Section 2 – Food Contamination

Objectives

- Identify sources of bacteria and how they are introduced into the food chain
- Distinguish between high risk and low risk foods
- Define the term ‘cross contamination’ and state how it occurs
- Spoilage, pathogenic and beneficial bacteria
- Name the common food poisoning bacteria

Sources of bacteria

<table>
<thead>
<tr>
<th>Where bacteria originate</th>
<th>Type of bacteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Animal</td>
<td>E. coli</td>
</tr>
<tr>
<td>Poultry &amp; eggs</td>
<td>Salmonella &amp; Campylobacter</td>
</tr>
<tr>
<td>Vegetables</td>
<td>Clostridium perfringens</td>
</tr>
<tr>
<td>Shellfish</td>
<td>Viruses</td>
</tr>
<tr>
<td>Milk</td>
<td>TB</td>
</tr>
<tr>
<td>Water</td>
<td>E. coli</td>
</tr>
<tr>
<td>Hands</td>
<td>Staphylococcus aureus</td>
</tr>
</tbody>
</table>

Define contamination

What is contamination?
Contamination is the presence of any harmful or objectionable substance in food.

Examples of cross contamination -

Bacterial contamination of food

- Direct - Raw meats touching ready to eat products
- Indirect - Using a knife to cut raw meat and then using the same knife to cut a ready to eat product
- Airborne contamination – sneezing over food

Preventative measures against cross contamination

- Store raw food and cooked food separately
- Keep raw meat on the bottom shelf of the fridge
- Use different chopping boards and knives for raw and cooked/ready to eat foods
- Always cover foods that are stored in the fridge
Bacteria

Three types of bacteria

- Pathogenic bacteria – cause illness
- Beneficial bacteria – used to make beer, cheese and yogurt
- Spoilage bacteria – cause food to rot.

Pathogenic bacteria versus spoilage bacteria

These types of bacteria differ: pathogenic strains cause illness in humans and can be difficult to detect, while spoilage bacteria cause food to rot or perish and signs can be more readily detected.

Examples of common food poisoning (pathogenic) bacteria

- Campylobacter
- Salmonella
- E. coli

It is important to note that not all bacteria cause poisoning and spoilage.

Examples of beneficial bacteria

Some bacteria have beneficial properties:

- Lactobacillus casei immunitass
- Lactobacillus plantarum

Define the term ‘high-risk foods’.

High-risk foods support the growth of pathogenic bacteria because they are high in protein and water. High risk foods are usually ‘ready-to-eat foods intended for consumption without further cooking, such as coleslaw, ready washed salad, and cooked rice.

Name the three types of contamination?

- Chemical - e.g. Cleaning products and pesticides poison food products
- Physical - e.g. foreign objects - parts of machinery fall into products during their manufacture, such as plasters and hairs.
- Microbial - contamination by bacteria

Common foods that can cause allergic reactions in consumers

- Peanuts
- Tree nuts
- Eggs
- Shellfish
- Cows milk
- Wheat (gluten)
- Soy
Symptoms of allergic reactions

- Tingling around the mouth
- Swelling around the nose, mouth and throat
- Difficulty breathing
- Rashes
- Vomiting
- Diarrhoea
- Cramps
- Anaphylactic reactions

Understand procedures required for dealing with foods that may cause allergic reactions

As a food handler you must be careful not to inadvertently contaminate food that is supposed to be free from allergens. For example, do not place peanuts on a surface or next to another food group that wouldn’t naturally contain peanuts.

You must be careful to give the right information about ingredients to customers who ask.