



## NEW ENGLAND EXTENSION FOOD SAFETY CONSORTIUM

# GOOD AGRICULTURAL PRACTICES

In the Field  
Safe Water Sources

### New England GAP Guidelines Addressed Here:

#### *Water sources for irrigation and drinkable water (potable water)*

- Wells are protected from outside contamination
- Drinkable water supply and/or wells are tested at least once a year
- Water source(s) used for washing produce are located the distance required by local/state regulations from manure storage facility, livestock area, pesticide storage area and/or septic system drainage field
- Water used to clean and br sanitize produce meets the EPA Drinking Water Standard
- Records of all water tests on file
- Backflow devices and air gaps installed at appropriate locations

### Water use in the field

Irrigation water has been the source of contamination in several foodborne disease outbreaks attributed to produce. Clean water is most important when in direct contact with edible portion of crop close to or at harvest--whether you are irrigating or applying a pesticide.

While no standards for irrigation water quality exist, there are two recommendations you can use as guidelines. The broad range of these two guidelines points to the need for more research in this area:

1. The Environmental Protection Agency (EPA) established a standard for reclaimed water (treated effluent) used on non-processed fresh produce of less than 2.2 fecal coliforms per 100 milliliters of water.
2. Researchers from the University of California concluded in earlier research on irrigation water quality that 1,000 fecal coliforms in 100 mls of water was acceptable based on survival studies of several pathogens of produce.

### Things to think about if you use surface water for irrigation:

- Do you use drip, under-tree or low volume spray irrigation to reduce water contact with fruit?
- If you use overhead irrigation or evaporative cooling, do you test your irrigation water for fecal coliform concentrations during the growing season?

- If livestock operations are located nearby the irrigation source, are animals excluded?
- Are good management practices in place to protect the quality of irrigation water?
- Do you use only potable water to apply foliar applications including pesticides, nutrients, and growth regulators?

## What can you do?

- ***Choose application methods that are less risky.***  
Use drip irrigation whenever possible, especially when using non-potable water. This method reduces the risk of crop contamination because the edible parts of most crops are not wetted directly.
  - Microbial risks in overhead irrigation are minimized by using potable water. If surface water is used for overhead irrigation or pesticide application, examine the source of the water and be aware of upstream use of that waterway. By applying overhead irrigation in the morning, leaf drying time is reduced. Rapid drying and ultraviolet light will reduce survival of human pathogens on crops.
  - If you are using surface water (pond, stream), consider not using overhead irrigation or pesticide application methods within one week of harvest.
  - When possible, use potable water for sprays. When potable water is not available, test water quality and keep records. Consider possibility of contamination when processing and handling produce down the line.
  - Keep records of application methods, rates, and dates.
- ***Management/location of farm animals***
  - Do not allow pets, poultry, or livestock to roam in crop areas, especially close to harvest time.
  - Do not let "pick your own" patrons bring their pets along.
  - Minimize wild animal and bird traffic in ponds and fields where possible.
  - Clean tractors that were used in manure handling prior to entering produce fields.
- ***Potable water must be available in the field for workers and "pick your own patrons" to wash their hands and to drink.***
  - You can set up a portable and temporary handwashing station quite easily if potable water is not readily available in the field.
  - Put drawing of temp handwashing station, using large McDonalds like cooler, collection bucket, paper towels, soap, and trash bin

## References and Resources:

### *Guide to Minimize Microbial Food Safety Hazards for Fresh Fruits and Vegetables*

US Department of Health and Human Services, Food and Drug Administration  
Center for Food Safety and Applied Nutrition (CFSAN), October, 1998  
Food Safety Initiative Staff, HFS-32  
U.S. Food and Drug Administration  
Center for Food Safety and Applied Nutrition  
200 C Street S.W. Washington, D. C. 20204  
<http://www.cfsan.fda.gov/~dms/prodguid.html>

### *Food Safety Begins on the Farm: A Grower's Guide: Good Agricultural Practices for Fresh Fruits and Vegetables*

Anusuya Rangarajan, Elizabeth A. Bihn, Robert B. Gravani, Donna L. Scott, and Marvin P. Pritts. Cornell University, Cornell Good Agricultural Practices Program (607) 254-5383 [eab38@cornell.edu](mailto:eab38@cornell.edu)

### *Reducing Food Safety Risks in Apples: A Self Assessment Workbook for Producers of Apples, Juice, and Cider.*

May 2001  
G. Baird Wireman, D. Granatstein, E. Kirby, E. Adams, Washington State University Cooperative Extension and S. Ingham, University of Wisconsin-Madison  
<http://organic.tfrec.wsu.edu/FoodSafetyWeb/Home.htm>

### *Waterborne Pathogens in Agricultural Watersheds*

Barry Rosen, University of Vermont  
NRAES-147; Natural Resource, Agriculture, and Engineering Service (NRAES) Cooperative Extension in cooperation with United States Department of Agriculture Natural Resources Conservation Service and the Watershed Science Institute  
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### *Information regarding management of wild geese*

<http://www.dec.state.ny.us/website/reg6/press/6r00-21.html>  
<http://ohioline.osu.edu/w-fact/0003.html>  
<http://dep.state.ct.us/burnatr/wildlife/problem/goosprob.htm>

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## Contact Information

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