

# Food Safety and Standards Act, 2006

## INTRODUCTION

- Act to consolidated the laws governing the production, storage, distribution, sale, and import of food in order to ensure the availability of wholesome, safe food for human consumption and things relating to or incidental thereto. Act to establish the Food Safety and Standards Authority of India.
- There were numerous laws pertaining to food in place before to the enactment of the Food Safety and Standards Act, 2006 (FSS Act). Because of this, their application lacked consistency. Additionally, there were numerous ministries, organizations, and agencies for regulating various food-related industries.
- As a result, several food safety standards existed. Food rules from the past did not keep up with production advances, storage, sales, and distribution. In order to assure a comprehensive approach, standardization, and successful implementation, it was felt that there was a need for a single law with a single regulatory agency at the national level for all food safety and related problems.
- Any reference of the beginning of this Act in any such provision shall be understood to refer to the provision's entry into force. It will go into effect on the date that the Central Government may designate by publication of a notice in the Official Gazette. Different dates may be set aside for certain aspects of this Act's requirements:
  - Vegetable Oil Products (Control) Order, 1947
  - Prevention of Food Adulteration Act, 1954
  - Fruit Products Order, 1955
  - Related to food Any other order under Essential Commodities Act, 1955
  - Solvent Extracted Oil, De-oiled Meal, and Edible Flour (Control) Order, 1967
  - Meat Food Products Order, 1973
  - Milk and Milk Products Order, 1992
  - Edible Oils Packaging (Regulation) Order, 1998

These Act and Orders were repealed after commencement of FSS Act, 2006. The Ministry of Health and Family Welfare was finally designated as the Administrative Ministry for the purposes of the FSS Act, 2006.

The Food Safety and Standards Act of 2006, Section 91, gives the Central Government the authority to enact rules for enforcing the FSS Act's requirements by notifying them

in the Official Gazette. Rules and Regulations have been enacted to give the provisions of this Act effect.

The Food Safety and Standards Rules and Regulations of 2011. The Act's Rules and Regulations are now in effect as of August 5, 2011. This signalled a change from multiple levels of control to a single line of control with an emphasis on self compliance rather than a strict regulatory regime.

### **OBJECTIVES**

- The primary goal of this Act is to make healthful, nutritious, safe food readily available to the general people.
- To combine the previous laws on food and agriculture
- To create the India Food Safety and Standards Authority
- To control the production, handling, sale, and import of food products to guarantee the availability of healthy, safe food for human consumption.

### **DEFINITIONS UNDER THE ACT**

- Adulterant means any material which is or could be employed for making the food unsafe or sub-standard or misbranded or containing extraneous matter.
- Advertisement means any audio or visual publicity, representation or pronouncement made by means of any light, sound, smoke, gas, print, electronic media, internet or website and includes through any notice, circular, label, wrapper, invoice or other documents.
- Chairperson means the Chairperson of the Food Authority.
- Claim means any representation which states, suggests, or implies that a food has particular qualities relating to its origin, nutritional properties, nature, processing, composition or otherwise.
- Commissioner of Food Safety means the Commissioner of Food Safety appointed under section 30.
- Consumer means persons and families purchasing and receiving food in order to meet their personal needs.
- Contaminant means any substance, whether or not added to food, but which is present in such food as a result of the production (including operations carried out in crop husbandry, animal husbandry or veterinary medicine), manufacture, processing, preparation, treatment, packing, packaging, transport or holding of such food or as a result of environmental contamination and does not include insect fragments, rodent hairs and other extraneous matter.
- Designated Officer means the officer appointed under section 36.
- Extraneous matter means any matter contained in an article of food which may be carried from the raw materials, packaging materials or process systems used for its manufacture or which is added to it, but such matter does not render such article of food unsafe.
- Food means any substance, whether processed, partially processed or unprocessed, which is intended for human consumption and includes primary food to the extent defined in clause, genetically modified or engineered food or food containing such ingredients, infant food, packaged drinking water, alcoholic drink, chewing gum, and any substance, including water used into the food during its manufacture, preparation or treatment but does not include any animal feed, live animals unless they are prepared

or processed for placing on the market for human consumption, plants, prior to harvesting, drugs and medicinal products, cosmetics, narcotic or psychotropic substances: Provided that the Central Government may declare, by notification in the Official Gazette, any other article as food for the purposes of this Act having regards to its use, nature, substance or quality.

