

HOW TO BUILD A LOW-COST HANDWASHING STATION

ON-FARM FOOD SAFETY PROGRAM




UNIVERSITY OF MINNESOTA
EXTENSION
Driven to DiscoverSM

Anne Sawyer and Annalisa Hultberg
Extension Educators
Food Safety, Horticultural Systems

THE IMPORTANCE OF HANDWASHING

Handwashing is one of the most important steps you can take to reduce the risk of contaminating your fruits and vegetables with foodborne illness-causing pathogens. Many of the diseases that can be transmitted through food may be harbored in the intestinal tracts of people as well as wild and domesticated animals. If a person's hands become contaminated with fecal material, pathogens can be transmitted to fresh produce. Always wash hands thoroughly after using the toilet, before handling produce, or whenever they may be a source of contamination.

Hand sanitizer should only be used in addition to proper handwashing, not in place of it. Hand sanitizer is not effective when hands are dirty, and is not intended to replace proper handwashing.

HANDWASHING AREAS ON THE FARM

Handwashing stations should be near all portable toilets and in your packing area. Have a handwashing station near work areas so it is convenient for everyone handling produce. If your farm is large, you might consider mounting a handwashing station on a trailer so it can be moved around your farm with workers.

How many handwashing stations do you need? A benchmark from the Occupational Safety and Health Administration (OSHA) is one station per 20 employees, but you should have as many as needed to service everyone who works on your farm. Even if you only have two employees, you should have handwashing stations where they are needed so it is easy for people to wash their hands regularly.

Handwashing stations must always use clean water that is the microbial equivalent of potable (drinking) water. This stand might also be useful at a farmers' market, roadside stand, U-pick or any other location.



HOW TO BUILD A PORTABLE HANDWASHING STATION FOR THE FARM

Making your own handwashing station is straightforward and cost-effective. You can purchase lumber, or use materials you already have and adjust these plans as needed.

This stand is about 36 inches tall, and accommodates a 5 - 10 gallon closed plastic container with a continuous flow valve and a bucket to catch the wash water. Hand soap is placed on the stand, and single-use paper towels are located in a plastic dishpan drawer that is built into the stand.

Many dimensions of this stand are based on the size of the dishpan drawer, so measure yours first and adjust as needed.

STEP-BY-STEP INSTRUCTIONS

STEP 1: LAY OUT THE SIDES

You'll start with:

- 4 - 2 x 6 legs
- 4 - 2 x 4 leg connectors

Lay two of the 2 x 6 legs down parallel to each other.

Lay two of the 2 x 4 leg connectors on top of the legs.

Place the top leg connector far enough below the top of the legs to create a lip for the dishpan drawer to slide on. You need to account for the height of the dishpan's handle, so it fits under the plywood top you'll attach later.

Similarly, place the bottom leg connector about 1 inch above the bottom of the legs to allow for uneven ground.

STEP 2: SCREW THE LEG CONNECTORS TO THE LEGS

Use two screws in each end to secure the 2 x 4 leg connectors to the legs.

Pre-drill the holes to keep the wood from splitting.

Here, you can see how we placed the top leg connector down from the top of the legs to act as the dishpan drawer slide.

Repeat **STEPS 1 AND 2** for the second side.



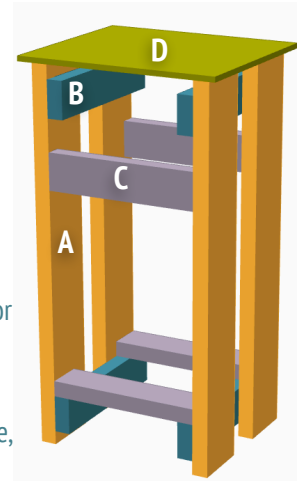
TOOLS AND MATERIALS

SAFETY EQUIPMENT AND TOOLS

Safety glasses, gloves, hearing protection, saw, drill, drill bits, tape measure, square, pencil.

LUMBER

- A. Legs
4 - 2 x 6 cut to 36" long.
- B. Leg connectors
4 - 2 x 4 cut to 15" long, or to fit the length of the dishpan.
- C. Cross pieces
4 - 2 x 4 cut to 14¹/₄" long, or to fit the width of the dishpan.
- D. Plywood - 1/2" thick or more, cut to 16" x 18", or to fit top of stand with a small overhang.



SCREWS

36 - 2¹/₂" deck screws

PLASTIC DISHPAN

This design uses a standard 12-quart dishpan that is 15" L x 12³/₄" W x 6¹/₂" H. It serves as the drawer under the water container to hold single-use paper towels. Costs \$4 to \$8.



