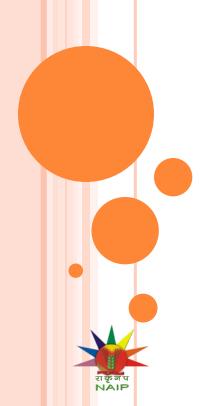
# FOOD LAWS, STANDARDS AND REGULATIONS

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# Food Laws (PFA, FPO, MMPO, Agmark, BIS & FSSAI)



#### **Food laws and Regulations**

#### Objective

To meet a country's sanitary and phytosanitary requirements, food must comply with the local laws and regulations to gain market access.

These laws ensure the safety and suitability of food for consumers.

Factors on which it depends

In some countries food laws also govern food quality and composition standards

Contd.....



#### Food laws and Regulations

The requirement of food regulation may be based on several factors such as

whether a country adopts international norms developed by the Codex Alimentarius Commission of the Food and Agriculture Organization of the United Nations

and the World Health Organization or a country may also has its own suite of food regulations.

Each country regulates food differently and has its own food regulatory framework.



Previous

#### Food laws in our country

The Indian Parliament has recently passed the *Food Safety and Standards Act, 200*6 that overrides all other food related laws. Such as;

Prevention of Food Adulteration Act, 1954

Fruit Products Order, 1955

Meat Food Products Order ,1973;

Vegetable Oil Products (Control) Order, 1947

Edible Oils Packaging (Regulation) Order 1988

Solvent Extracted Oil, De-Oiled Meal and Edible Flour (Control) Order, 1967,

Milk and Milk Products Order, 1992 etc are repealed after commencement of FSS Act, 2006.



#### Food Safety and Standards Authority of India (FSSAI)

The Food Safety and Standards Authority of India (FSSAI) has been established under Food Safety and Standards Act, 2006

which consolidates various acts & orders that have hitherto handled food related issues in various Ministries and Departments.

FSSAI has been created for laying down science based standards for articles of food and



to regulate their manufacture, storage, distribution, sale and import to ensure availability of safe and wholesome food for human consumption.



#### Functions performed by FSSAI

- Framing of Regulations to lay down the Standards and guidelines in relation to articles of food and specifying appropriate system of enforcing various standards.
- •Laying down mechanisms and guidelines for accreditation of certification bodies engaged in certification of food safety management system for food businesses.
  - •Laying down procedure and guidelines for accreditation of laboratories and notification of the accredited laboratories.
  - •To provide scientific advice and technical support to Central Government and State Governments in the matters of framing the policy and rules in areas which have a direct or indirect bearing of food safety and nutrition.

Contd.....



End

#### Functions performed by FSSAI

- Collect and collate data regarding food consumption, incidence and prevalence of biological risk, contaminants in food, residues of various, contaminants in foods products, identification of emerging risks and introduction of rapid alert system.
- Creating an information network across the country so that the public, consumers, Panchayats etc receive rapid, reliable and objective information about food safety and issues of concern.
  - Provide training programmes for persons who are involved or intend to get involved in food businesses.
- Contribute to the development of international technical standards for food, sanitary and phyto-sanitary standards.

Previous



 Promote general awareness about food safety and food standards

#### **Bureau of Indian Standards (BIS)**

The Bureau of Indian Standards (BIS), the National Standards Body of India, resolves to be the leader in all matters concerning Standardization, Certification and Quality.

#### **Main Activities**

Harmonious development of standardization, marking and quality certification

To provide new thrust to standardization and quality control.

To evolve a national strategy for according recognition to standards and integrating them with growth and development of production and exports.



#### Bureau of Indian Standards (BIS)

#### **Main Activities**

Certification

To Product

Hallmarking of Gold Jewellery.

**Quality Management System** 

**Environmental Management Systems** 

Occupational Health and Safety Management System

Food Safety Management System

Hazard Analysis and Critical Control Points

Imported Products

\_aboratory Management

International Activities

**Training Services** 



#### AGMARK

The Directorate of Marketing and Inspection enforces the Agricultural Produce (Grading and Marketing) Act, 1937. Under this Act Grade standards are prescribed for agricultural and allied.

