



An Emergency Food Worker's Guide to Food Safety

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Note on temperatures: Cooling and cooking temperatures in this booklet comply with the 2001 FDA Food Code. Since these temperatures are somewhat different than those mandated by the present sanitary code of the New York State Department of Health for foodservice operations, New York temperatures are also given for cooling and cooking foods.

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Before a disaster strikes your community, work with your local health department and other agencies such as the Red Cross Disaster Preparedness team or your state's affiliate of the Federal Emergency Management Agency (FEMA) to plan and equip your foodservice facility so that you can properly prepare and serve safe food in an emergency situation. In addition, make plans for how you could safely house temporarily homeless people. The emergency agencies listed at the back of this booklet can provide you with the information you need to prepare your facility for disasters that might occur.

To Emergency Workers and Volunteers



Natural disasters can create devastation and cause many problems. Blizzards, forest fires, floods, hurricanes, ice storms, or tornadoes can destroy people's homes or make them temporarily unlivable, or strand motorists far from where they live. These disasters can also turn your facility into an emergency disaster shelter where you will temporarily feed and/or house people affected by such events.

The purpose of this booklet is to help you prepare and serve safe and wholesome food to your temporary guests. It's not hard to do if you:

- practice good personal hygiene,
- observe good work habits,
- take care when receiving and storing foods,
- use safe food preparation techniques,
- keep foods at proper temperatures during thawing, hot- and cold-holding, and reheating,
- keep equipment and utensils clean and sanitary,

- serve food properly on clean, sanitized dishes, and
- follow a regular cleaning schedule for your facility.

Since your facility is not a regular foodservice establishment, it may not have the kinds of equipment mentioned throughout this booklet. And in an emergency you may have to operate under crowded, less-than-ideal conditions, or even without electrical power and running water. However, the information presented here can still provide you with guidelines for preparing safe food so that you can do the best job possible under emergency conditions.

Read this Guide thoroughly. It contains essential information to help you do your job well. Consult the *Definitions* section (page 27) if there are words that are new to you. Contact your local health department sanitarian or your local Cooperative Extension food and nutrition educator if there is anything in this Guide that you do not understand or if you have a question about your temporary foodservice operation.

Keep this guide near your work area so you can refer to it if you have a question about safe food preparation and service.

The Cause of Foodborne Illness

The intestinal flu-like symptoms of foodborne illness (food poisoning) range from mild to severe. Some kinds of foodborne illness can even cause death. People who are very young, very old, pregnant, or who have weakened immune systems (for example, from cancer therapy,

chronic disease, or HIV or AIDS) are especially vulnerable to foodborne illness. Fortunately, most foodborne illnesses can be prevented.

Foodborne illnesses are caused by *harmful* microorganisms, usually bacteria or viruses. But not all microorganisms cause foodborne illness. Some *helpful* bacteria, yeasts, and molds are used in the production of foods such as bread, beer, yogurt, cheese, buttermilk, sauerkraut, vinegar, and summer sausage. Other kinds, called *spoilage* microorganisms, can multiply at room or refrigerated temperatures and cause food to look, smell, or taste bad. Spoiled food, such as mushy green peppers or soured milk, is not necessarily harmful to eat, but should be thrown out.

Unfortunately, harmful bacteria and viruses rarely make food look, smell, or taste bad, so you and your guests cannot tell when these microorganisms are present in food. Even though we can't see them, bacteria are all around us. They are present in the air, in the soil, in the intestinal tracts of animals and humans, and in raw and undercooked foods. Bacteria are found in our noses and mouths, on our skin and hair, and in infected cuts and burns. It is up to you to keep these bacteria out of the food you prepare and serve in your soup kitchen.

Another kind of foodborne illness is caused by chemicals that get into food by accident. Metal food poisoning can be caused by using containers such as galvanized metal garbage cans to hold large quantities of food. Other chemical food poisoning can be caused when cleaning compounds or pest-control chemicals get into food by accident.

When you:

- practice good personal hygiene,
- have good work habits,
- handle food safely,
- keep equipment and utensils clean and sanitary,
- use only foodgrade containers to serve and store food, and
- serve food properly on clean, sanitized dishes...

you help prevent the spread of harmful microorganisms or the introduction of chemicals that cause foodborne illness.

Personal Hygiene and Work Habits

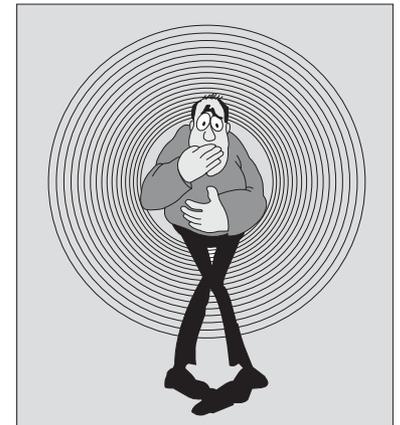


Practice good personal hygiene:

- Bathe every day and keep your hair clean and neat.
- Keep your hands and fingernails clean. Brush your teeth regularly.
- Wear clean, washable outer garments and keep your shoes clean.
- Wear a suitable hair restraint, such as a baseball cap or hair net.

Harmful microorganisms rarely make food look, smell, or taste bad, so you and your guests cannot tell when these microorganisms are present in food.

Fortunately, most foodborne illnesses can be prevented.



Wear clean gloves or use appropriate utensils to prepare food.

- Wash your hands and exposed parts of your arms thoroughly:
 - before starting work,
 - after using the toilet,
 - after eating, smoking, or otherwise touching your mouth or anything that has been in your mouth,
 - after touching your hair, scalp, nose, ears, neck, or other parts of your body,
 - After working with trash, garbage, or dirty or nonfood equipment,
 - After sneezing or coughing onto your hands,
 - After switching from handling raw food to cooked or other ready-to-eat foods, and
 - After any absence from the work area or after a change in work duties.

How to Wash Hands

- Wet hands with clean, warm water and soap.
- Rub hands together for at least 20 seconds (sing “Happy Birthday” 2 times while you wash your hands).
- Clean under the nails and between the fingers.



- Rinse under clean running water.
- Dry hands with a disposable towel.

Adopt Good Work Habits When You Prepare Food

- Take off jewelry or earrings that could trap soil and bacteria or fall into food. Only smooth wedding bands are acceptable when you work with food.
- Do not carry items in shirt pockets, such as cigarettes, lighters, and uncapped pens without clips.
- Wear clean gloves or use appropriate utensils to prepare food.
- Eat, drink, smoke, or chew gum only in an authorized break area, not in the kitchen.
- Do not pick, scratch, groom, or otherwise touch parts of your body while you prepare and serve food. Wash your hands when you return to work after a break of any kind.
- Never spit while in food-handling areas or anywhere else.
- Store street clothing, personal belongings, or personally owned foods and beverages away from food preparation, serving, or storage areas.



