

PM Formalisation of Micro Food Processing Enterprises Scheme

HANDBOOK OF PROCESSING OF GINGER PASTE



AATMANIRBHAR BHARAT

Indian Institute of Food Processing Technology
Ministry of Food Processing Industries
Pudukkottai Road, Thanjavur, Tamil Nadu 613005
Website: <http://www.iifpt.edu.in>
Email: info@iifpt.edu.in
Call: +91 4362 228155

TABLE OF CONTENTS

Page No.

Chapter 1: Introduction		
1.1	About Ginger	3-4
1.2	Market Status	4-5
1.3	Health Benefits	5-7
1.4	Value Addition	7-8
1.5	Ginger Paste	8
Chapter 2: Processing of Ginger for paste		
2.1	Ingredients used	9
2.2	Processing	9-11
2.3	Flow Chart	12
2.4	Machines used	13-15
Chapter 3: Packaging		
3.1	Source of Contamination	16
3.2	Criteria for packaging material	16
3.3	Major Classification of Packaging	16-20
Chapter 4: FSSAI Food Regulations and Standards		
4.1	Definition of Standards	21-24
4.2	Food Safety and Standards, Contaminants, Toxins and Residues Regulations	24-25
4.2	Packaging and Labelling regulations	25-30
4.3	Sanitary and hygiene requirements	30-31

CHAPTER 1

INTRODUCTION

1.1 ABOUT

Ginger (*Zingiber officinale*) is one of the most commonly consumed dietary condiments in the world. It belongs to the *Zingiberaceae* family, and it's closely related to turmeric, cardamom, and galangal. Ginger may also be referred to as true ginger, stem ginger, garden ginger or root ginger and it is believed to have originated in the Southeast Asia. It is one of the first spices to have been exported from Asia, arriving in Europe with the spice trade, and was used by ancient Greeks and Romans. Ginger grows well in warm and humid climate and is cultivated from sea level to an altitude of 1500 m above sea level. Ginger can be grown both under rain fed and irrigated conditions.

Ginger is commonly used in foods and beverages for their characteristic pungency and piquant flavour. The main active components in ginger are gingerols, which are responsible for its distinct fragrance and flavour. The texture of ginger rhizomes is firm, knotty, rough, and striated (banded). Depending on the variety, the flesh may be yellow, white, or red. The skin is cream-colored to light brown and may be thick or thin, depending on the plant's maturity at harvest.

Because of its medicinal properties, Ginger is widely employed in Chinese, Ayurvedic, Unani medicines and home remedies since antiquity for many ailments including pain, inflammation, and gastrointestinal disorders.



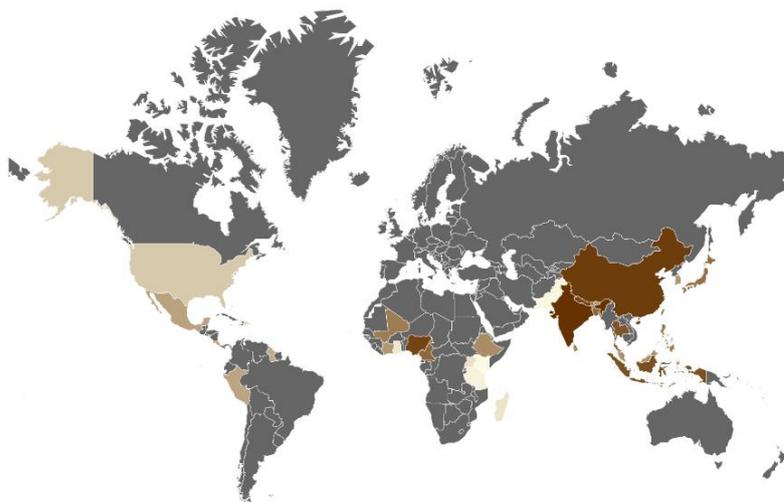
Varieties in India

Several cultivars of ginger are grown in the different ginger growing areas in India. They are generally named after the localities or places where they are grown. Some of the more prominent indigenous types are Maran (Assam), Kuruppampadi, Ernad and Wynad local (all from Kerala). A high yielding introduction Rio-de-Janeiro has become very popular among the growers. Other popular varieties are Suprabha, Suruchi and Surari.

1.2 MARKET STATUS

World Scenario

Globally 4.08 MMT ginger is produced in the year 2019. (Source-FAO). India emerged as top producer of ginger with 996.041 MT ginger production followed by Nigeria and China.



