



After a Flood: Keeping Food Safe

Adapted from USDA emergency preparedness fact sheet, Keeping Food Safe During an Emergency, by
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Storm- and flood-damaged foods may not be safe to eat. If you have even the slightest question about the safety of any item, dispose of it. Otherwise, keep the following points in mind:

Destroy the following foods if they have been covered by flood waters and are not in a water-proof container. They cannot be effectively cleaned and sanitized:

- Fresh fruits and vegetables.
- Foods in cardboard or paper cartons or bags—juice, milk and baby formula boxes, rice, pastas, flour.
- Foods, liquids, or beverages in crown-capped bottles, containers with pull-tops, snap lids, crimped caps, corks or screw caps.
- Foods in glass jars—both commercial and home canned.

Destroy all foods that were covered by water which may have been contaminated with waste, whether agricultural, industrial, or domestic. This includes foods in sealed, unopened cans.

Disinfect metal cans or retort pouches (i.e. flexible, shelf-stable juice or seafood pouches) not fouled by waste water. They may be safe to eat if the cans don't have bulges or leaks:

- Remove labels, if at all possible, since they harbor dirt and bacteria.
- Brush or wipe away any dirt or silt.
- Thoroughly wash containers with soap and hot water.

- Rinse with water that is safe for drinking. Dirt or residual soap will reduce the effectiveness of chlorine sanitation.
- Sanitize by immersing in one of these two ways:
 1. Place in water and allow water to come to a boil and continue boiling for 2 minutes.
 2. Place in a freshly made solution consisting of 1 tablespoon unscented, liquid chlorine bleach per gallon of drinking water (or cleanest, clearest water available) for 15 minutes.
- Air-dry for a minimum of 1 hour before opening or storing.
- Re-label with contents of can and expiration date, if known.
- Use as soon as possible.
- Any concentrated baby formula must be diluted with clean drinking water.

Clean pots, pans, dishes and utensils and countertop covered with flood waters.

- Thoroughly wash all metal pans, ceramic dishes, utensils (including can opener) and countertops with soap and hot water.
- Rinse, then sanitize using one following:
 1. Boil in clean water.
 2. Immerse for 15 minutes in 1 tablespoon unscented, liquid chlorine bleach solution per gallon of drinking water (or cleanest, clearest available)
- Rinse countertop, then sanitize by applying a solution of 1 tablespoon of unscented, liquid chlorine bleach per gallon of drinking water (or cleanest, clearest available).
- Air-dry all dishes and countertops.

For **safe drinking water** after a flood, use bottled water that has not been exposed to flood waters. If that is not available consider the following options:

- **Boil** water for 1 minute. This will kill most disease-causing organisms that may be present. If water is cloudy, filter it first through clean clothes or allow it to settle and then draw off the clear water for boiling. Cool, store in clean, covered containers.
- **Disinfect** with household bleach if boiling is not an option. Bleach kills some, but not all, disease-causing microorganisms that may be in the water. If cloudy, filter first through clean cloths or allow sediment to settle. Draw off clean water and add 1/8 teaspoon, or 8 drops, of regular, unscented liquid bleach for each gallon of water. Stir well and let stand for 30 minutes before use. Store in clean, covered containers.
- **Test** and disinfect flooded wells after flood waters have receded. Contact local or state health department or your Extension office for specific advice.

If the power has gone out consider these recommendations to maintain the safety of frozen and refrigerated foods:

- **Never taste food to determine its safety!**
- Appliance thermometers can be a lifesaver in knowing if the refrigerator or freezer were ever above 40 F. If the freezer stayed below 40 F, the food can be refrozen.
- Keep refrigerator and freezer doors closed as much as possible to maintain the cold temperature. The refrigerator will keep food safely cold for about 4 hours if the door is unopened. A full freezer will hold temperature

for approximately 48 hours (24 hours if it is half full) if the door remains closed.

- Obtain dry or block ice if the power is going to be out for a prolonged period of time. Fifty pounds of dry ice should hold an 18-cubic-foot full freezer for 2 days. Ahead of time, learn where dry ice and block ice can be purchased.

Frozen foods

- If frozen foods are thawed completely and have warmed above 40 F, cook, eat, or discard them immediately. After cooking, they can be refrozen.
- Partially thawed frozen foods with ice crystals may be safely refrozen.
- All breads and cakes can be refrozen even if completely thawed. If item has a cheese or custard base it must be discarded.
- Commercial pie crusts and homemade bread dough can be refrozen if completely thawed.
- Fruits and vegetables that did not reach temperatures above 40 F (refrigeration temperature) or that contain ice crystals can be refrozen.
- Discard all casseroles and foods that contain stuffing.
- Discard completely thawed frozen meals, entrees, and specialty items such as pizzas.
- Discard any dairy product that is completely thawed and above 40 F for more than 2 hours.
- Discard all frozen fruit juices that are completely thawed and show mold, smell yeasty, or appear slimy.
- Discard vegetable juices if held above 40 F for more than 6 hours.

What to do with refrigerated foods that have been above 40 F for more than 2 hours.

Save	Discard
Hard and processed and cheeses.	Yogurt, milk, cream, sour cream, soy milk, eggnog and opened baby food.
Cheese in a can or jar (i.e. grated Pamesan, Romano, or combination).	All soft cheeses, shredded and low fat cheeses.
Margarine and butter.	Meat, poultry, or seafood at a temperature above 40 F for over 2 hours.
Condiments and pickles.	Salads, gravy, stuffing, broth, luncheon meats, hot dogs, bacon, sausage, dried beef, pizza, canned hams that are labeled “Keep Refrigerated”, and opened canned meat.
Breakfast foods such as waffles, pancakes, and bagels.	All eggs and egg dishes.
Fresh fruits that are whole and uncut.	Fresh fruits that have been cut.
Fruit pies.	Cream filled pastries or pies.
Fresh (raw) vegetables, herbs, spices and mushrooms that are whole and uncut.	<p>Cooked vegetables and canned vegetables that are opened (including juices).</p> <p>All cooked pastas, rice, potatoes, pasta and potato salads, refrigerator biscuits.</p> <p>Sauces, spreads and jams that have been above 50 F for over 8 hours.</p> <p>Garlic in oil.</p> <p>Opened creamy-based dressings.</p> <p>Spaghetti sauce.</p>

Sources:

USDA Fact Sheet Emergency Preparedness, Keeping food safe during an emergency. September 6, 2006.
 SDSU CES ExEx14019. After a flood, play it safe with food. June 1992.

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