Be Sure You Are Healthy When You Work with Food

- If you feel ill, have a sore throat, or have diarrhea, stomach cramps, vomiting, or fever, immediately tell the supervisor (or person supervising) and do not work with food.
- If you are infected with or think you may be the carrier of a communicable (catching) disease, tell the supervisor and do not work with food.
- If you have infected cuts, abrasions, boils, or any condition that causes flaking of the skin, do not work with food. Working with a wound is okay if it is freshly and properly bandaged and covered with clean gloves or clothing which will prevent contact with food or food-contact surfaces.

Receiving Food and Supplies

Safe food starts with properly handled and stored raw ingredients and supplies. Check the condition of all incoming foods, food packaging supplies, single-service items, laundry, and other items connected with food preparation and service.

Use a thermometer to check the temperature of all refrigerated and frozen foods. Refrigerated foods should be 40°F (45°F in N.Y.) or below;



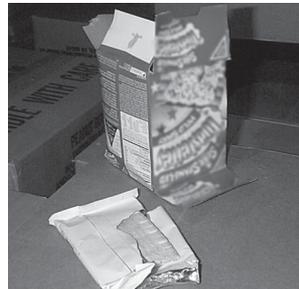
frozen foods should be frozen solid (ideally, 0°F or below) and not soft on the outside.

Foods requiring refrigeration include meat, poultry, seafood, eggs, milk, cheese, yogurt, pudding, some raw vegetables and fruits, and all cooked food, such as soup, stew, vegetables, potatoes, rice, or casseroles. Some of these same foods, and items like ice cream and sherbet, may be delivered frozen.

Fresh fruits and vegetables with cosmetic blemishes that might not be acceptable to supermarket customers can be trimmed and used by creative temporary cooks. If you are unfamiliar with the difference between cosmetic blemishes and true spoilage or over-ripeness of fruits and vegetables, ask a supermarket produce manager, local farmer, or Cooperative Extension Educator to advise you.

Reject or Discard:

- refrigerated foods warmer than 40°F (45°F in N.Y.) and frozen foods that have become soft or are warmer than 32°F (use your thermometer and ask to see the recording thermometers inside trucks, if they are so equipped),
- food that looks or smells spoiled,
- packages that are broken, torn, damaged, leaking, or soiled, or packages with missing or illegible labels,



Foods requiring refrigeration include meat, poultry, seafood, eggs, milk, cheese, yogurt, pudding, some raw vegetables and fruits, and all cooked food.

Prevent cross-contamination: Store items that might leak or drip, such as fresh, raw meat, poultry, seafood, or shell eggs below other items. Store uncooked foods below cooked or ready-to-eat products.

Reject or Discard:

- boxes with inner bags that are imperfectly sealed, torn, leaking, or contaminated, or that have moldy or foreign objects inside; damaged exterior packaging with readable labels are acceptable if the inner liner is not damaged,
- items with stains that indicate they might have been contaminated by water, toxic materials, or pests,
- packages with insect damage (bore holes, webs, moving bugs, insect skins) or rodent gnaw marks or droppings,



- canned foods that are leaking, severely dented (especially along rims and seams) pitted with rust, or have bulging or puffy ends,



- canned foods with incomplete or miswelded seams, dirt under pull tabs, pits or pinholes, cuts or misformed rims and loose tops, no label, or rust that will not rub off, and
- all home canned products.

After you check the condition of the products, store cold foods in the freezer or refrigerator immediately after delivery. Then put away dry-storage items, single-service items, and laundry.

Proper Storage of Food and Supplies



Proper Storage Guidelines

- Store products at least 6 inches off the floor, in an orderly manner, on clean shelves, dollies, racks or pallets, and in regular storage areas that are clean and tidy.
- Use the First-In, First-Out (FIFO) rotation system: Date food items or cases and place newer items at the bottom or in back of older items.

- Prevent cross-contamination: Store items that might leak or drip, such as raw meat, poultry, seafood, or fresh shell eggs, below other items. Store uncooked foods below cooked or ready-to-eat products.
- Label and date clean, covered containers of food that have been removed from the original containers.

Do Not Store Food and Serving Supplies:

- under possible sources of contamination, such as unprotected sewer lines, water lines, or refrigerator lines where there is excessive moisture,
- in toilet rooms, vestibules, garbage rooms, salvage areas, or mechanical equipment rooms,
- directly on the floor,
- in overcrowded conditions, or
- near cleaning and sanitizing supplies or pesticides and other toxic materials.



Dry or Pantry Storage

- Close opened bags or boxes of food securely, or transfer the contents to clean, sanitized, covered, labeled, food-grade plastic or metal containers. Don't use garbage bags for food storage; use clear, food-grade bags.

- Check products frequently for signs of pest infestation. Insects may be tiny and difficult to see. Grain products (such as flour, cornmeal, cereals, and rice), raw nuts, seeds, and spices, in particular, can become infested with insects and rodents. Discard all infested foods.
- If possible in your storage area, leave a space of at least 18 inches between stacks of product and between stacks and walls if storage time will be more than 30 days.



- Store all clean utensils, packaging, and single-service supplies under the same sanitary conditions used for food.
- Store pesticides and other toxic materials separately from cleaners and sanitizers. DO NOT store either of these kinds of products above or close to food or food-contact items.

Controlled Temperature Storage

Store frozen items at 0°F, or below if possible. Check freezer temperature frequently, ideally at least twice daily.

Note: Pesticides are allowed only if the facility operator has a state license to apply these chemicals.

Store cloths for wiping in sanitizer solution.

Store equipment so it will stay clean and sanitary.

Store refrigerated items at 40°F (45°F in N.Y.) or below. Check refrigerator temperatures frequently, ideally at least twice daily.

Avoid cross-contamination of ready-to-eat foods; cross-contamination can be caused by juices dripping from eggs, raw meat, poultry, fish, and seafood, or by physical contact with these foods. Store these raw products on shelves **BELOW** other foods.



Store fresh shell eggs, meat, poultry, fish, and seafood on clean, sanitized trays and **NOT** in direct contact with water or undrained ice.

Raw fruits are safe at room temperature, but after ripening, will mold or rot quickly. For best quality, store ripe fruit in the refrigerator or prepare it for freezing.

