9 Food Laws and Regulations

Contents

All food business operators (FBO's) are aware that quality of their products is important for their survival in today's competitive market. Every nation needs an effective food legislation and food control service to promote a safe, wholesome, hygienic and nutritious food supply and to protect consumers from contaminated, adulterated, and spoiled foods. With the increase in global trade in food products, international organizations for food laws and regulations have become mandatory. The knowledge of food laws and regulation, fortification, additives and labelling are essential for the students. Therefore the objectives of the same are outlined as under;

- To impart knowledge to the students on various acts, rules, regulations, standards, orders and laws related to food articles governing their manufacturing, import, export, storage, distribution and sale.
- To know and understand the various national and international standards for different food articles in detail.
- To understand the food regulation mechanism in our country.
- To become aware of the present scenario related to food fortification, additives and labelling.

Food standards :

Standards are essential to ensure that products and services have desirable characteristics such as quality, safety, etc.

- To protect people from health hazards of consuming unsafe food.
- It is necessary to impose control and check over the quality of food available to the consumer.

In this regard, food standards play a vital role. Violation of these acts is against the law and any person who fails to comply with these acts may have to pay a heavy fine.

9.1 INDIAN STANDARDS

Details of some Indian standards are as follow :

9.1.1 Bureau of Indian Standards (BIS):

The Bureau of Indian Standards (BIS) is the national standards body of India which was established under the Bureau of Indian Standards Act, 1986. To protect consumer's interest, BIS operates a product certification scheme which provides 'ISI mark' for certification of processed food items. ISI certification is compulsory for certain food items such as condensed milk, milk powder, infant milk substitute, infant food, packaged drinking water and mineral water, etc.

Fig 9.1 BIS and AGMARK logo

9.1.2 Agricultural Produce (Grading and Marketing) Act, 1937 (AGMARK):

AGMARK is a certification mark employed on agricultural products in India, assuring that they conform to a set of standards approved by the Directorate of Marketing and Inspection, an agency of the Government of India. It promotes standardization, grading and quality control of agricultural produce.

9.1.3 The Food Safety and Standards Act (FSSA), 2006:

It is a consolidating statute related to food safety and regulation in India. Food Safety and Standards Authority of India (FSSAI) is an autonomous body established under the Ministry of Health & Family Welfare,

fssai
FOOD SAFETY AND STANDARDS AUTHORITY OF INDIA
Inspiring Trust, Assuring Safe & Nutritious Food
Ministry of Health and Family Welfare, Government of India

Fig 9.2 : FSSAI logo

Government of India. FSSAI is responsible for protecting and promoting public health through the regulation and supervision of food safety.

FSSAI was established on 5th August 2011 under Food Safety and Standards Act, 2006 which was operationalized in year 2006. The FSSAI has its headquarters at New Delhi. The authority also has 6 regional offices located in Delhi, Guwahati, Mumbai, Kolkata, Cochin, and Chennai.

The main aims of FSSAI are:

1. Lay down science-based standards for articles of food
2. To regulate manufacture, storage, distribution, import and sale of food
3. To facilitate safety of food

The FSS Act is a bucket for all the older laws, rules and regulations for food safety. The FSS Act took 7 older acts into one umbrella, those are;

1. Prevention of Food Adulteration Act, 1954 and rules, 1955
2. Agriculture Produce (Grading and Marketing) Act, 1937
3. Bureau of Indian Standard (BIS) Act, 1986
4. The standards of weight and measures act, 1976 (Packaged Commodities Rules, 1977)
5. Environment Protection Act, 1986 and Rules, 1989
6. Export (Quality control and Inspection) Act, 1963
7. Essential Commodities Act, 1955
   All Orders under Essential Commodities Act
   a. Fruit Product Order, 1955
   b. Vegetable Oil Products (Regulation) Order, 1998
   c. Solvent Extracted Oil, De-oiled Meal and Edible Flour (Control) Order, 1976.
   d. Meat Product Control Order, 1973
   e. Edible Oil Packaging (Developments and Regulation) Order, 1998
   f. Milk and Milk Products Order, 1992

9.2 INTERNATIONAL STANDARDS

9.2.1 Codex Alimentarius (Codex Standards):

It is a collection of internationally recognized standards, codes of practice, guidelines, and other recommendations relating to foods, food production, and food safety.