- Food additive means any substance not normally consumed as a food by itself or used as a typical ingredient of the food, whether or not it has nutritive value, the intentional addition of which to food for a technological (including organoleptic) purpose in the manufacture, processing, preparation, treatment, packing, packaging, transport or holding of such food results, or may be reasonably expected to result (directly or indirectly), in it or its by-products becoming a component of or otherwise affecting the characteristics of such food but does not include contaminants or substances added to food for maintaining or improving nutritional qualities.
- Food Analyst means an analyst appointed under section 45.
- Food Authority means the Food Safety and Standards Authority of India established under section 4.
- Food business means any undertaking, whether for profit or not and whether public or private, carrying out any of the activities related to any stage of manufacture, processing, packaging, storage, transportation, distribution of food, import and includes food services, catering services, sale of food or food ingredients.
- Food laboratory means any food laboratory or institute established by the Central or a State Government or any other agency and accredited by National Accreditation Board for Testing and Calibration Laboratories or an equivalent accreditation agency and recognised by the Food Authority under section 43.
- Food safety means assurance that food is acceptable for human consumption according to its intended use.
- Food safety audit means a systematic and functionally independent examination of food safety measures adopted by manufacturing units to determine whether such measures and related results meet with objectives of food safety and the claims made in that behalf.
- Food Safety Management System means the adoption Good Manufacturing Practices, Good Hygienic Practices, Hazard Analysis and Critical Control Point and such other practices as may be specified by regulation, for the food business.
- Food Safety Officer means an officer appointed under section 37.
- Hazard means a biological, chemical or physical agent in, or condition of, food with the potential to cause an adverse health effect.
- Label means any tag, brand, mark, pictorial or other descriptive matter, written, printed, stencilled, marked, embossed, graphic, perforated, stamped or impressed on or attached to container, cover, lid or crown of any food package and includes a product insert.
- Licence means a licence granted under section 31.
- Manufacture means a process or adoption or any treatment for conversion of ingredients into an article of food, which includes any sub-process, incidental or ancillary to the manufacture of an article of food.
- Manufacturer means a person engaged in the business of manufacturing any article of food for sale and includes any person who obtains such article from another person and packs and labels it for sale or only labels it for such purposes.

- Misbranded food means an article of food if it is purported, or is represented to be, or is being offered or promoted for sale with false, misleading or deceptive claims either; upon the label of the package, or through advertisement, sold by a name which belongs to another article of food; or offered or promoted for sale under the name of a fictitious individual or company as the manufacturer or producer of the article as borne on the package or containing the article or the label on such package.
- Package means a pre-packed box, bottle, casket, tin, barrel, case, pouch, receptacle, sack, bag, wrapper or such other things in which an article of food is packed.
- Primary food means an article of food, being a produce of agriculture or horticulture or animal husbandry and dairying or aquaculture in its natural form, resulting from the growing, raising, cultivation, picking, harvesting, collection or catching in the hands of a person other than a farmer or fisherman.
- Prohibition order means an order issued under section 33 of this Act.
- Sale with its grammatical variations and cognate expressions, means the sale of any article of food, whether for cash or on credit or by way of exchange and whether by wholesale or retail, for human consumption or use, or for analysis, and includes an agreement for sale, an offer for sale, the exposing for sale or having in possession for sale of any such article, and includes also an attempt to sell any such article.
- Sub-standard an article of food shall be deemed to be sub-standard if it does not meet the specified standards but not so as to render the article of food unsafe.
- Tribunal means the Food Safety Appellate Tribunal established under section 70.
- Unsafe food means an article of food whose nature, substance or quality is so affected as to render it injurious to health.

## **FOOD SAFETY AND STANDARDS AUTHORITY OF INDIA**

### **Establishment of Food Safety and Standards Authority of India**

- The Food Safety and Standards Authority of India will be the organisation that the Central Government creates by notification to carry out the tasks assigned to it and execute the powers granted to it by this Act.
- The Food Authority shall be a body corporate by the aforementioned name, with perpetual succession, a common seal, and the power to buy, hold, and sell real estate, both mobile and immovable, to enter into contracts, and to bring and defend legal actions.
- The Food Authority's headquarters will be in Delhi.
- The Food Authority is free to set up shop wherever else in India.

### **Composition of Food Authority and Qualifications for Appointment of its Chairperson and other Members**

- The Food Authority shall consist of a Chairperson and the following twenty-two members out of which one-third shall be women, namely:
  - a. Seven Members, not below the rank of a Joint Secretary to the Government of India, to be appointed by the Central Government, to respectively represent the Ministries or Departments of the Central Government dealing with:
    1. Agriculture,
    2. Commerce,
    3. Consumer Affairs,

4. Food Processing,
  5. Health,
  6. Legislative Affairs,
  7. Small Scale Industries, who shall be Members ex-officio
- b. Two representatives from food industry of which one shall be from small scale industries.
  - c. Two representatives from consumer organizations.
  - d. Three eminent food technologists or scientists.
  - e. Five members to be appointed by rotation every three years, one each in seriatim from the Zones as specified in the First Schedule to represent the States and the Union territories.
  - f. Two persons to represent farmers organizations.
  - g. One person to represent retailers organizations.
- The Chairperson and other Members of the Food Authority shall be appointed in such a manner so as to secure the highest standards of competence, broad range of relevant expertise, and shall represent, the broadest possible geographic distribution within the country.
  - The Chairperson shall be appointed by the Central Government from amongst the persons of eminence in the field of food science or from amongst the persons from the administration who have been associated with the subject and is either holding or has held the position of not below the rank of Secretary to the Government of India.