#### AGMARK is a

**Quality Certification Mark.** 

It ensures quality and purity of a product.

It acts as a Third Party Guarantee to Quality Certified.

Quality standards for agricultural commodities are framed based on their intrinsic quality.

Food safety factors are being incorporated in the standards to complete in World Trade.



#### **AGMARK**

Standards are being harmonized with international standards keeping in view the WTO requirements. Certification of agricultural commodities is carried out for the benefit of producer/manufacturer and consumer.

Products available under AGMARK are as follows:-

**Pulses** 

Whole spices & ground spices

Vegetable oils

Wheat Products

Milk products.

Other products such as Honey, Compounded asafetida, Rice, Tapioca Sago, Seedless tamarind, Besan (Gram flour)



#### Fruit Product Order (FPO), 1955

Objective

The main objective is lay down quality standards to manufacture fruit & vegetable products maintaining sanitary and hygienic conditions in the premises.

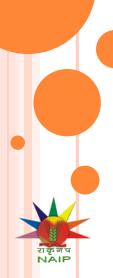
It is mandatory for all manufacturers of fruit and vegetable products including some non fruit products like non fruit vinegar, syrup and sweetened aerated water to obtain a license under this Order.



#### Fruit Product Order (FPO), 1955

Following minimum requirements are laid down in the Fruit Product Order for hygienic production and quality standards:

- Location and surroundings of the factory
- Sanitary and hygienic conditions of premises
- Personnel hygiene
- Portability of water
- Machinery & Equipment with installed capacity
- Quality control facility & Technical staff
- Product Standards
- Limits for preservatives & other additives



#### Fruit Product Order (FPO), 1955

- •Fruit product means any of the following articles, namely
  - Non fruit beverages, syrups and sherbets
  - ·Vinegar, whether brewed or non-fruit
  - Pickles
  - Dehydrated fruits and vegetables
  - •Squashes, crushes cordials, barley water, barreled juice, and ready to serve beverages, fruit nectars or any other beverages containing fruit juices or fruit pulp
  - Jams, jellies and marmalades
  - Tomato products, ketchup and sauces
  - Preserves, candied and crystallized fruit and peel
  - Chutneys
  - Canned and bottled fruits, juices and pulps
  - Canned and bottled vegetables
  - •Frozen fruits and vegetables
  - Sweetened aerated water and without fruit juice pr fruit pulp
  - •All unspecified fruit and vegetable products which are considered microbiologically safe and contains only permitted additives within permissible limits.

End Previous Next

#### Fruit Product Order (FPO), 1955

Each container in which any fruit product is packed shall specify a code number indicating the lot or the date of manufacture of such fruit product.

No person can carry on the business of a manufacturer except under and in accordance with the terms of an effective license granted to him under this Order in Form B and shall not use the License number on labels of non-fruit products.FPO mark should be printed on the label with license number.

The labels shall not contain any statement, claim, design or device which is false or misleading in any particular concerning the fruit products contained n the package or concerning the quantity or the nutritive value or in relation to the place of origin of the said fruit products.



#### **Meat Food Products Order (MFPO)**

#### Objectives:

The main objective is to regulate production and sale of meat food products through licensing of manufacturers, enforce sanitary and hygienic conditions prescribed for production of wholesome meat food products, exercise strict quality control at all stages of production of meat food products, fish products including chilled poultry etc.

Meat & Meat Products are highly perishable in nature and can transmit diseases from animals to human-beings.

Processing of meat products is licensed under Meat Food Products Order, (MFPO) 1973 which was hitherto being implemented by Ministry of food Processing industries

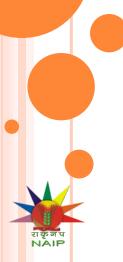


End

#### **Meat Food Products Order (MFPO)**

Contd....

Under the provision of MFPO all manufacturers of meat food products engaged in the business of manufacturing, packing, repacking, relabeling meat food products meant for sale are licensed but excluding those manufacturers who manufactures such products for consumption on the spot like a restaurant, hotel, boarding house, snack bar, eating house or any other similar establishment.



