



Safe Wisconsin Produce

Water Issue
Fall/Winter 2024

What is Agricultural Water?

Agricultural water quality is regulated under the Food Safety Modernization Act (FSMA) Produce Safety Rule. Protecting the safety and quality of your fresh produce is important. Subpart E of the FSMA Produce Safety Rule states that all agricultural water must be safe and of adequate sanitary quality for its intended use (§112.41). The Produce Safety Rule defines agricultural water as water that is intended or likely to contact covered produce or food contact surfaces that would touch covered produce. Covered produce is produce subject to the requirements of the Produce Safety Rule.

Agricultural water can be used in pre-harvest activities, including irrigation water applied using direct water application methods, water used for preparing crop sprays, frost protection, and cooling. Agricultural water can also be used during and after harvest that can include water used in the field during harvest, as well as during packing or holding activities. This water includes water used for washing or cooling harvested produce, and water used for preventing dehydration of covered produce. Other uses of post-harvest water include ice making, post-harvest fungicide, wax mixing and application, hand washing, and cleaning and sanitizing.



An AI generated image of field crop spray

There are three different water sources that are commonly used as agricultural water: public water, groundwater, and surface water. The safety of fresh produce can be impacted by many factors, including source. Human pathogens can be introduced into a water supply and may contaminate produce during growing activities. Each water source has different probabilities of contamination with human pathogens such as E. coli. Public water can be contaminated in the piping between treatment plants and the farm or in the water distribution system on the farm. Groundwater is vulnerable to contamination if wells are not capped or open to the environment, cracked, improperly constructed or if septic tanks are located too close to well head. Of the three water sources, surface water is most prone to contamination because it is open to the environment. This allows for direct access to local wildlife, which can introduce animal feces into the water supply. Other sources of contamination include manure application, composting processes, agricultural runoff, and wastewater discharge.

Keep in mind that if a farm uses water that does not meet the definition of agricultural water, this is not subject to the agricultural water requirements in the Produce Safety Rule. For example, water that does not contact the produce would not be considered agricultural water, such as water used for drip or furrow irrigation in apple orchards.

Overview of Final Rule - Food Safety Modernization Act (FSMA) – Preharvest Agricultural Water Standards

The Food and Drug Administration (FDA) finalized a new rule under the Food Safety Modernization Act (FSMA) that revised preharvest agricultural water standards for covered produce. This new rule makes a change from prescriptive criteria and testing requirements to a more flexible approach of conducting preharvest agricultural water assessments. This decision is designed to identify hazards and assist produce farming operations to manage risks in their agricultural water more effectively. The final rule focuses on improving public health protections by permitting more reasonable and adaptable applications across diverse agricultural water systems. It also builds on recent scientific perceptions, feedback from stakeholders, and lessons learned from investigations into produce-related outbreaks.

Components of the Final Rule

Under the new rule, farms covered by the FSMA Produce Safety Rule are required to perform detailed agricultural water assessments annually and/or when significant changes happen that could increase hazard risks. These assessments must evaluate the following factors that could influence the safety of produce:

- **Source of Water:** Evaluate whether the water is from a surface, groundwater or municipal (public) source and the characteristics of the water distribution system.
- **Potential Contamination Sources:** Recognize possible contamination from nearby land uses, animal activities, and other environmental influences.
- **Water Application Methods:** Consider how water is applied to covered produce

These factors must be carefully evaluated to determine when corrective actions or mitigation measures should be introduced to minimize risks associated with agricultural water use.

Exemptions and Compliance Dates

The update rule provides specific exemptions for farms that can demonstrate their water meets certain safety criteria, such as water from public systems that comply with established standards or treated water that meets the Produce Safety Rule’s requirements. Listed in table are current compliance dates set for preharvest agricultural water for farms not exempt.