#### **Selection Committee for Selection of Chairperson and Members of Food Authority**

- The Central Government shall, for the purpose of selection of the Chairperson and the Members other than ex-officio Members of the Food Authority, constitute a Selection Committee consisting of:
  - a. Cabinet Secretary—Chairperson,
  - b. Secretary-in-charge of the Ministry or the Department responsible for administration of this Act as the convener—Member,
  - c. Secretary-in-charge of the Ministries or the Departments of the Central Government dealing with Health, Legislative and Personnel—Members,
  - d. Chairman of the Public Enterprises Selection Board—Member,
  - e. An eminent food technologist to be nominated by the Central Government—Member.

#### **Officers and Other Employees of Food Authority**

- There shall be a Chief Executive Officer of the Food Authority, not below the rank of Additional Secretary to the Government of India, who shall be the Member-Secretary of the Authority, to be appointed by the Central Government.
- The Food Authority may, with the approval of the Central Government, determine the number, nature and categories of other officers and employees required to the Food Authority in the discharge of its functions.
- The salaries and allowances payable to and other conditions of service of, the Chief Executive Officer, officers, and other employees shall be such as may be specified by regulations by the Food Authority with the approval of the Central Government.

**Functions of the Chief Executive Officer**

- The Chief Executive Officer shall be the legal representative of the Food Authority and shall be responsible for:
  - a. The day-to-day administration of the Food Authority;
  - b. Drawing up of proposal for the Food Authority's work programmes in consultation with the Central Advisory Committee;
  - c. Implementing the work programmes and the decisions adopted by the Food Authority;
  - d. Ensuring the provision of appropriate scientific, technical and administrative support for the Scientific Committee and the Scientific Panel;
  - e. Ensuring that the Food Authority carries out its tasks in accordance with the requirements of its users, in particular with regard to the adequacy of the services provided and the time taken;
  - f. The preparation of the statement of revenue and expenditure and the execution of the budget of the Food Authority; and
  - g. Developing and maintaining contact with the Central Government, and for ensuring a regular dialogue with its relevant committees.
- Every year, the Chief Executive Officer shall submit to the Food Authority for approval:
  - a. A general report covering all the activities of the Food Authority in the previous year;
  - b. Programs of work;
  - c. The annual accounts for the previous year; and
  - d. The budget for the coming year.
- The Food Authority's adoption of the general report and the programmes, the Chief Executive Officer shall transmit them to the Central Government and the State Governments and arrange for their publication.
- The Chief Executive Officer shall exercise the powers of the Commissioner of Food Safety while dealing with matters relating to the food safety of such articles. The Chief Executive Officer shall approve all financial expenditures of the Food Authority and report on the Authority's activities to the Central Government.
- Officers and other Food Authority personnel are subject to administrative control of the Chief Executive Officer.

**Central Advisory Committee: The Food Authority shall, by Notification, Establish a Committee to be known as the Central Advisory Committee**

- The Central Advisory Committee will have two representatives from each of the food industry, agriculture, consumers, relevant research organisations, food laboratories, and all commissioners for food safety. The chairperson of the scientific committee will also be a member by default.
- To the discussions of the Central Advisory Committee, representatives of the relevant Ministries or Departments of the Central Government in Agriculture, Animal Husbandry and Dairy, Biotechnology, Commerce and Industry, Consumer Affairs, Environment and Forests, Food Processing Industries, Health, Panchayati Raj, Small Scale Industries, and Food and Public Distribution or government institutes or organisations as well as government recognised farmers' shall be invited.
- The Chief Executive Officer shall be ex-officio Chairperson of the Central Advisory Committee.

- The Central Advisory Committee shall follow such rules of procedure including its transaction of business as may be specified by regulations.

#### **Functions of Central Advisory Committee**

- The Central Advisory Committee shall ensure close cooperation between the Food Authority and the enforcement agencies and organisations operating in the field of food.
- The Central Advisory Committee shall advise the Food Authority on:
  - a. The performance of its duties under this section and in particular in drawing up of a proposal for the Food Authority's work programme,
  - b. On the prioritisation of work,
  - c. Identifying potential risks,
  - d. Pooling of knowledge, and
  - e. Such other functions as may be specified by regulations.
- The Central Advisory Committee shall meet regularly at the invitation of the Chairperson of Central Advisory Committee or at the request of at least one-third of its members, and not less than three times a year.