Raw vegetables keep longer and maintain better quality when they are stored in the refrigerator. Exceptions are raw garlic, onions, potatoes, sweet potatoes, and winter squash, which should be stored at cool room temperatures in a dark, dry place. All cooked fruits and vegetables must be kept refrigerated or frozen.

Check fresh fruits and vegetables each day. Discard produce with pest infestation, extensive blemishes, wilting, slime, mold, and decay.

Hold hot food items at a center temperature of at least 140°F or above; the exception is rare roast beef which may be held at a minimum center temperature of 130°F.

Food Preparation and Serving

Keep Food-Contact Surfaces Clean

Always wash, rinse, and sanitize all food-contact surfaces when switching from one food to another, or use another utensil or piece of equipment that is clean and sanitized. (See *How to Wash, Rinse, and Sanitize Dishes and Equipment* on page 21 for more information.)



Specifically, you must wash, rinse, and sanitize a surface or an item:

- when switching from one kind of raw meat species to another, such as from pork to lamb, or beef to poultry, or
- when switching from raw to ready-to-eat foods, or
- before the first use and after the final use each workday.

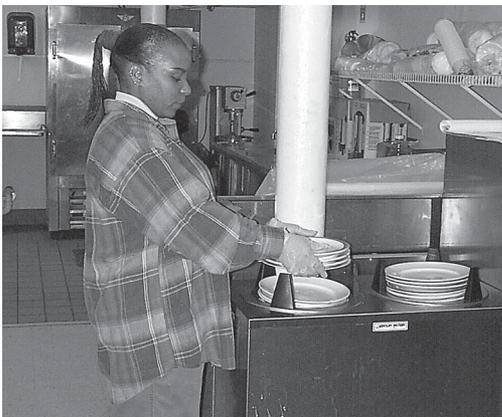
Keep cloths used to wipe food spills from food-contact surfaces, dining tables, and serving counters stored in a sanitizer solution when not in use. Replace the sanitizer solution and cloths at least every 4 hours, when cloths or solutions look soiled, or when the sanitizer test strip indicates that the solution is below the minimum effective strength (see page 22 for more information on sanitizing).

Discard disposable cloths when they are worn or permanently soiled.

Permanent cloths must be laundered by a process that includes a sanitizing step (for instance, the addition of bleach in the rinse cycle) and a hot-drying step. Single-service paper towels must be held by a dispenser.

Keep the food preparation area free of clutter. Wash, rinse, sanitize, and put away equipment not being used. Store equipment so it will stay clean and sanitary.

Immediately wash, rinse, and sanitize utensils and other food-contact items that fall to the floor.



Avoid Bare Hand Contact with Food



Handle ready-to-eat foods with utensils, deli papers, or gloves — not with bare hands. Wear clean disposable gloves when hand contact with ready-to-eat food is necessary. Clean hands are a must, even with glove use. Gloves must be changed frequently and certainly after they get ripped, damaged, or soiled. Wash your hands, then put on new gloves.

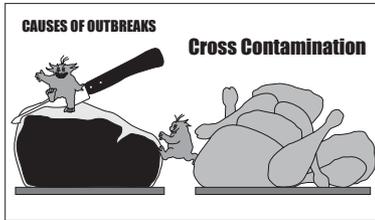
Put on new, clean gloves:



- before starting work,
- after using the toilet,
- after eating, smoking, or otherwise touching your mouth or anything that has been in your mouth,

Handle ready-to-eat foods with utensils, deli papers, or gloves — not with bare hands.

Wash your hands, then put on new gloves.



Thermometers must be washed, rinsed, sanitized, and air dried before and after each use, just like other food equipment.

- after touching your hair, scalp, nose, ears, neck, or other parts of your body,
- after working with trash, garbage, or dirty or non-food equipment,
- after sneezing or coughing onto your hands,
- after switching from raw food to cooked- or other ready-to-eat foods, and
- after any absence from the work area or change in work duties.

Handle utensils properly

- Pick up and use utensils by the handles only.
- If a utensil falls into the food, use a suitable, clean utensil to remove it.
- To taste food, use a clean spoon dipped into the food only once. Do not taste food from utensils used to prepare or serve foods. Do not sample food with your fingers; this could contaminate the whole batch of food with harmful bacteria.

Handle ice properly:

- Transfer ice with an approved scoop. Don't use hands, cups, glasses, or cans to scoop ice.
- Store the ice scoop outside the ice machine in a container or in a manner, such as hanging, that will prevent contamination of the scoop.
- Do not store food or beverage containers on ice reserved for drinks or for food preparation. Harmful bacteria can be transferred from the containers to foods and beverages, even from ice. This is one example of cross-contamination.

Prevent Cross-Contamination

Cross-contamination is the transfer of harmful microorganisms from one food to another by means of human hands, utensils, or equipment, or directly from a raw food to a cooked or ready-to-eat food.

Examples:

- Raw beef is cut with a knife, then the same knife is used, without first cleaning and sanitizing it, to slice cooked beef. The cooked beef could be “cross-contaminated” by harmful microorganisms from the raw beef.
- Storage of uncovered tossed salad greens below thawing poultry that is dripping raw poultry juice into the salad greens.

Cross-contamination can be prevented by careful storage of foods, as noted in the *Proper Storage of Food and Supplies* section of this manual (pages 8–10), by using gloves or utensils to handle food, and by the careful washing, rinsing, and sanitizing of cutting boards and other equipment used to prepare food.

Safe Food Temperatures

How to Use Thermometers

Keep your thermometer clean. Even thermometers can cause cross-contamination of harmful microorganisms from a raw food to a cooked food, so they must be washed, rinsed, sanitized, and air dried before and after each use, just like other food equipment. Keep their cases clean, as well. A sanitizing solution for food-contact surfaces or disposable alcohol wipes can be used to sanitize a thermometer.

Check product temperatures often. Use thermometers to check temperatures during cooking, hot-holding, serving, and cooling of foods. Take the temperature in several areas of the food. Be sure the sensing area of the thermometer is fully immersed in the food. Always take the temperature in the center or in the thickest part of the food. Do not touch any bones in meat or poultry. Clean and sanitize the thermometer after each use. Handle the thermometer with care and store it in its clean, sanitary case.

Check the accuracy of your thermometers periodically and calibrate (correct the setting) them if necessary. If a thermometer is dropped, check its accuracy right away. To adjust a thermometer, hold the face of the thermometer and turn the calibration (hex-shaped) nut underneath the face with a wrench until the indicator reads either 32°F (ice method) or the same temperature as the boiling point of water in your area (212°F at sea level).

To check the accuracy of your thermometer, use either the ice method or the boiling water method.

