

Storing Food for Safety and Quality

Surine Greenway

Family and Consumer Sciences
Extension Educator, University of Idaho
Extension, Owyhee County

Amy Robertson

Family and Consumer Sciences
Extension Educator, University of Idaho
Extension, Boundary County

Joey Peutz

Family and Consumer Sciences
Extension Educator, University of Idaho
Extension, Payette County

Grace Wittman

Family and Consumer Sciences
Extension Educator, University of Idaho
Extension, Cassia County

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The goal of home food storage is to ensure safe and high-quality food. Proper storage extends the shelf life of food, depending on the food type, packaging, and storage conditions, particularly temperature and humidity. Food quality should not decrease significantly during storage if you follow the recommended conditions and storage times in this bulletin.

Tips for Storing All Foods

Choose foods to store. When grocery shopping, purchase fresh foods (check freshness dates on packaged food) whose packaging is in good condition. Always check the freshness dates. Make sure refrigerated foods are cold and frozen foods solid. Select cold food items just before checkout and store them properly during transport and after arriving home. If more than half an hour will elapse before you can store the cold and frozen foods, consider taking an insulated container with a frozen ice or gel pack to maintain a cold storage environment during transportation. Additionally, a frozen container of water can be used to maintain cold storage during food transport. Only purchase the kinds and amounts of food that can be stored properly.

Practice first-in, first-out. When stocking food storage areas, place recently purchased items behind existing food. This helps to ensure all food is consumed before spoilage occurs and before its expiration date passes.

How foods spoil. Food spoilage is a natural process that starts when plants and animals are harvested. Bacteria, yeasts, and molds are the most common causes of food spoilage. Processing food by canning and drying and storing food at a cold temperature via refrigeration and freezing are ways to delay or prevent food spoilage. Enzymes naturally present in foods can also cause spoilage, such as excessive softening of fruits, or they can cause the flavor of some vegetables to deteriorate if those vegetables are not blanched before frozen storage. Heat inactivates enzymes and freezing

and drying can reduce their activity to minimal levels. Air and light cause flavor and color changes in food, so choose packaging carefully to minimize exposure.

Quality and safety. Quality is not the same as safety. A poor-quality food such as stale cereal or meat with freezer burn may be safe to eat. Unsafe food can appear visually acceptable but may contain a foodborne pathogen. The presence of pathogens cannot always be detected by appearance or smell. However, food should be discarded if it has off-odors, extensive slime (on meat, for example), or mold growing on the surface. One exception is mold on hard cheeses, which may be trimmed off 1 inch beyond the last visible mold.

Safety of stored food. In general, food stored in the cupboard or pantry is safe if the packaging is intact. Frozen foods, if not thawed, remain safe over extended periods. The quality of these items decreases with excessive frozen storage time, though safety is not compromised. However, fruits, vegetables, and bakery items stored at room temperature or in the refrigerator may develop mold growth over time. Discard foods that have developed mold, since some molds are toxic. Only purchase fresh produce that can be consumed in a reasonable period of time. The safety of refrigerated foods, including leftovers, can also be compromised by excessive storage time. Some foodborne pathogens, such as listeria, survive and grow slowly at refrigeration temperatures and multiply to an illness-causing number of cells when storage times are excessive. See page 16 for more on *listeria*.

Cleanliness. Since bacteria frequently get into food through careless food handling, it is important that everything—hands, preparation surfaces, cupboards, refrigerator, freezer, and storage containers—be kept clean. Consider using cleaning products with disposable paper towels to clean up kitchen surfaces. If you use dishcloths, wash them often in the washing machine's hot cycle and dry them in a clothes dryer. Kitchen sponges are not recommended because they provide

excellent places for microbes to grow. However, sponges can be sanitized by dampening them generously (otherwise, they are susceptible to catching fire) and then heating them in a microwave oven until steaming hot. If using a sponge, clean it daily and replace it frequently. For information on kitchen-towel cleaning practices, see <https://food.unl.edu/article/how-often-should-you-change-your-kitchen-towels>.

Storage materials. Store food only in its original packaging or in food-grade containers. Food-grade storage materials approved by the United States Food and Drug Administration should not contain nor transfer chemicals hazardous to human health into food. Examples of containers not approved for food contact include trash bags and plastic or fiberboard containers that have previously held nonfood materials. Storage materials intended for food contact use are generally clearly labeled for food use. These include glass and ceramic containers; plastic bags and rigid containers; and plastic, paper, and foil wraps.

Predicting storage times. The exact length of time foods can be stored depends on several factors; thus, the durations listed in this publication's food storage tables are only guidelines. Food storage is affected by its freshness when it reached the market, the length of time and the temperature at which food was held before purchase, storage temperature and humidity in the home, storage container or packaging, and the food item's characteristics. Generally, food maintains quality longer at colder storage temperatures.

Storage contradictions. For a few foods, optimum storage conditions for maintaining flavor or texture may differ from optimum conditions for maximum shelf life. For example, storing bread in a refrigerator extends the time before mold grows but causes bread to go stale more quickly. Additionally, tomatoes stored in a refrigerator last longer, but lose flavor more quickly. Nevertheless, always refrigerate tomatoes within two hours after slicing or cutting them, for safety reasons.

Deciphering Packaged Food Dates

For most foods, product dating is not required by law. An exception is infant formula and some baby foods, for which open dating is required.

Open dates are calendar dates that consumers clearly understand instead of coded dates that food manufacturers sometimes use for their tracking. Infant and baby foods are dated for nutrient



Figure 1. Do not buy or use infant formula or baby food after its “use by” date.

retention and quality, since they are often a baby’s sole source of nutrition. Do not buy or use infant formula or baby food after its “use by” date (Figure 1).

Many food manufacturers choose to label packaged foods with some type of date. However, there is no universal system for expressing the date. Commonly used date terminology is explained below. These dates are not related to product safety. See Figures 2–4 for examples of product dating.



Figure 3. “Use by” date example.



Figure 2. “Sell thru” date example. Often appears as “sell by.”



Figure 4. “Guaranteed fresh” date may also appear on food packaging.

Date of packaging or manufacture. Refers to when the food was packed or processed for sale. These are not “use by” dates. Instead, they are printed on canned or boxed goods that are shelf-stable items to identify and locate products if there is a recall.

Freshness, pull, or “sell thru” date. Tells the store how long to display the product for sale. The date allows for home storage and use within a reasonable period of time, as predicted by the manufacturer. The product may be safely consumed after the “sell thru” date, which is often printed on the packaging of breads, baked goods, and dairy products.

“Use before” or “Best if used by” date. Indicates the recommended shelf life for best flavor or quality. The food can be safely used past this date. It is often used with frozen foods and fried snack foods such as chips and crackers, cereals, canned foods, pasta, and rice.

“Freeze by” date. Similar to a “use before” date. Indicates the product should be used or frozen for longer-term storage by the date shown. Found on some meat products.

Expiration date. The last day the product should be used for the best quality. Yeast and baking powder have expiration dates.

