

FOOD SAFETY AND REGULATIONS

THEORY

Paper No.	:	6.2
Maximum Marks	:	100
Credits	:	4
Teaching Period	:	4 Theory + 1 Students Presentation/ Week
Teaching Load	:	48 Theory Periods + 12 Students Presentation/ Semester

Objectives

To understand the following:

- Food safety and hygiene
- Types of hazards associated with food
- Food regulations (national as well as international)
- Design and implementation of food safety management systems such as ISO series, HACCP and its prerequisites such as GMP, GHP etc.
- Emerging concerns

CONTENTS

UNIT 1 INTRODUCTION TO FOOD SAFETY (3 Lectures)

Definition, Types of hazards, biological, chemical, physical hazards, Factors affecting Food Safety, Importance of Safe Foods.
(Chapter 1, Forsythe)

UNIT 2 FOOD HAZARDS OF PHYSICAL AND CHEMICAL ORIGIN (5 Lectures)

Introduction, Physical Hazards with common examples, Chemical Hazards(naturally occurring ,environmental and intentionally added), Impact on health, Control measures
(Chapter 2, Lawley et.al)

UNIT 3 FOOD HAZARDS OF BIOLOGICAL ORIGIN (7 Lectures)

Introduction, Indicator Organisms, Food borne pathogens: bacteria, Food borne pathogens: viruses, Food borne pathogens: eukaryotes, Seafood and Shell fish poisoning, Mycotoxins.
(Chapter 5 , Forsythe; Chapter 2, Lawley et.al)

UNIT 4 MANAGEMENT OF HAZARDS (5 Lectures)

Need, Control of parameters, Temperature control, Food storage, Product design
(Chapter 7 Forsythe)

UNIT 5 HYGIENE AND SANITATION IN FOOD SERVICE ESTABLISHMENTS (5 Lectures)

Introduction, Sources of contamination, General Principles of Food Hygiene(GHP)
(Chapter 1 Marriott)

UNIT 6 FOOD SAFETY MANAGEMENT TOOLS (10 Lectures)

Basic concept, Prerequisites- GHPs ,GMPs, SSOPs etc, HACCP, ISO series, TQM -
concept and need for quality, components of TQM, Kaizen, Risk Analysis, Accreditation
and Auditing
(Chapter 7 Forsythe)

UNIT 7 MICROBIOLOGICAL CRITERIA (5 Lectures)

Microbiological standards and limits, Sampling, Basic steps in detection of food borne
pathogens, Water Analysis, Assessment of Surface Sanitation and Personal Hygiene
(Chapter 8, Forsythe)

UNIT 8 FOOD LAWS AND STANDARDS (4 Lectures)

Indian Food Regulatory Regime, Global Scenario, Other laws and standards related to
food
(Chapter 10, Forsythe and FSSA act)

UNIT 9 RECENT CONCERNS (3 Lectures)

Packaging , Product labeling and Nutritional labeling, Organic foods, Newer approaches
to food safety
(Chapter 1, Lawley et. al ; Chapter 1, De Vries)

Recommended Readings:

1. Lawley, R., Curtis L. and Davis,J. The Food Safety Hazard Guidebook , RSC
publishing, 2004

2. De Vries. Food Safety and Toxicity, CRC, New York, 1997
3. Marriott, Norman G. Principles of Food Sanitation, AVI, New York, 1985
4. Forsythe, S J. Microbiology of Safe Food, Blackwell Science, Oxford, 2000

(DC I) PRACTICALS IN FOOD SAFETY

Maximum Marks	:	50
Credits	:	4
Teaching Period	:	4 / Week
Teaching Load	:	48/Semester

CONTENTS

1. Preparation of different types of media (complex, differential and selective)
2. Enumeration of aerial microflora using PDA
3. Microbiological examination of different food samples
4. Bacteriological analysis of Water
5. Assessment of surface sanitation by swab/rinse method
6. Assessment of personal hygiene
7. Biochemical tests for identification of bacteria
8. Scheme for the detection of food borne pathogens
9. Implementation of FSMS – HACCP, ISO : 22000

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2. De Vries. Food Safety and Toxicity, CRC, New York, 1997
3. Marriott, Norman G. Principles of Food Sanitation, AVI, New York, 1985
4. Forsythe, S J. Microbiology of Safe Food, Blackwell Science, Oxford, 2000 & Sons; USA, 1987