Ice Method

Prepare a 50/50 mixture of ice and water by letting crushed ice melt in a container. This is much more accurate than adding tap water to the ice. Stir to create a uniform temperature. Insert the thermometer in the ice water. If the temperature is not 32°F, adjust the thermometer.

Boiling Water Method

Take care when using this method because boiling water can cause burns. Bring water to a boil. Stir to create a uniform temperature. Insert

the thermometer in the boiling water. If the temperature is not the same as the boiling point of water in your area, adjust the thermometer. Note: For each 1,000-foot increase in elevation above sea level, the boiling point of water drops 1°– 2°F.

Temperature Danger Zone

Keep foods out of the temperature danger zone, the range between 40°F (45°F in N.Y.) and 140°F, except while you prepare them for cooking or serving. Keep hot foods hot (above 140°F) and cold foods cold (below 40°F (45°F in N.Y.)). Many foodborne illnesses are caused by foods not kept hot or cold enough. Keeping food out of the temperature danger zone prevents harmful bacteria from multiplying in food and helps to prevent foodborne illness.



Bring from storage only the amount of ingredients needed. For instance, do not bring out 50 pounds of refrigerated raw meat if the recipe calls for only 10 pounds. This helps to prevent bacterial growth that would occur if the extra meat sat at room temperature needlessly.

Keep hot foods hot (above 140°F) and cold foods cold (below 40°F (45°F in N.Y.)) Use your thermometer to check temperatures.

Cooking Chart - 2001 Food Code

Use your thermometer to check temperatures for any cooking method you use.

Cooking	Temperature	Time
Fruits and vegetables cooked for hot-holding	140°F	
Solid portions of fish, beef, veal, pork, lamb, and game animals*	145°F	15 seconds
Shell eggs (prepared for <i>immediate</i> service)	145°F	15 seconds
Whole beef roasts, corned beef roasts, pork roasts, and cured pork roasts such as ham**	130°F	112 minutes
	140°F	12 minutes
	145°F	4 minutes
Ratites and injected meats***	158°F	<1 second (instantaneous), or
Chopped or ground fish, meats, and game animals*	155°F	15 seconds, or
	150°F	1 minute or
Shell eggs (<i>not</i> prepared for immediate service)	145°F	3 minutes
All poultry	165°F	15 seconds
Wild game animals****	165°F	15 seconds
All stuffed products, including meats, poultry, fish, pasta, and ratites	165°F	15 seconds
Stuffing containing meat, fish, poultry or ratites	165°F	15 seconds
<p>* Game animals either commercially raised for food or under a voluntary inspection program. See the <i>Food Code</i>, 3-201.17 (A)(1) and 3-201.17 (A)(2).</p> <p>** Other time and temperature combinations for cooking whole roasts are listed in the <i>Food Code</i>, 3-401.11(B)(2).</p> <p>*** Ratites include ostriches, rheas, emus, moas, and kiwis.</p> <p>**** Wild game animals that are live-caught or field-dressed. See the <i>Food Code</i>, 3-201.17 (A)(3) and 3-201.17 (A)(4).</p>		

Cooking Chart - 2001 Food Code

Hot-Holding

Hot foods that are held hot 140°F

Un sliced beef roasts and corned beef roasts 130°F

Reheating for Hot-Holding

Cooked and cooled potentially hazardous foods 165°F for 15 seconds

Ready-to-eat foods from a commercially processed, hermetically sealed container or an intact package from an inspected food processing plant 140°F

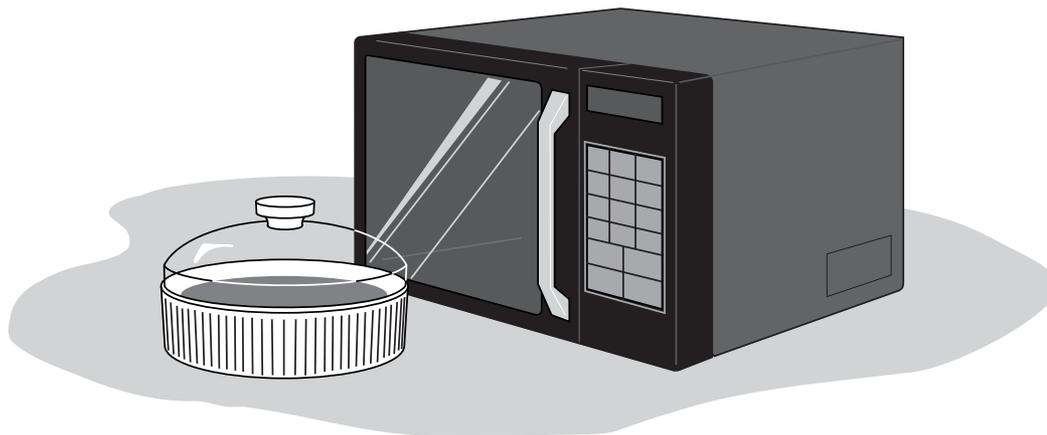
Microwave Cooking and Microwave Reheating for Hot-Holding

Raw animal foods

Cooked and cooled potentially hazardous foods that are reheated for hot-holding

165°F in all parts of the food; cover; rotate and stir throughout or midway during cooking or reheating; allow to stand covered 2 minutes after cooking or reheating

**Keep it hot,
keep it cold,
or don't keep it!**



Cooking Chart - New York State Health Code



Cooking	Temperature	Time
Fish	140°F	
Shell eggs	145°F	
Roast beef	130°F	121 minutes
	135°F	37 minutes
	140°F	12 minutes
	145°F	3 minutes
Pork and pork products	150°F	
Ground meat	158°F	
All poultry and poultry stuffing	165°F	
All stuffed meats	165°F	
Stuffing containing meat, fish, or poultry	165°F	
Microwave Cooking		
Roast beef	145°F	
Pork and pork products	170°F	
Reheating		
Cooked and cooled foods that are reheated	165°F	within 2 hours
Hot-Holding		
Hot foods that are held hot	140°F	

Thawing Food

Thaw frozen foods in one of these ways:

- in a refrigerator (plan ahead; it may take 2 to 3 days to thaw a food);
- under COLD, running, drinkable water;



- in a microwave oven:
 - when the food will be immediately transferred to regular cooking units as part of a continuous cooking process, or
 - when the entire uninterrupted cooking process takes place in the microwave oven;
- by continuously cooking (baking, boiling, or frying) from the frozen state until thoroughly cooked.

Do not refreeze frozen foods after thawing. Thawed raw meats or poultry that can't be used immediately can be cooked and frozen for later use.