Home dating. It is good practice to mark the date on purchased foods that do not have open dates and if you plan to store them for an extended time. Likewise, marking the date on stored, home-prepared foods or leftovers is the best way to keep track of stored food. Keep a marker or pen and small self-stick labels handy so you can record the storage date for these foods.

Cupboard or Pantry Storage

Cupboard or pantry storage refers to the containment of dry food staples such as flour, crackers, cereals, cake mixes, pasta, seasonings, and canned goods. To maximize food quality,

- Keep food in their original containers or transfer them to metal, glass, or plastic containers with tight-fitting lids. This will protect the contents from insects and from the

harmful effect of humidity levels greater than 60%. Dry foods not stored in airtight containers may absorb moisture, resulting in powders that clump and the loss of crispness in crackers. (Crispness can be restored by heating the affected item on a cookie sheet for a few minutes in a 425°F oven.)

- Maintain a storage temperature below 85°F (optimum is 50°F–70°F). Cooler temperatures help preserve food quality, so avoid using cabinets located near an oven, stove, hot pipes, or refrigerator exhaust.
- Store food in dark areas and/or avoid storing in direct sunlight. Light that shines through transparent packaging causes flavors to deteriorate more quickly.

Canned foods. Canned foods have a long shelf life, but color, flavor, and nutritive value deteriorate over time. Acidic canned foods, such as tomato products, fruits, sauerkraut, and foods in vinegar-based liquids, have a shorter shelf life than low-acid items. Bulging cans indicate the food is spoiled and must be discarded. Minor dents in cans do not harm contents. However, cans with dents that affect the side or rim seams should not be purchased or used because they may have an invisible leak.

Inspect rusty cans to ensure that corrosion has not penetrated the can. Food in a can that has frozen once and thawed may have inferior texture, but as long as the can has not bulged and its seams are intact, food safety should not be compromised.

Insects and rodents. Many insects can infest cupboard or pantry foods stored for long periods (more than two months). Pests feed on or breed in flours, cereals, grains, dried fruit, nuts, candy, and other stored food, such as dry dog and cat food. Control of stored-food pests is described in PNW 729, *Pantry Pest Guide*, <https://www.uidaho.edu/extension/publications/publication-detail?id=pnw0729>.

Cleaning out the pantry. Clean cupboards periodically to remove crumbs and food particles on shelves and in corners or cracks because these attract insect pests. See Table 1 for helpful tips on how to decide which foods to discard and which to save.

Table 1. Approximate storage cupboard times for best quality. The times listed are intended as useful guidelines, not set rules.

Product	At 70°F	Comments
FOOD STAPLES		
Baking Powder	18 months or expiration date on can	Keep dry and covered.
Baking Soda	18 months–2 years	Keep dry and covered.
Bouillon cubes or granules	2 years	Keep dry and covered.
Bread , room temperature	2–4 days	Refrigeration can retard mold growth, but speeds staling. Freeze for longer storage. Store in moisture- and vapor-proof wrap.
Bread crumbs , dried	6 months	Keep dry and covered.
Cereal:		
Ready-to-eat, unopened	6–12 months	
Ready-to-eat, opened	2–3 months	Refold package liner tightly after opening.
Hot, dry	6 months	
Chocolate:		
Semisweet	18 months–2 years	Keep cool.
Unsweetened	18 months–2 years	
Premelted	12 months	
Chocolate syrup:		
Unopened		
Opened	6 months	Cover tightly. Refrigerate after opening.
Cocoa mix	8 months	Cover tightly.
Coffee , ground:		
Unopened package	2 years	Refrigerate after opening. Keep tightly closed. Use a dry measuring spoon. Freeze to extend shelf life.
Opened package	2 weeks	
Coffee , instant:		
Unopened	1–2 years	
Opened	2–3 months	
Coffee , powdered creamer:		
Unopened dry	9 months	
Opened dry	6 months	Keep tightly covered.
Cornmeal	12 months	Keep tightly covered. Freeze for indefinite storage.
Cornstarch	18 months	Keep tightly covered.
Flour:		
White	6–12 months	Keep in airtight container.
Whole wheat	6–8 months	Keep refrigerated or freeze. Store in airtight container.
Specialty (almond, coconut, gluten-free, etc.)	6–8 months	Keep in airtight container.
Gelatin , all types	18 months–3 years	Keep in the original container.

Table 1. Approximate storage cupboard times for best quality, cont. The times listed are intended as useful guidelines, not set rules.

Product	At 70°F	Comments
FOOD STAPLES, cont.		
Grits	12 months	Store in airtight container.
Honey	12 months	Cover tightly. If it crystallizes, warm open jar in a pan of hot water.
Jelly, jam	12 months	Cover tightly, Refrigerate after opening.
Marshmallow cream , unopened	3–4 months	Refrigerate after opening to extend storage life. Cover tightly. Store at room temperature.
Marshmallows	2–4 months	Keep in an airtight container.
Mayonnaise , unopened	3–4 months	Refrigerate after opening. Check package date.
Milk:		
Condensed or evaporated, unopened	12 months	Invert cans every 2 months to prevent separation.
Nonfat, dry unopened	6 months	Store in an airtight container.
Nonfat dry, opened	3 months	
Molasses:		
Unopened	12 months	Keep tightly covered. Refrigerate to extend storage life.
Opened	6 months	
Pasta:		
Spaghetti, macaroni, etc.	1–2 years	Once opened, store in an airtight container.
Egg noodles	6 months	
Pectin , liquid or dry	1 year or expiration date	
Rice:		
Brown	1 year	Keep tightly covered.
White	1–2 years	
Flavored or herb	6 months	
Salad dressing , bottled, unopened	10–12 months	Refrigerate after opening.
Shortening	8 months	Refrigeration is not needed. Store in a cool, dark place in a tightly closed container.
Sugar:		
Brown	4 months	Put in an airtight container. Cover tightly.
Confectioners' Granulated	18 months	
Sweetener , artificial	2 years	Cover tightly.
Syrup	12 months	Refrigerate to extend storage life. (Some syrups may recommend storing in the refrigerator after opening.) Cover tightly.
Tea:		
Bags	18 months	Put in an airtight container.
Instant	3 years	Put in an airtight container.
Loose	2 years	Put in an airtight container.

Table 1. Approximate storage cupboard times for best quality, cont. The times listed are intended as useful guidelines, not set rules.