#### Milk and Milk Product order (MMPO)

The objective of the order is to maintain and increase the supply of liquid milk of desired quality in the interest of the general public and also for regulating the production, processing and distribution of milk and milk products.

As per the provisions of this order, any person/dairy plant handling more than 10,000 liters per day of milk or 500 MT of milk solids per annum needs to be registered with the Registering Authority appointed by the Central Government.

In every case where the milk or milk product is packed by the holder of a registration certificate in a tin, barrel, carton or any other container, the registration number shall either be exhibited prominently on the side label of such container or be embossed, punched or printed prominently thereon.



#### Prevention of Food Adulteration Act, 1954

•The Act was promulgated by Parliament in 1954 to make provision for the prevention of adulteration of food. Broadly, the PFA Act covers food standards, general procedures for sampling, analysis of food, powers of authorized officers, nature of penalties and other parameters related to food.

•It deals with parameters relating to food additives, preservative, colouring matters, packing & labelling of foods, prohibition & regulations of sales etc. The provisions of PFA Act and Rules are implemented by State Government and local bodies as provided in the rules.

In every case where the milk or milk product is packed Prevention of Food Adulteration Act, 1954 is repealed from 05.08.2011by the Central Government as per the Food Safety and Standards Act, 2006.



#### Prevention of Food Adulteration Act, 1954

The act clearly defines "What is meant by Food Adulteration and what is the punishment given to person/manufacturer involved in the crime?

The food is considered adulterated if it fulfills any of the below -

•If food is sub-standard rotten, decomposed or obtained from diseased animal or is insect- infested or is otherwise unfit for human consumption.

If food contains any other substance which affects, or if the article is so processed as to affect, injuriously the nature, substance or quality thereof

if the article has been prepared, packed or kept under insanitary conditions whereby it has become contaminated or injurious to health;



#### Prevention of Food Adulteration Act, 1954

if any constituent of the article has been wholly or in part abstracted so as to affect injuriously the nature, substance or quality thereof.

if the article contains any poisonous or other ingredient which renders it injurious to health

if any colouring matter other than that prescribed in respect thereof is present in the article, or if the amounts of the prescribed colouring matter which is present in the article are not within the prescribed limits of variability

if the article contains any prohibited preservative or permitted preservative in excess of the prescribed limits;

if the quality or purity of the article fall. below the prescribed standard or its constituents are present in.

End Previous

# Indian Standards on Food Safety

### Product Standards

## Voluntary

Examples

IS 5346: 1994

Synthetic food colour -Preparations and mixtures -Specification (second revision)

IS 4467: 1996

Caramel - Specification (second revision)

IS 1011: 2002

Biscuits - Specification (fourth revision)

IS 1008: 2004

Sugar boiled confectionery (second revision)

## Mandatory

Examples

IS 1165: 2002

Milk powder

IS 1656: 2007

Milk-cereal based weaning foods

IS 14433: 2007

Infant milk substitute, Milk protein based

IS 13428 : 2005

Packaged Natural Mineral Water

IS 14543: 2004

Packaged Drinking Water (Other than Packaged Natural Mineral Water)

#### **Process Standa**

Examples

1S/1S0 22000:2005

Food safety management systems —Requirements for any organization in the food chain

IS 16019: 2012

Food Retail Management — Basic Requirements

IS 16020: 2012

Food Safety Management – Requirements for Good Hygiene Practices

IS 16021 : 2012

Good Manufacturing
Practices (GMP) —
Requirements for
Organizations in the Food
Processing Sector

SOME ACTS/ REGULATIONS/ CONTROL ORDERS TO REGULATE TRADE IN INDIA	AGENCIES INVOLVED	
>Prevention of Food Adulteration Act 1954 >(on the pattern of USFDA)	Directorate General of Health Services	
Plant Quarantine (Regulation of Import into India) Order, 2003	Department of Agriculture & Cooperation	
>Insecticides Act	Deptt. Of Agriculture and co-operation	
Fruit Products Order, 1955	Ministry of Food Processing Industries	
Meat Food Product Order 1973	Ministry of Food Processing Industries	
Milk and Milk Product Order 1992	Directorate General of Health Services	
>Standards on Weight and Measurement Act 1976	Department of Legal Metrology	
>Bureau of Indian Standards act, 1986	Department of Consumer Affairs, Govt. of India	
>AGMARK Act 1937	Directorate of Marketing and Inspection	