#### **Duties and Functions of Food Authority**

- It shall be the duty of the Food Authority to regulate and monitor the manufacture, processing, distribution, sale and import of food so as to ensure safe and wholesome food.
- Without prejudice to the provisions of sub-section (1), the Food Authority may by regulations specify:
  - a. The standards and guidelines in relation to articles of food and specifying an appropriate system for enforcing various standards notified under this Act;
  - b. The limits for use of food additives, crop contaminants, pesticide residues, residues of veterinary drugs, heavy metals, processing aids, myco-toxins, antibiotics and pharmacological active substances and irradiation of food;
  - c. The mechanisms and guidelines for accreditation of certification bodies engaged in certification of food safety management systems for food businesses;
  - d. The procedure and the enforcement of quality control in relation to any article of food imported into India;
  - e. The procedure and guidelines for accreditation of laboratories and notification of the accredited laboratories;
  - f. The method of sampling, analysis and exchange of information among enforcement authorities;
  - g. Conduct survey of enforcement and administration of this Act in the country;
  - h. Food labelling standards including claims on health, nutrition, special dietary uses and food category systems for foods; and (i) the manner in which and the procedure subject to which risk analysis, risk assessment, risk communication and risk management shall be undertaken.
- The Food Authority shall also:
  - a. Provide scientific advice and technical support to the Central Government and the State Governments in matters of framing the policy and rules in areas which have a direct or indirect bearing on food safety and nutrition;

- b. Search, collect, collate, analyse and summarise relevant scientific and technical data particularly relating to:
  - i. Food consumption and the exposure of individuals to risks related to the consumption of food;
  - ii. Incidence and prevalence of biological risk;
  - iii. Contaminants in food;
  - iv. Residues of various contaminants;
  - v. Identification of emerging risks; and
  - vi. Introduction of rapid alert system;
- c. Promote, co-ordinate and issue guidelines for the development of risk assessment methodologies and monitor and conduct and forward messages on the health and nutritional risks of food to the Central Government, State Governments and Commissioners of Food Safety;
- d. Provide scientific and technical advice and assistance to the Central Government and the State Governments in implementation of crisis management procedures with regard to food safety and to draw up a general plan for crisis management and work in close co-operation with the crisis unit set up by the Central Government in this regard;
- e. Establish a system of network of organisations with the aim to facilitate a scientific cooperation framework by the co-ordination of activities, the exchange of information, the development and implementation of joint projects, the exchange of expertise and best practices in the fields within the Food Authority's responsibility;
- f. Provide scientific and technical assistance to the Central Government and the State Governments for improving co-operation with international organizations;
- g. Take all such steps to ensure that the public, consumers, interested parties and all levels of panchayats receive rapid, reliable, objective and comprehensive information through appropriate methods and means;
- h. Provide, whether within or outside their area, training programmes in food safety and standards for persons who are or intend to become involved in food businesses, whether as food business operators or employees or otherwise;
- i. Undertake any other task assigned to it by the Central Government to carry out the objects of this Act;
- j. Contribute to the development of international technical standards for food, sanitary and phyto sanitary standards;
- k. Contribute, where relevant and appropriate to the development of agreement on recognition of the equivalence of specific food related measures;
  - l. Promote co-ordination of work on food standards undertaken by international governmental and non-governmental organizations;
- m. Promote consistency between international technical standards and domestic food standards while ensuring that the level of protection adopted in the country is not reduced; and
  - n. Promote general awareness as to food safety and food standards.
- The Food Authority shall make it public without undue delay:
  - a. The opinions of the Scientific Committee and the Scientific Panel immediately after adoption;



- b. The annual declarations of interest made by members of the Food Authority, the Chief Executive Officer, members of the Advisory Committee and members of the Scientific Committee and Scientific Panel, as well as the declarations of interest if any, made in relation to items on the agendas of meetings;
  - c. The results of its scientific studies; and
  - d. The annual report of its activities.
- The Food Authority shall not disclose or cause to be disclosed to third parties confidential information that it receives for which confidential treatment has been requested and has been acceded, except for information which must be made public.
  - The Food Authority shall not disclose or cause to be disclosed to third parties confidential information that it receives for which confidential treatment has been requested and has been acceded, except for information which must be made public if circumstances so require, in order to protect public health.

*Proceedings of food authority:*

- Meetings of Food authority are held at the head office or any of its office at the time directed by Chairperson as specified by regulation.
- If the Chairperson is unable to attend a meeting of the Food Authority, any other Member nominated by the Chairperson or in the absence of such nomination, any Member chosen by the members present from amongst themselves, shall preside at the meeting.
- The questions in the meeting of the Food Authority shall be decided by a majority of votes of the Members present and in case of equality of votes, the person presiding over the meeting shall have the right to exercise a second or casting vote.
- All orders and decisions of the Food Authority shall be authenticated by the Chief Executive Officer.
- The Chief Executive Officer shall take part in the meetings of the Food Authority but without a right to vote.
- The Food Authority may invite the Chairperson of the Scientific Committee to attend its meetings but without a right to vote.