Hot Food Preparation, Holding, and Reheating

When cooking food:

- Preheat ovens or other cooking devices before placing food in them.
- Cook continuously until proper center temperature is reached.

Cook foods to temperatures listed in the *Cooking Charts* on pages 14–16.

Cooling Food

Hot food is often cooled to 40°F (45°F in N.Y.) or below when the food will be:

- served to guests cold (for example, custard),
- reheated (for example, soups or stews), or
- used in further recipe preparation (for example, cooked meat or poultry).

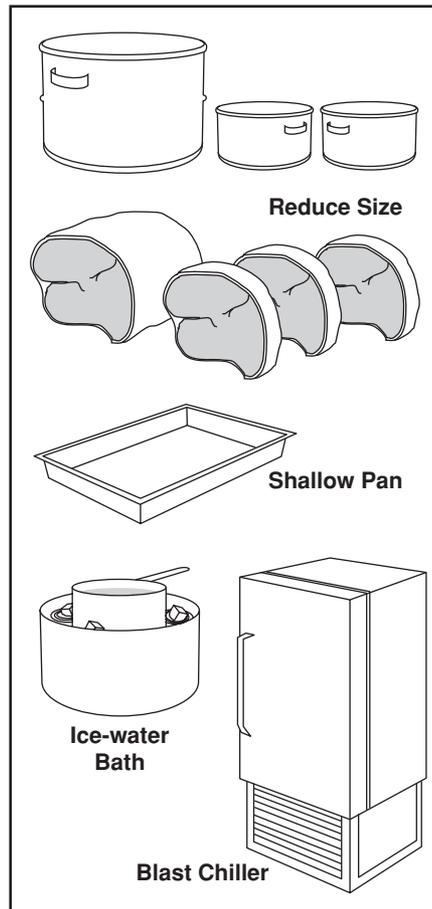
Whatever its use will be, the food must be cooled quickly so that it will spend a minimum amount of time in the temperature danger zone (40°F (45°F in N.Y.) to 140°F).

To accomplish rapid cooling

- Place the food container in an ice-water bath, making sure that the ice bath level is at or higher than the level of the food in the container. Stir the food frequently until your thermometer indicates that the food is 40°F (45°F in N.Y.) or below; then cover and refrigerate.
- Place the food in uncovered shallow pans (4 inches or less deep) and place immediately onto upper shelves in the refrigerator. Stir frequently during the cool-down period. Cover pans when your thermometer indicates that the food is 40°F (45°F in N.Y.) or below.
- Separate large pieces of cooked meat or poultry into portions weighing 3 pounds or less, or 3 inches or less in thickness; place pieces, uncovered, on a tray on the upper shelves in the refrigerator. Cover when your thermometer indicates that the food is 40°F (45°F in N.Y.) or below.

When cooling foods, the food temperature must decrease from 140°F to 70°F within 2 hours and from 70°F to 40°F (45°F in N.Y.) within another 4 hours. This prevents the growth of harmful bacteria that might have gotten into the food.

Prepare chicken, potato, tuna, and egg salads with chilled ingredients (40°F (45°F in N.Y.) or below).



Label and date all cooled foods so that others know when the food was prepared and cooled.

Store leftovers in clean, sanitized, covered and dated containers in the refrigerator. Discard the leftovers if they are not consumed within 3 to 4 days.

Reheating Food

Use your thermometer to check temperatures for any cooking method you use. Microwave ovens can heat unevenly, so final temperature recommendations are higher for food cooked in them.

Leftover foods that have been cooked, cooled, and reheated can be served only once. Discard any reheated food that is left over.

Preparation of Specific Kinds of Food

Preparation of Cold Salads and Sandwich Fillings

Foods that might be served cold include egg, potato, pasta, chicken, and tuna salads and sandwich fillings. Since these ingredients can easily support the growth of microorganisms, they must be prepared with care. Vegetable ingredients for these foods must be properly cleaned and prepared; poultry, meat, and seafood should be cooked properly and cooled quickly.

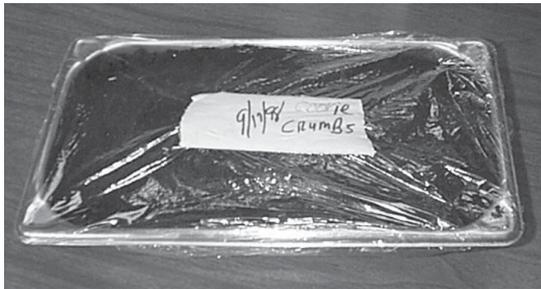


- Cool chicken, potatoes, and eggs quickly to 40°F (45°F in N.Y.) after cooking and dicing. The section on cooling foods, page 17, can tell you how.
- Prepare chicken, potato, tuna, and egg salads with chilled ingredients (40°F (45°F in N.Y.) or below). Move cans of tuna and jars of unopened mayonnaise from the storeroom to the refrigerator the day before salad is prepared.

- Prevent cross-contamination. Don't allow raw eggs, poultry, or unwashed vegetables to contact the cooked or cleaned ingredients. Carefully wash, rinse, and sanitize cutting boards and utensils after preparation of raw ingredients.
- Wrap and refrigerate small batches of sandwiches as they are prepared so that large quantities are not left at room temperature.

Canned Foods

- Use a clean and sanitized can opener.
- Clean lids before opening; remove lids completely.
- Transfer leftovers from cans to clean, sanitized, covered, and dated food-approved containers and store in the refrigerator.



Preparation of Eggs and Egg-Based Mixtures

- Keep eggs refrigerated when not in use. Sound, uncracked raw eggs can be stored in the refrigerator for 3 to 5 weeks.
- Do not use cracked eggs.
- Do not pool eggs for later use. Break only as many eggs as needed.

- Use pasteurized eggs for dishes that receive little or no cooking, such as meringues, Hollandaise sauce, or Caesar salad dressing.
- Cook eggs so that they are firm throughout or a final temperature of 145°F or above is reached.

Fruits and Vegetables

- Before cutting or processing, rinse thoroughly under water that is safe to drink.
- Cutting before washing might introduce harmful microorganisms or soil to hard-to-wash cut surfaces.
- Use a clean scrub brush to wash foods with hard exteriors such as potatoes, canteloupes, or winter squash.
- Use clean disposable gloves to prepare fruits and vegetables that will be served raw.