Farms are exempt from conducting a pre-harvest agricultural water assessment if the water:

- Is the same quality as harvest and postharvest agricultural water
 - No detectable generic *E. coli* in 100 mL and meets other postharvest agricultural water testing requirements
 - Is not untreated surface water
 - Is treated in accordance with FSMA Produce Safety Rule
- Is received from the public water system with documentation (public system certificate of compliance, public supply generic *E. coli* monitoring results)
- Each exemption condition requires documented records

Farm Size	Pre-harvest Agricultural Water Compliance Dates
Large farms (>\$500K)	April 7, 2025
Small farms (>\$250K-500K)	April 6, 2026
Very small farms (>\$30K-250K)	April 5, 2027

Salmonella Outbreak linked to Cucumber Growers: Demonstrates Value and Importance of Produce Safety Rule

The Food and Drug Administration (FDA) linked cucumber growers located in Florida to an outbreak of Salmonella infections in Spring 2024. The outbreak sickened 449 people across 31 states (including Wisconsin) with 125 patients requiring hospitalization.



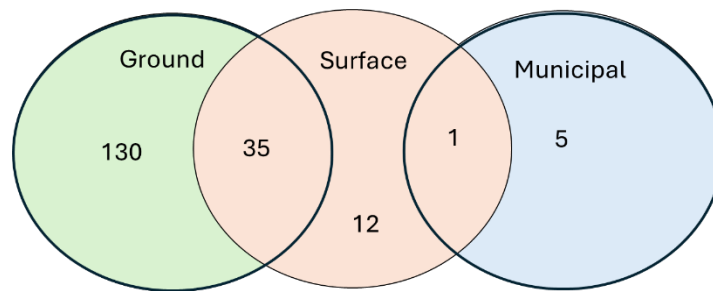
A cucumber harvest

Testing confirmed that canal water (or surface water) used by cucumber growers was contaminated with outbreak strains of Salmonella. The FDA confirmed that Salmonella from canal water used by cucumber growers was a match for the Salmonella that makes people sick.

Food contaminated with Salmonella bacteria does not usually look, smell, or taste spoiled. Anyone can become sick with Salmonella. The number of people sickened during such an outbreak is likely higher than confirmed cases reported as some people do not seek medical attention, and others do not get specifically tested for Salmonella infection. Further, some who get infected may not show symptoms or get sick; however, they can still spread the infection to others, such as older adults, pregnant women, cancer patients, and children who are more likely to develop severe illness and may lead to life-threatening conditions.

This outbreak reminds all of us that produce outbreaks can happen anywhere. Situations related to contamination from a water source, specifically surface water, strongly demonstrate why it is vital to have a full agricultural water distribution system inspection and agricultural water assessment completed at least annually.

This cucumber outbreak scenario also highlights the value and impact of the work performed by the Safe Wisconsin Produce program. In Wisconsin, nearly 25% of all covered farming operations use surface water, and almost 200 total farming operations utilize some sort of surface water. Understanding how each farming operation can use specific water sources on their farm is critically important to instill food safety practices for production throughout the state.



Number of Wisconsin covered farms and their known water sources

2025 Survey Updates

We thank everyone who has completed the Safe Wisconsin Produce survey over the years! This tool allows our program to best allocate resources and design services that most appropriately meet the needs of our growing communities. As we feel more confident with the status of our Farm Inventory in terms of recency and accuracy, we will be transitioning from a development approach to a maintenance approach. With that, the frequency of surveys will be adjusted. For the 2025 survey season, only farms categorized by the Produce Safety Rule as Covered or Qualified Exempt will be receiving a survey. Updated details for these operations are necessary to best prepare for the 2025 inspection season and to help inform educational opportunities related to traceability. That said, if you are within another farm category and have made any significant changes to your operation (e.g. sales volume, market, commodities, water source, etc.), please reach out to us to update your profile.