**Designated Officer**

- The Commissioner of Food Safety shall, by order, appoint the Designated Officer, who shall not be below the rank of a Sub-Divisional Officer, to be in-charge of food safety administration in such area as may be specified by regulations.
- There shall be a Designated Officer for each district:
  - a. The functions to be performed by the Designated Officer shall be as follows, namely: To prohibit the sale of any article of food which is in contravention of the provisions of this Act and rules and regulations made there under;
  - b. To issue or cancel license of food business operators;
  - c. To receive report and samples of article of foods from Food Safety Officer under his jurisdiction and get them analyzed;
  - d. To make recommendations to the Commissioner of Food Safety for sanction to launch prosecutions in case of contraventions punishable with imprisonment;
  - e. To sanction or launch prosecutions in cases of contraventions punishable with fine;
  - f. To maintain record of all inspections made by Food Safety Officers and action taken by them in the performance of their duties;

- g. To get investigated any complaint which may be made in writing in respect of any contravention of the provisions of this Act and the rules and regulations made there under;
- h. To investigate any complaint which may be made in writing against the Food Safety Officer; and to perform such other duties as may be entrusted by the Commissioner of Food Safety.

### **Food Safety Officer**

- The Commissioner of Food Safety shall, by notification, appoint such persons as he/she thinks fit, having the qualifications prescribed by the Central Government, as Food Safety Officers for such local areas as he may assign to them for the purpose of performing functions under this Act and the rules and regulations made there under.
- The State Government may authorise any officer of the State Government having the qualifications prescribed under sub-section (1) to perform the functions of a Food Safety Officer within a specified jurisdiction.

### **Powers of Food Safety Officer**

- The Food Safety Officer may:
  - i. take a sample of any food, or any substance, which appears to him to be intended for sale, or to have been sold for human consumption; or of any article of food or substance which is found by him/her on or in any such premises; which he/she has reason to believe that it may be required as evidence in proceedings under any of the provisions of this Act or of the regulations or orders made thereunder; or
  - ii. Seize any article of food which appears to the Food Safety Officer to be in contravention of this Act or the regulations made thereunder; and
  - iii. Keep it in the safe custody of the food business operator such article of food after taking a sample; and in both cases send the same for analysis to a Food Analyst for the local area within which such sample has been taken:
- Provided that where the Food Safety Officer keeps such article in the safe custody of the food business operator, he/she may require the food business operator to execute a bond for a sum of money equal to the value of such article with one or more sureties as the Food Safety Officer deems fit and the food business operator shall execute the bond accordingly.
- The Food Safety Officer may enter and inspect any place where the article of food is manufactured, or stored for sale, or stored for the manufacture of any other article of food, or exposed or exhibited for manufactured or kept, and take samples of such articles for sale and where any adulterant is of food or adulterant for analysis.
- Where any sample is taken, its cost calculated at the rate at which the article is usually sold to the public shall be paid to the person from whom it is taken.
- Where any article of food seized under clause (b) of sub-section (1) is of a perishable nature and the Food Safety Officer is satisfied that such article of food is so deteriorated that it is unfit for human consumption, the Food Safety Officer may, after giving notice in writing to the food business operator, cause the same to be destroyed.
- The Food Safety Officer shall, in exercising the powers of entry upon, and inspection of any place under this section, follow, as far as may be, the provisions of the Code of Criminal Procedure, 1973 (2 of 1974) relating to the search or inspection of a place by a police officer executing a search warrant issued under that Code.

## MANUFACTURE

- Plant design refers to the overall design of a manufacturing enterprise/facility. It moves through several stages before it is completed.
- The stages involved are: identification and selection of the product to be manufactured, feasibility analysis and appraisal, design, economic evaluation, design report preparation, procurement of materials including plant and machinery construction, installation and commissioning.
- The design should consider the technical and economic factors, various unit operations involved, existing and potential market conditions, etc.

### Plant Design Specifies

- a. The equipment to be used
- b. Performance requirements for the equipment
- c. Interconnections and raw material flows in terms of flow charts and plant layouts
- d. The placement of equipment, storage spaces, shop facilities, office spaces, delivery and shipping facilities, access ways, site plans and elevation drawings
- e. Required instrumentation and controls, and process monitoring and control interconnections
- f. Utility and waste treatment requirements, connections and facilities
- g. The rationale for site selection
- h. The basis for selecting and sizing critical pieces of equipment
- i. Ways in which the design was optimized and the engineering basis for such optimization. They also often provide economic analyses of plant profitability in terms of various product demand and price and material cost scenarios.

### Plant Design Situations

*Plant design situations may arise due to one or more of the following:*

- Design and erection of a completely new plant
- Design and erection of an addition to the existing plant
- The facility or plant operations and subsequent expansion restricted by a poor site, thereby necessitating the setting up of the plant at a new site
- Addition of some new product to the existing range
- Adoption of some new process/replacement of some existing equipment
- Modernization/automation of the existing facility
- Expansion of the plant capacity
- Relocating the existing plant at a new site because of new economic, social, legal or political factors

### Differences in the Design of Food Processing and Non-food Processing Plants

- Many of the elements of plant design are the same for food plants as they are for other plants particularly those processing industrial chemicals.
- There are many significant differences, basically in the areas of equipment selection and sizing, and in working space design. These differences stem from the ways in which the processing of foods differs from the processing of industrial chemicals.

