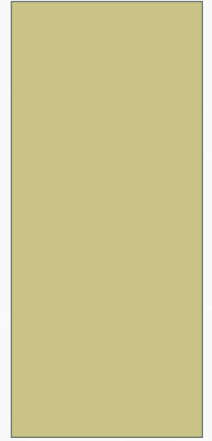


IMPORTANCE OF FOOD MICROBIOLOGY

UNIT 3

BIOSAFETY



DEFINITION

Food microbiology is a branch of microbiology that deals with microorganisms present in food, their interactions, and their impact on food quality, safety, and shelf life.

GENERAL PRINCIPLES OF FOOD MICROBIOLOGY

1. Microbial Growth: Microorganisms require specific conditions to grow and reproduce, including nutrients, pH, temperature, and water activity (a_w). Understanding these factors helps in controlling microbial growth in food.

2. Types of Microorganisms: Common types of microorganisms in food include bacteria, yeasts, molds, and viruses. Each has different growth requirements and impacts food differently.

3. Spoilage: Microorganisms can cause food spoilage through various mechanisms, including production of enzymes, acids, and toxins, leading to changes in taste, texture, and appearance.

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GENERAL PRINCIPLES OF FOOD MICROBIOLOGY

4. Food Safety: Some microorganisms can cause foodborne illnesses (food poisoning) by producing toxins or by infecting the consumer. Pathogenic bacteria like Salmonella, Listeria, and E. coli are significant concerns.

5. Food Preservation: Techniques such as heat processing (e.g., pasteurization, sterilization), refrigeration, freezing, drying, fermentation, and use of preservatives are used to control microbial growth and extend shelf life.

6. HACCP (Hazard Analysis Critical Control Points): A systematic preventive approach to food safety that identifies, evaluates, and controls hazards throughout the food production process.

GENERAL PRINCIPLES OF FOOD MICROBIOLOGY

7. Quality Control: Microbiological testing and monitoring are essential for ensuring food safety and quality. This includes testing for pathogens, spoilage organisms, and indicators of hygiene and cleanliness.

8. Regulatory Standards: Food microbiology is guided by national and international regulations and standards that specify acceptable levels of microorganisms, hygiene practices, and safety measures in food production and handling.

9. Emerging Issues: Changes in food production practices, global food trade, and consumer preferences continuously influence food microbiology. Issues such as antimicrobial resistance and novel food technologies are also areas of concern.

10. Education and Research: Ongoing research in food microbiology focuses on understanding microbial behavior, developing new preservation techniques, and improving food safety measures.

WHY THESE PRINCIPLES?

Understanding these principles helps food scientists, producers, and regulators ensure that food is :

**safe,
nutritious,
and of high quality
throughout its production,
distribution,
and consumption.**

UNIT 3



FOOD SAFETY AND STANDARDS AUTHORITY OF INDIA



FSSAI

- FSSAI stands for Food Safety and Standard Authority of India.
- FSSAI department is controlled directly by the Ministry of Health and Family welfare.
- The FSSAI has been established under the Food Safety and Standards Act, 2006.
- It is responsible for food distribution and manufacturing and is mandatory for every operator irrespective of their scale of business.
- FSSAI is responsible for protecting and promoting public health through the regulation and supervision of food safety

Highlights of Food Safety and Standard Act, 2006

- The act aims to establish a single reference point for all matters relating to food safety, and standards, by moving from multi-level, multi-departmental control to a single line of command.



- **The Food Safety and Standards Authority of India (FSSAI)**

has been established under Food Safety and Standards , 2006 which consolidates various acts & orders that have hitherto handled food related issues in various Departments.

- The FSSAI is responsible for setting standards for food so that there is one body to deal with and no confusion in the minds of consumers, traders, manufacturers, and investors.

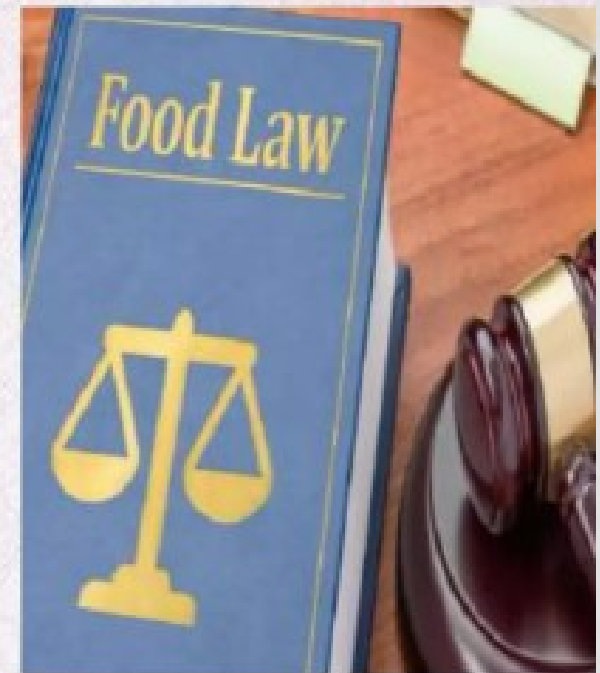
Highlights of Food Safety and Standard Act, 2006

- The Act aims to establish a single reference point for all matters relating to food safety and standards, by moving from multi- level, multi- departmental control to a single line of command.



