

# CLEANING AND SANITIZING FOOD CONTACT SURFACES

ON-FARM FOOD SAFETY PROGRAM



UNIVERSITY OF MINNESOTA  
**EXTENSION**  
Driven to Discover<sup>SM</sup>

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## QUICK TIPS FOR CLEANING AND SANITIZING

**HARVEST CONTAINERS:** Clean debris from totes weekly, or whenever visibly soiled. Sanitize regularly throughout the season.

**TABLES AND OTHER SORTING/PACKING SURFACES:** Clean and sanitize daily when in use.

**HARVEST TOOLS:** Clean and sanitize daily when in use.

**EQUIPMENT FOR WASHING PRODUCE:** Clean and sanitize between uses.

**TOOLS, EQUIPMENT STORED OUTDOORS:** Clean and sanitize prior to each use.

**LARGE EQUIPMENT:** Clean and sanitize starting at the top and working down to avoid dirtying already cleaned surfaces.

**DESIGNATE SOMEONE** to oversee cleaning and sanitizing, to make sure it is done right.

**TRAIN EMPLOYEES** on how to clean and sanitize different tools and pieces of equipment.

**DOCUMENT** cleaning and sanitizing activities on a log sheet to ensure they are done routinely.

## WHY CLEAN AND SANITIZE?

Cleaning and sanitizing tools, equipment, and food contact surfaces can reduce the risk of spreading foodborne illness-causing pathogens to your customers. It can also help increase produce shelf life and reduce the spread of plant diseases around the farm.

Regularly clean and sanitize all surfaces that come into contact with food, such as harvest totes, tools, tables, brush washers, and dunk tanks. Soil, debris, and other residue on surfaces can provide moisture and nutrients that allow pathogens to grow and persist.

## HOW OFTEN TO CLEAN AND SANITIZE?

Frequency of cleaning and sanitizing will vary depending on the type of tool or equipment, amount of use, accumulation of soil, and storage conditions.

Tools like clippers should be cleaned and sanitized at the end of each day of use, while harvest totes can likely be sanitized less frequently, but should still be rinsed of visible dirt regularly.

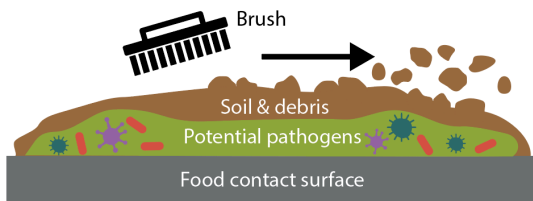
Your cleaning and sanitizing schedule should minimize food safety risks but also be realistic for your operation. It's important that cleaning and sanitizing practices fit well with the routines on your farm. That way, they'll be sure to get done and get done properly.

Designate someone to be responsible for overseeing cleaning and sanitizing, and help everyone on the farm understand the importance of these practices for food safety.

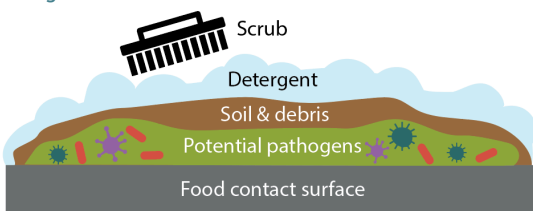
# HOW THE CLEANING AND SANITIZING PROCESS WORKS

## CLEANING

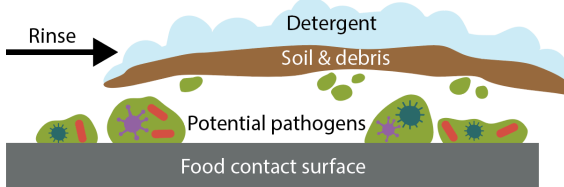
Brushing or rinsing away bulk soil and debris makes the cleaning process easier.



Scrubbing with detergent helps break up microorganisms that might be stuck to the surface.



Rinsing removes detergent and loosened debris from the surface. This step is important. Sanitizer won't work if there is still debris and detergent on the surface.

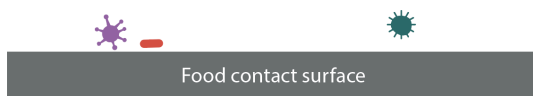


## SANITIZING

Applying sanitizer to the clean surface greatly reduces the number of microorganisms.



The surface will not be totally free of microorganisms, but they will be greatly reduced. If done correctly, this process results in safer products while maintaining quality.



## CLEANING AND SANITIZING PROCEDURE

### CLEANING

Cleaning with detergent and water physically removes soil, vegetable matter, and residue from containers, tools, and food contact surfaces. Cleaning is a 3-step process:

1. Brush or rinse surfaces to remove visible soil and debris.
2. Scrub with detergent and water using a clean brush or rag designated for food contact surfaces.
3. Rinse with clean water to remove all residue and suds.

Use only drinkable water for cleaning and sanitizing. Regular dish detergent like Dawn® works well for cleaning, although any detergent formulated for use on food contact surfaces can be used for the wash step as long as it is thoroughly rinsed.



### SANITIZING

The final step is to sanitize surfaces. Sanitizers are products that reduce, but not necessarily eliminate, microorganisms to levels that are considered safe.

Sanitizing reduces the contamination level on surfaces by killing microorganisms that cause disease. Sanitizers are most effective when surfaces are clean and free of soil and residues.

- Sanitizers are often applied with a sprayer.
- Apply a fine mist of sanitizer solution to the surface.
- Do not rinse surfaces after sanitizing, unless the sanitizer instructions specify a final rinse.
- Do not dry surfaces with towels after sanitizing, since they can recontaminate the surface.