CODEX ALIMENTARIUS
International Food Standards
World Health Organization
Food and Agriculture Organization of the United Nations

Fig 9.3 : Codex alimentarius logo

It was established in early November 1961 by the Food and Agriculture Organizations (FAO) of the united nation, was joined by World Health Organisation (WHO) in June 1962.

Codex standards have been formulated to:

1. Protect the health and well being of consumers
2. Ensure fair practices in the food trade
3. Helps to harmonize all the work done by international governmental and non-governmental organizations in preparing food standards.

9.2.2 International Organization for Standardization (ISO) Standards:

It is an international standard. The setting body is composed of representatives from various national standards organizations. Its headquarter is in Geneva, Switzerland. The industry achieves its certification through an audit process done by an independent accreditation agency approved by the International body. There are number of ISO standards as per requirement of the food business operator (FBO).

- ISO 9000 (Quality Management System)
- ISO 14000 (Environmental Management System)
- ISO 22000 (Food Safety Management System)

Fig 9.4 : ISO logo

9.3 INTERNATIONAL ORGANIZATIONS

9.3.1 World Health Organization (WHO):

It is a specialized agency of the United Nations that is concerned with international public health. It was established on 7 April 1948, and its headquarter is in Geneva, Switzerland. The primary role of WHO is to assist its partner members to strengthen programmes for improving food safety in the entire food chain from farm to fork. The goal of WHO is to build a better healthier future for people all over the world.

Fig 9.5 : WHO logo

9.3.2 Food and Agricultural Organization (FAO):

It is an agency of the United Nations founded on 16th October 1945. The day is now celebrated as World Food Day. It leads international efforts to defeat hunger and works to make sure people have regular access to enough high quality food to lead active, healthy lives.

Fig 9.6 : FAO logo

Do you know ?

FIAT PANIS means "Let there be bread"

9.3.3 World Trade Organization (WTO):

It is an inter governmental organization that is concerned with the regulation of international trade between nations. The main function of WTO is to ensure that trade flows smoothly, freely, fairly and predictably as possible and producers, importers, and exporters of food products have no problems. It officially commenced on 1st January 1995 at Geneva, Switzerland. India has been WTO members since its establishment.

Fig 9.7 : WTO logo

9.4 FOOD SAFETY MANAGEMENT SYSTEM

Food safety management system (FSMS) is used in food industry to ensure that the food is safe for human consumption. It includes good manufacturing practices (GMP), good hygienic practices (GHP) and hazard analysis critical control point (HACCP). FSMS identifies, evaluate and control food safety hazards at every stage of food preparation from farm to fork.

9.5 FOOD FORTIFICATION, ADDITIVES AND LABELLING

9.5.1 Food fortification:

Food fortification is the process of adding small quantities of nutrients to a food to improve the nutritional value of the foods. Some times food is fortified with multiple nutrients to simultaneously overcome deficiencies of two or more micro nutrients in a cost effective manner (health care purpose).

Table 9.1 : Some example of food fortification

Sr. No.	Food to be fortified	Nutrients
1.	Salt	Iodine and Iron
2.	Vegetable oil	Vitamin A, D
3.	Milk	Vitamin A, D
4.	Whole wheat flour	Folic acid, iron, vitamin B complex, vitamin E and some minerals etc.

9.5.2 Food Additives:

The uses of food additives is nothing new. Preserving food is an age old necessity by using additives. Food additives are used either to facilitate or complement a wide variety of production methods in the modern food supply. Food additives have two main functions.