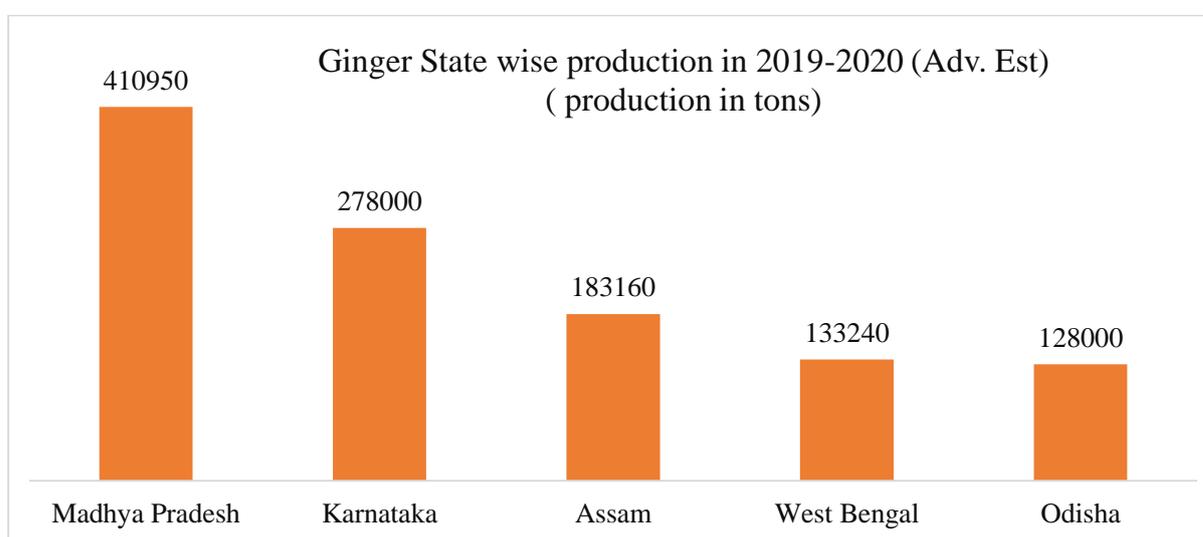
Ginger producing countries

Indian Scenario

India Ginger Production jumped by 11.5% in 2019, compared to the previous year. Still India stands at number 1 position in ginger production globally. Ginger is cultivated in most of the states in India. However, states namely Karnataka, Orissa, Assam, West Bengal, Madhya Pradesh together contribute 65 per cent to the country's total production.

GINGER	2018-19		2019-20 (1st Advance Estimate)		2019-20 (2nd Advance Estimate)	
	Area	Production	Area	Production	Area	Production
	(in '000 Ha)	'000 MT	(in '000 Ha)	'000 MT	(in '000 Ha)	'000 MT
	164	1788	168	1805	172	1844

(Source: National Horticulture Board)



(Source: State Agriculture/Horticulture Departments)

1.3 HEALTH BENEFITS

1. Contains gingerol

Gingerol is the main bioactive compound in ginger. It's responsible for much of ginger's medicinal properties. Gingerol has powerful anti-inflammatory and antioxidant effects, according to research. For instance, it may help reduce oxidative stress, which is the result of having an excess number of free radicals in the body.

2. Treat many forms of nausea

Ginger appears to be highly effective against nausea. It may help relieve nausea and vomiting for people undergoing certain types of surgery. However, it may be the most effective when it comes to pregnancy-related nausea, such as morning sickness.

3. Can help with osteoarthritis

Osteoarthritis (OA) is a common health problem. It involves degeneration of the joints in the body, leading to symptoms such as joint pain and stiffness. One literature review found that people who used ginger to treat their OA saw significant reductions in pain and disability.

4. Lower blood sugars and improve heart disease risk factors

Ginger has been shown to lower blood sugar levels and improve various heart disease risk factors in people with type 2 diabetes. There's some evidence, that ginger can lead to significant reductions in LDL (bad) cholesterol, total cholesterol, and blood triglyceride levels.

5. Can help treat chronic indigestion

Chronic indigestion is characterized by recurrent pain and discomfort in the upper part of the stomach. It's believed that delayed emptying of the stomach is a major driver of indigestion. Interestingly, ginger has been shown to speed up emptying of the stomach.

6. May significantly reduce menstrual pain

Dysmenorrhea refers to pain felt during the menstrual cycle. Ginger appears to be very effective against menstrual pain when taken at the beginning of the menstrual period.

7. Improve brain function

Oxidative stress and chronic inflammation can accelerate the aging process. They're believed to be among the key drivers of Alzheimer's disease and age-related cognitive decline. Some animal studies suggest that the antioxidants and bioactive compounds in ginger can inhibit inflammatory responses that occur in the brain.

Nutritional content

Sl. No.	Nutrient	Amount(/100g)
1.	Energy	125 kcal
2.	Carbohydrate	18 gm
3.	Sugars	1.7 gm
4.	Protein	1.82 gm
5.	Sodium	13 mg
6.	Magnesium	43 mg
7.	Potassium	415 mg

(Source: USDA)

1.4 VALUE ADDITION

Ginger is used in numerous forms, including fresh, dried, pickled, preserved, crystallized, candied, and powdered or ground. The flavour is somewhat peppery and slightly sweet, with a strong and spicy aroma. The concentration of essential oils increases as ginger ages and, therefore, the intended use of the rhizome determines the time when it is harvested. If extracting the oil is the main purpose, then ginger can be harvested at 9 months or longer. Ginger is commonly pickled in sweet vinegar, which turns it a pink colour; this form is popular with sushi. Ginger harvested at 8-9 months has a tough skin that must be removed before eating, and the root is more pungent and is used dried or pulverized into ground ginger. This is the form most commonly found in our spice racks and used in cookies, cakes, and curry mixes. Candied or crystallized ginger is cooked in sugar syrup and coated with granulated sugar.