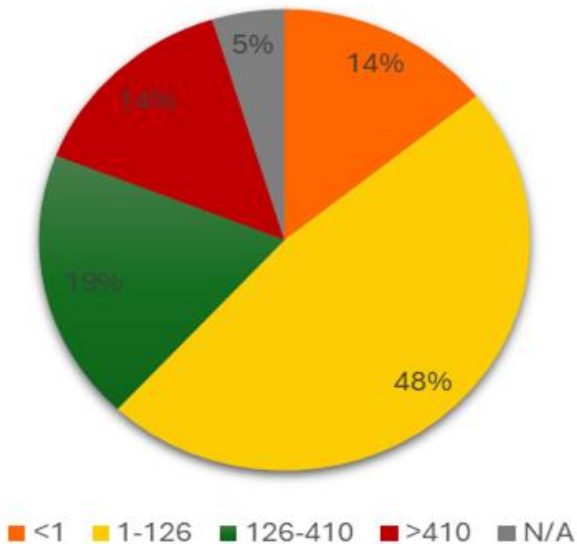
Agricultural Water Sampling

During the 2024 growing season, the Safe Wisconsin Program introduced an agricultural water sampling assignment. Approximately 60 water samples were collected in conjunction with Produce Safety Rule inspections on 13 selected farms statewide. The samples were collected from a variety of sources and distribution methods, including, but not limited to, wells, spring boxes, streams, open and closed holding tanks, single pass and recirculated spray tables, wash tanks/tubs, and handwashing sinks. The results of this assignment are intended to further inform farm personnel about the safety of their specific systems and to assist DATCP in increasing their understanding of state-wide water-related practices and quality. While full analysis of the results has not yet been completed, a few initial concepts have been identified and/or reiterated through this assignment:



Water Sampling Test Kits

Surface Water Results



Surface Water Sampling Results

- Surface water is incredibly dynamic and therefore ensuring consistency of water quality, without treatment, is very difficult.
- Distribution systems can decrease the quality of water (i.e. water obtained from a safe source can become contaminated within a system prior to application).
- Most farms have collected their own water samples; however, some farms have yet to implement *any* of the Produce Safety Rule requirements.

Please note that sampling remains the only quantitative means of understanding water quality. Therefore, Safe Wisconsin Produce requires that relevant portions of 21 CFR 112, Subpart E are applied and recommends that water sampling is conducted on a regular basis. This assignment will resume during the 2025 growing season until a total of 120 samples are collected. Thank you to all who participated so far. Your cooperation is greatly appreciated!

Happy Farewell, Dear Colleague!

The Safe Wisconsin Produce team bids a dear farewell to **Joanna Kahvedjian**. It has been wonderful working with you over the past six years. Great colleagues are those who believe in *we* rather than *me*. Your dedication, contributions and exceptional skills have made a tremendous impact on the SWP program. We all share grateful memories and want to thank Joanna for everything.

Best wishes, and best of luck on your new ventures!



Joanna Kahvedjian

The Difference Between Agricultural Water Distribution System Inspection and Agricultural Water Assessment

Agricultural water distribution system inspection and agricultural water assessment are two separate things, and each requires a record. Water assessment applies to agricultural water only used in growing covered produce; this is referred to as *pre-harvest water*. The water distribution system inspection applies to water used during pre-harvest, harvest, and postharvest activities on the farm. It is important to note that results from your water distribution system inspection will also be a part of the agricultural water assessment record.



Inspection vs. Assessment

Agricultural Water Distribution System Inspection

First, let us review the agricultural water distribution system inspection. Produce Safety Rule requires that you inspect your water distribution system at the beginning of the growing season and annually thereafter and this record needs to be documented. It does not have to be complicated, but growers must inspect all water distribution systems that apply to both pre-harvest and postharvest water under a farm's control to identify produce safety hazards, including:

- Location and nature of water source (ground, municipal, or surface water.)
- Type of distribution system (open or closed water transport.)
- Degree of protection of each water source from possible sources of contamination. This includes animal impacts, adjacent and nearby land uses related to animal activity, application of biological soil amendment, or presence of untreated human waste.
- Introduction of known/foreseeable hazards to agricultural water by other users of agricultural water.