**Such Differences Occur because of the following Considerations**

- The storage life of foods is relatively limited and strongly affected by temperature, pH, water activity, maturity, prior history, and initial microbial contamination levels.
- Very high and verifiable levels of product safety and sterility have to be provided.
- Foods are highly susceptible to microbial attack and insect and rodent infestation.
- Fermentations are used in producing various foods and bio chemicals. Successful processing requires the use of conditions, which ensure the dominance of desired strains of microorganisms growth or activity.
- Enzyme-catalyzed processes are used or occur in many cases. These, like microbial growth and fermentation are very sensitive to temperature, pH, water activity and other environmental conditions.
- Many foods are still living organisms or biochemically active long after harvest or slaughter.
- In some cases foods (e.g. ripening cheeses) contain active living microorganisms, which induce chemical transformations for long periods of time.
- Crop-based food raw materials may only be available in usable form on a seasonal basis. Therefore, plant design may involve the modelling of crop availability.
- Food raw materials are highly variable and that variability is enhanced by the ageing of raw material and uncontrollable variations in climatic conditions.
- The biological and cellular nature and structural complexity of foods causes special heat-transfer, mass-transfer and component separation problems.
- Foods are frequently solid. Heat and mass-transfer problems in solids have to be created in ways that are different than those used for liquid and gas streams. The kinetics of microbe and enzyme inactivation during thermally induced sterilization and blanching and heat-transfer in the solids being sterilized or blanched are strongly linked.
- Food processing generates wastes with high BOD loads.
- Foods are often chemically complex systems whose components tend to react with one another. Certain types of reactions, e.g. Maillard reactions, oxidative rancidification, hydrolytic rancidification and enzymatic browning tend to occur with a high degree of frequency.
- The engineering properties of foods and biological material are less well known and more variable than those of pure chemicals and simple mixtures of chemicals.
- Vaguely defined sensory attributes often have to be preserved, generated or modified.
- These require sensory testing. Raw material variation, minor processing changes and trace contaminants leached from processing equipment and packages can often cause significant changes in these attributes. Frequently, we do not have mechanistic bases for linking these attributes to processing conditions and equipment design. Much current food engineering and food science research activity at universities is designed to provide such linkages.
- In the case of foods, prototype products have to be consumer tested so as to assure market acceptability before plants for large scale production are built.
- Mechanical working is sometimes used to induce desired textural changes. Examples include kneading and sponge mixing during the making of bread, the calendaring of pastry dough, shearing during extrusion texturization.
- Packaging in small containers is often used or required; and strong package-product interactions exist.

- Packaging often requires care to maintain integrity of closure, reproducibility of fill elimination of air from head spaces and prevention of subsequent moisture and oxygen transfer. Segregation often causes problems in the packaging of powdered foods. Aseptic packaging is starting to be widely used.
- Food processing techniques and formulations are sometimes constrained by standards of identity and good manufacturing practice regulations and codes.
- Food processing is an art to a certain extent. Engineers and technologists are frequently uncertain as to whether portions of that art are really justified or necessary. It is sometimes difficult for them to translate the necessary portions of that art into quantifiable heat-transfer and chemical reaction processes on which rational designs can be based.

### General Requirements

- 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 specifications for Cast Aluminium & Aluminium Alloy for utensils or IS:21 specifications for Wrought Aluminium and Aluminium Alloy for utensils.
- 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:
  - a. IS: 10146 Specification for Polyethylene in contact with foodstuffs
  - b. IS: 10142 Specification for Styrene Polymers in contact with foodstuffs
  - c. IS: 10151 Specification for Polyvinyl Chloride (PVC), in contact with foodstuffs
  - d. IS: 10910 Specification for Polypropylene in contact with foodstuffs
  - e. IS: 11434 Specification for Ionomer Resins in contact with foodstuffs
  - f. IS: 11704 Specification for Ethylene Acrylic Acid (EAA) copolymer
  - g. IS: 12252 Specification for Poly alkylene terephthalates (PET)
  - h. IS: 12247 Specification for Nylon 6 Polymer
  - i. IS: 13601 Ethylene Vinyl Acetate (EVA)
  - j. IS: 13576 Ethylene Metha Acrylic Acid (EMAA)
  - k. 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.
- General packaging requirements for canned products:
  - i. All containers shall be securely packed and sealed.
  - ii. The exterior of the cans shall be free from major dents, rust, perforations and seam distortions.
  - iii. Cans shall be free from leaks.

