



SOUTH CAROLINA FAMILY AND COMMUNITY LEADERS

Affiliated with National Volunteer Outreach Network, Country Women's Council, U.S.A., Associated Country Women of the World and in partnership with Clemson University Cooperative Extension Service
SCFCL website: <http://www.scfcl.com>

Leader Training Guide

FOOD DAMAGE IN THE HOUSE – HOW TO CLEAN UP AND MAKE THE ENVIRONMENT SAFE

Objectives: Participants will learn how to make food environmentally safe after a disaster.

Lesson Overview/Introduction: Food contamination can be a problem after a disaster (flood, tornado or fire). Except for fire, floods are the most common and widespread of all natural disasters. Most communities in the United States can experience some kind of flooding after spring rains, heavy thunderstorms, or winter snow thaws. Flood waters may carry silt, raw sewage, oil or chemical waste. Filth and disease-causing bacteria in flood water may contaminate foods the water touches, making them unsafe to eat. Food exposed to fire can be compromised by three factors: the heat of the fire, smoke fumes and chemicals used to fight fire. If you are in doubt about the safety of a food, throw it out rather than risk disease.

Lesson:

Ask: Do you know how to handle food following a disaster?

Unsafe Refrigerated 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 dressing;
- batters and doughs (i.e., pancake batter, cookie dough);
- custard, chiffon, or cheese pies;
- cream-filled pastries;
- 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.

NOTE: In general, if any food has been opened, come in contact with flood water, has an unusual odor, color, or texture, **throw it out.**

Safe-to Eat Frozen 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.

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.

Food Safety 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.
- 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 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 floodwaters — even partially — it is unsafe to use and must be discarded.

Salvaging All-Metal Cans and 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. Note the expiration dates for relabeling.
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:
 - a. Place in water. Allow the water to come to a boil for 2 minutes; or
 - b. 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 and Food: 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. These include:

- Foods stored outside of the refrigerator, such as bread, fruits, and vegetables.
- Raw food 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 for 1 tablespoon of unscented, liquid chlorine bleach per gallon of drinking water.

Lesson Summary: Those living in natural disaster areas should keep supplies on hand because during a hurricane or flood power will likely be disrupted, putting food in danger. Knowing what to keep and how to make environmentally damaged food safe after a disaster can help you avoid foodborne illnesses.

Suggested Activities: Show how to prepare a sanitizing solution to clean items that have been exposed to flood water or fire. Display food and equipment that should be kept or discarded after a disaster.

Suggested Materials:

HGIC 3800. "Food Safety in Hurricane and Floods", Clemson Extension Home and Garden Information Center,
http://www.clemson.edu/extension/hgic/food/food_safety/emergencies/hgic3800.htm

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Sources/References:

HGIC 3800. "Food Safety in Hurricane and Floods", Clemson Extension Home and Garden Information Center,
http://www.clemson.edu/extension/hgic/food/food_safety/emergencies/hgic3800.htm

USDA, Keep Your Food Safe During Emergencies: Power Outages, Floods and Fires,
http://www.fsis.usda.gov/wps/portal/fsis/topics/food-safety-education/get-answers/food-safety-fact-sheets/emergency-preparedness/keep-your-food-safe-during-emergencies/ct_index