Section 1 – Why bother?

Objectives

• Define the terms ‘food hygiene’, ‘food poisoning’ and foodborne disease.
• Name the different classes of microorganism and where they are found.
• Identify the main conditions bacteria need in order to grow.
• Explain how the growth of bacteria can be controlled.

Define the term food hygiene?

What is food hygiene?
Food hygiene is the practice of ensuring food is safe, sound and wholesome by protecting it from contamination, preventing bacterial multiplication and by the destruction of harmful bacteria.

Define the term food poisoning

What is food poisoning?
Food poisoning is an illness that occurs usually between 1 and 36 hours after eating contaminated or poisoned food, the most common symptoms being diarrhoea, vomiting and dehydration.

Food workers must report all instances of diarrhoea, vomiting and skin infections to a supervisor before returning to work and must not work while suffering from these symptoms. Failure to observe these rules is the most common reason for food workers being prosecuted.

Define the term foodborne illness?

Foodborne illness is an illness that occurs when food containing harmful bacteria is ingested. This term also covers foodborne disease and food poisoning.

Define the term foodborne disease?

Foodborne disease – A disease or illness caused by microorganisms carried by food or water.

What are the causes of food poisoning?

• Bacteria – Pathogenic bacteria are the most common cause
• Viruses
• Metals
• Chemicals
• Natural poisons in food (toadstools, green potatoes, and red kidney beans)
• Moulds
Factors contributing to food poisoning cases

- Food prepared too far in advance
- Cooling food too slowly
- Not re-heating food to high enough temperatures
- Using cooked food contaminated with food poisoning bacteria
- Poor food safety practices

Those people most at risk?

- Elderly people
- Babies and toddlers
- Pregnant women
- Individuals who are already unwell

Spores are small round bodies with thick walls which allow the bacteria to stay dormant but alive, over long periods of time, e.g. during freezing, defrosting, cooking and cooling. When conditions become favourable the spores germinate and active bacteria are produced once more. It is vital therefore that food is kept out of the danger zone as far as possible.

Toxins are poisonous chemicals produced by certain types of bacteria, e.g. the bacteria *Staphylococcus aureus* produces a toxin in food, which normally causes severe illness very soon after the food is eaten.

Name the different classes of microorganism?

- Bacteria
- Yeasts
- Fungi
- Moulds
- Viruses

Conditions required for the growth of bacteria

- Moisture
- Time
- Food
- Warmth (37°C optimum for growth)

Once the conditions required for growth are ideal, bacteria will multiply by **binary fission**: simply by splitting in two. Most bacteria will double every 10 to 20 minutes.

Preservation methods

To preserve food, remove one or more requirement for bacterial growth. For instance, dehydrate food to remove moisture.
What is the danger zone?
The danger zone is optimum temperature range within which bacteria can multiply: +5°C to +63°C.

Important temperatures to note
- 70°C for 2 min: too hot for bacteria to survive. At this temperature bacteria are killed off and food is deemed safe to eat
- 0 to +5°C: bacteria do not multiply or multiply very slowly
- -18°C or below: bacteria are dormant and do not multiply at freezer temperatures

How can bacterial growth be controlled?
- Good quality control systems, such as not storing raw food next to ready to eat and cooked food
- Temperature control, such as cooking food to a core temperature of 70°C for 2 min
- Personal hygiene, such as washing hands after visiting the toilet and then preparing food.
- Cleaning and disinfecting

Define the term ‘due diligence’
A food business must be able to demonstrate that it has done everything within its power to safeguard consumer health.

The legal requirements of food handlers
- Keep yourself clean
- Keep the workplace clean
- Protect food from contamination or anything that could cause harm
- Follow good personal hygiene practices – e.g. hand washing
- Wear appropriate protective clothing
- Tell your employer if you are suffering from or are a carrier of a foodborne disease

Required training of food handlers
- By law food handlers must receive adequate supervision, instruction/ or training in food hygiene for the work they do
- Those responsible for HACCP should also receive adequate training
- Training certificates should be renewed every 3 years
- Training should be refreshed – this generally takes place annually
- Training records should be kept

Food safety is best defined as making sure food is protected from harm of any kind. It is the protection of consumer health and well-being by safeguarding food from anything that can cause harm.