The rule also requires that covered farms maintain all agricultural water distribution systems. Such maintenance includes control of cross-connections and repairs to well caps, casings, and sanitary seals, properly storing equipment, and keeping water source and system free of debris, trash, and other sources of contamination.

When you are testing, the results of those agricultural water tests, or a certificate of the testing from your municipality, should be included in your record for inspection of your water distribution system. If you treat the water, you need documentation of the treatment itself and monitoring related to water treatment that supports that the treatment is effective. Overall, your focus is managing your water quality so at each step throughout your physical water distribution system, your agricultural water does not become a contamination source.

Agricultural Water Assessment

An agricultural water assessment is an evaluation of an agricultural water distribution system, agricultural water practices, crop characteristics, environmental conditions, and other factors (including test results, where appropriate) related to growing activities for covered produce. The agricultural water assessment is specific to pre-harvest agricultural water used to grow covered produce. A water assessment is required at least once per year to identify conditions that may result in contamination of your water source. **See page 6 for further resources.**

The agricultural water assessment must identify conditions that are reasonably likely to introduce known or reasonably foreseeable hazards into or onto covered produce or food contact surfaces based on 5 factors:

1. Agricultural water distribution system (water source, transport system, and degree of protection)
2. Agricultural water practices – how water is used. Application method (spray or drip irrigation of produce growing underground) and time between last application and harvest of produce.
3. Crop characteristics – crop height, surface area and texture can affect whether a hazard will stick to or get internalized by produce.
4. Environmental conditions – heavy rains, freezing (impact water system) or damage health of crop during growing season, also air temperature and sun exposure.
5. Water tests can be part of assessment (must test for generic E. coli)

****Test results would be one part of total assessment & cannot be used as only basis for water use decisions.**

Education & Outreach

Produce Safety Alliance (PSA) Training – Winter

Safely producing fruits and vegetables requires everyone involved in planting, growing, harvesting, packing, and transporting fresh produce to understand food safety practices. Please review our PSA training opportunity and plan to register yourself and/or staff.

- January 26, 2025
 - Location: Kalahari Resort, Wisconsin Dells
 - In-Person | \$35 *Note: For eligible AFDO certificate -processing fee
 - Course material or refresher only | \$0 registration fee
 - Held on first day of 2025 Growing Wisconsin Conference
 - Contact: (608) 224-4511 | safeproduce@wi.gov

**Participants who attend the entire training will be eligible to receive a certificate from the Association of Food and Drug Officials (AFDO) that verifies completion of the course.*

Highlighted Conference Season

- January 26-28, 2025
 - 2025 Growing Wisconsin Conference (previously called Wisconsin Fresh Fruit & Vegetable)
 - Location: Kalahari Resort, Wisconsin Dells
 - SWP will have an educational booth available
- February 20-22, 2025
 - 2025 Marbleseed Organic Farming Conference
 - Location: LaCrosse Center, 300 Harborview Plaza, La Crosse, WI
 - SWP will have an educational booth available

Preharvest Water Assessment Additional Resources:

- [Annual Agricultural Water Assessments and Risk-Based Outcomes](#)
- [Factors for Agricultural Water Assessment to Consider](#)

Contact us

As always, the Safe Wisconsin Produce team welcomes your feedback and engagement. If you would like to share your produce safety story to be featured in the next newsletter, or if you have other questions, please send us a note at safeproduce@wi.gov or call (608) 224-4511.

Resources

Attend an Upcoming Event in Your Area!

Did you know the Safe Wisconsin Produce website lists upcoming events that are happening all around the state? These events focus on growing fruits and vegetables, gardening, general horticulture, and more. To view upcoming events, visit https://datcp.wi.gov/Pages/Programs_Services/SafeWIProduceEvents.aspx.

SWP Webpage Updates

[Safeproduce.wi.gov](https://safeproduce.wi.gov) contains tons of helpful information for growers. If there is something you would like to see on the website, let us know. The page is intended to be a resource for growers, buyers, and consumers, and we appreciate your perspective.

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