and constructed in such manner so that the risk of contaminating food or the potable water supply is eliminated.

- Waste storage shall be located in such manner that it does not contaminate the food process, storage areas, the environment inside and outside the food establishment and waste shall be kept in covered containers and shall be removed at regular intervals.

- Periodic disposal of the refuse / waste should be made compulsory. No waste shall be kept open inside the premise and shall be disposed of in an appropriate manner as per local rules and regulations including those for plastics and other non environment friendly materials.

v. Personnel facilities and toilets

- Personnel facilities shall include those for proper washing and drying of hands before touching food materials including wash basins and a supply of hot and /or cold water as appropriate; separate lavatories, of

appropriate hygienic design, for males and females separately; and changing facilities for personnel and such facilities shall be suitably located so that they do not open directly into food processing, handling or storage areas.

- Number of toilets should be adequate depending on the number of employees (male /female) in the establishment and they should be made aware of the cleanliness requirement while handling food.
- Rest and refreshments rooms shall be separate from food process and service areas and these areas shall not lead directly to food production, service and storage areas.
- A display board mentioning do's & don'ts for the workers shall be put up inside at a prominent place in the premise in English or in local language for everyone's understanding.

vi. Air quality and ventilation

- Ventilation systems natural and /or mechanical including air filters, exhaust fans, wherever required, shall be designed and constructed so that air does not flow from contaminated areas to clean areas.

vii. Lighting

- Natural or artificial lighting shall be provided to the food establishment, to enable the employees/workers to operate in a hygienic manner. Lighting fixtures must wherever appropriate, be protected to ensure that food is not contaminated by breakages of electrical fittings.

4.2.5 FOOD OPERATIONS AND CONTROLS

i. Procurement of raw materials

- No raw material or ingredient thereof shall be accepted by an establishment if it is known to contain parasites, undesirable micro-organisms, pesticides, veterinary drugs or toxic items, decomposed or extraneous substances, which would not be reduced to an acceptable level by normal sorting and/or processing.
- All raw materials, food additives and ingredients, wherever applicable, shall conform to all the Regulations and standards laid down under the Act.
- Records of raw materials, food additives and ingredients as well as their source of procurement shall b maintained in a register for inspection.
- All raw materials should be checked & cleaned physically thoroughly.
- Raw materials should be purchased in quantities that correspond to storage/ preservation capacity.

- Packaged raw material must be checked for 'expiry date'/ 'best before'/ 'use by' date, packaging integrity and storage conditions.

ii. Storage of raw materials and food

- Food storage facilities shall be designed and constructed to enable food to be effectively protected from contamination during storage; permit adequate maintenance and cleaning, to avoid pest access and accumulation.
- Cold Storage facility, wherever required, shall be provided to raw, processed / packed food according to the type and requirement.
- Segregation shall be provided for the storage of raw, processed, rejected, recalled or returned materials or products which will be distinguishably marked and secured. Raw materials and food shall be stored in separate areas from printed packaging materials, stationary, hardware and cleaning materials / chemicals.
- Raw food, particularly Ghee, Khoa shall be cold stored separately from the area of work-in-progress, processed, cooked and packaged products. The conditions of storage in terms of temperature and humidity requisite for enhancing the shelf life of the respective food materials / products shall be maintained.
- Storage of raw materials, ingredients, work-in-progress and processed / cooked or packaged food products shall be subject to FIFO (First in, First Out), FEFO (First Expire First Out) stock rotation system as applicable.
- Containers made of non-toxic materials shall be provided for storage of raw materials, work-in-progress and finished / ready to serve products. The food materials shall be stored on racks / pallets such that they are reasonably well above the floor level and away from the wall so as to facilitate effective cleaning and prevent harbouring of any pests, insects or rodents.

4.2.6 FOOD PROCESSING / PREPARATION, PACKAGING AND DISTRIBUTION / SERVICE

i. Time and temperature control

- The Food Business shall develop and maintain the systems to ensure that time and temperature are controlled effectively where it is critical to the safety and suitability of food. Such control shall include time and temperature of receiving, processing, cooking, cooling, storage, packaging, distribution and food service upto the consumer, as applicable.
- Wherever cooking is done on open fire, proper outlets for smoke/steam etc. like chimney, exhaust fan etc. shall be provided.

ii. Food Packaging

- Packaging materials shall provide protection for all food products to prevent contamination, damage and shall accommodate required labelling as laid down under the FSS Act & the FSS (Packaging) Regulations there under.
- For primary packaging (i.e packaging in which the food or ingredient or additive comes in direct contact with the packaging material), only Food grade packaging materials are to be used . For packaging materials like aluminium plastic and tin, the standards to be followed are as mentioned under the FSS Regulations and rules framed there under.
- Packaging materials or gases where used, shall be non-toxic and shall not pose a threat to the safety and suitability of food under the specified conditions of storage and use.

