



# BE FOOD SAFE DURING EMERGENCIES

## POWER OUTAGES, FLOODS & FIRES



University of Kentucky  
College of Agriculture,  
Food and Environment  
*Cooperative Extension Service*



# POWER OUTAGES & FOOD SAFETY

## PLAN AHEAD

- Keep an appliance thermometer in both the refrigerator and freezer. Make sure the refrigerator temperature is at 40°F or below and the freezer is at 0°F or below.
- Group foods together in both the refrigerator and freezer. This helps foods stay cold longer.
- Keep the freezer full. Fill empty spaces with frozen plastic jugs of water, bags of ice, or gel packs.
- Freeze refrigerated items that you may not need immediately, such as leftovers, milk, and fresh meat and poultry. This will keep them at a safe temperature longer.
- Have a large, insulated cooler and frozen gel packs available. Perishable foods will stay safe in a refrigerator only 4 hours.
- Find out where dry ice and block ice can be purchased.

## DURING A POWER OUTAGE

- Keep refrigerator and freezer doors closed.
- The refrigerator will keep food safe for up to 4 hours. If the power is off longer, you can transfer food to a cooler and fill with ice or frozen gel packs. Make sure there is enough ice to keep food in the cooler at 40°F or below. Add more ice to the cooler as it begins to melt.
- A full freezer will hold the temperature for approximately 48 hours (24 hours if it is half full).
- Obtain dry ice or block ice if your power is going to be out for a prolonged period. Fifty pounds of dry ice should hold an 18-cubic-foot freezer for 2 days. **(Caution: Do not touch dry ice with bare hands or place it in direct contact with food.)**
- In freezers, food in the front, in the door, or in small, thin packages will defrost faster than larger, thick items or food in the back or bottom of the unit.
- During a snowstorm, do not place perishable food out in the snow. Outside temperatures can vary and food can be exposed to unsanitary conditions and animals. Instead, make ice. Fill buckets, empty milk containers, or cans with water and leave them outside to freeze. Use the home-made ice in your refrigerator, freezer, or coolers.

## AFTER A POWER OUTAGE

**Never** taste food to determine its safety.  
**If In Doubt, Throw it Out!**

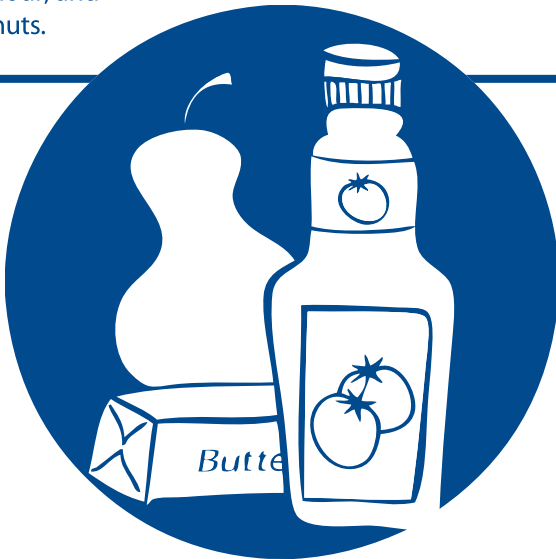
## REFRIGERATED FOODS

### UNSAFE FOODS

- Discard the following if your refrigerator has been without power for more than 4 hours:
  - raw, cooked, or leftover meat, poultry, fish, eggs, and egg substitutes;
  - luncheon meat and hot dogs;
  - casseroles, soups, stews, and pizza;
  - mixed salads (i.e., chicken, tuna, macaroni, potato);
  - gravy and stuffing;
  - milk, cream, yogurt, sour cream, and soft cheeses;
  - cut fruits and vegetables (fresh);
  - cooked vegetables;
  - fruit and vegetable juices (opened);
  - creamy-based salad dressings;
  - batters and doughs (i.e., pancake batter, cookie dough);
  - custard, chiffon, or cheese pies;
  - cream-filled pastries; and
  - garlic stored in oil.
  
- Discard opened mayonnaise, tartar sauce, and horseradish if they were held above 50°F for over 8 hours.
  
- Discard any foods like bread or salad greens that may have become contaminated by juices dripping from raw meat, poultry, or fish.
  
- In general, if any food has an unusual odor, color, or texture, **throw it out.**

## SAFE-TO-EAT FOODS

- High-acid foods such as mustard, ketchup, relishes, pickles, non-creamy salad dressings, jams, and jellies; however, they may spoil sooner.
- Foods that don't actually require refrigeration. These foods may be used unless they turn moldy or have an unusual odor:
  - whole fruits and vegetables (fresh);
  - fruit and vegetable juices (unopened);
  - dried fruits and coconut;
  - baked goods such as fruit pies, bread, rolls, muffins, and cakes (except those with cream cheese frosting or cream fillings);
  - hard and processed cheeses;
  - butter and margarine;
  - fresh herbs and spices;
  - flour; and
  - nuts.



# FROZEN FOODS

## SAFE-TO-EAT FOODS

- Frozen foods that have thawed, but still contain ice crystals.
- Foods that have remained at refrigerator temperatures (40°F or below). They may be safely refrozen; however, their quality may suffer.
- Foods that don't actually need to be frozen. These foods may be used unless they turn moldy or have an unusual odor:
  - dried fruits and coconut;
  - baked goods including fruit pies, bread, rolls, muffins, and cakes (except for those with cream cheese frosting or cream fillings);
  - hard and processed cheeses;
  - butter and margarine;
  - fruit juices, and
  - nuts.
- **Never** taste food to determine its safety.