SOME ACTS/ REGULATIONS/ CONTROL ORDERS TO REGULATE TRADE IN INDIA	AGENCIES INVOLVED
Drugs & Cosmetics Rules	Ministry of Health & Family Welfare
>Textiles Regulation 1988	Ministry of Textiles
>Export (Quality Control and Inspection) Act, 1963	Export Inspection Council of India
▶Indian Explosives Act,1884	Chief Controller of Explosives
>Mines Act	Directorate General of Mines Safety



ACTS/ REGULATIONS/ CONTROL ORDERS To regulate trade through Mandatory Certification by BIS	PRODUCTS
Prevention of Food Adulteration Act 1954	Infant Milk Products, Packaged Drinking Water and Natural Mineral Water
The Infant Milk Substitutes, Feeding Bottles and Infant Foods (regulation of production, supply and distribution), Act	Plastic Feeding Bottles
Bureau of Indian Standards Act, 1986	Electrical Wires, Cables, Appliances and Protection Devices and Accessories
Indian Explosive Act,1884	Gas Cylinders
Bureau of Indian Standards Act, 1986	Clinical Thermometers
Essential Commodities Act,1955	Pressure stoves, Steel Tubes
Environment (Protection), Act 1986	Compression ignition (diesel) engine
Bureau of Indian Standards Act, 1986	Cement

# FOOD STANDARDS

•Permissible limits

#### SAFETY OF SUGARS

- Sugars, including glucose, dextrose, fructose, sucrose, high fructose corn syrup, lactose, and maltose, are "generally recognized as safe" as per US FDA
- Inst of Medicine (2002) recommends calories from carbohydrates 45-65% of total. Very high intakes of sugars associated with lower micronutrient intakes. Max. sugar intake recommended 25%
- WHO & FAO (2003) recommended free sugars not more than 10% of total calories stating epidemiologic, economic, social impacts besides scientific reasons
- Anderson 1997: Except in dental caries, sugars are not cause of chronic or acute diseases, confirmed by Mardis 2001



### SUGAR ALCOHOLS OR POLYOLS

50 - 70%

60 - 80%

25 - 50%

	Calories per gram	Approximate Sweetness (sucrose =100%)	Typical Food Applications
Sorbitol	2.6	50 - 70%	Sugar-free candies, chewing gums, frozen desserts and baked goods
Xylitol	2.4	100%	Chewing gum, gum drops and hard candy, pharmaceuticals and oral health products, such as throat lozenges, cough syrups, children's chewable multivitamins, toothpastes and mouthwashes; used in foods for special dietary purposes
Maltitol	2.1	75%	Hard candies, chewing gum, chocolates, baked goods and ice cream
Isomolt	2.0	15 - 65%	Candies, toffee, lollipops, fudge, wafers, cough drops, throat

lozenges

candy and frozen dairy desserts

**Bulk sweetener in low calorie foods** 

and bulk to a variety of sugarless products

Chocolate, some baked goods (cookies and cakes), hard and soft

Dusting powder for chewing gum, ingredient in chocolate-

Bulk sweetener in low calorie foods, provide sweetness, texture

flavored coating agents for ice cream and confections

Xylitol	2.4	100%	
Maltitol	2.1	75%	
Isomalt	2.0	45 - 65%	

2.0

1.6

0 - 0.2\*

3

Lactitol

**Mannitol** 

**Erythritol** 

**Hydrogenated Starch** 

**Hydrolysates (HSH)** 

## SUGAR ALCOHOLS

- They are incompletely absorbed and metabolised in body so fewer calories
- Most polyols less sweet than sugar so require in bulk quantity for same sweetness
- Although they occur naturally in many fruits & vegetables, commercially produced from sucrose, glucose & starch by hydrogenation
- They are partially absorbed and most are converted to energy using mechanism requiring little insulin & do not raise blood glucose much
- Since incompletely absorbed they may cause laxative effect if consumed in large quantities (ADL advises >50g sorbitol or >20g mannitol per day may cause diarrhea)
- Erythritol may be more completely absorbed and may be excreted as such through urine so v little calories and less laxative effect
- Bacteria in mouth cannot grow on polyols they do not cause tooth decay