Ginger harvested at 5 months is not yet mature and has a very thin skin, and the rhizomes are tender with a mild flavour and are best used in fresh or preserved forms.

1.5 GINGER PASTE

Ginger paste is a viscous product prepared by mincing ginger rhizome to obtain a fine paste. The paste is a semi-solid product. It is slightly yellow white and smooth to coarse in texture. Ginger paste is often used with garlic paste as “Ginger- garlic paste” which is a crushed mixture of raw ginger and garlic cloves. Optionally, salt is added to the ginger paste while crushing. This compounded mixture is often used in Indian curries and vegetable dishes in many parts of India.



Earlier, people used to prepare the ginger paste at home. However, busier lifestyle and increasing disposable income have prompted the consumers to use ready-to-use ginger paste.

The ginger paste is an FMCG item, which is getting immense popularity not only in the urban areas but also in small towns and rural areas. The cooking paste segment is catering to working professionals, students, travellers and chefs.

CHAPTER 2

PROCESSING

2.1 INGREDIENTS USED

Raw Ginger	Mature, firm
Salt	2-5%
Citric acid or Ascorbic acid	0.1 %- 0.2% or 1-4%

2.2 PROCESSING

1. Harvesting

Ginger can be harvested by digging up the entire plant. Although it may be harvested at any stage of maturity, the best time is when the plant is 8 to 10 months old.

Ginger is typically available in two forms:

- Young ginger is usually available only in Indian markets and does not need to be peeled.
- Mature ginger is more readily available and has a tough skin that needs to be peeled.

2. Selection of Ginger

High quality of fresh ginger rhizomes is acquired so that the colour, aroma, and taste remain nice and fresh in the final product. The gingers are separated on the basis of the surface colour, shape, size, weight, soundness, firmness, cleanliness, maturity & it free from foreign matter /diseases insect damage /mechanical injury. Selection may be done manually or mechanically. Sorting is also done by hand or machine to remove the gingers which are unsuitable for processing due to mechanical injuries, insects, diseases, immature, over-mature, misshapen etc.

By removing damaged produce from the healthy ones, reduces losses by preventing secondary contamination.

3. Cleaning

Ginger obtained from farmers or market have a lot of dirt as they grow under the ground. They require a thorough cleaning to remove impurities. Cleaning and washing can either be done manually or mechanically depending upon the plant's capacity.

4. Peeling

Peeling is one of the integral parts of a food processing, and the gingers are need to be peeled in order to remove the inedible portion at the initial stage of processing. Not peeling the gingers makes the paste coarse and impacts its taste.

Currently peeling is carried out by various methods which is including manual peeling (knife or blade) or mechanical peeling (abrasive devices, devices with drums, knives or blades etc). Mechanical peeling includes different types of process that interact directly with the skin and then removes the skin. Peeling is followed by another round of washing to remove the left-over peels from the ginger rhizomes.

5. Pulping

The washed and peeled gingers are then made into paste. Crushing machine is used to crush the ginger first. It is then put to pulping machine to obtain a paste of uniform consistency. Automatic Ginger grinding machine can be used for fine semi moist puree and paste.

6. Addition of salt and preservatives

After the ginger paste has been made, other ingredient and seasonings like salt, turmeric, and water (if required) can be added at this stage to obtain desirable flavour and consistency of the paste. Preservatives such as citric acid (0.1-0.3 % w/v) or ascorbic acid (1-4% w/v) can also be added to increase shelf life as both of these reduces antimicrobial activity in commercial ginger paste.

7. Pasteurization

Preservation of culinary paste by application of heat is the most common method. Pasteurization is a process in which paste/puree is heated to 82⁰C or slightly below for a sufficient time to inactivate/kill the micro-organisms, which cause spoilage. Usually, time ranges from 30 sec to 30 min depending on the type of heating system, the nature of paste and the size of the container.