Product	At 70°F	Comments
FOOD STAPLES, cont.		
Vegetable oil:		
Unopened	6 months	
Opened	1–3 months	Refrigeration extends shelf life. Store in a cool, dark place in a tightly closed container.
Vinegar:		
Unopened	2 years	
Opened	12 months	Keep tightly covered. Slightly cloudy appearance does not affect quality.
MIXES AND PACKAGED FOOD		
Biscuit, Brownie, Muffin mix	9 months	Keep cool and dry.
Cake:		
Purchased, baked	1–2 days	Refrigerate if it comes with whipped cream or custard filling.
Mixes, angel food	12 months	
Mixes, standard	12–18 months	Keep cool and dry.
Casserole mix , complete or add meat	9–12 months	Keep cool and dry. After preparation, store refrigerated or frozen.
Cookies:		
Homemade	2–3 weeks	Put in an airtight container.
Packaged	2 months	Keep tightly closed.
Crackers	8 months	Keep tightly closed.
Frosting:		
Canned	10 months	Store leftovers in refrigerator or freezer.
Mix	12 months	
Hot roll mix	18 months	If opened, put in an airtight container.
Pancake mix	15 months	Put in an airtight container.
Piecrust mix	8 months	Keep cool and dry.
Potatoes , instant mix	6–12 months	Keep in an airtight package.
Pudding mix	12 months	Keep cool and dry.
Rice mix	6 months	Keep cool and dry.
Sauce and gravy mix	1–2 years	Keep cool and dry.
Soup mix	12 months	Keep cool and dry.
Toaster pastry	6 months	Keep in an airtight package.
Tortilla	2–4 days	Refrigerate or freeze after opening.

Table 1. Approximate storage cupboard times for best quality, cont. The times listed are intended as useful guidelines, not set rules.

Product	At 70°F	Comments
CANNED AND DRIED FOOD		
Canned fruit juice	12 months	Store in cool, dark place.
Commercially canned high-acid food , unopened	12–18 months	Includes tomato products, fruit, sauerkraut, and food in vinegar-based sauces.
Commercially canned low-acid food , unopened	2–5 years	Includes canned meat and poultry, stews, soups (except tomato), pastas, potatoes, and other vegetables (except tomatoes).
Home-canned low- and high-acid food , unopened	12 months	Store in cool, dark place.
Fruit:		
Dried	6–12 months	Store in cool, dark place in an airtight container. Refrigerate if possible.
Freeze-Dried	Up to 25 years	Dependent on packaging. Packaging plays a key role in the product's quality. Store in cool, dark place in an airtight container.
Vegetables:		
Dried	1 year	Store in a cool, dark place in an airtight container.
Flakes	6 months	Refrigerate if possible. Keep tightly covered.
Freeze-Dried	Up to 25 years	Dependent on packaging. Packaging plays a key role in the product's quality. Store in a cool, dark place in an airtight container.
SPICES, HERBS, CONDIMENTS, EXTRACTS		
Chili sauce, Ketchup:		
Opened	1 month	Refrigerate for longer storage.
Unopened	12 months	
Commercial salsa , unopened	12–18 months	Refrigerate after opening, use within 1–2 months.
Hot sauce, Worcestershire, etc.	1 year	
Mustard , prepared yellow:		
Opened	1 year	May be refrigerated, stir before using.
Unopened	1 year	
Spices and herbs:		
Ground spices	6–12 months	
Herbs	6 months	
Spice blends	6 months	
Whole spices	12 months	Whole cloves, nutmeg, and cinnamon maintain quality beyond 2 years. Can be stored in the freezer to extend shelf life.
Vanilla and other extracts:		
Opened	12 months	Keep tightly closed (volatile oils can escape).
Unopened	2 years	

Table 1. Approximate storage cupboard times for best quality, cont. The times listed are intended as useful guidelines, not set rules.

Product	At 70°F	Comments
OTHER GOODS		
Cheese, Parmesan , grated	10 months	Refrigerate after opening, keep tightly covered.
Coconut , shredded, canned, or packaged, unopened	12 months	Refrigerate after opening.
Meat substitutes , imitation bacon, etc.	4 months	Keep tightly covered; refrigerate for longer storage.
Nuts:		
In shell, unopened	4 months	
Package or canned, opened	1 month	
Vacuum can, unopened	12 months	Refrigerate after opening; freeze for longer storage. Unsalted and blanched keep longer than salted.
Peanut butter:		
Opened	2–3 months	Keeps longer if refrigerated. Use at room temperature.
Unopened	6–9 months	Refrigeration not needed.
Peas, Beans , dried	12 months	Store in an airtight container.
Popcorn:		
Kernel	2 years	Store in an airtight container.
Microwave popcorn	1 year	
Powdered breakfast mix , liquid breakfast formula	6 months	Store in covered containers or original packages.
Whipped topping , dry	12 months	Keep cool and dry.
Yeast , dry	Expiration date on package	Refrigerate or freeze after opening to extend shelf life.

Adapted from materials prepared by Kansas State University, the United States Department of Agriculture, and University of Missouri Extension.

Refrigerator and Freezer Storage

Refrigerator or freezer storage is necessary for meat, dairy products, eggs, and cut fruits and vegetables. Refrigerator and freezer temperatures do not destroy pathogenic or spoilage microorganisms, but freezer temperatures stop their growth.

Even when frozen foods are stored properly, they lose color, texture, and flavor. With excessive storage time, a decrease in nutritional value may also occur, although this does not cause foodborne illness.

Preparing foods for frozen storage requires some care. The following publications can assist you:

- *Freezing Convenience Foods That You’ve Prepared at Home* (PNW 296): <https://www.uidaho.edu/extension/publications/publication-detail?id=pnw0296>
- *Freezing Fruits and Vegetables* (PNW 214): <https://www.uidaho.edu/extension/publications/publication-detail?id=pnw0214>

To optimize your refrigerator conditions:

- Maintain your refrigerator’s temperature between 34°F–40°F. Thermometers are available to monitor the temperature inside your refrigerator.
- Keep some foods, including milk, meat, and leftovers, colder than others. The coldest part of

the refrigerator is usually nearest the freezer compartment, but a refrigerator thermometer confirms the precise coldness of each refrigerator's section.

- Food placement in a refrigerator affects air circulation and efficiency. Don't stack foods tightly and do not cover refrigerator shelves with foil or any other material that prevents air circulation from quickly and evenly cooling the food. Refrigerators with glass shelving have air spaces at the back for circulation that should not be blocked.
- Wrap food with appropriate plastic or foil wraps or use airtight containers to reduce the transfer of odors among foods.
- Wrap raw meat and poultry securely and place them in a tray or pan to prevent leaking that can contaminate other foods.
- Clean a refrigerator to remove spills and spoiled foods that provide a place for bacteria to grow.

Store raw meat in a separate location from cheese or ready-to-eat meat, such as deli meat. Designate the meat drawer for either raw meat or ready-to-eat meat—not both. This practice helps to minimize cross contamination between raw meat, which frequently contains pathogens, and ready-to-eat food, such as a prepared salad, which by definition should be pathogen-free.

To optimize freezer conditions:

- Keep your freezer at 0°F or below (-10°F to -20°F is best) to maintain the quality of frozen foods. At temperatures between 0°F and 32°F, food quality deteriorates more rapidly. If your freezer unit cannot maintain 0°F, do not plan to store frozen foods for the maximum suggested storage time. Fluctuating freezer temperatures that occur in self-defrosting freezers to clear ice buildup may also reduce food quality.
- Use moisture-proof, freezer-weight wrap. Examples are foil, freezer bags, and freezer paper.
- Label and date all packages.

