Food preservation

FOOD	DESSICCATED	SALTED	CANDIED	SMOKED	CANNED	FREEZED	OTHER
Anchovies							
Beans							
Beef							
Bread							
Cherries							
Ham							
Herbs							
Herrings							
Mushrooms							
Olives							
Orange peel							
Peas							
Peppers							
Strawberries							
Tomatoes							
Tuna fish							

How would you treat these foods to preserve them for a long time? Tick the right column(s).

The various methods of food preservation aim to prevent or delay microbial and other forms of food spoilage, and to guard against food poisoning; such methods therefore help to retain the nutritive value of the product, extend its shelf-life, and keep it safe for consumption. **Heat treatment** – Foods are exposed to a temperature/time regime which renders them safe and microbiologically stable for extended periods of time on subsequent storage in hermetically sealed containers at temperatures below 40°C. High temperature short time (HTST) treatment involves heat processing at high temperatures for periods ranging from ca. 2 sec to several minutes. In the ultra-high temperature (UHT) treatment of milk the process involves maintenance of a minimum temperature of ca. 140°C for at least 2 sec. **Canning** is a form of heat treatment in which suitably prepared foods are put into metal containers (cans/tins) which are then exhausted, hermetically sealed and heated. Pasteurization is a form of heat treatment which kills certain pathogens and/or spoilage

GLOSSARY

ca.: (circa) about. consumption: use. exhausted: emptied of air. ranging: varying. regime: scheme.
sealed: tightly closed.
shelf-life: the length of time a
product will last without any

reduction in quality, especially while being kept in a shop. *spoilage:* deterioration. organisms in milk and certain foods; temperatures below 100°C are used.

Low-temperature preservation – Low temperatures delay or prevent spoilage by reducing the metabolic activities of contaminating organisms and/or the activity of endogenous enzymes in the food. Refrigeration between 0°C and 10°C is often used for the short-term storage of foods. Freezing may kill a proportion of contaminating organisms, and it also makes food a less hospitable environment for surviving contaminants.

Dehydration - The water activity of foods may be reduced to a point at which the food will not support the growth of contaminating organisms by evaporation through heating (drying) or by the addition of sodium chloride (salting) or sugar syrups. Freeze-drying (lyophilization) has been used e.q. for coffee. Curing is a method of food preservation in which meat is permeated with a solution typically containing NaCl, NaNO, and NaNO, at a temperature of 4°C. They inhibit the growth of vegetative bacteria and enhance the colour and flavour of cured meats. Brines used for curing hams contain a characteristic microflora. Smoking is a method of food preservation in which the foodstuff is exposed to smoke for hours or days; smoking has a drying effect and raises the salt concentration of the food. Wood smoke contains various components which have antibacterial and antifungal properties.





Acidification – Pickling is a traditional method of food preservation in which the pH is lowered either by direct addition of acid (e.g. vinegar, lactic acid) or by a lactic acid fermentation of the food. The combination of salt, anaerobiosis and low pH serves to discourage the growth of undesirable organisms.

Fermentation – Fermentation of certain types of **raw** food not only enhances the keeping qualities of the food, it may also improve the flavour and the nutritive value of the food.

Preservatives - The addition of preservatives to particular foods is generally subject to governmental control.

Ionizing radiation has been used in some countries e.g. for chicken and for fish fillets, strawberries, onions and spices.

P. Singleton, D. Sainsbury: Dictionary of Microbiology and Molecular Biology, WILEY

GLOSSARY

brine: water containing a lot of salt, used for preserving food.

permeated: saturated.
proportion: part.

raw: uncooked.
typically: usually.

- **1** Student A: using the prompts below, ask questions about the reading passage. Student B: answer Student A's questions.
 - a. What / purpose / food preservation?
 - b. How / heat treated foods / be stored?
 - c. Difference / HTST / UHT?
 - d. What / canning?
 - e. What / pasteurisation?
 - f. Why / low temperatures / prevent / food spoilage?
 - g. Difference / refrigeration / freezing?
 - h. Different methods / dehydration?
 - i. What / curing / meat?
 - j. What / smoking / food?
 - k. What / pickling?
 - I. Advantages / fermentation?
 - m. What foods / ionising radiation / used?
- 2 Write down the answers you have given and join them into a summary of the reading passage.

3 Report orally the main ideas expressed in the reading passage.

- 4 Match the verbs into pairs of synonyms.
 - a. aim 🗌 1. protect

 - c. enhance 3. slow down
 - d. extend 4. improve
 - e. guard 5. intend
 - f. prevent 🗌 6. prolong
 - g. raise 🗌 7. make
 - h. render 🗌 8. sustain
 - i. retain 9. increase
 - j. support 🗌 10. preserve

5 And now let's have some fun and sing!

YOU'D BETTER WASH YOUR HANDS (Carl Winter's song taken from the Beatles' *I want to hold your hand*)

Oh yeah I'll tell you something / I think you'll understand / For the sake of sanitation / You'd better wash your hands / You'd better wash your hands / You'd better wash your hands Before, and after meals / And when you use the can / Soap and water, for twenty seconds/ Should be part of your plan / That's how you wash your hands / That's how you wash your hands / And when you're finished you'll feel happy inside / Washin' so thorough that microbes / They can't hide, they can't hide

Make sure you clean your nails / And dry with towel or fan / Prevent those nasty microbes From spreadin' 'cross the land / You'd better wash your hands / You'd better wash your hands And when you're finished you'll feel happy inside / Washin' so thorough that microbes / They can't hide, they can't hide, they can't hide

Oh yeah I'll, tell you something / I think you'll understand / For the sake of sanitation / You'd better wash your hands / You'd better wash your hands / You'd better wash your hands.