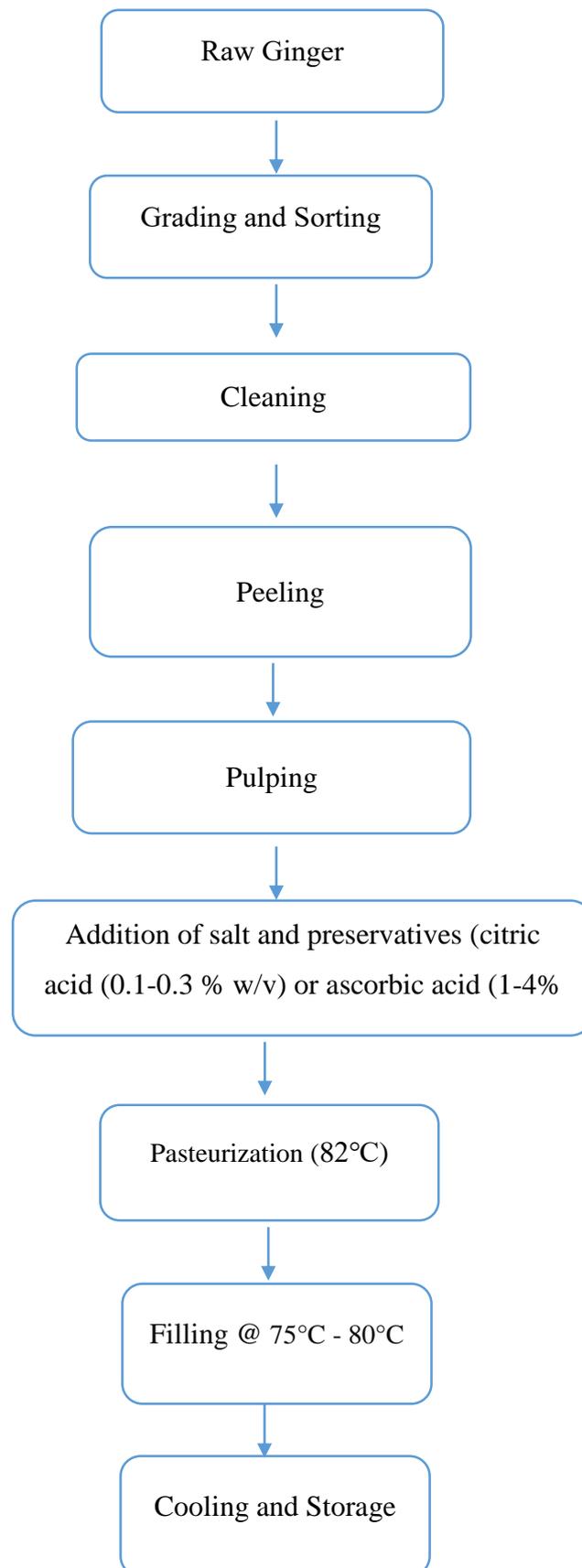
8. Filling

To prevent contamination, the Ginger pastes passes from the receiving tanks to the filling machines at a temperature not lower than 75°C - 80°C. The containers are filled with the paste and immediately sealed to retain the freshness of the product. Ginger paste containers come in various sizes and shapes, including bottles, cans, pouch packs etc.

9. Cooling and Storage

The containers must be cooled to prevent flavour loss through stack burning, which occurs when paste stays at high temperatures after cooking is complete. Containers of ginger paste may be cooled in cold air or cold water. After cooling, proper storage must be done.

2.3 FLOW CHART



2.4 MACHINES USED

1. Industrial bubble washing machine



To remove adhering dirt, to remove latex strains, to remove surface organism if any, wash with 50 ppm chlorine to prevent the microbial contamination

2. Ginger Peeling Machine



This machine is regarded for its high tensile strength and resistance to corrosion. It is durable, seamless in terms of finish and resistant to corrosion. This machine is used for peeling gingers in restaurants and food processing industry.

3. Ginger Grinding Machine



It can grind root vegetable like the fresh or bloated gingers, garlic etc. into paste. Coarseness of the paste can be adjusted.

4. Pasteurizer



The sterilization temperature can be adjusted from 62°C to 85°C for variable minutes. It can eliminate bacteria, yeast and inhibit enzyme activity in paste/puree.

5. Packaging machine



For pouch packaging and sealing Ginger paste pouches of variable sizes.

CHAPTER 3

PACKAGING

3.1. SOURCE OF CONTAMINATION

The major source of sauce contamination is micro-organisms. The microbial load on the product before and after storage should, therefore, be carefully studied in order to avoid deterioration of product. Bacterial flora, fungal growth and yeast are some of the microorganisms frequently observed in packed sauces. As it is containing citric acid, onion paste does not spoil easily. In order to maintain the product's quality more effectively, it is suggested that sauces (and any other processed food) be refrigerated after opening because refrigeration retards spoilage.

3.2 CRITERIA FOR PACKAGING MATERIAL

Packaging enhances the life span of many perishable food items. The package should offer sufficient barrier against light, moisture, gases, and other environmental factors. Apart from this, it should also protect the organoleptic characteristics (quality attributes) of sauces viz. colour, flavour, taste and overall acceptability. The package should prevent emission of off-flavours. The package must be “chemically clean and inert”, and it should be able to perform at high processing speeds. In order to protect leaching out of powerful flavour ingredients through film structures thereby causing de-lamination, chemical resistant adhesives and primers can be used to assure packaging integrity.