1. To make food safer by preserving it from microbial and chemical undesirable changes.
2. To make food nutritious, tasty or feel more pleasing in the mouth.

Definition: Food additives are chemical substances which are not food items by themselves but are intentionally added to food for a functional purpose in the manufacturing, processing, preparation, treatment, packaging, transport or storage of such food to improve the overall quality.

Do you know ?

Food Additives are not new to food industry, some additives have been used by our ancestors e.g. preserving meat by marination of salt, turmeric and spices, preparation of pickles with acid (vinegar/ acetic acid), oil and using sulphur dioxide for wine making.

Food additives should be used only if they perform at least one of the follow functions.

1. Preserve flavour
2. Enhance taste
3. Improve acceptability and appearance
4. Maintain nutritional quality
5. Enhance keeping quality
6. Aid in food processing

Food additives are grouped into different categories on the basis of the functions they perform. The different categories are as follows:

1. Preservatives
2. Antioxidants
3. Emulsifying agent
4. Stabilizers and thickening agents
5. Food colours
6. Flavouring agents
7. Anticaking agents
8. Non nutritive sweeteners

Numbering of additives (E-Number): The “E numbers” in the ingredients list of packaged foods replace the chemical or common name of particular food additives. The “E” stands for “Europe” or “European Union”.

The numbering scheme has been adopted by the Codex Alimentarius Commission to internationally identify all additives, both approved and non-approved. Some examples of additives are as follows

Table 9.2 Food additives with their code numbers

Baking soda	E-500	MSG*	E-621	Paprika	E-160c
Sorbitol	E-420	Polyphosphate	E-451	Glycine	E-640
Thickener and Binder			E-415, E-410, E-412 and E-417		

* MSG : Monosodium glutamate (Ajinomoto)

Table 9.3 Some food additives with their description and examples

S. No.	Additives	Description	Examples
1.	Preservatives	Increases shelf life by preventing or inhibiting microbial spoilage of food	Sodium benzoate, potassium metabisulphite
2.	Antioxidant	Inhibit the effects of oxygen on food and prevent rancidity in food.	BHA, EDTA, TBA, TBHQ
3.	Emulsifying agent	Stabilize emulsion and ensure that water and oils phase held together in an emulsion, e.g. mayonnaise, ice cream and homogenized milk.	Lecithin and Glycerol mono stearate (GMS)
4.	Stabilizers and thickeners	Increases viscosity without substantially modifying its functional properties.	Dextrin and modified starch
5.	Food colour	Added to food to replace the colour lost during preparation, or to make food look more attractive	Curcumin, chlorophyll, caramel, chocolate, lycopene, beetroot red, etc.
6.	Flavouring agent	Gives food a particulars taste, or smell, and may be derived from natural ingredients or prepared artificially.	Synthetic fruits flavours and essential oil
7.	Anticaking agent	Keep dry food powders such as instant idli mix from forming lumps or caking	Calcium phosphate, magnesium carbonate
8.	Non nutritive sweeteners	Added to foods for flavoring to keep the calorie content low or because they have beneficial effects for diabetics.	Stevia, saccharine, aspartame

BHA (Butylated hydroxyl anisole), EDTA (Ethylene di-amine tetra acetic acid),

TBA (Thio Barbituric acid), TBHQ (Tertiary butyl Hydroquinone)

9.5.3 Food labelling and standard:

Labelling inform consumers about what they are purchasing.

FSSAI regulations are a comprehensive set of guidelines that all food product manufacturers and brands should follow. In this, it has been made mandatory for prepackaged and packaged foods to be labelled before they are sold.