iii. Food Distribution / Service

- All critical links in the supply chain need to be identified and provided for to minimize food spoilage during transportation. Processed / packaged and / or ready-to-eat food shall be protected as per the required storage conditions during transportation and / or service.
- Temperatures and humidity which are necessary for sustaining food safety and quality shall be maintained.
- The conveyances and /or containers shall be designed, constructed and maintained in such manner that they can effectively maintain the requisite temperature, humidity, atmosphere and other conditions necessary to protect food conveyances and / or containers used for transporting / serving foodstuffs shall be non toxic, kept clean and maintained in good condition in order to protect foodstuffs from any contamination.
- Receptacles in vehicles and / or containers shall not be used for transporting anything other than foodstuffs where this may result in contamination of foodstuffs. Where the same conveyance or container is used for transportation of different foods, or high risk foods such as fish, meat, poultry, eggs etc., effective cleaning and disinfections shall be carried out between loads to avoid the risk of cross- contamination. For bulk transport of food, containers and conveyances shall be designated and marked for food use only and be used only for that purpose.

4.2.7 MANAGEMENT AND SUPERVISION

i. A detailed Standard Operating Procedure (SOP) for the processing of food as well as its packing, despatch and storage will be developed for proper management which in turn would help in identifying any problem and the exact point, so that damage control would be faster.

ii. The Food Business shall ensure that technical managers and supervisors have appropriate qualifications, knowledge and skills on food hygiene principles and practices to be able to ensure food safety and quality of its products, judge food hazards, take appropriate preventive and corrective action, and to ensure effective monitoring and supervision.

4.2.8 FOOD TESTING FACILITIES

i. A well equipped, laboratory for testing of food materials / food for physical, microbiological and chemical analysis in accordance with the specification/standards laid down under the rules and regulations shall be in place inside the premise for regular / periodic testing and when ever required.

ii. In case of any suspicion or possible contamination, food materials / food shall be tested before dispatch from the factory.

iii. If there is no in house laboratory facility, then regular testing shall be done through an accredited lab notified by FSSAI . In case of complaints received and if so required, the company shall voluntarily do the testing either in the in house laboratory or an accredited lab or lab notified by FSSAI.

4.2.9 AUDIT, DOCUMENTATION AND RECORDS

i. A periodic audit of the whole system according to the SOP shall be done to find out any fault / gap in the GMP/GHP system.

ii. Appropriate records of food processing / preparation, production / cooking, storage, distribution, service, food quality, laboratory test results, cleaning and sanitation, pest control and product recall shall be kept and retained for a period of one year or the shelf-life of the product, whichever is more.

iii. Listed below are some reasons why there is a need for documentation:

- It gives detailed knowledge about running the business.
- It helps to control product quality.
- It helps to keep track of the money invested in the business.
- It helps to identify the separate costs of raw material or product ingredients.
- It helps to identify the production cost of a particular process.
- It helps to make sure that all the quality assurance practices were followed during the production.
- It helps to make sure that the production equipment is running smoothly/effectively.
- It works as an evidence for legal procedures.
- It helps to set an appropriate product price.
- It helps to take corrective measures at the right time.

iv. How to Keep Records?

Every food processing organization follows a more or less similar way of keeping records. Production records keep a log of the following:

- The quantity and type of raw materials received
- The quantity and type of ingredients used during processing
- The processing conditions in which production took place (e.g. the temperature set or the air pressure applied)
- The product quality produced

Product quality can be maintained only when:

- The same quantity and quality of ingredients and raw materials are mixed in every batch
- A standard formulation is used for every batch
- Standard process parameters are applied for every batch

Every batch of food is given a batch number. This number is recorded in:

- Stock control books (where raw material procurement is noted)
- Processing logbooks (where production process is noted)
- Product sales records (where sales and distribution is noted)

The batch number must correlate with the product code number, which is printed on labels. This helps the processor to trace any fault found in a batch back to the raw material used or the production process.

4.2.10 SANITATION AND MAINTENANCE OF ESTABLISHMENT PREMISES

i. Cleaning and Maintenance

- A cleaning and sanitation programme shall be drawn up and observed and the record thereof shall be properly maintained, which shall indicate specific areas to be cleaned, cleaning frequency and cleaning procedure to be followed, including equipment and materials to be used for cleaning. Equipments used in manufacturing will be cleaned and sterilized at set frequencies.

