



**Water Quality Criteria
For
Agricultural Water Sources and Microbial Testing Guidelines**

**USDA Good Agricultural Practices (GAP)
Audit Verification Program**

Why Is Water Testing Part Of The GAP Audit?

Water use is a critical factor in many phases of crop production, harvesting and distribution. On the farm, water is often used for frost protection, pesticide and fertilizer application, irrigation, produce washing and cooling, employee sanitation and drinking.

Water can also be a carrier of microorganisms such as bacteria, parasites and viruses. Some of these contaminants can be pathogens that make people or animals sick. Regardless of whether contaminants get into water from farm activities or other land uses, preventing food borne illness can be accomplished by good production practices. Regular testing of the water used on your farm is an important quality management tool.

As A Grower, What Water Sources Do I Need To Test?

Any well, spring, pond, river or stream that is used for crop irrigation, frost protection or pesticide/fertilizer application to crops is required to be tested. **[Group A]**

Any well, spring or surface water used as a **potable water supply** (drinking water or crop washing and rinsing water) is also required to be tested. **[Group B]**

If you use water from a town/municipal system, you are not required to test the water because the water system does the testing for you.

What Should I Test For?

Group A Water Sources

Water tests must include bacteria analysis for both **Total coliform** and **E. coli (Fecal coliform)**. Test results must be reported as a number, such as a colony count or MPN (most probable number) and NOT just as the presence or absence of coliform bacteria.

Group B Water Sources

Water tests must include bacteria analysis for both **Total coliform** and **E. coli (Fecal coliform)** (same as Group A) **AND** the analysis for **Nitrate/Nitrite**.

How Often Should I Test My Water?

Type of Water Source

Schedule for Testing

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| <p>1) Well Water
(Drilled, Dug or Driven Point Wells)</p> <p>2) Surface Water
(Springs, Ponds, Rivers and Streams)</p> <p>3) Town/Municipal Water
(Public Water Systems)</p> | <p>Two (2) times per year
Start of season and peak use</p> <p>Three (3) times per year
Start of season, peak use and harvest</p> <p>Acquire a copy of test results from your
Town Offices or water system operator
(Current Year Test Results)</p> |
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Where Can I Get My Water Tested?

There are 10-15 commercial testing labs in Vermont and New England that can provide the bacteria testing required for GAP Certification. Visit The Vermont Department of Health website to get the list of Laboratories Certified for Drinking Water Analysis. Use this website address or call:

800-660-9997 or (802) 863-7335

http://healthvermont.gov/enviro/ph_lab/documents/certified_labs.pdf

How Do I Collect A Sample For Testing?

When you purchase a water testing kit, the laboratory will send you the container(s) and the instructions for collecting a sample that match the procedures used by that specific laboratory. If you have a question about sampling, the first place you call for help should be to your laboratory.

What Are The Acceptable Standards?

Tests results for Group A and Group B water sources must be less than the values listed in the standards table.

	Water Uses	Water Source Types	Required Tests	Standards
Group A Water Sources	Irrigation, Frost Protection or Chemical & Fertilizer Application To Crops	Wells, Springs, Ponds, Rivers or Streams	Total coliform (1)	200 CFU/100 ml (Retest to confirm E.coli number)
			E. coli (Fecal coliform)	77 CFU/100 ml (2)
Group B Water Sources	Potable Water For Drinking or Crop Washing & Rinsing	Wells, Springs and All Surface Waters	Total coliform	0 CFU/100 ml (3)
			E. coli (Fecal coliform)	0 CFU/100 ml (3)
			Nitrate/Nitrite (as Nitrogen)	10 mg/L (NO ₃ -N) (3) 10 PPM (NO ₃ -N)

Notes: (1) Total coliform for Group A Water Sources is an vulnerability indicator, not a regulatory standard.

(2) Water Quality Criteria for Class B Waters. Vermont Water Quality Standards. January, 2008.

(3) Primary Groundwater & Drinking Water Quality Standards. VT Groundwater Protection Rule. February, 2005.





What Do I Do About Flood Water?

You can't test flood water ahead of time like you do with your regular water sources or prevent a flood from happening. The best way to protect your crops against contaminated water during a flooding event is to plant low risk crops in the fields most likely to flood. Low risk crops means plants such as root crops, corn, squash, beans and other hard-sided produce that are washed, peeled or cooked before eating. Plants that are immature at the time of flooding and have time to grow before harvest are also acceptable.

The Vermont Department of Health advisory for crops that come in contact with flood water is to discard above-ground fruits and vegetables that have matured and cannot be washed and cooked prior to consumption. High risk crops are leafy, high surface area plants such as lettuce, spinach, cabbage, berries, asparagus and herbs. Crops like these are difficult to clean and remove all contamination with just plain rinsing and should not be eaten after they are exposed to a flood.

The best protection for your crops against contamination by unpredictable flood water is to make and follow a plan for which crops get planted in which fields. This approach can be accomplished and still meet the goals of your crop rotation plans.

Program Contacts and Other Sources Of Helpful Information:

GAP Program Websites

<http://www.ams.usda.gov/gapghp>

<http://gaps.cornell.edu>

Vermont GAP Audit Program & Water Testing Questions

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