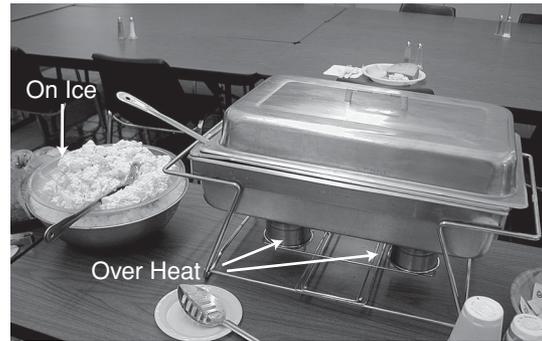
Condiments

- Store condiments, such as catsup, mayonnaise, or mustard, in the refrigerator after opening.

Use clean disposable gloves to prepare fruits and vegetables that will be served raw.

Servers need to handle clean dishes or utensils so that the parts of tableware which come in contact with the guests' food or mouth are never touched.

Serving Food Safely



Service of food is another step where food contamination can be avoided by careful practices.

- In some emergency situations, disposable dishes and utensils may need to be used.
- Keep hot food hot and cold food cold while serving food to guests.
- Use a thermometer to be sure hot food is at 140°F or above and cold food is at 40°F (45°F in N.Y.) or below.
- Use the stove top, oven, or microwave oven to reheat foods (for specific temperatures, see the section on reheating foods in the Cooking Chart). Don't use hot-holding equipment (steam tables, electric soup pots) to reheat foods.
- Store serving utensils in food with handles extended out of the food when not in use. Store utensils, such as tongs or ice cream



scoops, on a clean, dry surface, such as a plate or a paper towel, or in a clean sanitary holder.

- Serve food from foodgrade containers, and never from non-food containers such as metal garbage pails.
- Select proper utensils for serving food; ladles or spoons with long handles help keep the server's hands a safe distance from the food.
- Cover or protect serving containers to prevent contaminants from falling into food and to retain heat in hot foods.
- When guests return for second helpings, serve the food on a clean plate or have the guest hold his or her plate and do not allow the serving utensil to contact the plate.

Contamination of food can occur if the server's hands or utensils touch tableware that has been used by guests.

Likewise, servers need to handle clean dishes or utensils so that the parts of tableware which come in contact with the guests' food or mouth are never touched:

- Hold beverage cups and mugs by the handle and tumblers by the side or bottom. Carry groups of beverage containers on trays, not by the tops with fingers inside them.



- Hold silverware by the handles, not the part that touches food.
- Hold plates and bowls by the edge or the bottom.
- Carry multiple serving plates or cups and saucers filled with foods or beverages on a tray, not on top of each other.
- Dispense ice with a proper scoop, not with hands or a glass or mug; store the scoop in a clean, sanitary holder outside the ice bin.
- Discard disposable plates, cups, and utensils after one use.

How to Wash, Rinse, and Sanitize Dishes and Equipment

If your facility has an automatic dishwasher, follow the manufacturer's directions and your manager's guidelines for tableware preparation and washing. If tableware and food preparation equipment has to be cleaned manually in a three-compartment sink, follow the directions below.

Dishes, Utensils, Pans, and Small Equipment

Wash all dishes and all utensils, such as knives, forks, spoons, tongs, and pans, used in food preparation and serving in the three-compartment sink. Wash all pieces of small equipment that can be taken apart, either completely or partially, in the three-compartment sink, as well. Such items include the slicer, parts of the cold and hot food cases, and the mixer.

Prewashing

1. Scrape food and soil from dishes, utensils, and pans into the garbage can.



2. Prerinse the scraped equipment promptly with warm water before the food dries.
3. Presoak pans with dried-on food.

Prewashing makes it easier to wash the items by loosening food that may have dried on dishes, equipment, or utensils. Prewashing keeps the wash water free of large food particles that lower the cleaning power of the detergent and clog the drain. Wash, rinse, and sanitize the sink before use.

Washing (Sink #1)

1. Prepare the sink by removing food particles from it and by washing it with cleanser. Rinse well with clean water, then sanitize the sink. (See "Sink #3" for how to mix the sanitizer.)
2. Fill the sink with clean, hot water (110°F to 120°F).
3. Check the temperature with an accurately calibrated thermometer. Hold the pointed end of the thermometer under the water and read the temperature when the needle on the dial stops moving.

Always change the wash water and detergent as soon as it becomes dirty or when it is no longer hot.

Sanitizing kills harmful microorganisms that may be on dishes and utensils and this helps prevent the spread of foodborne illness.

4. Mix the detergent into the hot water according to the manufacturer's directions.
5. Put on clean rubber gloves to protect your hands.
6. Submerge dishes, pans, and utensils in the soapy water and soak them at least 5 minutes.
7. Thoroughly wash both sides of each dish, pan, or utensil. Use a flexible scrub pad for utensils and knives, and a stiff brush or an approved abrasive pad for pans. Scrub hard to remove cooked-on food.
8. Always change the wash water and detergent as soon as it becomes dirty or when it is no longer hot.

Soaking items makes washing easier. Washing dishes, utensils, and pans gets them clean by removing dirt and grease, but it does not sanitize or disinfect them. Cold, dirty water doesn't clean the equipment very well.



Rinsing (Sink # 2)

1. Prepare the sink by washing it with cleanser. Rinse well with clean water, then sanitize the sink. (See "Sink #3" for how to mix the sanitizer).
2. Fill the second sink with clean, hot water (110°F to 120°F).
3. Lift the dishes, utensils, or pans from the first sink and let the soapy water on them drain back into the sink.
4. Completely submerge the dishes, utensils, and pans in the hot water in the rinse sink to remove all the detergent.



5. Change the rinse water frequently. Do not rinse items in cold, dirty, or soapy water.

Food particles and/or detergent residues from poorly washed and rinsed dishes can break down the sanitizing solution in the third sink. Weak sanitizer does not kill microorganisms on equipment and utensils.

Sanitizing (Sink #3)

1. Prepare the sink by washing it with cleanser. Rinse it well with clean water.
2. Prepare the sanitizing solution according to the manufacturer's directions. Measure the concentrated sanitizer carefully with a measuring cup marked for that purpose and add it to the correct amount of water at

the correct temperature. Stir the solution with a clean utensil. DO NOT use more sanitizer than called for by the directions.

- Use the test kit designed for the sanitizer you are using to test its strength. Test kits are available from restaurant supply stores or from manufacturers of sanitizer products.



- Dip a test strip into the sanitizing solution.
 - Hold the wet strip next to the colored label on the vial containing the test strips.
 - If the color of the wet strip matches the correct color and strength on the label, the solution is the right strength to kill microorganisms on the equipment and utensils. If the color is not the same, make a new batch of solution or add more sanitizer.
- Submerge dishes, utensils, and pans in the sanitizing solution for the time recommended by the manufacturer. Long-handled wire baskets can be used to lift items in and out of the sanitizing solution.