- Cleaning chemicals shall be handled and used carefully in accordance with the instructions of the manufacturer and shall be stored separately away from food materials, in clearly identified containers, to avoid any risk of contaminating food.

- Cleaning and sanitizing programmes shall be established at facility to ensure that the food-processing equipment and environment are maintained in a hygienic condition to prevent contamination of food, such as from metal shards, flaking plaster, food debris and chemicals and records of the same shall be maintained. The programme should ensure that all parts of the

establishment are appropriately clean, and shall include the cleaning of cleaning equipment.

- Master sanitation schedule shall be maintained for overall facility through checklists which includes:
    - Areas, items of equipment and utensils to be cleaned;
    - Responsibility for particular tasks;
    - Cleaning method and frequency of cleaning; and
    - Monitoring arrangements for checking effectiveness of cleaning
    - Person responsible for cleaning
    - Persons responsible for monitoring & verification of effectiveness of cleaning
    - In case of any deviation what correction & corrective actions being taken.
    - Where ever chances of microbial risk with product air count & swab test beingrecommended.
- Cleaning and disinfection chemicals shall be food grade wherever chances of it maycome in direct or indirect contact through equipment's or plant surfaces, handled andused carefully and in accordance with manufacturers' instructions, for example, usingthe correct dilutions, and stored, where necessary, separated from food, in clearlyidentified containers to avoid the risk of contaminating food.
- Cleaning shall remove food residues and dirt and it can be carried out by the separateor the combined use of physical methods, such as heat, scrubbing, turbulent flow andvacuum cleaning or other methods that avoid the use of water, and chemical methods using appropriate cleaning agents.
- These facilities should be constructed of corrosion resistant materials, be easy to cleanand shall have adequate supply of hot and cold potable water, where appropriate. It isrecommended to have different colour for hot and cold pipes.A validation mechanism should be in place for all cleaning programme.
    - Cleaning procedure should generally involve;
        - Removing gross visible debris from surfaces.
        - Applying a detergent solution to loosen soil and bacterial film (cleaning)
        - Rinsing with water (hot water where possible) to remove loosened soil and residues ofdetergent.
        - Dry cleaning or other appropriate methods for removing and collecting residues anddebris and
        - Where necessary, cleaning should be followed by disinfection with subsequent rinsing.
- Designated area with lock & key provision should be allocated for cleaning equipment's & chemicals. Where ever necessary & applicable CIP procedure should be defined for equipment's cleaning.

- **House keeping**
    - A housekeeping schedule covering manufacturing and storage areas shall be maintained.
    - The surrounding areas including roads, parking lots and drains should be wellmaintained.
    - Walls and floors should be maintained neat and clean. Ceilings and light fixtures shouldbe easy to clean.
    - Drains should be sufficiently sized and well sloped. Drains should have removablegrates installed for ease of cleaning.
    - For 3rd party (contract) cleaning companies, the supplier should define clear scope, details of services and responsibilities.
    - Waste storage areas should be clearly marked and waste shall be disposed of in a timely manner.

ii. Pest Control

- Food establishment, including equipment and building shall be kept in good repair to prevent pest access and to eliminate potential breeding sites. Holes, drains and other places where pests are likely to gain access shall be kept in sealed condition or fitted with mesh / grills / claddings or any other suitable means as required and animals, birds and pets shall not be allowed to enter into the food establishment areas/ premises.
- Food materials shall be stored in pest-proof containers stacked above the ground and away from walls.
- Pest infestations shall be dealt with immediately and without adversely affecting the food safety or suitability. Treatment with permissible chemical, physical or biological agents, within the appropriate limits, shall be carried out without posing a threat to the safety or suitability of food. Records of pesticides / insecticides used along with dates and frequency shall be maintained.

4.2.11 PERSONAL HYGIENE

i. Health Status

- Personnel known, or believed, to be suffering from, or to be a carrier of a disease or illness likely to be transmitted through food, shall not be allowed to enter into any food handling area . The Food Business shall develop system, whereby any person so affected, shall immediately report illness or symptoms of illness to the management and medical examination of a food handler shall be carried out apart from the periodic checkups, if clinically or epidemiologically indicated.
- Arrangements shall be made to get the food handlers / employees of the establishment medically examined once in a year to ensure that they are free from

any infectious, contagious and other communicable diseases. A record of these examinations signed by a registered medical practitioner shall be maintained for inspection purpose.