Solving refrigerator and freezer odors. If food has been allowed to spoil in a refrigerator or freezer, the pungent odors may be extremely difficult to remove.

If mold gets into the insulation, the refrigerator may be impossible to clean. Some general recommendations include the following:

- Clean the appliance with a gentle household cleaning solution and water
- Use a bleach solution (one tablespoon chlorine bleach per gallon of water) to rinse inside surfaces
- Unplug the unit and leave the door open for a day or two to air it out

If the odor remains, you may want to try one of the following methods:

- Place trays of activated charcoal, clean kitty litter, or baking soda on the refrigerator or freezer shelves. Run the appliance empty for two or three days. Activated charcoal can be purchased from stores that sell aquarium and terrarium supplies.
- Spread freshly ground coffee on cookie sheets in the refrigerator or freezer, close the door, and run the appliance empty for two or three days. A slight coffee odor may remain but will disappear after washing and rinsing.
- Pack each refrigerator or freezer shelf with crumpled newspaper. Set a cup of water on the top shelf or sprinkle the newspaper with water. Allow the refrigerator or freezer to run for approximately five or six days. This method is time-consuming but effectively removes strong odors.
- Use commercial products that are available for the removal of refrigerator and freezer odors. These products may be purchased at hardware, grocery, discount, and variety stores.

Refreezing foods. Once food is thawed in the refrigerator and kept in the refrigerator, it is safe to refreeze without cooking. However, there may be some reduction in quality due to the moisture lost through defrosting. Previously frozen raw foods that have been cooked can be safely frozen. If previously cooked foods are thawed in the refrigerator, you may refreeze the unused portion. If you purchase previously frozen meat, poultry, or fish at a retail store, you can refreeze it if it has been handled with food safety (following recommended food-handling practices) as a top priority.

If the power goes out. To ensure the safety of your food during a power outage,

- Keep the refrigerator and freezer doors closed as much as possible to maintain the cold temperature. The refrigerator will keep food safely cold for about four hours if it is unopened. A full freezer will hold the temperature for approximately forty-eight hours (twenty-four hours if it is half full), if the door remains closed.
- Obtain dry or block ice to keep your refrigerator as cold as possible if the power will be out for a prolonged period. Fifty pounds of dry ice should hold an eighteen-cubic-foot, full freezer for two days. Plan and know where dry ice and block ice can be purchased.
- Freeze refrigerated items such as leftovers, milk, and fresh meat and poultry you may not need immediately.
- Refreeze food that still has ice crystals or is below 40°F. Confirm by using a thermometer.
- Discard food that is above 40°F for more than two hours.

For additional recommendations and a list of foods to save or throw out during a power outage, see the United States Department of Agriculture (USDA) Fact Sheet “Keep Your Food Safe during Emergencies,” <https://www.fsis.usda.gov/food-safety/safe-food-handling-and-preparation/emergencies/keep-your-food-safe-during-emergencies>.

Particular concerns with refrigerated ready-to-eat foods. Ready-to-eat perishable foods are prepared to be eaten without heating, such as deli meats and salads. *Listeria* is a pathogenic bacterium that can grow on perishable foods at refrigerator temperatures and is occasionally found in ready-to-eat foods. Consumers can reduce the risk of illness by

- Using perishable items that are precooked or ready-to-eat as soon as possible;
- Cleaning their refrigerators regularly; and
- Using a refrigerator thermometer to make sure the refrigerator always stays at 40°F or lower. See Table 2 for refrigerator and freezer times for familiar foods.

Table 2. Approximate refrigerator and freezer storage times for better quality. The times listed are intended as useful guidelines, not set rules.

Product	Refrigerator at 35°F–40°F	Freezer at 0°F	Comments
BREAD, PASTRY, CAKE			
Unbaked rolls and bread	2–3 weeks, for tube cans follow use-by date	6 months	Inactivates yeast, weakens gluten. For commercial products, follow use-by date.
Partially baked cinnamon roll		2 months	
Baked quick bread		2 months	
Baked muffin	1 week	6–12 months	
Baked bread (no preservatives)	1–2 weeks	2–3 months	Store in refrigerator to inhibit mold growth, but it will stale more rapidly.
Waffle		1 month	
Unbaked fruit pie	1–2 days	2–4 months	
Baked fruit pie	4 days	6–8 months	
Pumpkin or Chiffon pie	1–2 days, chiffon, 3–4 days, pumpkin	Not recommended, chiffon 1–2 months, pumpkin	

Table 2. Approximate refrigerator and freezer storage times for better quality, cont. The times listed are intended as useful guidelines, not set rules.

Product	Refrigerator at 35°F–40°F	Freezer at 0°F	Comments
BREAD, PASTRY, CAKE, cont.			
Baked cookie	Not recommended	6–12 months	Cupboard storage is best. Store 2–3 weeks in an airtight container.
Cookie dough	4 days	3 months	
Frosted baked cake	1 week	1 month	
Unfrosted baked cake	1 week	2–4 months	
Angel cakes	1 week	6–12 months	
Fruitcake	6 months	12 months	
DAIRY			
Butter	3 months	6–9 months	Freeze in original carton, overwrap in a freezer-grade container.
Buttermilk	1–2 weeks	3 months	Check the carton date. Will keep several days after the date. Will form curds when frozen.
Cheese:			
Cottage, ricotta	5–7 days	1 month	Freezing changes the texture of soft cheeses. It becomes crumbly when frozen; can be used in cooking when creaminess is not important.
Cream cheese	2 weeks	1 month	
Natural, aged cheese:			
Cheddar, swiss, brick, Gouda, mozzarella, etc.			Natural and processed cheeses can be frozen, but natural cheeses are likely to become more crumbly. Defrost in refrigerator so cheese will be less likely to crumble. Use soon after thawing.
Large pieces, packaged or wax-coated	6 months		
Slices or opened packages	1 month	6–8 months	
Parmesan, Romano, grated	1 month	3–4 months	
Pasteurized process cheese	1–2 months	6–8 months	Freezing changes texture.
Coffee whitener (liquid)	3 weeks	See package.	
Cream, light or half and half:			
(UHT* process, unopened)	4 weeks	4 months	
(UHT process, opened)	1 week		
Cream, heavy or whipping	1 week	Not recommended unless whipped first.	Whipping cream will not whip after thawing. Whipped cream may be frozen and stored for 1–2 months.
Dip, sour cream:			
Commercial	2 weeks	Not recommended.	
Homemade	3–4 days	Not recommended.	
Margarine	6 months	12 months	Leave in original foil and carton, overwrap in a freezer-grade container. Milk can be frozen, but curds may form after thawing.

Table 2. Approximate refrigerator and freezer storage times for better quality, cont. The times listed are intended as useful guidelines, not set rules.