### Product Specific Requirements

- *Packaging requirements for milk and milk products:* Bottling or filling of containers with heat-treated milk and milk product shall be carried out mechanically and the sealing of the containers shall be carried out automatically.
- *Packaging requirements for edible oil/fat:* Tin plate used for the manufacture of tin containers for packaging edible oils and fats shall conform to the standards of prime grade quality contained in BIS. Standards No. 1993 or 13955 or 9025 or 13954 as amended from time to time and in respect of Tin containers for packaging edible oils and fats shall conform to IS No. 10325 or 10339 as amended from time to time.
- *Packaging requirements for fruits and vegetables products:*
  - a. Every bottle in which any fruit product is packed shall be so sealed that it cannot be opened without destroying the licensing number and the special identification mark of the manufacture to be displayed on the top or neck of the bottle.
  - b. For canned fruits, juices and vegetables, sanitary top cans made up of suitable kind of tin plates shall be used.
  - c. For bottled fruits, juices and vegetables, only bottles/jars capable of giving hermetic seal shall be used.
- *Packaging requirements for canned meat products:* New sanitary top cans made from suitable kind of tin plate shall be used. The cans shall be lacquered internally; they shall be sealed hermetically after filling. The lacquer used shall be sulphur resistant and shall not be soluble in fat or brine. Meat products packed in hermetically sealed containers shall be processed to withstand spoilage under commercial conditions of storage and transport.
- *Packaging requirements for drinking water (Both packaged and mineral water):* It shall be packed in clean, hygienic, colourless, transparent and tamperproof bottles/containers made of polyethylene (PE) (conforming to IS: 10146 or polyvinyl chloride (PVC) conforming to IS: 10151 or polyalkylene terephthalate (PET and PBT) conforming to IS: 12252 or polypropylene conforming to IS: 10910 or foodgrade polycarbonate or sterile glass bottles suitable for preventing possible adulteration or contamination of the water.
- All packaging materials of plastic origin shall pass the prescribed overall migration and colour migration limits.

### LABELLING

Labelling means displaying information about your product on its packaging. Other than the name of the item and your brand, it should also show all the details that your customers need to know to influence their buying decision.

### General Requirements

1. Every prepackaged food shall carry a label containing information as required here under unless otherwise provided, namely.
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. 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.
4. Label in pre-packaged foods shall be applied in such a manner that they will not become separated from the container.
5. Contents on the label shall be clear, prominent, indelible and readily legible by the consumer under normal conditions of purchase and use.
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.

### **Labelling of Pre-packaged Foods**

In addition to the general labelling requirements every package of food shall carry the following information on the label, namely:

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

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

- a. The list of ingredients shall contain an appropriate title, such as the term "Ingredients";
- b. 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;
- c. A specific name shall be used for ingredients in the list of Ingredients;

### **Nutritional Information**

Nutritional Information or nutritional facts per 100 g or 100 ml or per serving of the product shall be given on the label the nutrition declaration is made per serving, the amount in gram (g) or milliliter (ml) shall be included for reference beside the serving measure; Provided that the food claimed to be enriched with nutrients, such as, minerals, proteins, vitamins, metals or their compounds, amino acids or enzymes shall give the quantities of such added nutrients on the label. Label contain following information related to nutritional:

- i. The amounts of protein, carbohydrate (specify quantity of sugar) and fat in gram.
- ii. The amount of any other nutrient for which a nutrition or health claim is made: 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.
- iii. Wherever, numerical information on vitamins and minerals is declared.

### **Declaration Regarding Food Additives**

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, color, color retention agent, emulsifier, emulsifying salt, firming agent, flour treatment agent, flavour enhancer, foaming agent, gelling agent, glazing agent, humectants, preservative, propellant, raising agent, stabilizer, sweetener, thickener, and addition of colors and/or flavours.

Contains permitted natural colour or contains permitted synthetic food colour or contains permitted natural and synthetic food colour: 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

#### ***Name and Complete Address of the Manufacturer***

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

#### ***Net Quantity***

Net quantity by weight or volume or number, as the case may be, shall be declared on every package of food; and in addition to the declaration of net quantity, a food packed in a liquid medium shall carry a declaration of the drained weight of the food.

#### ***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. Provided that in case of packages containing bread and milk including sterilised milk, particulars under this clause shall not be required to be given on the label.

#### ***Date of Manufacture or Packing***

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 prepacked shall be mentioned on the label. The month and year in capital letters up to 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.**

#### ***Country of Origin for Imported Food***

The country of origin of the food shall be declared on the label of food imported into India. When a food undergoes processing in a second country which changes its nature, the country in which the processing is performed shall be considered to be the country of origin for the purposes of labelling.

#### ***Instructions for Use***

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



## STORAGE

- As stated in federal statutory law, food stored in unsanitary conditions will be considered adulterated even if the food is not contaminated.
- Food warehouses and other storage facilities must be maintained so that food stored within the facility cannot be contaminated. This expectation pertains to commodity storage at a processing plant, product storage at a processing plant, or food storage at any location even if no processing occurs.
- Accordingly, all facilities in the food distribution network or system must be maintained in a manner that will not allow the food to be contaminated.
- A food shall be deemed to be adulterated if it has been prepared, packed, or held under insanitary conditions whereby it may have become contaminated with filth, or whereby it may have been rendered injurious to health.