### **SWEETENERS**

- Saccharin: carbonated water 100 ppm to chocolates & Indian traditional sweets 500ppm to sugar based/sugar-free confectionery & chewing gum/bubble gum 3000ppm
- **Aspartame:** carbonated water 700 ppm, biscuit, bread, cakes 2000 ppm, Indian sweets 200 ppm, jams jellies 1000 ppm, sugar based/free confectionery 10000, ice cream 1000 ppm, flavoured milk 600 ppm, RTE cereal 1000 ppm, still beverages 600 ppm
- Acesulfame K: carbonated water 300 ppm, biscuits, cakes etc. 1000 ppm, Indian sweets 500 ppm, sugar based/free confectionery 3500 ppm, still beverages 300 ppm
- Sucralose: carbonated water 300 ppm, biscuits, cakes 750 ppm, Indian sweets 750 ppm, still beverages 300 ppm, jams jellies 450 ppm, ice lollies/candies 800 ppm
- Neotame: carbonated water & soft drink conc.
   33 ppm
- Mixture of Aspartame & Acesulfame K allowed in carbonated water, soft drink conc., & synthetic syrup for dispenser

## SUGAR ALCOHOLS (POLYOLS)

• Following polyols have been permitted

Sorbitol

Mannitol

**Xylitol** 

Isomalt

Lactitol

Maltitol



Label declaration necessary:

Polyols may have laxative effect

#### FOODS

S.No.	Additives	Snacks/Saoutiries (Fried Products):- Chiwda, Bhujia, Dalmoth, Kadubale, Kharaboondi, Spiced & fried dals, banana chips and similar fried products sold by any name	Sweets (Carbohydrates based and Milk product based): Halwa, Mysore Pak, Boondi Ladoo, Jalebi, Khoya Burfi, Peda, Gulab Jamun, Rasogolla, and Similar milk product based sweets sold by any name	Instant Mixes:- Idli mix, dosa mix, puliyogare mix, pongal mix, gulab jamoon mix, jalebi mix, vada mix	Rice and Pulses based Papads	Ready-to-Serve Berverages Tea/Coffee based	Chewing gum/Bubble gum	Sugar based/Sugar free confectionery	Chocolates	Synthetic syrup for dispensers	Lozenges
1	2	3	4	5	6	7	8	9	10	11	12
F. Po	olyols (singly o	or in combin	nation)								
1.	Sorbito1	_	GMP	_	-	_	GMP	GMP	GMP	_	GMP
2.	Manitol	_	GMP	-	-	-	GMP	GMP	GMP	_	GMP
3.	Xylitol	-	GMP	_	-	_	GMP	GMP	GMP	-	GMP
4.	Is <b>o</b> malt	-	-	_	-	-	GMP	GMP	GMP	_	GMP
5.	Lactito1	-	-	-	-	-	GMP	GMP	GMP	_	GMP
6.	Maltitol	-	-	-	-	-	GMP	GMP	GMP	_	GMP

Sorbitol is permitted in jams, jellies, fruit cheese, fruit marmalades 3% max

#### MICROBIAL LIMITS

The presence of <u>Salmonella</u> on fresh fruits or vegetables or in ready-to-eat meat or poultry products will render those products adulterated. Microbial limits-zero organisms Coliform-Nil

## E. coli <u>O157:H7</u>-Nil

# Listeria monocytogenes-Nil

E. coli O157:H7 is the only pathogen that is considered an adulterant when present in raw

meat or poultry products.