Product	Refrigerator at 35°F–40°F	Freezer at 0°F	Comments
DAIRY, cont.			
Milk:			
Evaporated	3–5 days	Not recommended.	
Whole or low-fat	1 week	Not recommended.	
Reconstructed nonfat dry	1 week	Not recommended.	
Sweetened, condensed, opened	3–5 days	Not recommended.	
Sour cream	2–3 weeks	Not recommended.	Will separate if frozen.
Whipped topping:			
In aerosol can	3 weeks	Not recommended.	
Prepared from mix	3 days	Not recommended.	
Frozen carton (after thawing)	2 weeks	Refreezing not recommended.	
Yogurt	1 month	Not recommended.	Will separate if frozen.

EGG AND PRODUCTS CONTAINING EGG

Eggs:			
In shell, fresh	2–5 weeks	Not recommended.	
Fresh, yolks or whites	4 days	12 months	To freeze, break eggs out of the shell and stir until the yolk is blended with white (or with other yolks). Adding a small amount salt, sugar, or corn syrup will improve keeping quality.
In shell, hard-cooked	2 weeks	Not recommended.	Decorated Easter eggs: If you intend to eat them, keep refrigerated. Eggs should not sit out for 2 hours or longer. Within 2 hours either reheat or refrigerate.
Egg-containing products: Custards, custard sauces, puddings, custard-filled pastries or cakes	1–2 days	Not recommended.	
Canned pudding , opened	1–2 days	Not recommended.	

FRUIT

See Table 3 for information about fresh, frozen, and canned fruits.

MEAT, FRESH

Roast:			
Beef	3–5 days	4–12 months	May be left in supermarket packaging for refrigerator storage or for very brief freezer storage (2 weeks maximum).
Veal or pork	3–5 days	4–12 months	
Lamb	3–5 days	4–12 months	
Steak , beef	3–5 days	4–12 months	For frozen storage beyond 2 weeks, rewrap in moisture- and vapor-proof wrap or freezer bags.

Table 2. Approximate refrigerator and freezer storage times for better quality, cont. The times listed are intended as useful guidelines, not set rules.

Product	Refrigerator at 35°F–40°F	Freezer at 0°F	Comments
MEAT, FRESH, cont.			
Chop:			
Pork	3–5 days	3–4 months	
Lamb or Veal	3–5 days	6–9 months	
Ground beef, stew meat, ground pork	1–2 days	3–4 months	
Sausage pork	1–2 days	1–2 months	
Bratwurst, fresh	2–3 days	2–3 months	
Variety meat (tongue, liver, brain, heart, kidneys)	1–2 days	3–4 months	
MEAT, COOKED			
Canned meat, opened	2–3 days	Not recommended.	
Cooked meats and meat dishes	3–4 days	2–3 months	Quickly refrigerate all cooked meats and dishes leftovers. Use as soon as possible. Cut large roasts into halves to cool in the refrigerator.
Gravy and meat broth	1–2 days	2–3 months	Fats tend to separate in homemade gravies, stews, and sauces, but usually recombine when heated. Cool leftover gravy and broth quickly in shallow containers in the refrigerator.
MEAT, PROCESSED AND CURED			
Bacon	7 days	1 month	Keep processed meats in original package. For best quality, use within 1 week of the sell-thru date.
Frankfurter	7 days (storage time after the vacuum-sealed package is opened)	1 month	Frozen cured meats lose quality rapidly; use as soon as possible.
Ham:			
Whole	7 days	1–2 months	
Half	3–5 days	1–2 months	
Canned (unopened)	8–12 months	Not recommended.	Small pieces of canned ham (opened) may be frozen for 4–6 weeks.
Luncheon meat	3–5 days	1–2 months	Refrigeration storage time is after vacuum-sealed package is opened. When freezing, emulsion may be broken and the product can “weep.”
Sausage:			
Smoked	7 days	1–2 months	
Dry and semi-dry	2–3 weeks	6 months	

Table 2. Approximate refrigerator and freezer storage times for better quality, cont. The times listed are intended as useful guidelines, not set rules.

Product	Refrigerator at 35°F–40°F	Freezer at 0°F	Comments
POULTRY, FRESH			
Chicken and turkey (whole)	1–2 days	12 months	
Chicken (pieces)	1–2 days	9 months	
Turkey (pieces)	1–2 days	6 months	
Duck and goose (whole)	1–2 days	6 months	
Giblets	1–2 days	3–4 months	
COOKED POULTRY			
Canned poultry , opened	2–3 days	4 months	Quickly cool meat and broth separately in shallow containers. Add ice cubes to the concentrated broth to speed cooling and aid fat removal.
Cooked poultry dish:	3–4 days	4–6 months	
Pieces covered with broth	1–2 days	6 months	
Pieces not in broth	3–4 days	4 months	
Fried chicken	3–4 days	4 months	
WILD GAME			
Venison	3–5 days	6–12 month	
Rabbit, squirrel	1–2 days	12 months	
Wild duck, pheasant, goose (whole)	1–2 days	6 months	
SEAFOOD			
Canned fish, seafood (opened)	3–4 days	4–6 months	
Clam, oyster (shucked), and scallops	1–2 days	3–4 months	Store in the coldest part of the refrigerator. Do not use if the liquid is frothy.
Crab	1–2 days	4 months	
Shrimp	1–2 days	3–6 months	
Lobster (shelled or not)	1–2 days	6 months	
Freshwater fish , cleaned	3–5 days	6–9 months	
Fillet: Cod, flounder, haddock, pollock, ocean perch, sea perch, sea trout, striped bass	1–2 days	4–6 months	
Salmon streak	1–2 days	2 months	
Cooked fish	3–4 days	1–3 months	

Table 2. Approximate refrigerator and freezer storage times for better quality, cont. The times listed are intended as useful guidelines, not set rules.

Product	Refrigerator at 35°F–40°F	Freezer at 0°F	Comments
VEGETABLES			
See Table 3 for information about fresh, frozen, and canned vegetables.			
MISCELLANEOUS			
Baby food	2–3 days	Not recommended.	Store covered. Do not feed from the jar. Reheat only enough for one feeding. Freeze homemade baby food in ice cube trays, covered, 2–4 weeks.
Soup, stew	2–3 days	4–6 months	
Sandwich	2–3 days	1 month	
Casserole	1–2 days	1 month	
Ground spices	6 months	6–12 months	Refrigeration unnecessary, but helps keep the flavor fresher. Can also store in a cupboard.
Candy	Not necessary.	3–6 months	Chocolates may discolor.
Salad dressing, opened	Several months.	Not recommended.	

*UHT = ultra heat treated. Table adapted from materials prepared by Kansas State University Agricultural Experiment Station and Cooperative Extension Service (<https://bookstore.ksre.ksu.edu/pubs/MF3130.pdf>), the United States Department of Agriculture, and University of Wisconsin Extension Service.

Listeria can cause serious infection and illness in susceptible (at-risk) people. In pregnant women, it can result in a miscarriage or fetal death, a newborn’s severe illness, or an infant’s death. Elderly adults and individuals with a weakened or suppressed immune system are also at risk. Additional precautions are recommended for at-risk consumers when eating foods that have a greater likelihood of containing *Listeria*:

- Do not eat hot dogs and luncheon meats, unless they are reheated until steaming hot.
- Do not eat soft cheese such as feta, Brie, Camembert, blue-veined cheeses, and Mexican-style cheeses such as “queso blanco fresco,” unless they’re made with pasteurized milk. Cheese that may be eaten include hard cheese; semisoft cheese such as mozzarella; pasteurized processed cheese, such as slices and spreads; cream cheese; and cottage cheese.
- Do not eat refrigerated pâtés or meat spreads. Canned or shelf-stable pâtés and meat spreads may be eaten.

