

Cleaning and Sanitizing Tools and Harvest Containers

This fact sheet is part of a series about food safety on the farm for fruit and vegetable growers. Developed for the Minnesota Fruit and Vegetable Growers Association by Michele Schermann and Annalisa Hultberg. Reviewed by Dr. Cindy Tong.

Using clean containers and tools can help decrease postharvest losses on sensitive products like summer squash, tomatoes and berries, as well as reduce the chance of spreading foodborne illness-causing pathogens.

All reusable harvest containers and tools should be kept as clean as possible and regularly disinfected. At least weekly, or as often as needed, reusable produce bins, buckets, totes and other containers, should be cleaned of excess soil, vegetable matter and other debris. Tools should be cleaned daily or as needed to keep them clean.

Sanitize tools and totes several times throughout the growing season, and at the end and beginning of each season. A sanitizing solution, such as a weak (50 - 150 ppm) bleach solution, should be applied to harvest tools and containers after cleaning and as needed to kill pathogens.

Cleaning Procedure

Clean harvest containers, tools and food contact surfaces before sanitizing. Sanitizers are more effective if the surfaces are clean and free of soil and other debris.



Wash harvest totes and tools as often as needed to keep them free of excess debris and soil.

- Rinse surface of container to remove soil and debris.
- Wash surface of container with detergent and water. For harvest containers, use a high-pressure sprayer hose.
- Rinse with clean potable water.

Any detergent can be used for the wash step on hard surfaces. Only detergents/

For more information on Cleaning and Sanitizing

- Cleaning and Sanitizing Guide, Iowa State University Extension.
- Guidance for Industry: Guide to Minimize Microbial Food Safety Hazards for Fresh Fruits and Vegetables, FDA.
- GAP: A Self-Audit for Growers and Handlers, UC Davis

soaps that come in contact with food need to be labeled as safe for food. Read the label and make sure you follow the instructions on the label.

Sanitizing harvest containers, tools and food contact surfaces

- Apply a fine mist of sanitizer solution to surfaces using a sprayer. (See below for sanitizing products)
- Let containers, tools and surfaces air dry. Do not dry with towels.

Sanitizing Products

Sanitizing can be done with a number of products. Many companies, such as EcoLab, have hydrogen peroxide-based products that are formulated specifically for sanitizing hard surfaces.

Bleach solution (50 ppm is about 1.5 tablespoons of household chlorine bleach per five gallons of water) is an inexpensive and commonly used sanitizing solution.

Vinegar is not an acceptable sanitizer, as it does not adequately sanitize surfaces.

If you are certified organic, there are many allowable solutions to use, but make sure you check with your certifying agency first.

Whatever sanitizer you use, you will need to monitor the concentration to make sure that it is the correct strength. In the case of chlorine bleach, use test strips¹ to make sure the solution is at the needed strength.

Other sanitizers will have different recommended concentrations. Follow all

label directions carefully, and wear protective gear (e.g. gloves, goggles) when pouring all sanitizers; they are dangerous when undiluted.

Many companies have formulations that are specific to hard surfaces.

Sanitizers for Use on Hard Surfaces²

Chlorine bleach (*hypochlorite*):

Assuming a 5.25% hypochlorite in household bleach, use 1 cup per 50 gallons or 1.5 tablespoons per 5 gallons and check with chlorine tester strips for ~50ppm.

EcoLab: numerous hard surface formulations: <http://www.ecolab.com>

Sanidate 5.0: <http://www.johnnyseeds.com/p-8467-sanidate-5-0-liquid-sanitizer-og-2-12-gal-.aspx>

StorOx 2.0 hydrogen peroxide- based sanitizer (Biosafe Systems): <http://www.biosafesystems.com/Product-Ag-StorOx.asp>

Some detergents and sanitizers are dangerous to use, so protecting workers and farmers is important; read the labels.

¹Test strips for chlorine are available at restaurant supply stores, and online. Test strips for other products are available from the product supplier.

²These are commonly used sanitizers. This list is for information and should not be viewed as an endorsement of a product by the University of Minnesota, the Minnesota Fruit and Vegetable Growers Association, Minnesota Department of Agriculture, or the USDA.



Photos: M. Schermann. Support for this project was provided to the Minnesota Fruit and Vegetable Growers Association through the Specialty Crop Block Grant Program – Farm Bill, through the Minnesota Department of Agriculture and the USDA – AMS. These institutions are equal opportunity providers. (2012)

