

CHAPTER 7**HANDOUT****Food Preservation Techniques****BLM 7-5**

Use this factsheet to help you complete Find Out Activity 7-E: Keeping Micro-Organisms Under Control

The basic principle of food preservation is to slow down the action of micro-organisms that cause food to spoil or kill the micro-organisms. The following is a list of techniques used to control the growth of micro-organisms on food.

Technique	How It Works	When It Is Used
Heat	Heat kills micro-organisms by changing the physical and chemical properties of their proteins.	Heat is used in the canning process. First, the food is boiled in the can to kill all the bacteria. The can is then sealed to prevent any new bacteria from getting in.
Pasteurization	A liquid, such as milk, is heated to temperatures high enough to kill certain (not all) bacteria and disable certain enzymes but preserve taste and nutritional value.	Products such as milk and honey are pasteurized.
Cold	Low temperatures reduce the rates of growth and reproduction of micro-organisms. Very low temperatures stop bacterial action completely.	Refrigerated foods take longer to spoil. Frozen foods do not spoil as a result of bacterial growth.
Drying or Dehydrating	Water is a basic need of all living things, including micro-organisms. Drying or dehydrating food removes most or all of the water. Freeze-drying is a special form of dehydrating that removes all moisture but preserves the taste.	Soups and sauces are often dehydrated. Pasta can be dried; potatoes can be reduced to flakes.
Salting	Salting is an ancient food preservation technique. Salt draws moisture from microbial cells, causing them to shrink and slowing or stopping their growth.	Meats and fish can be preserved by salting techniques.
Pickling	Pickling uses the preservative qualities of salt combined with the preservative qualities of acid, such as vinegar. Acid environments inhibit bacteria.	Vegetables such as cucumbers, tomatoes, beets, or carrots are pickled for long-term storage.
Radiation	Ultra violet radiation (UV) radiation kills the bacteria on products without significantly changing the quality of the food. If the food is sealed in plastic and then irradiated, the food will become sterile and can be stored on a shelf without refrigeration.	Meat storage
Vacuum Packing	Vacuum packing food in an airtight container removes the oxygen—another basic need of living things.	Coffee is often vacuum packed for long-term storage.
Use of Gases	Gases such as carbon dioxide or ozone are used to slow the growth of the fungi that spoil many fruits.	Long-term storage of apples and pears.