**IF IN  
DOUBT,  
THROW  
IT OUT!**

## REMOVING ODORS FROM REFRIGERATORS AND FREEZERS

**The following steps may have to be repeated several times:**

- Dispose of any spoiled or questionable food.
- Remove shelves, crispers, and ice trays. Wash them thoroughly with hot water and detergent. Then rinse with a sanitizing solution of 1 tablespoon of unscented, liquid chlorine bleach per gallon of drinking water.
- Wash the interior of the refrigerator and freezer, including the door and gaskets, with hot water and baking soda. Rinse with a sanitizing solution (see above).
- Leave the door open for about 15 minutes.

**If odor remains, try any or all of the following:**

- Wipe the inside of the unit with equal parts of vinegar and water to destroy mildew.
- Leave the door open and allow to air out for several days.
- Stuff the refrigerator and freezer with rolled newspapers. Keep the door closed for several days. Remove the newspaper and clean with vinegar and water.
- Sprinkle fresh coffee grounds or baking soda loosely in a large, shallow container in the bottom of the unit.
- Place a cotton swab soaked with vanilla extract inside the freezer. Keep the door closed for 24 hours.
- Use a commercial product available at hardware and or discount stores. Follow the manufacturer's instructions.

Note: If odors still remain, the unit may need to be discarded.



# FLOODING & FOOD SAFETY

## PLAN AHEAD

- If possible, raise refrigerators and freezers off the floor, putting cement blocks under their corners.
- Move canned goods and other foods that are kept in the basement or low cabinets to a higher area.

## AFTER A FLOOD

- Use bottled drinking water that has not come in contact with flood water.
- Do not eat any food that may have come in contact with flood water.
- Discard any food that is not in a waterproof container if there is any chance it may have come in contact with flood water. Food containers that are not waterproof include those with screw-caps, snap lids, pull tops, and crimped caps.
- Also discard cardboard juice/milk/baby formula boxes and home canned foods if they have come in contact with flood waters. They cannot be effectively cleaned and sanitized.

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## FLOODING & FOOD SAFETY (continued)

- Inspect canned foods; discard any food in damaged cans. Can damage is shown by swelling, leakage, punctures, holes, fractures, extensive deep rusting, or crushing/denting severe enough to prevent normal stacking or opening with a manual, wheel-type can opener.
- Discard wooden cutting boards, plastic utensils, baby bottle nipples, and pacifiers that may have come in contact with flood waters. There is no way to safely clean them.
- Thoroughly wash metal pans, ceramic dishes, utensils (including can openers) with soap and water (hot water if available). Rinse and then sanitize them by boiling in clean water or immersing them for 15 minutes in a solution of 1 tablespoon of unscented, liquid chlorine bleach per gallon of drinking water.
- Thoroughly wash countertops with soap and water (hot water if available). Rinse and then sanitize them by applying a solution of 1 tablespoon of unscented, liquid chlorine bleach per gallon of drinking water. Allow to air-dry.
- Note: If your refrigerator or freezer was submerged by flood waters – even partially, it is unsafe to use and must be discarded. Make certain you “childproof” the units so children cannot get trapped inside.

### SALVAGING ALL-METAL CANS & RETORT POUCHES

Undamaged, commercially prepared food in all-metal cans and retort pouches (for example, flexible, shelf-stable juice or seafood pouches) can be saved if you do the following:

1. Remove the labels if possible. They can harbor dirt and bacteria.

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## **FLOODING & FOOD SAFETY** (continued)

- 2.** Thoroughly wash the cans or retort pouches with soap and water (use hot water if available).
- 3.** Brush or wipe away any dirt or silt.
- 4.** Rinse the cans or retort pouches with water that is safe for drinking (if available). Dirt or residual soap will reduce the effectiveness of chlorine sanitation.
- 5.** Then sanitize them by immersion in one of the following ways:
  - Place in water. Allow the water to come to a boil for 2 minutes.

Or

  - Place in a freshly made solution consisting of 1 tablespoon of unscented, liquid chlorine bleach per gallon of drinking water (or the cleanest, clearest water available) for 15 minutes.
- 6.** Allow to air-dry for a minimum of 1 hour before opening or storing.
- 7.** Relabel the cans or retort pouches with a marker. Include the expiration date if available.
- 8.** Use the food in these reconditioned cans and retort pouches as soon as possible.
- 9.** Any concentrated baby formula in reconditioned, all-metal containers must be diluted with clean, drinking water.



# FIRES & FOOD SAFETY

- Discard all food that has been near a fire. Food exposed to fire can be damaged by the heat of the fire, smoke fumes, and fire-fighting chemicals. These fumes and chemicals cannot be washed off food. These include:
  - Foods stored outside the refrigerator, such as bread, fruits, and vegetables.
  - Raw foods or food in permeable packaging (cardboard, plastic wrap, etc.)
  - All foods in cans, bottles, and jars. While they may appear to be okay, the heat from a fire can damage the containers and can activate food spoilage bacteria.
  - Foods stored in refrigerators or freezers. Refrigerator seals are not airtight and fumes can get inside.
- Sanitize cookware exposed to fire-fighting chemicals by washing in soap and hot water. Then submerge for 15 minutes in a solution of 1 tablespoon of unscented, liquid chlorine bleach per gallon of drinking water.

For additional information about food safety  
contact your local extension service.

<http://www.ca.uky.edu/county>

**USDA Meat and Poultry Hotline**

**1-888-MPHotline**

(1-888-674-6854)

TTY: 1-800-256-7072

Open Monday through Friday from 10 a.m. to 6 p.m. ET.  
Recorded food safety messages are available 24 hours a day.

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