3.3 MAJOR CLASSIFICATION OF PACKAGING FOR GINGER PASTE

Primary packing

Secondary packing

Tertiary packing

Primary Packing – is the material that first envelops the product and hold it. This Usually is the smallest unit of distribution or use and is the package which is in direct contact with the contents. For Ginger paste, primary packaging available in the market are:

1. Glass Jars

Bottles/ jars are commonly used for paste/puree and sauce. Glass bottles of various sizes are used and shapes with labels and provided with metal or plastic caps. The glass used for food packaging is soda-lime glass. Most bottles and jars are tailor-made specifically for one product or one manufacturer. Glass containers can be reused or recycled. It eliminates the risk of potentially harmful chemicals found in some plastics that can leach into food. It is now slowly being replaced because of the disadvantages such as heavy weight and brittleness.



2. Stand up Pouches

Introduction of stand-up pouch for paste/puree packing is one of the innovations in the packaging field. This type of packing was designed with the objective to provide a cost effective and consumer friendly alternative to lay flat pouches with easy-pour-out and re-closing facilities. Generally, stand-up pouch is made up of 6 colour reverse printed laminate structure of a 10 μ PET / 120 μ -3 layer PE film, structurally providing the pack contents with physical, chemical and biological protection. Some important features of the stand-up pouch are:

- Value addition through packing
- An easy-to-use pack, which incorporates easy pourability and re-closing in its design
- Unique stand-up format providing greater display capabilities and brand imaging
- Automatic packing



3. Plastic bottles (PET bottles)

PET is clear, tough, and has good gas and moisture barrier properties. Most companies opt for an oval shaped bottle with large mouth for easy dispensing of paste. Its advantages are:

- Clear, shiny and transparent.
- Good barrier properties.
- 100% recyclable.
- Clear and optically smooth surfaces for oriented films and bottles
- Excellent barrier to oxygen, water, and carbon dioxide
- High impact capability and shatter resistance
- Excellent resistance to most solvents



4. Polypropylene (PP) Cups

PP has good chemical resistance, is strong, and has a high melting point making it good for hot-fill liquids. This resin is found in flexible and rigid packaging, fibres, and large moulded parts for automotive and consumer products. Some of its advantages are:-

- Excellent optical clarity in biaxially oriented films and stretch blow moulded containers
- Low moisture vapor transmission
- Inertness toward acids, alkalis, and most solvents



Secondary Packaging

Secondary packaging is used mainly for logistical and storage purposes, to protect and collect individual units. Sometimes is also referred to as grouped or display packaging as they are made to display multiple units of products for sale. This facilitates resupply from the warehouse to the store and includes shelf-ready packaging (SRP), retail-ready packaging (RRP) or counter display units (CDU).

Secondary Packing Available for Ginger paste in market



- Paper boards
- Cartons
- Reusable Plastic Crates

Tertiary packaging

Tertiary packaging is typically not seen by consumers since it is usually removed by retailers before products are displayed for sale. It is one of the three types of wrapping used to protect manufactured goods for shipping or storing. It is used to protect not only the product but also its secondary and primary packaging.



- Used for handling of bulk during storage and transport.
- Carton palletized unit of secondary package. Package for any product is selected based on their characteristics and stability

CHAPTER 4

FOOD SAFETY REGULATIONS AND STANDARDS

4.1 DEFINITION OF STANDARDS - (FOOD PRODUCTS STANDARDS AND FOOD ADDITIVES. REGULATIONS, 2011)

According to FSSAI Standards (Food Products Standards and Food Additives) Regulations, 2011) under **2.3.28 Culinary Pastes / Fruits and Vegetable Sauces Other Than Tomato Sauce and Soya Sauce**

1. Culinary Pastes / Fruits and Vegetable Sauces Other Than Tomato Sauce and Soya Sauce means a culinary preparation used as an adjunct to food, prepared from edible portion of any suitable fruit/vegetable including, roots, tubers & rhizomes, their pulps/purees, dried fruits, singly or in combination by blending with nutritive sweeteners, salt, spices and condiments and other ingredient appropriate to the product.
2. It may contain caramel but shall not contain any other added colour whether natural or synthetic. The product shall conform to the microbiological requirements given in Appendix B. It shall meet the following requirements: -

<i>Name of the Product</i>	<i>Total Soluble Solids (Salt free basis) (m/m)</i>	<i>Acidity % (as acetic acid)</i>
Sauces/ Culinary Paste	Not less than 15.0 percent	Not less than 1.2 percent

3. The container shall be well filled with the product and shall occupy not less than 90 percent of the water capacity of the container, when packed in the rigid containers. The water capacity of the container is the volume of distilled water at 20°C which the sealed container is capable of holding when completely filled.