#### COLOURS

• In India, Rule 26 of The Prevention of Food Adulteration Act, 1954 (PFA) and The Prevention of Food Adulteration Rules, 1955 & 1999 permit following colours whether isolated from natural sources or produced synthetically in food items:

#### COLOURS USED IN FOODS

- Annatto (Yellow/Orange);
- Carotene (Orange);
- Beetroot (Pink/blue/red);
- Chlorophyll (Green);
- Beta Carotene (Yellow/Orange)
- Chlorophyllin (Green);
- Capsanthin (Red/Orange);
- Curcumin (Yellow);
- Carmine (Red);
- Lycopene (Reddish orange);
- Carminic Acid (Orange/Red);
- Lutein (Yellow);
- Anthocynin (Red/Purple);
- Vegetable carbon (Black)

### PERMITTED SYNTHETIC COLOURS

S. No.	Colour	Common name	Colour Index	Chemical Class
1.	Red	Ponceau 4R	16255	Azo
		Carmoisine	17420	Azo
		Erythrosine	45430	Xanthene
2.	Yellow	Tartrazine	19140	Pyrazolone
		Sunset Yellow FCF	15985	Azo
3.	Blue	Indigo Carmine	73015	Indigoid
		Brilliant Blue FCF	42090	TriaryImethane
4.	Green	Fast Green FCF	42053	Triarylmethane

#### MAXIMUM LIMIT

• Maximum limit of the permitted colour (Rule 30) shall not exceed 100 or 200 ppm of the final food or beverage for consumption. The colours should be pure and free from any harmful impurities (Rule 31)

# PRESERVATIVES: CLASSIFICATION OF FOOD PRESERVATIVES

- Class-I preservatives (NaturalPreservatives)
- Naturally occurring substances, generally used
- o in kitchen Man-made chemical substance
- No restriction or limitation on use as naturally
- o occurring Used in limited quantity
- No need to be cautious in using them, so better
- to choose product containing these type of
- preservatives Risk in use as they are chemicals
- o Salt, Sugar, Vinegar, Alcohol Benzoic acid, sulfite, sorbate
- Table 1. Classification of Preservatives

# CLASS-II PRESERVATIVES (ARTIFICIAL PRESERVATIVES)

- Man-made chemical substance
- Used in limited quantity
- Risk in use as they are chemicals
- Benzoic acid, sulfite, sorbate

# HARMFUL EFFECTS OF FOOD PRESERVATIVES:

- Preservatives such as EDTA and Nitrites increase the risk of cancer.
- Sulfite preservatives may cause asthma symptoms. Nowadays FDA prohibited the
- use of sulfites preservatives as it causes respiratory diseases.
- According to a 2007 study published in the journal "Lancet." Use of sodium benzoate
- causes hyperactivity in children's.
- A number of food preservatives are banned because of severe health problems
- o associated with them.
- Alzheimer's disease, an irreversible neurological disease that causes cognitive
- deterioration and metabolic diseases is caused due to excess consumption of
- preservatives.

# PRESERVATIVE:

• Preservatives	Acceptable	Daily intake
0	(mg/Kg body weigh	nt) Commonly used levels (%)
<ul><li>Lactic Acid</li></ul>	No limit	No limit
<ul><li>Citric acid</li></ul>	No limit	No limit
<ul><li>Acetic acid</li></ul>	No limit	No limit
o Sodium Diaceta	ate 15	0.3-0.5
o Sodium benzoa	te 5	0.03 - 0.2
o Sodium propion	nate 10	0.1-0.3
• Potassium sorb	ate 25	0.05 - 0.2
• Methyl parabet	n 10	0.05 - 0.1
• Sodium nitrite	0.2	0.01 - 0.02
<ul> <li>Sulphur dioxid</li> </ul>	e = 0.7	0.005 - 0.2

### PESTICIDE LIMITS

Commodity name	MRL(Max.residue limit)	(mg/kg)
Barley	0.01	
Broccoli	0.02	
Broccoli	0.05	
Chicken meat	0.1	
Chicken, Edible offal of	0.1	
Peanut, Whole	0. 5	
Potato	0.05	
Cattle milk	0.008	
Grapes	0.1	
Apple	0.05	
Tomato	0.5	
Cotton seed oil	0.05	
Watermelon	0.05	
- 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		

#### **Drinking Water**

10% of the ADI (Acceptable daily limits)—0.002 is allocated to drinking water.

## NEW REGULATION GSR 664

The 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:-

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



THANK YOU