- Do not eat refrigerated smoked seafood, unless it is in a cooked dish, such as a casserole. Refrigerated smoked seafood, such as salmon, trout, whitefish, cod, tuna, or mackerel, is most often labeled “nova-style,” “lox,” “kippered,” “smoked,” or “jerky.” These kinds of fish are found in the refrigerator section or sold at deli counters of grocery stores and delicatessens. Canned or shelf-stable smoked seafood may be eaten.
- Do not drink raw (unpasteurized) milk or eat foods that contain unpasteurized milk.

Fresh Fruit and Vegetable Storage

To maintain the freshness and flavor of the produce you buy at the market or grow in your garden, store it safely at home. For information on the proper storage of fresh fruits and vegetables for better taste, see “Storing Fresh Fruits and Vegetables for Better Taste”: <https://postharvest.ucdavis.edu/files/230110.pdf>. See Table 3 for the approximate storage times needed to maintain the quality of fruits and vegetables.

Table 3. Approximate storage times for best-quality fresh fruits and vegetables. The times listed are intended as useful guidelines, not set rules.

Product	Room Temperature	Refrigerator at 35°F–40°F	Comments
FRUIT			
Apple	1–2 days	1–4 weeks	Ripen apples at room temperature. Once ripe, store unwashed in plastic bags in the crisper drawer.
Apricot	Until ripe.	2–3 day	
Avocado	Until ripe.	3–5 days	
Banana	2–3 days or until ripe	2 days (skin blackens)	
Berries (blackberries, blueberries, strawberries, raspberries) and cherries		1–2 days	Before storing berries, remove any spoiled or crushed fruit. Store the berries unwashed in plastic bags or plastic containers. Do not remove the green tops from strawberries before storing them—they will deteriorate more quickly.
Citrus fruit	10 days	1–2 weeks	Best stored at a cool room temperature. Wrap cut surfaces to prevent loss of vitamin C.
Coconut, fresh	1 week	2–3 weeks	
Grapes	1 days	1 week	
Kiwi fruit	Until ripe	3–4 days	
Melon (watermelon, cantaloupe, honeydew)	1–2 days.	3–4 days	For best flavor, store melons unwashed at room temperature until ripe. Store ripe, cut melons covered in the refrigerator.
Papaya, mango	3–5 day	1 week	
Peach, nectarine	Until ripe	3–4 days	
Pear, plum	3–5 days	3–4 days	
VEGETABLES			
Artichoke, whole	1–2 days	1–2 weeks	
Asparagus		3–4 days	
Beans, green or wax		1 week	
Beet	1 day	7–10 days	
Bok Choy		2–3 days	
Broccoli, rabe, and rapini		3–5 days	
Brussel sprouts		3–5 days	
Cauliflower		3–5 days	
Cabbage		1–2 weeks	
Carrot, parsnip		3 weeks	
Celery		1–2 weeks	
Corn on the cob		1–2 days	
Cucumber		4–5 days	

Table 3. Approximate storage times for best-quality fresh fruits and vegetables, cont. The times listed are intended as useful guidelines, not set rules.

Product	Room Temperature	Refrigerator at 35°F-40°F	Comments
VEGETABLES, cont.			
Eggplant	1 day	3–4 days	
Garlic	1 month	1–2 weeks	
Ginger root	1–2 days	1–2 weeks	
Greens		1–2 days	
Herbs, fresh		7–10 days	
Leek		1–2 weeks	
Lettuce, iceberg		1–2 weeks	Store in bag or lettuce keeper.
Lettuce, leaf		3–7 days	Store in bag or lettuce keeper.
Mushroom		2–3 days	Do not wash before refrigerator storage.
Okra		3–5 days	
Onion: Dry (red, white, yellow)		1 month	Store dry onions loosely in a mesh bag in a cool, dry, well-ventilated place away from sunlight.
Green		1–2 weeks	Store green onions unwashed.
Parsley, cilantro		1 week	
Peas, lima beans, unshelled		3–5 days	Store unshelled in the refrigerator until needed.
Peppers, bell or chile		4–5 days	
Potato	1–2 months	1–2 weeks	Store unwashed potatoes in a cool, dry, well-ventilated area away from light, which causes greening. Storing in the refrigerator reduces sprouting. However, starches will turn to sugar (causes fried potatoes to darken). For more information, see CIS 1153, <i>Options for Storing Potatoes at Home</i> , https://www.uidaho.edu/extension/publications/publication-detail?id=cis1153 .
Radish		10–14 days	
Rutabaga	1 week	2 weeks	
Spinach		3–7 days	
Squash: Summer		4–5 days	Cured winter squash will last 2–6 months in cool temperatures (55°F–60°F).
Winter	1 week	2 weeks	
Turnip		2 weeks	
Tomato	Ripen at room temperature, away from sunlight.	5–6 days	For best flavor, store unwashed at room temperature and eat immediately when ripe. Store fully ripened tomatoes unwashed in the refrigerator.

Table adapted from materials prepared by FoodSafety.gov: <https://www.foodsafety.gov/keep-food-safe/foodkeeper-app>.

Tips for selecting fresh fruits and vegetables.

When possible, purchase in-season produce. Listed below are some general time frames for seasonal fruits and vegetables. Recommendations vary depending on your location.

Spring: asparagus, green onion, leeks, lettuce, new potato, peas, red radishes, rhubarb, spinach, strawberries, watercress

Summer: apricot, blueberries, blackberries, cherries, eggplant, fresh herbs, green beans, hot peppers, melon, okra, peaches, plums, sweet corn, sweet peppers, tomatoes, zucchini

Fall: apple, broccoli, Brussels sprouts, cauliflower, collard, grapes, kale, pears, persimmons, pumpkin, winter squash, yam

Winter: beets, cabbage, carrots, citrus fruit, onion, rutabaga, turnips, winter squash

Ask your store's produce manager for delivery days so you can get to your favorite fruits and vegetables before quality declines. Many communities offer weekly farmers markets. Fruits and vegetables grown by local farmers may be fresher and tastier than those shipped long distances from larger farms.

Selection. Vegetables that show characteristic color, shape, and size generally have the best taste and texture. However, less-than-perfect produce is very acceptable. Most bananas, for example, have a fuller flavor if they are speckled. In general, produce that is very soft is too ripe; if it is very hard, it is probably not ripe enough. Some fruit, like peaches and melons, have a strong scent when they are ripe. If you purchase fruit that is not ripe, speed up the ripening process by placing your fruit in a brown paper bag at room temperature, out of direct sunlight. The ethylene produced by the fruit in the closed bag will cause the fruit to ripen faster than if left on the counter to ripen. If you want to speed up the process even more, place an apple or a banana inside the bag with the other fruit.