Table: Microbial Standards for Fruits and Vegetables and their Products – Process Hygiene Criteria

Product Category	Aerobic Plate Count	Yeast and Mold Count	<i>Enterobacteriac eae</i>	<i>Staphylococcus aureus</i> (Coagulase +ve)
	Limits (cfu/g)	Limits (cfu/g)	Limits (cfu/g)	Limits (cfu/g)

	m	M	m	M	m	M	m	M
Thermally processed (other than pasteurization at less than 100°C)	1x10 ² /g	1x10 ³ /g	50/g	1x10 ² /g	Not detectable as per prescribed method		Absent/25g	
Fermented or pickled or acidified or with preservatives	NA	NA	1x10 ² /g	1x10 ³ /g	1x10 ² /g	1x10 ³ /g	10/g	1x10 ² /g

Table: Microbiological Standards for Fruits and Vegetables and their Products-Food Safety Criteria

Product Category	<i>Salmonella</i>	<i>Listeria monocytogenes</i>	Sulphite Clostridia Reducing		<i>E. Coli 0157 and Vero or Shiga toxin producing E coli</i>	<i>Vibrio cholerae</i>
	Limits (cfu/g)	Limits (cfu/g)	Limits (cfu/g)		Limits (cfu/g)	Limits (cfu/g)
	m M	m M	m	M	m M	M
Thermally processed (other than pasteurization at less than 100°C)	Absent/25 g	Absent/25 g	NA	NA	Absent/25 g	Absent/25 g
Fermented or pickled or acidified or with preservatives	Absent/25 g	Absent/25 g	NA	NA	Absent/25 g	Absent/25 g

Use of food additives in food products

Food products may contain additives as specified in these regulations and in the following Table.

Fruits and vegetables				
Food Category System	Food Category Name	Food Additive	INS No	Recommended maximum level
4.2.2.5	Vegetables (including mushrooms and fungi, roots and tubers, pulses and legumes, and aloe vera) sea weeds, nuts and seeds, purees and spreads (peanut butter)	SULFITES		50 mg/kg
		Aspartame	951	1,000 mg/kg
		Acesulfame potassium	950	1,000 mg/kg
		BENZOATES		1,000 mg/kg
		Caramel III - ammonia caramel	150c	50,000 mg/kg
		beta-Carotenes, vegetable	160a(ii)	1,000 mg/kg
		CAROTENOIDS		50 mg/kg
		CHLOROPHYLLS AND CHLOROPHYLINS, COPPER COMPLEXES		100 mg/kg
		ETHYLENE DIAMINE TETRA ACETATES (EDTA)		250 mg/kg
		Grape skin Extract	163(ii)	100 mg/kg
		HYDROXYBENZOATES, PARA-		1,000 mg/kg
		Neotame	961	33 mg/kg
		PHOSPHATES		2,200 mg/kg
		Polydimethylsiloxane	900a	10 mg/kg
		SACCHARINS		160 mg/kg
		SORBATES		1,000 mg/kg
		Steviol glycosides	960	330 mg/kg

		Sucralose (trichlorogalacto sucrose)	955	400 mg/kg
		SULFITES		500 mg/kg

4.2 FOOD SAFETY AND STANDARDS (CONTAMINANTS, TOXINS AND RESIDUES) REGULATIONS, 2011

CONTAMINANTS, TOXINS AND RESIDUES

METAL CONTAMINANTS

1. Chemicals described in monographs of the Indian Pharmacopoeia when used in foods, shall not contain metal contaminants beyond the limits specified in the appropriate monographs of the Indian Pharmacopoeia for the time being in force.
2. Notwithstanding anything contained in clause (1) above, no article of food specified in column (2) of the table below shall contain any metal specified in excess of the quantity specified in column (3) of the said table:

Name of metal contaminant	Article of food	Parts per Million (mg/kg or mg/L)
(1)	(2)	(3)
Lead	Other vegetable	2.5
Cadmium	Other vegetable	1.5

RESIDUES

Restriction on the use of insecticides:

- (1) The expression “insecticide” shall have the meaning assigned to it in the Insecticide Act, 1968 (46 of 1968).
- (2) Subject to the provisions of clause (3), no insecticides shall be used directly on articles of food: Provided that nothing in this regulation shall apply to the fumigants which are registered and recommended for use as such on articles of food by the Registration Committee, constituted under section 5 of the Insecticides Act, 1968 (46 of 1968).

Food	Name of the Insecticide	Maximum Residue Limit (MRL) in mg/kg
Other Vegetables	Captan	15
	Carbaryl	5
	Chlorpyriphos	0.2
	Ethion(Residues to be determined as ethion and its oxygen analogue and expressed as ethion)	1
	Paraquat dichloride (Determined as Paraquatcations)	0.05
	Phosalone	1
	Thiometon(Residues determined as thiometon its sulfoxide and sulphone expressed as thiometon)	0.5

4.3 FOOD SAFETY AND STANDARDS (PACKAGING AND LABELLING) REGULATIONS, 2011

FSSAI 2.1: Packaging 2.1.1: General Requirements

1. A utensil or container made of the following materials or metals, when used in the preparation, packaging and storing of food shall be deemed to render it unfit for human consumption:— (a) containers which are rusty; (b) enamelled containers which have become chipped and rusty; (c) copper or brass containers which are not properly tinned (d) containers made of aluminium not conforming in chemical composition to IS:20 specification for Cast Aluminium & Aluminium Alloy for utensils or IS:21 specification for Wrought Aluminium and Aluminium Alloy for utensils.