- Use a test strip to check the strength of the sanitizing solution after you have used it for awhile. Replace the solution when it has lost its strength.

Chlorine bleach sanitizers are commonly used in emergency shelters. Recommended strength for chlorine sanitizer solutions is 100 to 200 parts per million (ppm), with a minimum of 50 ppm. Immerse equipment for 1 minute at 75°F (N.Y. Code) or for at least 7 seconds at 75°F (Food Code).

Sanitizing kills harmful microorganisms that may be on dishes and utensils and this helps prevent the spread of foodborne illness.

Drying

- Lift the dishes, utensils, and equipment out of the sanitizing solution and drain them for a few seconds over the sink.
- Set the dishes and equipment in the clean dish draining area.
- Inspect the items to see that all of them are clean. Rewash, rinse, and sanitize all unclean items.
- Make sure all items are turned upside down so that the sanitizing solution can run out.
- Let the items air dry. Do not use cloth towels to dry them. If an item must be dried immediately, use clean, disposable paper towels.



Weak sanitizer does not kill microorganisms on equipment and utensils.

Chlorine Sanitizer Solution

Parts Per Million (mg/L)	Teaspoons 5.25% Chlorine Bleach per Gallon of Water
100	1 1/2
200	3*

(*3 teaspoons = 1 Tablespoon)

Counters, food-contact surfaces, cutting boards, food holding equipment, and pieces of equipment too large to fit into a sink or parts containing electrical components must be washed, rinsed, and sanitized in place.

Store insecticides or other toxic materials that are used in your facility separately from cleaners and sanitizers.

Drying dishes, equipment and utensils with dish towels can recontaminate them with microorganisms.

If You Don't Have a Three-Compartment Sink

You can add sanitizer to the rinse water. However, the rinse water/sanitizer solution must be changed more frequently than plain rinse water. In addition, you must absolutely AIR DRY all dishes and equipment. No wiping is allowed, even with clean, disposable towels.

Items that Won't Fit into a Sink



Counters, food-contact surfaces, cutting boards, food holding equipment, and pieces of equipment too large to fit into a sink or parts containing electrical components must be washed, rinsed, and sanitized in place.

Use individually labeled buckets for detergent solution, rinse water, and sanitizer solutions. Sanitizer can be put in a spray bottle, too.

1. Wipe up any food spills and discard pieces of food.
2. Wash surfaces thoroughly with a clean, soapy cloth or a disposable wipe. Be sure to remove all dried-on food.

3. Rinse each surface thoroughly with a clean, damp cloth and wipe or spray it lightly with sanitizer.

Prepare the sanitizer at twice the recommended strength and put it into a clearly labeled bucket or spray bottle. Check the sanitizer with a paper test strip to be sure it is at the appropriate strength to work properly. Prepare a new sanitizer solution every 4 hours.

Storage of Cleaning Products

Store cleaners and sanitizers in a location separate from all food and food-contact items. In addition, store any insecticides or other toxic materials that are used in your facility separately from cleaners and sanitizers.

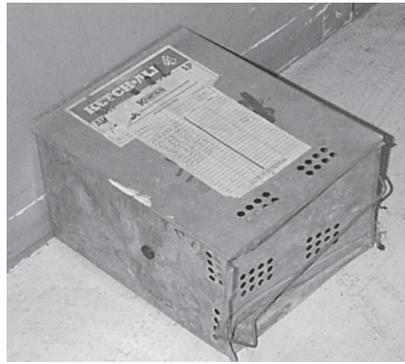
General Housekeeping and Pest Control

Consult with local health department officials to develop regular procedures for housekeeping in your foodservice facility, before it is used in an emergency feeding situation.



General Guidelines

- Regularly remove dirt, dust, debris, insect webbing, and mold from floors, walls, cracks, fixtures, and equipment.
- Use and store cleaning and maintenance materials so that they cannot contaminate food, utensils, packaging supplies, and food-contact items.
- Hold and dispose of trash and garbage so that they will not contaminate foods, attract pests, or contribute to unsanitary conditions. Specifically:
 - Keep garbage and trash in covered, appropriate containers.
 - Keep garbage and trash containers clean and in good repair.
 - Empty containers regularly to prevent overflowing (at least daily). Do not allow garbage and trash to accumulate at work stations or at other places inside the facility.
 - Do not allow outside garbage and trash storage to attract people, pets, or wild animals. Keep dumpsters tightly covered and locked, if necessary.
- Restrooms must be cleaned at least once daily and must always be kept supplied with soap and single-service towels, hot and cold running water, and covered waste containers that are emptied frequently.



Pest Control

- Keep outside doors and windows closed or screened.
- Report any signs of pest activity (insects, rodents, and birds) to the supervising person.
- Clean up and remove any signs of pest activity.
- Allow only trained and licensed personnel to apply pesticides.
- Use and store pesticides so they do not contaminate food, utensils, packaging supplies, food-contact items, or food-contact surfaces.

Use and store pesticides so they do not contaminate food, utensils, packaging supplies, food-contact items, or food-contact surfaces.

You play a vital role in making sure that the food you prepare and serve in your facility is safe for your guests.

Conclusion

You play a vital role in making sure that the food you prepare and serve in your facility is safe for your guests when you:

- practice good personal hygiene,
- observe good work habits,
- take care when receiving and storing foods,
- use safe food handling techniques,
- keep foods at proper temperatures during thawing, hot- and cold-holding, and reheating,
- keep equipment and utensils clean and sanitary,
- serve food properly on clean, sanitized dishes, and
- follow a regular cleaning schedule for your facility.

Remember, you and your co-workers can help **prevent** the spread of harmful microorganisms and the contamination of food with harmful chemicals that cause foodborne illness.

Keep on doing a good job and **thank you** for the important work you do for your community!



Definitions

C

Center Temperature – The temperature at the center of the thickest portion of any food. Also known as internal temperature

Cleaner – Soap or detergent that breaks down and loosens soils so they can be rinsed away.

Cleaning – Removing all food residues (soils) and grease from food-contact surfaces by washing with soap or detergent and rinsing with clean, hot water.

Contaminate – To transfer impurities or harmful microorganisms onto foods or food-contact surfaces.

Cross-Contamination – The transfer of harmful microorganisms from one food to another by means of human hands, utensils, or equipment, or directly from a raw food to a cooked or ready-to-eat food. For example, cutting raw beef with a knife then using the same knife without first cleaning and sanitizing it to slice cooked beef. The cooked beef could be cross-contaminated by harmful microorganisms from the raw beef. Storage of uncovered, tossed salad greens below thawing poultry which is dripping raw poultry juice into the salad greens is another example of cross-contamination.