The FSS Act

- The FSS Act took 8 older acts into one umbrella.
- 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
- The FSS Act is a bucket for all the older laws, rules and regulations for food safety



FSSAI – Administrative structure

- Ministry of Health & Family Welfare, Government of India is the Administrative Ministry of Food Safety and Standards Authority of India.
- The FSSAI is headed by a non-executive Chairperson, appointed by the Central Government, either holding or has held the position of not below the rank of Secretary to the Government of India.
- The FSSAI consists of a chairperson & 22 members.

As of October 2024, **Shri Sudhansh Pant** is the Chairman of the Food Safety and Standards Authority of India (FSSAI). He is also the Secretary of the Ministry of Health and Family Welfare, Government of India

Appointment	The central government appoints the chairperson, who is a non-executive member. The chairperson must have held or currently hold the position of Secretary to the Government of India or higher.
Other members	The FSSAI also has 22 other members, including at least one-third women.
Headquarters	The FSSAI is headquartered in New Delhi.
Regional offices	The FSSAI has regional offices in Delhi, Guwahati, Mumbai, Kolkata, Cochin, and Chennai.
Laboratories	The FSSAI has 22 referral laboratories, 72 state/UT laboratories, and 112 NABL accredited private laboratories.
Enforcement	Food Safety Officers enforce FSSAI provisions.

- The FSSAI is a statutory body established under the Food Safety and Standards Act, 2006. It's responsible for protecting and promoting public health through the regulation and supervision of food safety.

Location

- FSSAI is located in 5 regions
- Northern Region – With head office at New Delhi
- Eastern Region- Kolkata
- North Eastern Region- Guwahati
- Western region- Mumbai
- Southern Region- Cochin and Chennai

Aims

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

Powers or Functions of FSSAI

1. Framing of regulations to lay down food safety standards
2. Laying down guidelines for accreditation of laboratories for food testing
3. Providing scientific advice and technical support to the Central Government
4. Contributing to the development of international technical standards in food
5. Collecting and collating data regarding food consumption, contamination, emerging risks etc.
6. Disseminating information and promoting awareness about food safety and nutrition in India

FUNCTIONS



Governance and Administration



Food Standards



Safe Food Practices



Compliance - Licensing and Inspections



Food Testing and Surveillance



Training & Capacity Building



Transforming
the Food Safety
& Nutrition
landscape

Healthy Diets



Social and Behavioural Change



Consumer Focus



Leveraging Web-based Technology and
Research Focus



International Collaboration,
Partnerships and Convergence



Partnerships and Convergence



Departments

1. Import Division
2. International Co-operation
3. Regulatory Compliance Division (RCD)
4. Food Safety Management System (FSMS) Division
5. Risk Assessment and R&D division (RARD)
6. Information Education Communication (IEC) Division
7. Regulation and Codex Division
8. Quality Assurance/ lab Division
9. HR Division
10. Standards Division

Research and Quality assurance



Research

The Research and Development division is responsible for research with the following objectives:

- Generate new knowledge that would help in continuously updating and upgrading food safety standards which are compatible with international organizations

- Carry out evidence based studies for improving or building policies

Quality Assurance

FSSAI has been mandated to perform various functions related to quality and standards of food.

These functions in addition to others include “Laying down procedure and guidelines for notification of the accredited laboratories

FSSAI notified laboratories

- FSSAI notified laboratories that are classified as:
- FSSAI notified NABL (National accreditation board for testing and calibrating laboratories) accredited labs- 112
- State Labs-72
- Referral Labs-14



- **The FSSAI has prescribed standards for following food products:**

- Dairy products and analogues
- Fats, oils and fat emulsions
- Fruits and vegetable products
- Cereal and cereal products
- Meat and meat products
- Fish and fish products
- Sweets & confectionery
- Sweetening agents including honey
- Salt, spices, condiments and related products
- Beverages, (other than dairy and fruits & vegetables based)
- Other food product and ingredients
- Proprietary food
- Irradiation of food

Standards

Food Standards



Applicable FSSAI License



- FSSAI issues three types of license based on nature of food business and turnover:
 1. **Registration:** For Turnover less than 12 Lakh
 2. **State License:** For Turnover between 12 Lakh to 20 Crore
 3. **Central License:** For Turnover above 20 Crore
- Other criteria like the location of the business, number of retail stores etc. is needed while evaluating the nature of license applicable.