2. Containers made of plastic materials should conform to the following Indian Standards Specification, used as appliances or receptacles for packing or storing whether partly or wholly, food articles namely: —

(i) IS: 10146 (Specification for Polyethylene in contact with foodstuffs);

(ii) IS: 10142 (Specification for Styrene Polymers in contact with foodstuffs);

- (iii) IS: 10151 (Specification for Polyvinyl Chloride (PVC), in contact with foodstuffs);
- (iv) IS: 10910 (Specification for Polypropylene in contact with foodstuffs);
- (v) IS: 11434 (Specification for Ionomer Resins in contact with foodstuffs);
- (vi) IS: 11704 Specification for Ethylene Acrylic Acid (EAA) copolymer.
- (vii) IS: 12252 - Specification for Poly alkylene terephthalates (PET).
- (viii) IS: 12247 - Specification for Nylon 6 Polymer;
- (ix) IS: 13601 - Ethylene Vinyl Acetate (EVA);
- (x) IS: 13576 - Ethylene Metha Acrylic Acid (EMAA);
- (xi) Tin and plastic containers once used, shall not be re-used for packaging of edible oils and fats; Provided that utensils or containers made of copper though not properly tinned, may be used for the preparation of sugar confectionery or essential oils and mere use of such utensils or containers shall not be deemed to render sugar confectionery or essential oils unfit for human consumption.

Labelling Requirements

All food products sold in India that are pre-packaged are required to comply with the Food Safety and Standards (Packaging and labelling) Regulations, 2011. The Food Safety and Standards Regulation, 2011 is a notification issued by the Food Safety and Standards Authority of India under the Ministry of Health and Family Welfare.

Applicability of Food Labelling Regulations

The food labelling regulations require all “Pre-packaged” or “Pre-packed food” to comply with the labelling regulations in India. As per the rules, pre-packaged food means food, which is placed in a package of any nature, in such a manner that the contents cannot be changed without tampering it and which is ready for sale to the consumer.

General Labelling Requirements

The following labelling requirements must be complied with by all pre-packaged food sold in India:

- The label must be in English or Hindi or Devnagri language. In addition to the above, the label can contain information in any other language, as required.

- The label must not contain information about the food that could be deemed to be false, misleading, deceptive or otherwise create an erroneous impression regarding the product.
- The label must be affixed to the container in such a manner that it would not easily be separated from the container.
- The contents or information presented in the label should be clear, prominent, indelible and readily legible by the consumer.
- If the container is covered by a wrapper, then the wrapper must contain necessary information or make the label of the product inside readily legible by not obscuring.
- The name of the food must be mentioned along with the trade name and description of the food contained. In case the food contains more than one ingredient, then a list of ingredients must be presented in descending order of their composition by weight or volume, as the case may be, at the time of its manufacture;

Nutritional Information

- Nutritional Information or nutritional facts per 100 gm or 100ml or per serving of the product must be given on the label along with the following information:
 - energy value in kcal;
 - the amounts of protein, carbohydrate (specify the 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:

It is important to note that any “health claim” or “nutrition claim” or “risk reduction” claim made in the label will be thoroughly scrutinized by the FSSAI authorities. Hence, any such claim must be validated by test data. As per the rules, the following is the definition for “health claim”, “nutrition claim” and “risk reduction” claim:

- **“Health claims”** means any representation that states, suggests or implies that a relationship exists between a food or a constituent of that food and health and include nutrition claims which describe the physiological role of the nutrient in growth, development and normal functions of the body, other functional claims concerning specific beneficial effect of the consumption of food or its constituents, in the context of the total diet, on normal functions or biological activities of the body and such

claims relate to a positive contribution to health or to the improvement of function or to modifying or preserving health, or disease, risk reduction claim relating to the consumption of a food or food constituents, in the context of the total diet, to the reduced risk of developing a disease or health-related condition;

- **“Nutrition claim”** means any representation which states, suggests or implies that a food has particular nutritional properties which are not limited to the energy value but include protein, fat carbohydrates, vitamins and minerals;
- **“Risk reduction”** in the context of health claims means significantly altering a major risk factor for a disease or health-related condition

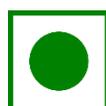
Veg or Non-Veg Symbol

All packaged food that is “Non-Vegetarian” must have a symbol that is a brown colour filled circle inside a square with a brown outline. If a food contains only egg as a non-vegetarian ingredient, then the manufacturer may provide a declaration that the product contains only egg and add the non-vegetarian symbol



Non-Veg Symbol

Packaged vegetarian food should have a symbol that consist of green colour filled circle inside a green square.