F

FIFO – First-In, First-Out. This is a storage system where items such as food, packaging materials, ingredients, and single-service items are rotated so that the older items are used first.

Food-Contact Surface – Anything that touches food while it is being prepared, packaged, stored, served, or eaten. Examples include knives, spoons, cutting boards, other food equipment, pots, and utensils, work counters, hands, or gloves.

M

Microorganism – Forms of life that are too small to be seen without a microscope. These include bacteria, viruses, molds, and yeasts. Some microorganisms are beneficial and help create desirable food products, some cause foods to spoil, and some harmful microorganisms can cause sickness or even death.

P

Pests – Insects, mice, and rats. If birds are allowed to enter the soup kitchen facility, they would also be considered pests.

Pesticide – Chemicals used for the prevention, elimination, or control of unwanted pests, such as insects or rodents, that can spread disease or ruin food in a soup kitchen. Pesticide chemicals can be made in a laboratory or naturally by plants or other organisms.

Potentially Hazardous Food – Foods that are high in moisture, protein, and carbohydrates. Potentially hazardous foods need special care when being stored, handled, and prepared because if they become contaminated with harmful microorganisms, the organisms can easily multiply in them. All foods which consist entirely or partly of milk or milk products, eggs, meat, poultry, fish, shellfish, tofu, and cooked pasta, rice, and potatoes are termed potentially hazardous. Casseroles made with these ingredients are also potentially hazardous. It is essential that volunteers preparing food observe strict sanitation and time and temperature control rules when working with potentially hazardous foods. To be on the safe side, consider all foods as potentially hazardous.

Potable Water – Clean water that is fit to drink.

R

Rinsing – To remove food residues, grease, and soap or detergent from food-contact surfaces.

S

Sanitizing – Treatment to kill microorganisms. Includes rinsing, soaking, spraying, or wiping with a sanitizing solution. All food-contact surfaces must first be thoroughly washed and rinsed before being sanitized. An unclean (dirty) surface cannot be properly sanitized.

Sanitizer – A chemical compound designed to kill microorganisms. Two of the most commonly used sanitizers in soup kitchens are household liquid bleach (chlorine) and “quats” (quaternary ammonium compounds). The sanitizing solution is made by mixing a small amount of the sanitizer with water that is safe to drink, according to directions on the label. Only approved sanitizers should be used.

Single-Service Items or Disposables – Equipment intended to be used only once, then discarded. Examples include plastic knives, forks, and spoons; styrofoam or paper cups, bowls, and plates; and paper products such as napkins and towels.

T

Thermometer – Dial-read or other thermometers accurate to within plus or minus 2.0°F.

U

Utensils – Hand tools and hand-held containers such as knives, forks, spoons, pots, and pans.

W

Washing – Removing all food residues (soils) and grease from food-contact surfaces by scrubbing with soap or detergent.

Need More Detailed Information? See These Resources:

American Red Cross, <http://www.redcross.org/>. Preparing for disasters: <http://www.redcross.org/services/disaster/beprepared/> See local listings for phone numbers.

Cooking for Groups: A Volunteer's Guide to Food Safety, United States Department of Agriculture – Food Safety and Inspection Service, March 2001. Single copies available from: Federal Consumer Information Center, Item #604 H, Pueblo, CO 81009. Also, order at Web site: <http://www.pueblo.gsa.gov>

Requests for multiple copies via email: fsis.outreach@usda.gov or fax request to 202-720-9063.

The *Guide* is available on the USDA FSIS Web site: <http://www.fsis.usda.gov>

For food safety questions about cooking for groups, call the **USDA Meat and Poultry Hotline** at 1-800-535-4555. Washington, D. C. number, 202-720-3333. It is open from 10 a.m. to 4 p.m. Eastern Time, Monday through Friday. Toll-free number for the hearing impaired (TTY) is 1-800-256-7072.

Essentials of Food Safety and Sanitation, David McSwane, Nancy Rue, and Richard Linton, 1998, Prentice Hall, Inc., Simon & Schuster/A Viacom Company, Upper Saddle River, NJ 07458. ISBN 0-13-532136-0.

Federal Emergency Management Agency, <http://www.fema.gov>. FEMA, 500 C Street, SW Washington, D.C. 20472, Phone: (202) 566-1600

Food Code, 2001, Recommendations of the United States Public Health Service Food and Drug Administration. For sale by U.S. Department of Commerce, Technology Administration, National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161, Ph. (703) 605-6000 or 1-800-553-NTIS (6847); refer to report number: PB2002100819. Download from the World Wide Web: <http://vm.cfsan.fda.gov/~dms/foodcode.html>.

Food For Fifty, Mary Molt, 10th Edition, 1997, Prentice-Hall, Inc., Simon & Schuster/A Viacom Company, Upper Saddle River, NJ 07458. ISBN 0-13-382839-5.

Food Store Sanitation, Robert B. Gravani and Don C. Rishoi, 6th Edition, 1998, Lebharr-Friedman Books, 425 Park Avenue, New York, NY 10022. ISBN 0-86730-716-1.

Home Storage of Fruits and Vegetables, Susan MacKay, Revised 1984, Northeast Regional Agricultural Engineering Service, # NRAES-7. Order from NRAES, Riley Robb Hall, Cornell University, Ithaca, NY 14853. Ph. (607) 255-7654.

New York State Emergency Management Office, <http://www.nysemo.state.ny.us/>. Emergency Coordination Center staffed 24 Hours (518) 457-2200

New York State Sanitary Code, Subpart 14-1, Food Service Establishments, Amended 1997, New York State Department of Health, Bureau of Community Sanitation and Food Protection, 2 University Place, Albany, NY 12203. Call (518) 458-6707 or contact your local health department.

Produce Management and Operations, Thomas H. Frank and Edward W. McLaughlin, 1997, Cornell University, Ithaca, NY 14853. ISBN 0-914681-04-4. Ph. (607) 255-3028.

ServSafe Essentials. Educational Foundation of the National Restaurant Association. 1999. ISBN 1-58280-016-2. Call 1-800-456-0111 for information about ordering. Call 312-715-1010 in Chicago. In New York call New York Restaurant Association's Educational Foundation at 518-452-4222.

The Foodkeeper, food storage brochure, 2002, Food Marketing Institute with Cornell University Institute of Food Science and Cornell Cooperative Extension and USDA Food Safety and Inspection Service. Order from the Food Marketing Institute (FMI) by contacting Publication Sales at FMI, 655 15th Street, NW, Washington, DC 20005, Ph. (202) 220-0600.

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