### Topics or Details to Consider

- Design the storage facility to minimize risk of contamination
- Construct the storage facility of materials that can be readily cleaned and maintained
- Maintain the storage facility to prevent external contamination
- Separate storage area from worker "break areas"
- Separate storage of raw product from processed product
- Maintain proper storage environment, e.g. temperature, humidity
- Food storage facilities are subject to inspection by federal, state and local authorities.

## LICENSING AND REGISTRATION OF FOOD BUSINESS

Food business activities cover all phases of food production and processing, packaging, storage, distribution, and importation. They also cover food services, catering, and the retail sale of food and food ingredients.

- A licensing is necessary in order to operate any food business.
- Anyone who wants to open a food business must apply to the authorised officer with the required information and the costs outlined in the regulations for license issuance.
- If satisfied, the designated officer may give the licence. If the officer is unsatisfied, he or she may refuse to issue a licence while providing the applicant the chance to argue their case.
- In the same area, one licence may be given for one or more food items for the same or different enterprises or premises.
- A separate licence is necessary if the food products are produced, kept, sold, or displayed for sale at various locations spread across many regions.
- There is a mechanism for an appeal to the Commissioner of Food Safety in the event that the licence grant is rejected.
- A licence renewal application must be submitted prior to the license's period of validity expiring.
- The licence must continue even if the licence holder passes away for the benefit of his or her representative or a family member:
  - a. For further three months after the death of license holder or
  - b. Such longer period as the designated officer may allow.

- No licence is necessary for small-scale, cottage, or other food-related businesses, hawkers, itinerant vendors, temporary stall holders, or tiny manufacturers and retailers. However, such a small-scale business owner must register with the appropriate authorities as stipulated by the legislation that provide healthy and safe food for human consumption.

## SALE

- Food sales means gross revenues from the sale of food and non-alcoholic beverages that are sold or delivered on or off the facility by Lessee, its permitted subtenants, licensees or concessionaires, whether for cash or for credit, including in respect of guest rooms, banquet rooms, meeting rooms and other similar rooms.
- Gross revenue from the rental of banquet, meeting and other similar rooms. Such revenue shall include sales by Lessee and its permitted subtenants, licensees and concessionaires, but as to subleases, licenses or similar arrangements for food and non-alcoholic beverage sales which were entered into by Lessee or any prior owner of the Leased Property with parties who are not Affiliates of Lessee and which are existing as of the date of this Lease, such revenue shall only include rents received under such existing subleases, licenses or similar arrangements.

### *Self-assessment Exercises* MCQs

- 1. Food Safety and Standards Act Authority of India comes under:**

a. 2005	b. 2006
c. 2007	d. 2008
- 2. Any material which is or could be employed for making the food unsafe or sub-standard or mis-branded or containing extraneous matter known as:**

a. Adulterant	b. Substitution
c. Deterioration	d. None of the above
- 3. The Commissioner of Food Safety appointed under section:**

a. Section 25	b. Section 28
c. Section 29	d. Section 30
- 4. The designated officer appointed under:**

a. Section 25	b. Section 36
c. Section 29	d. Section 30
- 5. Food Analyst appointed under:**

a. Section 25	b. Section 36
c. Section 45	d. Section 30
- 6. The Food Safety and Standards Authority of India established under:**

a. Section 5	b. Section 6
c. Section 4	d. Section 3

- 7. Food Safety Officer appointed under:**  
 a. Section 25  
 b. Section 36  
 c. Section 37  
 d. Section 30
- 8. Licence granted under:**  
 a. Section 31  
 b. Section 36  
 c. Section 37  
 d. Section 30
- 9. Food authority head office at .....**  
 a. Delhi  
 b. Bengaluru  
 c. New York  
 d. Japan
- 10. How many are members in Food authority?**  
 a. 21  
 b. 22  
 c. 23  
 d. 24
- 11. How many are ex-officio members in food authority?**  
 a. 5  
 b. 7  
 c. 8  
 d. 9
- 12. Secretary to the Government of India, who shall be the Member-secretary of the Authority, to be appointed by the:**  
 a. State Government  
 b. Central Government  
 c. Both a and b  
 d. None of the above
- 13. Chief Executive Officer of the Food Authority to be appointed by the:**  
 a. State Government  
 b. Central Government  
 c. Both a and b  
 d. None of the above
- 14. Central Advisory Committee consists of:**  
 a. 3 members  
 b. 2 members  
 c. 4 members  
 d. 6 members
- 15. Which of following is function of Central Advisory Committee?**  
 a. Pooling of knowledge  
 b. Identifying potential risks  
 c. The prioritisation of work  
 d. All of the above
- 16. Displaying information about your product on its packaging is known as:**  
 a. Labelling  
 b. Packaging  
 c. Docking  
 d. None of the above

#### ANSWERS

- |       |       |       |       |       |
|-------|-------|-------|-------|-------|
| 1. b  | 2. a  | 3. d  | 4. b  | 5. c  |
| 6. c  | 7. c  | 8. a  | 9. a  | 10. b |
| 11. b | 12. b | 13. b | 14. b | 15. d |
| 16. a |       |       |       |       |