

STORAGE

When food is not properly stored or it is not used in a timely manner, it could become unsafe to eat. Unsafe storage practices could allow for contaminants to get into food. Unsafe storage temperatures could allow for bacteria that might be naturally present in potentially hazardous food to grow. To keep food safe during storage, make safe storage practices part of your food safety plan.

Safe Storage Guidelines

- Never remove the labels of commercially processed food. If they are removed, label the side of the container with the name of the contents.
- Rotate products to ensure that the oldest food is used first.
- Discard food that is past dated.
- Check temperatures of stored food and storage areas each day.
- Store food only in designated storage areas.
- Keep all storage areas clean and dry.

Cleaning and Chemical Storage

- Store cleaning supplies and other chemicals separate from all food, dishes, utensils, linens, and single-use items.
- Keep supplies and chemicals in their original containers.
- If supplies and chemicals are not in their original containers, clearly label the side of the holding container with the name of the contents. Do not label the lid because lids are interchangeable.

Dry Storage

- Keep storerooms cool, dry, and well ventilated.
- Store dry food away from walls and at least six inches off the floor.
- Keep dry food out of direct sunlight.
- Store food in durable containers that cannot be damaged by water or pests
- Set temperature between 50°F and 70°F (10°C and 21°C).
- Maintain humidity levels between 60% and 70%.
- Keep the area clean.

Frozen Storage

- Keep freezer temperature at 0°F (-18°C) or colder unless the food requires a different temperature.
- Place a freezer thermometer near the front of the freezer.
- Do not overload freezers.
- Check freezer temperatures daily.
- Place frozen food deliveries in the freezer as soon as they have been inspected.
- Do not put warm food inside the freezer.
- Store food to allow for good air circulation.
- If necessary, defrost freezers regularly.

-
- Keep the freezer closed as much as possible.

Refrigerated Storage

- Keep temperature at 39°F (4°C) or below. Potentially hazardous food must be at 41°F (5°C) or colder to prevent bacterial growth.
- Place a refrigerator thermometer on the top shelf near the door.
- Store raw foods below cooked or ready-to-eat foods.
- Check refrigeration temperatures daily.
- Store food to allow for good air circulation.
- Do not line shelves with foil or other materials because this prevents food air circulation.
- Keep the refrigerator closed as much as possible.
- Do not put large volumes of hot food into the refrigerator to cool.
- Cover food properly to prevent cross-contamination.

Hot-holding cabinets

- Set temperature at 135°F (57°C) or hotter. Potentially hazardous food must be at 135°F (57°C) or hotter to prevent bacterial growth.
- Place a thermometer on the top shelf near the front of the unit.

First In, First Out (FIFO)

Past-dated foods will lose their quality and sometimes become unsafe over time. To prevent this, develop written procedures for the storage of foods. First in, first out (FIFO) is one way to do this. FIFO ensures the proper rotation of foods during storage. When foods are received, put the oldest in the front and the newest in the back. It is best to discard foods that are past dated.

Date Marking

Refrigerated, ready-to-eat, potentially hazardous foods include: deli meats, seafood salads, cooked and chilled leftovers. When these foods are prepared in your restaurant and are held for more than 24 hours, they must be dated and used within seven days. When prepared and packaged by a food processing plant, they must be dated when the original container is opened and used within seven days if they will be held for more than 24 hours. The date must indicate when the food will eaten, sold, or thrown out.

Cross-contamination during Storage

Bacteria can be transferred from one food to another if the food is not properly stored. Properly cover foods with a lid or food-grade film, such as aluminum foil or plastic wrap. The only time that food should not be covered is while it is being cooled. However, after cooling is complete, the food must be properly covered.

Always store raw food below cooked or ready-to-eat food. Also separate raw, unprepared vegetables from ready-to-eat potentially hazardous foods. Completely separate raw animal foods, such as beef, fish, and poultry, from each other.

Storage Containers

Food that is not properly packaged or that is in damaged packaging could become contaminated. Store food that is removed from its original package in an approved storage container. An approved storage container is food-grade, in good condition, and clean. Clearly label the side of all food containers with the common name of the food unless the food is unmistakably recognized. For example, a container of flour must be labeled because it might be accidentally viewed as a sanitizer. Rice does not need to be labeled because it is unmistakably recognized.

Storage Guidelines for Specific Foods

Food	Storage Temperature	Other Requirements
Meat	41°F (5°C)	Tightly wrap or place it in a deep container.
Poultry	41°F (5°C)	Store ice-packed poultry in self-draining containers. Change ice often and sanitize the container regularly.
Fish	41°F (5°C)	Tightly wrap or store in original packaging. Before shipping, fish served raw or partially cooked must be frozen by the processor to -4°F (-20°C) or colder for seven days in a storage freezer <u>or</u> -31°F (-35°C) or colder for fifteen hours in a blast freezer.
Shellfish	Store alive at 45°F (7°C)	Store alive in the original container Store clams, oysters, mussels, and scallops in a display tank if the tank has a sign stating that the shellfish are for display only or if a variance is obtained from the local health department. Keep shellstock tags on file for 90 days from the date the last shellfish was used.
Shell eggs	41°F (5°C)	Use within 4-5 weeks of the packing date.
Dairy	41°F (5°C)	Discard if past the use-by or expiration date.
Ice cream and frozen yogurt	6°F-10°F (-14°C-12°C)	Discard if past the use-by or expiration date.
Produce	Temperature varies	If delivered packed on ice, store that way.

Food	Storage Temperature	Other Requirements
MAP, vacuum packed, and sous vide packaged food	41°F (5°C)	Discard if past the use use-by or expiration date.
UHT products, aseptically packaged	50°F-70°F (10°C-21°C)	Once opened, store all UHT at 41°F (5°C) or colder. Read the label to determine if the product needs to be refrigerated.
UHT products not aseptically packaged	41°F (5°C)	Store above raw foods. Read the label to determine if the product needs to be refrigerated.
Canned/ dry food	50°F-70°F (10°C-21°C)	If removed from its original packaging, store in airtight, clearly labeled containers.

Prepared by:

Angela M. Fraser, Ph.D., Associate Professor/Food Safety Specialist
Department of Family and Consumer Sciences
NC State University, Raleigh, NC 27695-7605

The material in this fact sheet, unless otherwise identified, is based upon work supported by the Extension Service, U.S. Department of Agriculture, under special project number 2003-51110-01715, the National Integrated Food Safety Initiative of the Integrated Research, Education, and Extension Competitive Grants Program. For more information, contact Dr. Angela Fraser at 919-515-9150 or at angela_fraser@ncsu.edu.

Employment and program opportunities are offered to all people regardless of race, color, national origin, sex, age, or disability through North Carolina State University, North Carolina A & T State University, U.S. Department of Agriculture, and local governments cooperating.