



OVERLOOKED RISKS IN WATER SYSTEMS ON PRODUCE FARMS



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GOALS

- Help you think critically about your own water systems
- Learn to identify potential water risks using 8 examples
- Build on concepts taught in the Produce Safety Alliance grower training courses

WHY THIS TALK?

- Water is a major route of potential contamination to produce
- FSMA establishes minimum standards for agricultural water use
- Harvest and post-harvest water requirements come into effect in Jan. 2023

Table 7. Relative Likelihood of Produce Becoming Contaminated with Pathogens of Public Health Concern from Agricultural Water

	Least			Most
Source	Public Drinking Water	Ground water	Surface water protected from runoff	Surface water unprotected from runoff
And where contamination is known to exist, the likelihood of contamination is a function of the following factors:				
Contact with commodity	Indirect contact		Direct contact	
Commodity effects	Unlikely infiltration		Susceptible to infiltration	
	Surface not conducive to adhesion		Surface conducive to adhesion	
Application timing	Early in crop growth	Late in crop growth	During harvest	Postharvest

FDA identified water as a major route of contamination in a 2015 qualitative risk assessment. (FDA, 2015).

OVERVIEW

Harvest & Post-harvest

Preharvest

1: Recognize High Risk Irrigation Practices

2: Identify Nearby & Upstream Hazards to Surface Water Sources

3: Spray Water

4: Ice

5: Floors and Drains

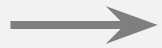
6: Condensation and Drip

7: Water Treatment Systems

8: Hand Sinks

I. RECOGNIZE HIGH RISK IRRIGATION PRACTICES

Crop	Water application method	Water source	Interval between last application and harvest
Brassicas	Drip	River	1 week
Strawberries	Overhead	River	3 days
Potatoes	Overhead	River	1 week
Apples	Spray	Pond	2 weeks



2: IDENTIFY NEARBY & UPSTREAM HAZARDS TO SURFACE WATER SOURCES



Examples of potential hazards:

- Livestock with direct access to water
- Runoff from manure spreading
- Wastewater treatment facility discharges
- Residential septic system failures
- Other hazards

Connecticut River at Putney,VT below Sacketts Brook

[Return to all sites](#) | [Nearby Sites](#) | [Return to search](#)
 PRC (Putney Rowing Club) docks
 Putney, VT
 Longitude/Latitude: -72.5219 / 42.9607
 Putney Rowing Club docks are privately owned and maintained but open to the public with priority given to scullers. The docks are used for boating, fishing, and swimming. The Putney Landing is a Vermont Fish & Wildlife Access Area.

Is It Clean?

Sample Date	Status	CFU/100ml	Wet Weather
2022-08-24	Clean for Boating and Swimming	13.4	Y
2022-08-10	Clean for Boating and Swimming	7.4	N
2022-07-27	Clean for Boating and Swimming	8.4	N
2022-07-13	Clean for Boating and Swimming	5.2	Y
2022-06-29	Clean for Boating and Swimming	15.8	N

[Get more data](#) | [What do these numbers mean?](#)

WET WEATHER COMBINED SEWER OVERFLOWS Reviewed by DEC Wastewater staff

	Start Date	End Date	Start/End Times	Municipality	Location	Waterbody	Nature of Incident	Estimated Volume (gallons)	Wastewater Treatment Facility
View	2022-10-13	2022-10-14	11:50 pm to 01:00 am	City of Montpelier	CSO- 001 Taylor St. Bridge	Winooski River	Authorized Wet Weather CSO Overflow	11,000	Montpelier





3. SPRAY WATER

- How, when, and what are you spraying?
- What's the water source?
- Does the spray include a BSAAO's?
- Is the BSAAO treated?
- Do you have documentation from the supplier?



This fill station needs a clean!