Wax coatings. Many fruits and vegetables lose their natural waxy coating after undergoing extensive washings to remove dirt and soil. Hence packers apply waxes to some produce items at a packing shed to replace the original coating. Waxes

- help retain moisture during shipping and marketing,
- help inhibit mold growth,
- protect the produce from bruising,
- prevent other physical damage and disease, and
- enhance the produce's appearance.

The government requires that wax coatings meet the United States Food and Drug Administration's food additive regulations. Produce shippers and supermarkets are required by federal law to label produce items that have been waxed. Waxes may turn white on the surface of fruits or vegetables if subjected to excessive heat or moisture. The whitened areas are safe to eat.

Washing. Store fresh fruits and vegetables unwashed. Storing the produce unwashed helps prevent spoilage and mold growth during storage. If fruits and vegetables are very dirty after harvest, brushing or rinsing and drying may be necessary before storing. Wash produce just before preparation or eating. Food-safety experts recommend that consumers use the six Fight BAC! procedures for handling fresh fruits and vegetables: Check, Clean, Rinse, Separate, Chill, Throw Away, as explained in the Fight BAC! brochure on safely handling fresh fruits and vegetables: <https://www.fightbac.org/wp-content/uploads/2020/09/Produce-Pro-Consumer-Fact-Sheet.pdf>.

Washing ready-to-eat leafy greens/lettuce: A panel of scientists with expertise in the microbial safety of fresh produce evaluated recent research and regulatory guidelines and came to the following conclusions:

- Lettuce/leafy green salad in sealed bags labeled "washed" or "ready-to-eat" does not need additional washing
- Additional washing of ready-to-eat green salads does not enhance safety
- The risk of cross contamination during washing may outweigh any of the safety benefit of additional washing

Harvesting and storing fresh garden vegetables.

Harvesting vegetables at the proper stage of maturity is essential for peak flavor and nutrition. Morning is the best time to harvest vegetables because they are cool and tolerate handling more easily. Vegetable quality deteriorates rapidly after harvest, so keep fresh produce out of direct sunlight and cook, process, or place it in the proper storage conditions as soon as possible. There are five main types of storage for garden vegetables:

Method 1: Cold, moist storage—32°F–40°F, 90%–95% relative humidity. The colder part of a refrigerator generally provides this range of temperatures. To maintain high relative humidity, place vegetables in plastic bags or place them unbagged in the crisper, which should be half or fuller. (Examples: asparagus, fresh lima beans, beets, broccoli, carrots, cauliflower.)

Method 2: Cool, moist storage—45°F–50°F, 80%–90% relative humidity. A special refrigerator kept at these warmer temperatures may be warranted for storing large amounts of vegetables. Vegetables needing this type of storage are sensitive to chilling injury at temperatures below 45°F. Storing certain immature vegetables under these conditions allows ripening that would not occur at a lower temperature. Vegetables should be stored in plastic bags or in the crisper (as in method 1) to maintain the surrounding air's humidity. (Examples: cucumbers, eggplant, Swiss chard, Crenshaw and honeydew melons.)

Method 3: Cool, dry storage—35°F–55°F, 50%–60% relative humidity. Use cool rooms and buildings. Pack vegetables in something other than plastic to maintain reduced humidity levels, such as in mesh or brown paper bags or cardboard boxes. (Examples: garlic, onions, shallots.)

Method 4: Warm, moist storage—55°F–60°F, 80%–85% relative humidity. Basement areas, garages and semiheated outbuildings, combined with plastic bags or damp soil, sand, or sawdust, often satisfy these conditions. (Examples: sweet potatoes, mature green tomatoes.)

Method 5: Warm, dry storage—55°F–60°F, 60%–70% relative humidity. Store in basement areas, garages, and semiheated outbuildings in packaging other than plastic to maintain reduced humidity levels, such as

in mesh or brown paper bags or cardboard boxes. (Examples: pumpkins, winter squash.)

For more detailed information on storage, see the University of Idaho BUL 617 *Harvesting and Storing Fresh Garden Vegetables*, <https://www.uidaho.edu/extension/publications/publication-detail?id=bul0617>, and CIS 1153 *Options for Storing Potatoes at Home*, <https://www.uidaho.edu/extension/publications/publication-detail?id=cis1153>.

Storage in root cellars. If you have an interest in storing fruits and vegetables in an appropriate pit, cellar, or basement without refrigeration, see University of Alaska Fairbanks Cooperative Extension Service HGA-00331, *Vegetable Storage in Root Cellars*, http://cespubs.uaf.edu/index.php/download_file/1171/, and Washington State University Extension EB1326E, *Storing Vegetables and Fruits at Home*, <https://pubs.extension.wsu.edu/storing-vegetables-and-fruits-at-home>.

Storing Leftovers

Leftovers are cooked foods that have not been eaten within two hours of cooking. The following are specific guidelines regarding leftover use and storage:

- Observe the two-hour rule by discarding any perishable foods (foods that decay rapidly if not refrigerated) left at room temperature longer than two hours total. Reduce this time to one hour in hot weather.
- Use shallow containers (3 inches tall or less) to cool foods more quickly when refrigerating or freezing foods. Alternatively, moisture-proof, freezer-weight wraps are good choices for freezer storage.
- Keep your refrigerator at 40°F or below and your freezer at or below 0°F.
- Label leftovers with a date and the product name.
- Practice first-in, first-out practices (see page 1).
- Never taste leftovers that are of questionable age or safety.
- Never keep leftovers in the refrigerator for more than three to four days. Freeze leftovers that will not be eaten within this time.

Reheating leftovers. Leftovers may be reheated in the microwave, on the stovetop, or in the oven. However, when using the microwave, stir liquid food after heating and rest solid food for two minutes after heating to allow the food's temperature to equalize. Basic rules for reheating leftovers, regardless of the heating medium:

- Heat solid leftovers to 165°F, using a food thermometer to check the temperature
- Heat sauces, soups, and gravies to boiling
- Set oven temperature no lower than 325°F

When to throw out. When leftovers have been in the refrigerator for longer than three to four days, or if they look or smell unusual, throw them out.

Any time you doubt the freshness or safety of food, dispose of it using a garbage disposal or a tightly wrapped package so that other people or animals won't eat it. See Table 4 for storage times for leftovers.

Using a food thermometer. There are two types of instant-read thermometers commonly available that are useful for checking the temperature of reheated leftovers. Insert an instant-read digital thermometer so that the bottom half inch of the probe or stem penetrates and rests in the center or coldest part of the food. For an instant-read dial thermometer, insert the probe or stem 2–2½ inches into the center or coldest part of the food.

Table 4. Approximate storage times for best-quality leftovers.