Vegetarian Symbol

Information Relating to Food Additives, Colours and Flavours

Food additives contained in the food product must be mentioned along with class titles along with the specific names or recognized international numerical identifications. Addition of colouring matter should be mentioned on the label along with certain statements like “CONTAINS PERMITTED NATURAL COLOUR(S)”, just beneath the list of the ingredients on the label. In case of addition of extraneous flavouring agent, then it should be mentioned in

a statement like “CONTAINS ADDED FLAVOUR” just beneath the list of ingredients on the label.

Name and Complete Address of the Manufacturer

The name and complete address of the manufacturer must be mentioned on every package of food. In the case of imported food, the package must contain the name and complete address of the importer in India.

Net Quantity

All packaged food must carry the net quantity by weight or volume or number, as the case may be. The net quantity of the commodity contained in the package must exclude the weight of the wrappers and packaging materials.

Lot Number of Batch Identification

A lot number or batch number or code number must be mentioned on all packaged food so that it can be traced while manufacturing and distribution. Only bread and milk including sterilised milk are not required to comply with this regulation.

Date of Manufacture or Packing

The date, month and year in which the commodity is manufactured, packed or pre-packed must be mentioned on the label. In the case of food products having a shelf life of more than three months, then the month and the year of manufacture can be given with the “Best Before Date”. In case of products having a shelf life of fewer than three months, the date, month and year in which the commodity is manufactured or prepared or pre-packed must be mentioned on the label with best before date.

Country of Origin for Imported Food

For imported food, the country of origin of the food should be declared on the label of the food. In case a food product undergoes processing in a second country which changes its nature, the country in which the processing is performed should be considered to be the country of origin for the purposes of labelling.

Instructions for Use

Instructions for use, including reconstitution, should be included on the label, if necessary, to ensure correct utilization of the food.

4.4 SANITARY AND HYGIENIC REQUIREMENTS FOR FOOD, MANUFACTURER/PROCESSOR/HANDLER

The place where food is manufactured, processed or handled shall comply with the following requirements:

1. The premises shall be located in a sanitary place and free from filthy surroundings and shall maintain overall hygienic environment. All new units shall set up away from environmentally polluted areas.
2. The premises to conduct food business for manufacturing should have adequate space for manufacturing and storage to maintain overall hygienic environment.
3. The premises shall be clean, adequately lighted and ventilated and sufficient free space for movement.
4. Floors, Ceilings and walls must be maintained in a sound condition. They should be smooth and easy to clean with no flaking paint or plaster.
5. The floor and skirted walls shall be washed as per requirement with an effective disinfectant the premises shall be kept free from all insects. No spraying shall be done during the conduct of business, but instead fly swats/ flaps should be used to kill spray flies getting into the premises. Windows, doors and other openings shall be fitted with net or screen, as appropriate to make the premise insect free. The water used in the manufacturing shall be potable and if required chemical and bacteriological examination of the water shall be done at regular intervals at any recognized laboratory.
6. Continuous supply of potable water shall be ensured in the premises. In case of intermittent water supply, adequate storage arrangement for water used in food or washing shall be made.
7. Equipment and machinery when employed shall be of such design which will permit easy cleaning. Arrangements for cleaning of containers, tables, working parts of machinery, etc. shall be provided.
8. No vessel, container or other equipment, the use of which is likely to cause metallic contamination injurious to health shall be employed in the preparation, packing or storage of food. (Copper or brass vessels shall have proper lining).
9. All equipments shall be kept clean, washed, dried and stacked at the close of business to ensure freedom from growth of mould/ fungi and infestation.

10. All equipments shall be placed well away from the walls to allow proper inspection.
11. There should be efficient drainage system and there shall be adequate provisions for disposal of refuse.
12. The workers working in processing and preparation shall use clean aprons, hand gloves, and head wears.
13. Persons suffering from infectious diseases shall not be permitted to work. Any cuts or wounds shall remain covered at all time and the person should not be allowed to come in direct contact with food.
14. All food handlers shall keep their finger nails trimmed, clean and wash their hands with soap, or detergent and water before commencing work and every time after using toilet. Scratching of body parts, hair shall be avoided during food handling processes.
15. All food handlers should avoid wearing, false nails or other items or loose jewellery that might fall into food and also avoid touching their face or hair.
16. Eating, chewing, smoking, spitting and nose blowing shall be prohibited within the premises especially while handling food.
17. All articles that are stored or are intended for sale shall be fit for consumption and have proper cover to avoid contamination.
18. The vehicles used to transport foods must be maintained in good repair and kept clean.
19. Foods while in transport in packaged form or in containers shall maintain the required temperature.
20. Insecticides / disinfectants shall be kept and stored separately and away from food manufacturing / storing/ handling areas.



Contact Us

Director,

Indian Institute of Food Processing Technology (IIFPT)

(Ministry of food processing industries, Government of India)

Pudukkottai Road, Thanjavur 613005, Tamil Nadu.

Phone No: +91-4362-228155, Fax No: +91 4362 227971

Email: director@iifpt.edu.in Website: www.iifpt.edu.in

