

Chapter I

INTRODUCTION TO FOOD SAFETY



- *Chapter I objectives*
- *Generality*
- *Types of Contamination*
- *Examples*
- *Activities*

I-1 Chapter I objectives

At the end of the Chapter I , in relation to the subjects covered, the student must be able to:

- **Recognize** the importance of food safety;
- **Learn** the food contamination and different types of contamination;

I-2 Generality

- Food safety is a scientific discipline that describes the steps from handling to serving of food in such a way as to avoid food-borne diseases.
- It contains a number of procedures to be followed to minimize potentially serious health risks.
- Safety of foods is a key concern for all countries.
- Microbiological and chemical contamination of food are two major causes of illness.



Fig 1. Examples of Contamination

➤ Activity 01 (Chap I) What is Food contamination?

Food that is spoiled or contaminated because it contains micro-organisms, such as bacteria or parasites, or toxic substances that make it unsuitable for consumption.



Fig 2. Contamination of Fruits

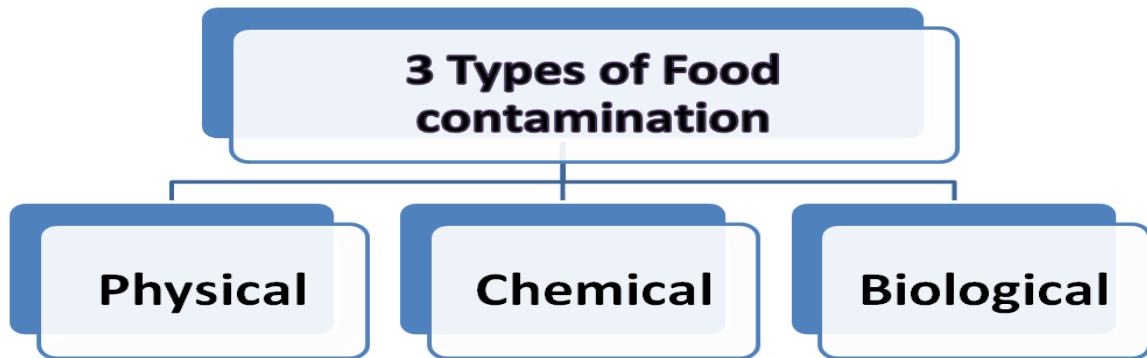


Fig 3. Three Types of Contamination

➤ **Activity 02 (Chap I)**

What are the differences between Physical, Chemical, and Biological Contamination?

Give examples for each type of contamination

I-3 Types of Contamination

I-3-1 Biological Contamination

A contaminant of this type is a substance that an organism produces. This contamination refers to the materials produced by microorganisms, insects, humans

Viruses and Bacteria are the major causes of this contamination. They can be a cause of a lot of foodborne diseases.

Biological contaminants are microscopic, single-cell organisms found everywhere and are quite hard to detect until they have formed large colonies.

EXAMPLES

Bacteria, viruses, moulds, yeasts and fungi.



Fig 4. Examples of Biological Contaminants

• **Hazardous Foods**

- Some foods are more vulnerable to biological contamination than others, because they provide all the conditions for bacteria to grow and multiply: the right pH, nutrition and water.
- Food handlers must always adhere to safe food handling procedures in order to reduce the growth of bacteria and remove the possibility of biological contamination;
- Foods that pose a high risk, such as meat, poultry, seafood, eggs, and dairy products, should be kept out of the danger zone.
- Acquire, thaw, store, prep, cook, and present high-risk meals appropriately.
- Make sure you adhere to the proper procedures for cleaning and sanitizing all equipment and surfaces that come into touch with food by keeping a regular cleaning and sanitizing routine.
- Maintain the personal hygiene of all staff and comply with standards in terms of sanitation..

I-3-2 Physical Contamination

A physical contaminant is the presence of one or more foreign objects in foodstuffs, which enter the food during production, preparation or service.

EXAMPLES

Pieces of plastic, glass, Metal ,steel wool, Equipment part



Fig 5. Examples of Physical Contaminants

I-3-3 Chemical Contamination

Chemical contaminants are natural or artificial substances that got into food. Chemical contaminants include toxic substances.

The impact of a food contaminant on consumer well-being is often not apparent for many years.

EXAMPLES

Agrochemicals

Agrochemicals are chemicals used by farmers, including insecticides, herbicides and rodenticides. They can also exist within-side the surroundings wherein we process, package, store, transport, and eat food.



Fig 6. Examples of Agrochemical Contaminants

Environmental

Environmental contaminants include chemicals that we found in the environment where we grow food. They may exist within the surroundings wherein we process, package, store, transport, and eat food

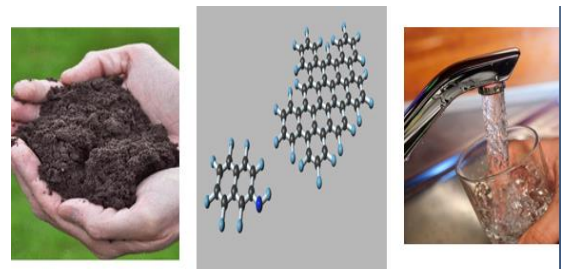


Fig 7. Examples of Environmental Contaminants

➤ **Activity 03 (Chap I) Drag and drop the correct answer on the lines below :**

Washed , Blood , Chicken, Vegetables, Shelves, Sanitized, Seafood, Hands, Cross contamination , Counter

- 1- Always keep raw meat likeseparate from ready to eat foods like
- 2- Is the unfold of micro organism from uncooked meat to different foods.
- 3- Always washafter handling raw meat
- 4- Use one cutting board for fresh produce and a separate one for raw meat, poultry and
- 5- Store raw foods onbelow ready to eat food to minimize contamination.
- 6- Food contact surfaces that touch raw meat must beand

➤ **Activity 04 (Chapter I) Circle anything in the picture that is an example of :**

A hazard to Food

Any type of Food Contamination



