

## **Food Preservation**

- A** Food preservation usually involves preventing the growth of bacteria, fungi or other micro-organisms, as well as retarding the oxidation of fats that cause rancidity. Food preservation may also include processes that inhibit visual deterioration, such as the enzymatic browning reaction in apples after they are cut.
- B** Often, several food preservation methods are used together. Preserving fruit by turning it into jam, for example, involves boiling, to reduce the fruit's moisture content and to kill bacteria, sugaring, to prevent re-growth of bacteria, and sealing within an airtight jar, to prevent recontamination. Maintaining or creating nutritional value, texture and flavour is an important aspect of food preservation, although, historically, some methods drastically altered the character of the food being preserved. In many cases these changes have come to be seen as desirable qualities – cheese, yogurt and pickled onions being common examples.
- C** Drying is one of the oldest techniques used to hamper the decomposition of food products. As early as 12,000 B.C., Middle Eastern and Oriental cultures were drying foods using the power of the sun. Vegetables and fruit are naturally dried by the sun and wind, but in the Middle Ages, "still houses" were built in areas that did not have enough sunlight for drying to take place. A fire would be built inside the building to provide the heat to dry the various fruits, vegetables and herbs.
- D** The earliest cultures also used sugar as a preservative, and it was commonplace to store fruit in honey. In northern climates without sufficient sun to dry foods, preserves were made by heating the fruit with sugar. Sugar kills microbes by drawing water from them and leaving the microbial cells dehydrated. In this way, the food remains safe from microbial spoilage. Sugar is used to preserve fruits, either in an anti-microbial syrup with fruit such as apples, pears, peaches, apricots and plums, or in crystallised form where the preserved material is cooked in sugar to the point of crystallisation and the resultant product is then stored dry. This method is used for the skins of citrus fruit.
- E** Salting, or curing, is another ancient food preservation technique, involving the use of salt to draw moisture from meat through the process of osmosis. There is evidence of a trade in salt meat across ancient Europe. For example, the Gauls exported salt pork each year to Rome in large quantities, where it was sold in different cuts and used to feed Roman armies. In the 18th century, salt meat was one of the main foods for sailors on long voyages.
- F** While traditional methods of food preservation are still very much in use, a range of modern industrial techniques are employed by commercial food producers. Perhaps the most well known of these is pasteurisation, which was invented by the French chemist Louis Pasteur in 1862. To remedy the frequent acidity of the local wines, Pasteur found that it is sufficient to heat a young wine to only about 50–60 °C for a brief time to kill microbes, and that the wine could subsequently be aged without sacrificing the final quality. Today the process of pasteurisation is used in the dairy and food industries for microbial control, most notably in the production of milk. Other modern methods of food preservation include vacuum packing, using artificial additives, irradiation, electroporation and high pressure preservation.
- G** Most of the food that we buy in shops and supermarkets has been preserved and made safe for consumption using at least one of the traditional or modern techniques. However, all foods are susceptible to spoiling, and food poisoning is still extremely common. In fact, recent research puts the figure for cases of food poisoning in the UK at more than 500,000 per year.

*Questions 1 to 5*

The reading passage above has seven paragraphs, labelled A to G.

Which paragraph contains the information in the five statements below? Write the letter of the correct paragraph.

**NB.** You may use the same letter more than once.

1. A technique that was originally used to preserve wines.
2. Examples of foods whose appeal derives from how they are preserved.
3. Spoiled food continues to cause illness.
4. Preserved food eaten by soldiers.
5. An example of different preservation techniques working together.

*Questions 6 to 9*

According to the passage, are the following statements TRUE, FALSE or NOT GIVEN?

6. Several methods are employed to prevent bacterial contamination of jam.
7. Drying was only used in places with sufficient sunlight.
8. Sugar was the most valued preservative in ancient times.
9. The Romans imported salted meat because of its high quality.

**Correct answers:**

1. F
2. B
3. G
4. E
5. B
  
6. TRUE
7. FALSE
8. NOT GIVEN
9. NOT GIVEN

**Here's my keyword table for the "which paragraph contains" answers:**

Keywords in question statements	Similar words in paragraphs
1) a technique to preserve wines	F) heat wine to kill microbes
2) examples of foods appeal how they are preserved	B) cheese, yoghurt... common examples seen as desirable methods... the food being preserved
3) spoiled food continues to cause illness	G) foods are susceptible to spoiling... food poisoning is still common
4) preserved food eaten by soldiers	E) salt pork... to feed Roman armies
5) example of different preservation techniques working together	B) preserving jam, for example, involves boiling... sugaring... sealing

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