TYPES OF LICENSES

- If you want to know How To Get FSSAI License in India, then you must know these three types of licenses.
- Generally, FSSAI Registration or License is based on business volume and business establishment. Depending on different factors like Installed capacity, Turnover and Location the Applicants establishments can be eligible for three different Licenses.
- **Basic License:** Basic License is issued by the State Government to the small (manufacturers, storage units, transporters, marketers, and distributors). This License is generally issued to a company with an annual yield of not more than Rs 12,00,000.
- **Note:** This License is issued for a period of a minimum of 1 year and a maximum of 5 years.

- **State License:** This License is generally issued for SMEs like Transporters, Storage Houses, Distributors, and Marketers, etc. The company involved in the food business must have its business operations in one state. The company should have an annual yield of Rs 12,00,000.
- **Note:** This License is issued by the state government for a minimum of 1 year and a maximum of 5 years.
-

- **Central License:** This License is generally issued by the Central Government, to the food business operators operating in more than one state or city, companies operating as importers or exporters in food-related business, big manufacturers in the food and processed food-related business, food business operators working with central government agencies, ports, and airports, etc.
- **Note:** If a company involved in food or food-related business (Nutrition Supplement) is operational in different states or cities then it is essential for its head office, to apply for a central License. Along with this Central License is mandatory for a Food Business operator having an annual yield of Rs 20 Crores.
-

Who can apply for FSSAI License?

Here is a list of Food Business Operators who can contact us for Food License to avoid the problems faced in procuring an FSSAI License.

Who can
apply for
FSSAI
License?

1

Restaurants,
Hotels

2

Food
manufacturers
& Vendors

3

Food
processing
corporate
companies

4

Medical Stores and
Pharmacies providing
nutritional
supplements

5

Food Importers and
exporters.



Decoding FSSAI's License Number



Importance of FSSAI Logo and License Number on Food Packaging



**Ensures Food
Quality & Safety**

01

**Gives Credibility &
Consumers' Trust in the
Product**

02

**FSSAI logo- Goodwill
Among Customers**

03

**Assist in Business
Expansion**

04

**Reduce Adulteration &
Eliminate
Unhygienic Processing**

04

**New Guidelines for
Compatibility with
International Organization**

05

**Set up as Evidence
for Drafting Further
Policies**

06

Sample FSSAI license





Registration Certificate
Government of Madhya Pradesh
Food and Drugs Administration
Food Safety and Standards Authority of India
Registration Certificate under FSS Act, 2006



पंजीकरण संख्या / Registration Number: 21422850008902



<p>1. Name and permanent address of Food Business Operator (FBO) / खाद्य व्यवसायिक अधिकारी का नाम और स्थायी पता:</p> <p>AARNAY FOOD PRODUCTS/ AJAY LASHKARI 107/1, HUKUMCHAND COLONY, PANCHKULIYA ROAD, INDORE, MP, Indore, Indore, Indore, Madhya Pradesh-452002</p>	
<p>2. Address of location where food business is to be conducted / premises / पता जहाँ खाद्य व्यवसाय किया जाएगा / स्थान:</p> <p>103-A HUKUM CHANDRA COLONY, PANCHKULIYA ROAD, INDORE, MP, Indore, Indore, Madhya Pradesh - 452002</p>	
<p>3. Kind of Business / व्यवसाय का प्रकार:</p> <p>General Manufacturing, Retailer</p>	
<p>4. Photo Identity Card / फोटो पहचान कार्ड/चित्रण):</p> <p>N/A</p>	

This Registration certificate is issued under and is subject to the provisions of FSS Act, 2006 all of which must be complied with by the petty food business. / यह पंजीकरण प्रमाणपत्र खाद्य व्यवसाय अधिनियम, 2006 के अधिनियम के अधीन जारी किया गया है और इसे पूरी तरह से अनुपालित किया जाना आवश्यक है।

Place / स्थान: Indore

Issued On / दिनांक: 13-12-2022 (New Registration)

Valid Upto / वैधता: 12-12-2027 (For details, refer Annexure)

Registering Authority

Date : 13-12-2022 13:56:34 IST

User Id : 1000000n4

Annexures:

- [Product Annexure](#)
- [Validity Annexure](#)
- [Registration Id Card](#)

Note:

- Application for renewal of Registration Certificate can be filed as early as 180 days prior to expiry date of Registration Certificate. You can file application for renewal or modification of Registration Certificate by login into FSSAI's Food Safety Compliance System (<https://foscos.fssai.gov.in>) with your user id and password or call us at 1800112100 for any clarification.
- This Registration Certificate is only to commence or carry on food businesses and not for any other purpose.
- This is computer generated Registration Certificate and doesn't require any signature or stamp by authority.
- This Registration Certificate is allowed to conduct food businesses activities having annual turnover upto Rs. 12 Lacs only.

Page 1 of 4

THANK YOU

