Your notes

GCSE Food Preparation and Nutrition: revision notes

Food spoilage and contamination

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Causes of food spoilage

- Enzymes: natural proteins in food that speed up ripening and cause **enzymic browning**, such as a cut apple turning brown. Acid (lemon juice) or blanching slows this.
- **Moulds**: fungi that grow on food, especially bread, cheese and fruit, producing visible furry patches.
- Yeasts: fungi that spoil sugary foods, such as fruit and jam, by fermenting them.
- Bacteria: some spoil food; **pathogenic bacteria** cause food poisoning without changing how food looks or smells.

What micro-organisms need

- Warmth: bacteria grow fastest at around 37°C. The **danger zone** is 5°C to 63°C.
- Moisture, food (especially high-protein foods) and time: in ideal conditions bacteria can double every 10 to 20 minutes.
- A suitable pH: most prefer neutral conditions, so acid (vinegar, as in pickling) slows them.
- Cold (below 5°C) slows growth; freezing (–18°C) stops it but doesn't kill bacteria; heat (75°C and above) kills most.

Food poisoning bacteria

- Campylobacter: raw poultry. The most common cause of food poisoning in the UK.
- Salmonella: raw eggs, raw poultry and meat.
- E. coli: undercooked beef (such as burgers) and unwashed vegetables.
- Staphylococcus aureus: from people's skin, nose and cuts, so good hygiene prevents it.
- Listeria: soft cheese, pâté and chilled ready meals; risky in pregnancy.

- Bacillus cereus: cooked rice left warm.

Useful micro-organisms

- Yeast makes bread rise. Bacteria turn milk into yoghurt and cheese. **Moulds** give blue cheeses their flavour.

Key terms

Enzymic browning	Browning of cut fruit and vegetables caused by enzymes.
Danger zone	The temperature range of 5°C to 63°C where bacteria grow fastest.
Pathogenic bacteria	Bacteria that cause illness.
Mould	A fungus that grows on food.
Cross-contamination	Bacteria spreading from one food or surface to another.
High-risk food	A moist, high-protein food where bacteria grow easily, such as cooked chicken.

Quick questions

Cover the answers and test yourself: remembering is what makes it stick.

1. What is the danger zone for bacterial growth?
2. At what temperature do bacteria grow fastest?
3. What causes a cut apple to turn brown?
4. How can enzymic browning be slowed?
5. Which bacterium is the most common cause of food poisoning in the UK?
6. Which bacterium is linked to cooked rice left warm?
7. Which bacterium comes from people's skin and noses?
8. What does freezing at –18°C do to bacteria?

Answers

1. 5°C to 63°C
2. About 37°C
3. Enzymes
4. Adding lemon juice
5. Campylobacter
6. Bacillus cereus
7. Staphylococcus aureus
8. Stops them growing but doesn't kill them

What to do next

Practise 11 questions on this topic

Try 4 exam questions, with mark schemes

Read the lesson, one step at a time

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