Food	Refrigerator (40°F)	Freezer (0°F)
Egg, liquid pasteurized or egg substitute, opened	3 days	Do not freeze.
Deli, vacuum-packed, and home-prepared salads: egg, chicken, tuna, ham, or macaroni salad	3–5 days	These products do not freeze well.
Prestuffed pork and lamb chop, chicken breast, stuffed with dressing	1 day	1–3 months
Cooked meat and meat dish	3–4 days	2–3 months
Soup and stew, gravy and meat broth	1–2 days	2–3 months
Cooked poultry, poultry dish	3–4 days	4–6 months
Chicken nugget, patty	1–2 days	1–3 months
Cooked fish	3–4 days	1–2 months
Hot dogs, opened package	1 week	1–2 months (wrapped)
Lunch meat, opened package	3–5 days	1–2 months (wrapped)
Baby food:		
Strained fruits and vegetables	2–3 days	6–8 months
Strained meat and egg yolk	1 day	1–2 months
Meat and vegetable combination	1–2 days	3–4 months

Storage times relevant for opened jars or homemade baby food. Follow the use-by date for shelf storage of unopened jars. Table adapted from materials prepared by University of Nebraska Extension and University of Georgia Cooperative Extension.

Storing Food for Emergencies

In the event of a disaster, you may not have access to food, water, and electricity for days or even weeks. Provide for your family during such a time by maintaining a stock of goods in your pantry, using the first-in, first-out practice to keep items fresh (see Suggested Grocery List, Tips for Storing Emergency Foods, and Disaster Supply Kit sheets). Store food on shelves, safely out of the way of contaminated water in case of flooding. Be sure to consider any special dietary needs for diabetics, pregnant women, breastfeeding mothers, babies and toddlers, and pets. Food preferences also need to be considered. For more information about handling refrigerated and frozen food during a power outage, see “Keep Your Food Safe during Emergencies: Power Outages, Floods and Fires,” <https://www.fsis.usda.gov/food-safety/safe-food-handling-and-preparation/emergencies/keep-your-food-safe-during-emergencies>.

Suggested Grocery List: Three-Day Food Supply for One Person

(Increase as needed for household size)

- Dry cereal – one 7 oz box
- Crackers – one box (8 oz or larger)
- Peanut butter – one 12 oz jar
- Canned juice – one 6 pack
- Applesauce – one 4 pack of 6 oz containers
- Peaches – one 8 oz can
- Fruit cocktail – one 8 oz can
- Pork and beans – one 8 oz can
- Corn – one 8 oz can
- Tuna – one 3¼ oz can
- Processed cheese spread – one 8 oz box or 4¼ oz jar
- Beef stew – one small can or container
- Chili – one small can or container
- Tomato or other soup – one can
- Cocoa – one box of individual packets
- Pudding – one 4 pack of 4¼ oz containers
- Dried prunes – one 12 oz package
- Peanuts or other nuts – one package or jar
- Tea – one box with 16 bags or one 2 oz jar instant coffee
- Nonfat dried milk – one box
- Bottled water – 3 gal
- Manual can opener

Be sure to rotate supplies. Avoid out-of-date products.

Tips for Storing Emergency Foods

- Keep food in a dry, cool, dark area if possible. If basement flooding is possible, store emergency food in higher locations.
- Open food boxes and other resealable containers carefully so that you can close them tightly after each use. Include food wrap or empty storage containers.
- Wrap foods such as cookies and crackers in plastic bags and keep them in sealed containers to prevent moisture and to keep out pests.
- Empty open packages of sugar, dried fruits, and nuts into screw-top jars or airtight canisters to keep out pests.
- Inspect all food for signs of spoilage before use.
- Throw out canned goods that become swollen, dented, or corroded.
- Use foods before their use-by dates and replace them with fresh supplies, dated with ink or marker. Place new items at the back of the storage area and older ones in the front.

Disaster Supply Kit

- Portable, battery-powered radio or television and extra batteries
- Flashlight and extra batteries (check batteries occasionally)
- First-aid kit and manual
- Sanitation and hygiene items (hand sanitizer, moist towelettes, and toilet paper)
- Matches in a waterproof container
- Whistle
- Extra clothing and blankets
- Kitchen accessories and cooking utensils

- Photocopies of identification and credit cards
- Cash and coins
- Special-needs items, such as prescription medications, eyeglasses, contact lens solution, and hearing aid batteries
- Items for infants, such as formula, diapers, bottles, and pacifiers
- Tools, pet supplies, a map of the local area, and other items to meet your unique family needs

Be sure to rotate supplies. Avoid out-of-date products.

Additional information on preparing for emergencies is available from the Federal Emergency Management Agency (Food and Water in an Emergency):

<http://www.fema.gov/pdf/library/f&web.pdf>.

Storing Home-Preserved Foods

Safety considerations. Home-canned or dried foods that have been prepared using other research-based procedures such as those recommended by Extension offices are safe indefinitely as long as the packaging remains intact. However, the flavor and nutritional quality of these foods deteriorate over time. Consequently, preserve only the amount that can be consumed within one year. For more information on safe canning, see the USDA Complete Guide to Home Canning (https://nchfp.uga.edu/publications/publications_usda.html#gsc.tab=0). For more information on dehydrating foods at home, see PNW 397 *Drying Fruits and Vegetables*, <https://www.uidaho.edu/extension/publications/publication-detail?id=pnw0397>.

Home-canned foods. Storing home-canned foods is similar to storing commercially canned foods: cool, dark, dry storage is best. Excluding light is an important storage consideration, because glass jars are used for home-canned foods. Before storing home-canned foods, wipe clean the jars and dry

and label them with the contents and storage date. Remove the screw band so it's easier to see if a seal has failed and so the band doesn't rust while securing the lid. Do not store jars above 95°F or near hot pipes, a range, a furnace, in an uninsulated attic, or in direct sunlight. Under these conditions, food loses quality in a few weeks or months and may spoil—dampness may corrode metal lids and/or break seals, allowing contamination and spoilage.

Accidental freezing of canned food would not cause spoilage unless the cold allows the jars to become unsealed and their contents contaminated. However, freezing and thawing may soften the food, lowering its quality. If jars must be stored where they may freeze, wrap them in newspaper, then place them in heavy cartons and cover them with more newspaper and blankets.

Signs of spoilage in home-canned foods. If a home-canned jar has a bulging lid, mold, off odor, or leakage or spurts liquid when opening the container, the food is spoiled and should be discarded.

Storing home-dried foods. Moisture must be kept out of dried foods to prevent mold. Containers suitable for freezer use, such as plastic freezer bags, glass jars with lids, and plastic containers with lids, work well for dried foods. Vacuum packaging is an excellent way to maintain the quality of dried foods.

Although dried foods may still be edible after many months or years in storage, they maintain the best quality and nutritional value if used within twelve months. Refrigerator or freezer storage extends the shelf life of dried foods.

Acknowledgment

The authors consulted food-storage Extension publications from Alaska, Arizona, California, Georgia, Indiana (Purdue), Iowa, Kansas, Nebraska, New Jersey (Rutgers), New York (Cornell), South Carolina (Clemson), Utah, Virginia, and Washington States, as well as the web pages of the Food Safety and Inspection Service and Federal Emergency Management Agency in preparing this publication.

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