SUPPLIES TO STOCK YOUR STATION

WATER DISPENSER

This blue "Aqua-Tainer" holds 7 gallons of water and has an open/close continuous flow valve. Available online, and at some home stores and outdoor stores. Costs \$15 to \$20.



TRASH CAN WITH A LID

A 5 gallon bucket with a lid works well.

WATER CATCHING BUCKET

Standard 5 gallon bucket

SOAP - LIQUID OR BAR

PAPER TOWELS

STEP 3: DETERMINE LENGTH OF THE CROSS PIECES

Stand the legs up and set the dishpan between them, resting the rim on the top leg connectors.

1. Measure between the legs to determine the length to cut the 2 x 4 cross pieces. The dishpan should fit snugly, but still easily slide on the leg connectors.

2. Cut these four 2 x 4s to the length you measured, and hold them in place to be sure of a good fit before screwing into place.

**STEP 4: ATTACH THE LOWER CROSS PIECES**

Take two of the 2 x 4 cross pieces and lay them across the lower leg connectors.

It works best if you lay these two pieces flat and screw down into the leg connectors.

1. Pre-drill two holes near the ends of each cross piece.

2. Screw the cross pieces in place with two screws on each end.

With these pieces installed flat, this can be used as a shelf to hold the catch bucket when the station is not in use.

**STEP 5: ATTACH THE TOP CROSS PIECES**

Take the last two 2 x 4 cross pieces and secure them below the top leg connectors.

1. Place them low enough so the dishpan drawer fits in the space above. The rim of the dishpan needs to slide on the top leg connectors.

2. Pre-drill and screw the cross pieces in place using two screws on each end.



STEP 6: CUT PLYWOOD TO FIT THE TOP OF THE STAND

1. Measure the top of your stand to determine the size of the plywood top. We recommend at least a 1/2 inch overhang on all four sides.

2. Cut the plywood to fit the top of your stand, and screw it in place.

Yours might be a slightly different size than the one here, depending on your materials.



STEP 7: INSTALL DISHPAN DRAWER, WATER CONTAINER, AND SUPPLIES

1. Store the single-use paper towels in the dishpan drawer.

Fill water container with clean water, and set on top of the stand. Set soap next to the water container.

2. Put a bucket underneath the spigot of the water container to catch the water. Do not empty the bucket of water in the produce field or where it could be tracked into the produce field.

Keep a lidded trash can handy for the used towels to keep them from blowing away.



FINAL NOTES

This is just one idea for a handwashing station. You can make this any size and with any materials. You could use scrap lumber or an existing table or cart. Instead of using the dishpan drawer, you could install a paper towel dispenser under the top. However, the towels might get wet in the rain.

If you take a pickup truck out to the field, you could simply set the water container and supplies on the truck bed and place the catch bucket and trash can on the ground.

Any of these handwashing station ideas can be used in the field, and also at your farmers' market booth or roadside stand - anywhere you need to provide a place for people to wash their hands.

This handwashing station is based on an original design by Michele Schermann, U of MN Department of Horticultural Science; Annalisa Hultberg, U of MN Extension; and Jill Randerson, Kidzibits, Inc., Minneapolis, MN.

Layout and editing by Emily Tepe, University of Minnesota Department of Horticultural Science.
 © 2019, Regents of the University of Minnesota. All rights reserved. University of Minnesota Extension is an equal opportunity educator and employer. In accordance with the Americans with Disabilities Act, this publication/ material is available in alternative formats upon request. Direct requests to 612-624-0772 or afnr@umn.edu.
 Funding for this publication was provided in part by the Minnesota Department of Agriculture's Specialty Crop Block Grant Program; by a grant from the U.S. Department of Agriculture (USDA) National Institute of Food and Agriculture Food Safety Outreach Program; and by the Food and Drug Administration through grant PAR-16-137. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of FDA or USDA.

MORE INFO AND RESOURCES

University of Minnesota Extension
 On-Farm Food Safety Program
www.extension.umn.edu/safety/growing-safe-food

PEOPLE AND CONTACTS

Anne Sawyer
 Extension Educator
 Food Safety,
 Horticultural Systems
sawye177@umn.edu
 651-480-7704

Annalisa Hultberg
 Extension Educator
 Food Safety,
 Horticultural Systems
hultb006@umn.edu
 651-480-7710

On-Farm Food Safety Program
safety@umn.edu

Special thanks to
 Andrew Bernhardt
 and The Good Acre
 for their collaboration
 on this project.
thegoodacre.org