## SELECTING A SANITIZER

There are many products available for sanitizing food contact surfaces. Some are allowable for certified organic production; check with your certifying agency before use.

Select a sanitizer based on its effectiveness on the microorganisms you want to kill, its availability, non-corrosiveness, and other properties to suit your needs. Different sanitizers are effective against specific microorganisms.

Chlorine and peroxyacetic acid (PAA) are both widely available and effective against a broad spectrum of microorganisms, and therefore commonly used by farms for sanitizing food contact surfaces.

Whatever sanitizer you use, always follow label directions carefully. If you buy a product without a full label, you can search online for the Environmental Protection Agency (EPA) registration number and find the full label. Sanitizers can be dangerous, especially before diluting. Always wear protective gear specified on the label when mixing a sanitizing solution. This might include gloves, eye protection, and long sleeves.

### SANITIZER TEST STRIPS

Once a sanitizing solution is prepared, monitor the concentration using paper test strips, an appropriate meter, or a titration kit to make sure it is the correct strength based on the label requirements for the use.

Purchase test strips that are appropriate for the active ingredient in the sanitizer you are using. If you are unsure what to purchase, contact the supplier or manufacturer. Many sanitizing solutions have limited shelf life. Monitor the concentration to ensure continued effectiveness.

### COMMONLY USED SANITIZERS

The following are commonly used sanitizers. Products in this list are given for information only and should not be viewed as an endorsement. Note that vinegar (acetic acid) is not acceptable as a stand-alone sanitizer, as it does not adequately sanitize surfaces.

#### Chlorine

A simple and effective sanitizing solution can be made using 2 teaspoons of household bleach (non-scented, 5.25 - 6% sodium hypochlorite) per 1 gallon of water. This results in a solution with a concentration of 100 - 175 ppm chlorine. Paper test strips for verifying chlorine concentration are easily found online. Product must be EPA labeled for the use on food contact surfaces.

Other chlorine-based sanitizers include calcium hypochlorite and chlorine dioxide. Follow instructions on the label for use.

#### Peracetic/Peroxyacetic acid (PAA)

PAA is another commonly used sanitizer. Examples include Sanidate®5.0 and StorOx®2.0 ([biosafesystems.com](http://biosafesystems.com)), both of which are OMRI-approved for organic production, although some restrictions may apply. Follow the label guidelines to mix these sanitizers to the correct concentration (ppm) for use on food contact surfaces.

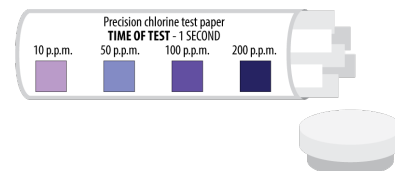
#### Others

Quaternary ammonium compounds (quats), such as Simple Green®D ([simplegreen.com](http://simplegreen.com)), are readily available and often used for surface sanitization in food service settings. Another option is a citric acid-based sanitizer, such as Pro-San®-L ([microcide.com](http://microcide.com)).

## HOW TO USE TEST STRIPS TO CHECK SANITIZER CONCENTRATION

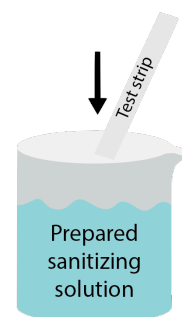
### CHOOSE

Make sure the test strip is the right one for the type of sanitizer you are testing. Always follow instructions on sanitizer labels and test strip packages.



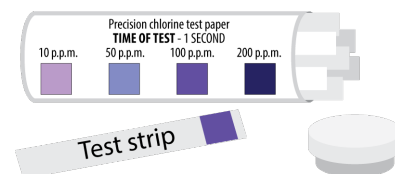
### DIP

Dip a strip into prepared sanitizing solution. The strip will change color.



### COMPARE

Compare the color of the strip to the guide on the package to determine solution strength.







Regular **cleaning** and **sanitizing** is an important step towards providing safe, **high-quality** produce to your customers.

**Train employees** on how, when, and why to clean and sanitize tools and equipment.

**Incorporate** cleaning and sanitizing into your farm's **routine**.

Clear procedures, checklists, and **log sheets** will help keep you **organized** and **on-schedule**.

## MORE INFO AND RESOURCES

### University of Minnesota Extension

On-Farm Food Safety Program: Includes log sheets and templates

[www.extension.umn.edu/safety/growing-safe-food](http://www.extension.umn.edu/safety/growing-safe-food)

On-farm Food Safety YouTube Channel

[www.z.umn.edu/food-safety-videos](http://www.z.umn.edu/food-safety-videos)

### Produce Safety Alliance

Sanitizer Selection Tool

[www.producesafetyalliance.cornell.edu](http://www.producesafetyalliance.cornell.edu) Search for: General Resource Listing

## FOOD SAFETY MODERNIZATION ACT (FSMA) PRODUCE SAFETY RULE

Growers covered under the FSMA Produce Safety Rule should refer to the Rule and associated guidance documents for requirements specific to cleaning and sanitizing.

### University of Minnesota Extension

FSMA Produce Safety Rule Information

[www.extension.umn.edu/safety/growing-safe-food](http://www.extension.umn.edu/safety/growing-safe-food)

### FDA Final Rule on Produce Safety and Guidance Documents

[www.fda.gov](http://www.fda.gov) Search for: FSMA Produce Safety Rule

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