

Water Testing for Farmers' Market Aggregation

What water sources need to be tested?

- Private well water if used for washing of produce or any surfaces that touch produce, including your hands
- Private well water if used for irrigation, pesticide sprays or frost protection
- Surface water if used for irrigation, pesticide sprays or frost protection

Note! Surface water must NOT be used for postharvest uses (e.g. washing produce, washing surfaces that touch produce, hydrocooling)

What is “surface water?”

- Ponds, lakes, rivers, streams, and ditches
- Cisterns or spring boxes if the water comes in contact with air at some point
- Rain barrels and catchments

Note! In karst topography, shallow groundwater that is in direct contact with the above-ground environment may have the bacterial characteristics of surface water.

How often should water be tested?

- Test each water source that you use for produce at least once per year.

What tests should be done on water?

- For post-harvest washing: generic *E. coli* presence or absence.
 - *E. coli* must be absent (zero) for postharvest washing
- For irrigation or spraying: Quantified generic *E. coli*.
 - As a benchmark: your sample should be less than 410 CFU per 100 ml.

Where can I get a water test?

See U of MN Extension information about water testing labs and protocols:

<https://extension.umn.edu/growing-safe-food/water-testing-labs-fsma>

What does “total coliform” mean on my water test?

The water test sheet you fill out and the report you get back may mention “total coliform,” because testing for total coliform is a step in the laboratory process of testing for generic *E. coli*. Total coliform is a larger family of soil and gut-dwelling bacteria that includes *E. coli*. A positive number for total coliform

on your water test report does NOT mean you have to stop using that water, if the *E. coli* levels meet the standards listed above.

I have total coliforms in my water. Now what?

You should expect to have a total coliform number for surface water, because coliform bacteria are widespread in the environment.

If you have a positive total coliform number for well water, it likely means you have some soil, water, or other material from the surface getting into your well. Properly constructed wells should not be taking in surface material, so this result indicates a potential problem with your well. A well contractor can help you figure out the problem and a solution.

I have *E. coli* in my water. Now what?

A positive *E. coli* test is evidence of fecal contamination in your water.

- Produce safety rules do not allow water with *E. coli* for postharvest produce washing, cleaning of surfaces, hydrocooling, or other postharvest uses.
- Water with low levels of *E. coli* can be used for irrigation or crop spraying with some precautions. Consult the Produce Safety Alliance information on agricultural water:
 - <https://producesafetyalliance.cornell.edu/sites/producesafetyalliance.cornell.edu/files/shared/documents/Tab-6-Ag-Water-1-V1.1.pdf>
 - <https://producesafetyalliance.cornell.edu/sites/producesafetyalliance.cornell.edu/files/shared/documents/Tab-7-Ag-Water-2-V1.1.pdf>
- Water with *E. coli* is a concern for drinking water because it indicates you likely have human or animal feces getting into your water supply. Consult a well contractor for advice.