The information that should be display on label are tabulated in below table no. 9.4

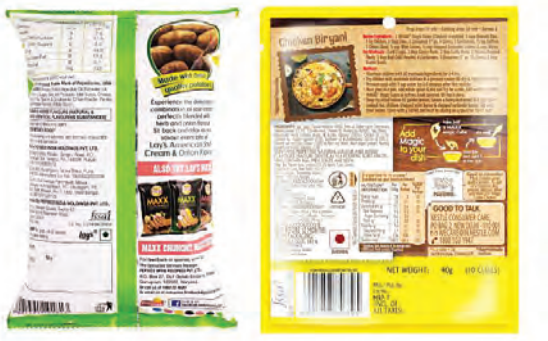

Fig 9.8 : Image of food product label

Table 9.4 Information to be displayed on the label of food product

Name of food product	Net weight of content
List of ingredients in descending order of weight	Lot/Code/Batch identification number
Symbol of vegetarian / non - vegetarian food	Date of manufacture (dd/mm/yyyy)
Nutritional facts	Use by date/best before date/expiry date
Food additives and their class/ number	Licensing authority and license number
Name and address of manufacturing unit	Picture and graphics of product
Instruction for use and disposal of packaging	Country of origin for imported food

Points to remember

- The Bureau of Indian Standards (BIS) is the national standard body of India which was established under the Bureau of Indian Standards Act, 1986.
- AGMARK is a certification mark employed on agricultural products in India, assuring that they conform to a set of standards approved by the Directorate of Marketing and Inspection, an agency of the Government of India.
- Food Safety and Standards Authority of India (FSSAI) is an autonomous body established under the Ministry of Health & Family Welfare, Government of India. FSSAI is responsible for protecting and promoting public health through the regulation and supervision of food safety.
- FSSAI was established on 5th August 2011 under Food Safety and Standards Act, 2006 which was operationalized in year 2006.
- Codex Alimentarius is a collection of internationally recognized standards, codes of practice, guidelines, and other recommendations relating to foods, food production, and food safety.
- World Health Organization (WHO) is a specialized agency of the United Nations that is concerned with international public health.
- Food and Agricultural Organization (FAO) is an agency of the United Nations founded on 16th October 1945. The day is now celebrated as Word Food Day.
- Food additives are used either to facilitate or complement a wide variety of production methods in the modern food supply.

Exercise

Q. 1 a. Select the correct option from the given choices.

i. Bureau of Indian standards (BIS) is the _____ standard body of India.
a. National b. International
c. Regional d. None of the above

ii. _____ is a certification marks employed on agricultural products in India.
a. AGMARK b. BIS
c. FSSAI d. WHO

iii. _____ is responsible for protecting and promoting public health through the regulation and supervision of food safety.
a. FSSAI b. AGMARK
c. WHO d. ISO

iv. Codex Alimentarius is a _____ recognized standards.
a. National b. International
c. Regional d. State

b. Match the correct pairs

A	B
i. FSSAI Act	a. Environmental Management System
ii. PFA Act	b. 2006
iii. ISO 9000	c. United Nation
iv. WHO	d. Quality Management System
v. ISO 14000	e. Food Safety Management System
vi. ISO 22000	f. 1954
	g. WTO

c. Do as directed:

i. Write true or false.

a. Preservative increases shelf life by preventing or inhibiting microbial spoilage of food

b. Anticaking agents keep dry food powders such as instant idli mix from forming lumps or caking

ii. By considering the first correlation complete the second correlation.
Flavouring agent: Additives that give food a particular taste or smell and may be derived from natural ingredients or created artificially
Anticaking agent : _____

iii. Identify the odd word.
a. BIS b. AGMARK
c. FSSAI d. Preservatives

iv. Name the word with the help of clue:
Clue: E-160c

		p			k	

v. Who am i:
Clue : increase the shelf life by preventing or inhibiting microbial spoilage of food

Q. 2 Answer the following questions briefly:

i. Define food additives with examples.

ii. Discuss the role of food additives in the food processing industry

iii. Define food fortification with examples.

Q. 3 Write short notes on:

i. BIS
ii. FSSAI
iii. WHO
iv. ISO

Q. 4 Long questions

i. What is E numbering and why is it necessary?

ii. Classify the different additives used in the food industry with one example for each of category.

Project:

Select five food laws and make an album based on its rules and regulations.