4. ICE

- Ice is also water
- What's the water source?
- How is ice stored and handled?
- Are boxes kept clean when packing with ice?
- Avoid stacking on top of non-iced crops
- Inspect and clean ice machines regularly



Example: a black “fish tote” keeps the bottom of boxes clean when field packing with ice

5. FLOORS AND DRAINS



Example of a clogged and overflowing drain



Consistently wet floors can increase the risk of cross contamination

6. SURFACE CONDENSATION



& DRIP





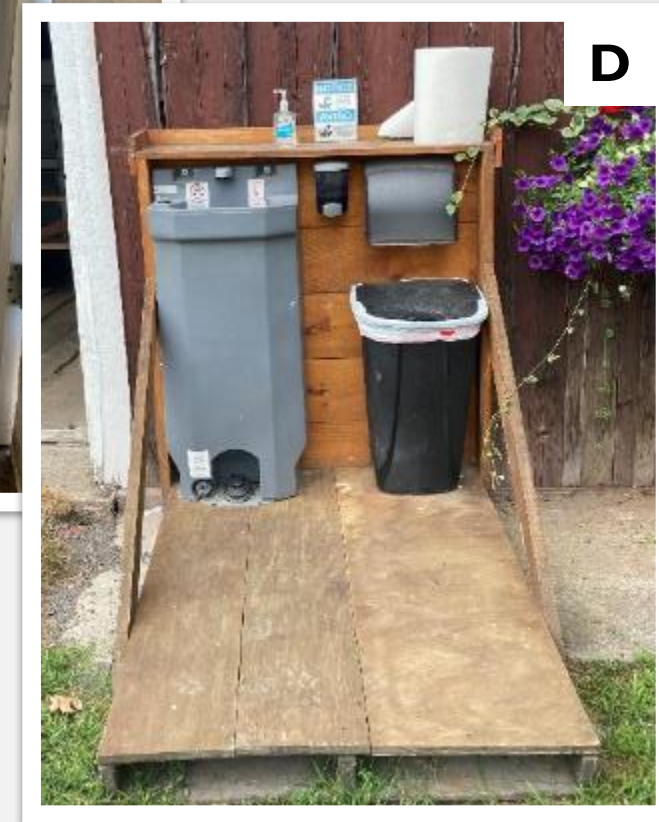
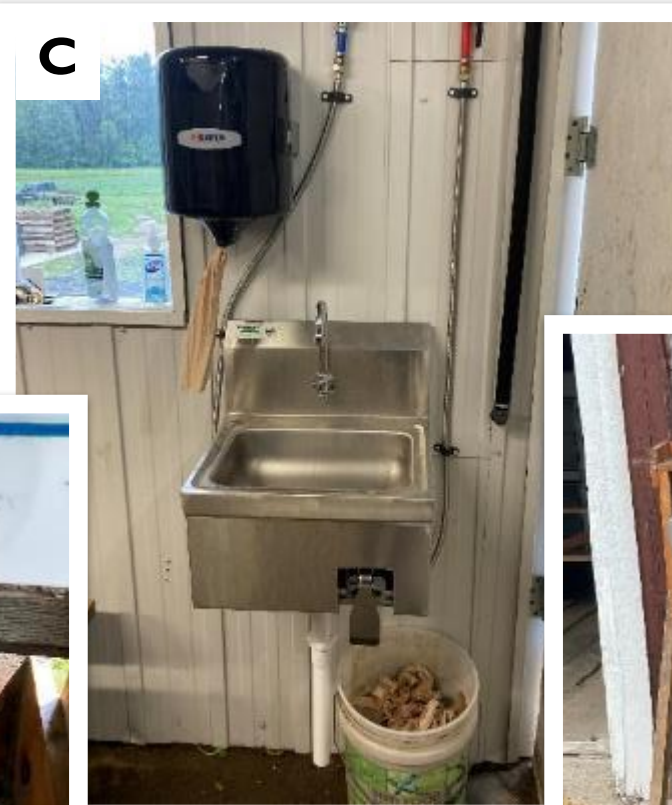
7. WATER TREATMENT SYSTEMS

- Designed and installed correctly?
- Inspected and serviced regularly?
- Service logs kept?
- Avoid using as a “band-aid” solution for a compromised water source

8. HAND SINKS

MUST BE

- ✓ Adequate
- ✓ Accessible
- ✓ And **USED**



Which do you sink do you prefer?

SUMMARY

- Water is a route of potential contamination and can be hard to manage
- But there are proactive steps we can take to reduce risk
- We can all learn from each other to make improvements
- Resources are out there if you need help or want to talk through an issue with someone

THANK YOU



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