

WATER + IRRIGATION.

What's the safety risk?

Non-potable water (water that is unsafe to drink because of contamination) can introduce pathogens.

What's the best way to lower the risk?

-  The best practice is to use a regulated, treated water source. Water authorities employ filtration, chlorination and testing to ensure it meets EPA drinking water standards.
-  If you are using or intend use another source, such as a well, have the water tested and make sure it is up to EPA standards before you use it for watering or washing (things like hands, equipment and food).

By ensuring the use of safe water for irrigation, the potential of microbial contamination of fruits and vegetables is reduced.

Begin by determining the source of the garden's water and collecting information on risk-reduction measures used on the water. Frequently, the same municipal source that services a school is used for irrigating the garden, but in a community garden, irrigation could be more complex. The best practice is to obtain water test results either from the water provider or have the water source tested at a reputable lab facility for coliform and generic *E. coli*, as an indicator of potential fecal contamination.

Know the water source. Without knowing the safety of your water source, you could be introducing heavy metals, chemicals, or pathogens into your garden. Water can be easily contaminated by a number of biological and chemical hazards including bacteria, viruses, domestic waste, nitrate nitrogen, combustion products from roadways, petroleum residues and heavy metals. Most public water systems provided by cities or other municipalities should be safe, but testing facilities can give the best information on what is coming out of the spigot. An inexpensive test can be obtained from a single sample at the point of use (or end point), which can account for the whole system.

Avoid unregulated sources such as rivers, streams, irrigation ditches, wells, or ponds. The water could be a source of contamination for the crops; the best practice is to use water consistent with [EPA restrictions](#).

If the garden is already using a water source that is untreated, such as a river, pond or rain barrel, be sure to have the water tested regularly, including water captured from rain barrels and cisterns. Contaminated or untreated water is a frequent source of Hepatitis A, *Giardia*, and *Shigella*, and the Centers for Disease Control and Prevention (CDC) state that *E. coli*, *Salmonella*, *Cryptosporidia*, *Toxoplasma*, and Norovirus bacteria can spread via water as well.

Uncontaminated water ensures a good quality harvest. Clean water is also needed for applying chemicals, irrigation, good hygiene and handwashing, and processing or washing the harvest.

If you wouldn't drink the water, do not apply to your edible plants.

What is the best way to water?

Using drip irrigation or watering at the base of plants is the best way to water to reduce water and soil splash on the edible portion of the plant, minimizing risk.

Drip irrigation is more efficient than hand watering, as it can be timed and rationed, but when it is impractical or cost-prohibitive, traditional hand watering is acceptable.

TAKING RESPONSIBILITY FOR THE GARDEN.

The garden manager typically in charge of the garden has left you to run things. Don't panic. It's all ok. If you have questions about food safety that have not been unanswered here, contact the Food Safety Extension Specialist at N.C. State University, Benjamin Chapman, at benjamin_chapman@ncsu.edu.



What about using rainwater for watering the garden?

There is a growing interest in collecting water in rain barrels or cisterns for watering the garden, especially during drought and in gardens without a nearby water source. Rain barrels and cisterns also effectively manage stormwater runoff, thereby minimizing soil erosion and maintaining better water quality. In North Carolina, a garden might be unable to meet irrigation demands with its barrel, but it is still an excellent way to supplement other water. There are various factors that go into making sure your roof runoff is safe: climate, age of roof, materials used, air quality, slope of the roof, and even its temperature. Roofs with metal surfaces need more water safety consideration; including the coating used on the heavy metal surfaces and using non-metal gutters and downspouts. It is a good idea to collect rainwater for watering your plants, but it should be treated to reduce microorganisms before applying to the edible portion of plants, or used on ornamentals.

While harvesting rainwater in barrels can be fine for watering the plants, it must be treated for microorganisms or even mercury before the gardeners should drink it or use for washing. If the water comes back positive for pathogenic *E. coli*, that water should not touch edible crops. Likewise, many gardeners choose to use the rainwater only for irrigating ornamental plantings due to its risky nature. Additionally, it is necessary to check out state and local laws before you build a mechanism for rainwater collection; in some states, a permit is necessary for a cistern. Lastly, if water is coming from an untested source, the water must be deemed as safe before a person should use it.

ALSO: ALLERGENS AND GARDEN ACTIVITIES.

The gardens are not all the same and neither are the gardeners. Some gardeners have food allergies, which are considered to be a major food safety issue. It's a good rule overall to not bring any products with allergens in the garden to prevent cross-contamination.

Keep activities with foods like peanut butter out of the garden. To be even safer and respectful of the fellow gardeners, do not grow crops of well-known allergens, such as peanuts or soybeans. Through the implementation of good agricultural practices, the garden can be a safer place.