

# Cleaning and Sanitizing the Kitchen: Using Inexpensive Household Food-Safe Products<sup>1</sup>

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Consumers can protect themselves by preventing the spread of germs by both cleaning and sanitizing surfaces where food is prepared.

## Definition of “cleaning”

Cleaning is the removal of dirt from food preparation surfaces in the kitchen. Surfaces can be counters, cutting boards, dishes, knives, utensils, pots, and pans.

## Cleaning steps

1. Wash surface with soap and warm water.
2. Rinse with clean water.
3. Air dry OR dry with a clean paper towel.

## Definition of “sanitizing”

Sanitizing is reducing germs to a safe level so that illness is unlikely to occur. The most commonly known germs causing illnesses are *Salmonella*, *Campylobacter*, and *Norovirus*. Toxin-producing *E. coli* and *Listeria monocytogenes* are less common in the kitchen, but can cause very serious, if not deadly, illnesses.

## Sanitizing steps:

1. Spray surface with sanitizer of choice.
2. Leave sanitizer on the surface for the suggested amount of time.
3. Allow to air dry OR dry with a clean paper towel.

Effective cleaning involves both cleaning and sanitizing surfaces **BEFORE** and **AFTER** use.

## Points to remember when using chlorine bleach:

- Diluted chlorine bleach is a **very effective sanitizer**. The amount needed is very small and no chlorine residue will be left behind using a concentration of 1 scant teaspoon of chlorine bleach to 1 quart of water.
- Chlorine reacts quickly and becomes inactive quickly. Detergents and dirt inactivate chlorine; surfaces must be cleaned first to ensure effective sanitation.
- Chlorine solutions need to be made at least weekly and must be stored in a dark place.

1. This document is FCS8 OH 2010, one of a series of the Family Youth and Community Sciences Department, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida. Original publication date February 2012. Visit the EDIS website at <http://edis.ifas.ufl.edu>. This document was originally published as *Cleaning & Sanitizing the Kitchen: Using Inexpensive Household Food-Safe Products* by Janet Buffer, Lydia Medeiros, Mary Schroeder, Patricia Kendall, Jeff LeJeune, and John Sofos of the Ohio State University Extension. It was adapted with permission by Amy Simonne for use in Florida.
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Table 1. Common household products effective as sanitizers on food preparation surfaces.<sup>1</sup>

Item	Concentration	Temperature	Contact time	<i>Listeria monocytogenes</i>	<i>E. coli</i>	<i>Salmonella</i>
<b>Chlorine bleach (6%)</b>	1 scant teaspoon to 1 quart water	Room temperature (77°F or 25°C)	1 minute	√	√	√
<b>Hydrogen peroxide (3%)</b>	Undiluted	130°F or 55°C	1 minute	√	√	√
<b>Hydrogen peroxide (3%)</b>	Undiluted	Room temperature (77°F or 25°C)	10 minutes		√	√
<b>White distilled vinegar (5%)</b>	Undiluted	130°F or 55°C	1 minute	√	√	√
<b>White distilled vinegar (5%)</b>	Undiluted	Room temperature (77°F or 25°C)	10 minutes			√
<b>Baking soda</b>	Not an effective sanitizer at any temperature or time, even after 10 minutes of contact time.					

<sup>1</sup>A √ means that the product was effective at reducing the presence of the pathogens with more than 99.99% reduction. Source: Yang et al. (2009).

- Do not use chlorine with added fragrance — this is not food-safe.

## Steps for using vinegar OR hydrogen peroxide to sanitize:

Both products when heated will produce an odor. This odor is not harmful to you. Test sanitizer in an unseen place to be sure hydrogen peroxide will not discolor or fade the surface.

### Tip - Option 1:

1. Heat either 4 oz (1/2 C) white distilled vinegar **OR** hydrogen peroxide in a sauce pan to 150°F or 66°C. (Handle **CAREFULLY** when heating as the liquids will be warm but not hot.)
2. Using a funnel, pour the **warm** solution into a spray bottle.
3. Immediately spray on kitchen surfaces, countertops, sink, refrigerator interior, and faucets.
4. Let sit for 1 minute, then wipe with a clean paper towel.

### Tip - Option 2 (if warming the solution is not an option):

1. Use either 4 oz (1/2 C) white distilled vinegar **OR** hydrogen peroxide.
2. Using a funnel, pour **room temperature** solution into a spray bottle.

3. Spray onto kitchen surfaces, countertops, sink, refrigerator interior, and faucets.
4. To be effective the solution **MUST sit for 10 minutes**, then wipe with a clean paper towel.

**Warning:** Never mix hydrogen peroxide and vinegar together.

## How often should you sanitize?

Sanitizers kill living organisms, which is why they are so important in controlling harmful pathogens. How often should the kitchen be sanitized is best determined by your personal situation. Some questions to think about when trying to decide how often the kitchen should be sanitized are:

1. Do you have elderly people living with you?
2. Do you have someone in your house that is severely ill or immune-compromised?
3. Do you have children under the age of 5 in your home?
4. Do you have indoor or outdoor pets?

You can sanitize daily. Think about your situation and decide what is right for you.

## What about “green” sanitizers?

“Green” is a commonly used term by the public or the media to convey that a product is “safe” for the environment. Over the past 10 years there has been an increase in the number of cleaning products labeled “environmentally

friendly,” “ecosafe,” and “environmentally safe” as a result of consumer demand. These terms suggest that the product is not going to cause harm to the environment; however, there is no standard or regulation for when or how these statements can be used. The Environmental Protection Agency (EPA) has started a program to help the consumer purchase environmentally safe products. Industries may submit their products to be reviewed by an EPA-approved scientific team. Each ingredient in the product is reviewed for chemicals that are the least concern for their class, e.g., low concern to humans, biodegrades easily, degraded by-products will not produce pollutants, etc.

If you would like more information about the EPA’s Design for the Environment (DfE) program, please go to the website: <http://www.epa.gov/oppt/dfe/>. The household products suggested for use as sanitizers at the recommended dilutions are safe for home use and are safe for the environment. Vinegar and hydrogen peroxide will not be found on the DfE website, although these two products do meet the DfE criteria.



**Look for the label!**

Figure 1. Products that meet the criteria for the EPA’s Design for the Environment program will come with this label. For more information on the program, visit the website at <http://www.epa.gov/oppt/dfe/>.

Credits: U.S. EPA

## Want to know more? Check out these additional resources:

Government Food Safety Information: <http://www.foodsafety.gov>

Centers for Disease Control and Prevention: <http://www.cdc.gov/foodsafety>

Food Safety Information from OSU: <http://www.foodsafety.osu.edu>

## References

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