- The factory staff shall be compulsorily inoculated against the enteric group of diseases as per recommended schedule of the vaccine and a record shall be kept for inspection.
- In case of an epidemic, all workers are to be vaccinated irrespective of the scheduled vaccination.

ii. Personal Cleanliness

- Food handlers shall maintain a high degree of personal cleanliness. The food business shall provide to all food handlers adequate and suitable clean protective clothing, head covering, face musk, gloves and footwear and the food business shall ensure that the food handlers at work wear only clean protective clothes, head covering and footwear every day.
- Food handlers shall always wash their hands with soap and clean potable water, disinfect their hands and then dry with hand drier or clean cloth towel or disposable paper at the beginning of food handling activities immediately after handling raw food or any contaminated material, tools, equipment or work surface, where this could result in contamination of other food items or after using the toilet.
- Food handlers engaged in food handling activities shall refrain from smoking, spitting, chewing, sneezing or coughing over any food whether protected or unprotected and eating in food preparation and food service areas.
- The food handlers should trim their nails and hair periodically, do not encourage or practice unhygienic habits while handling food.
- Persons working directly with and handling raw materials or food products shall maintain high standards of personal cleanliness at all times. In particular:

    a. they shall not smoke, spit, eat or drink in areas or rooms where raw materials and food products are handled or stored;

    b. wash their hands at least each time work is resumed and whenever contamination of their hands has occurred; e.g. after coughing / sneezing, visiting toilet, using telephone, smoking etc.

    c. avoid certain hand habits - e.g. scratching nose, running finger through hair, rubbing eyes, ears and mouth, scratching beard, scratching parts of bodies etc.- that are potentially hazardous when associated with handling food products, and might lead to food contamination through the transfer of bacteria from the employee to product during its preparation. When

unavoidable, hands should be effectively washed before resuming work after such actions.

iii. Visitors

- Generally visitors should be discouraged from going inside the food handling areas. Proper care has to be taken to ensure that food safety & hygiene is not getting compromised due to visitors in the floor area.
- The Food Business shall ensure that visitors to its food manufacturing, cooking, preparation, storage or handling areas must wherever appropriate, wear protective clothing, footwear and adhere to the other personal hygiene provisions envisaged in this section.

4.2.12 PRODUCT INFORMATION AND CONSUMER AWARNESS

All packaged food products shall carry a label and requisite information as per provisions of Food Safety and Standards Act, 2006 and Food Safety and Standards (Packaging) Regulations, 2018 made there under so as to ensure that adequate and accessible information is available to the each person in the food chain to enable them to handle, store, process, prepare and display the food products safely and correctly and that the lot or batch can be easily traced and recalled if necessary.

4.2.13 TRAINING

i. The Food Business shall ensure that all food handlers are aware of their role and responsibility in protecting food from contamination or deterioration. Food handlers shall have the necessary knowledge and skills which are relevant to food processing / manufacturing, packing, storing and serving so as to ensure the food safety and food quality.

ii. The Food Business shall ensure that all the food handlers are instructed and trained in food hygiene and food safety aspects along with personal hygiene requirements commensurate with their work activities, the nature of food, its handling, processing, preparation, packaging, storage, service and distribution.

iii. Periodic assessments of the effectiveness of training, awareness of safety requirements and competency level shall be made, as well as routine supervision and checks to ensure that food hygiene and food safety procedures are being carried out effectively.

iv. Training programmes shall be routinely reviewed and updated wherever necessary.

4.3 HACCP (HAZARD ANALYSIS AND CRITICAL CONTROL POINT) PROCEDURE

4.3.1 Every Food Business operator should have established the HACCP Plan.

4.3.2 HACCP is Defined as a Systematic approach to identify, evaluate and control Hazards which are significant for food safety.

4.3.3 Appropriate to the nature and size of the operation and sufficient to assist the business to verify that the HACCP controls are in place and being maintained.

Documentation shall include (as a minimum) the following:

- HACCP team composition;
- Product description;
- Intended use;
- Flow chart;
- Hazard analysis;
- CCP determination;
- Critical limit determination;
- Validation process; and
- HACCP plan

The HACCP plan shall include the following information for each identified CCP:

- Food safety hazard(s) to be controlled at the CCP;
- Control measure(s);
- Critical limit(s);
- Monitoring procedure(s);
- Corrections and corrective action(s) to be taken if critical limits are exceeded;
- Responsibilities and authorities for monitoring, corrective action and verification;
- Record(s) of monitoring.

Records to include

- CCP monitoring activities;
- Deviations and associated corrective actions;
- Disposition of non-conforming products;
- Verification procedures performed;
- Modifications to the HACCP plan;
- Validation record; Product release records and Testing records.