

The Maricopa Agricultural Center Water Quality Program: Assessing Water Quality for All—People, Produce, and Pathogens

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WHAT IS WATER QUALITY?

Water Quality (WQ) is the physical, chemical, and biological characteristics of water. It measures the condition of water based on particular uses and is the primary means by which standards are set for the following uses:

- **Agricultural (watering crops, washing produce)**
- **Recreational (swimming, fishing)**
- **Direct (drinking, bathing)**

WHAT WE DO

PROGRAM GOALS:

- **Food Safety (FS)**
Assess irrigation water for produce production
Assist FS managers with testing WQ parameters
- **Surface and Ground Water Protection**
Investigate WQ within surface and ground water
- **Water Reuse**
Study reclaimed water for potable & non-potable reuse
- **Advice & Recommendations**
Promote WQ best practices to improve environmental issues

As water quality specialists, our team adheres to the fact that all living organisms need water in some capacity. People need water to live—drink, cook, and bathe. Water is needed in agriculture so food seeds can grow to yield our produce favorites. And finally, the environment needs water for sustaining riparian ecosystems. Unfortunately pathogens and other WQ contaminants can pollute the following essential water sources:

- **Rivers, lakes, and streams**
- **Irrigation canals**
- **Wastewater treatment plants**

We use *Escherichia coli* as an indicator to measure fecal pollution in the water sources listed above. Each source is regulated with its own acceptable criteria for allowable number of bacteria. If *E. coli* is present at high numbers in a single source, this source may be deemed unsafe until treatment occurs, the source is controlled, or a set period of time is allowed to pass before use.

Definition: E.coli – a usually non-pathogenic bacterium that lives in the intestines of all warm-blooded animals

OUTREACH & EDUCATION

The water quality program has been doing outreach and creating educational material for eight years, reaching upward of 26,000 individuals. Our outreach efforts are focused on:

WATERSHED STEWARDS	INDUSTRY
PRIMARY AND SECONDARY SCHOOLS	GENERAL PUBLIC

RESOURCES

Food Safety Online Lessons (Microbiology 101 & Biofilm Mitigation) available in English & Spanish at <http://cals.arizona.edu/fps/node/57>

Food Safety Best Management Practices (for growers and industry)

Track and Scat Glovebox Guide (an animal intrusion reference guide for growers)

Water Quality Assessment App (to assist growers with FDA & FSMA WQ compliance...COMING SOON!!)



CURRENT PROJECTS

Pathogen Transmission to Crops from Animals
Arizona Department of Agriculture (ADA) Specialty Crop Block Grant Program

Evaluation of Risk-based Water Quality Sampling Strategies for the Fresh Produce Industry
The Center for Produce Safety (CPS)

Volunteer Water Quality Monitoring Training and Technical Support
The Arizona Department of Environmental Quality (ADEQ)

Assessment of Techniques to Evaluate and Demonstrate the Safety of Water from Direct Potable Reuse Treatment Facilities
Water Research Foundation

Evaluation of an Alternative Water Quality Indicator for the Produce Industry
The Center for Produce Safety

Wildcat Water Lab Educational Outreach Events

RECENT PUBLICATIONS

Agricultural Use of Recycled Water for Crop Production in Arizona
[az1670-2015.pdf](#)

Water Quality, *E.coli* and Your Health
[az1624.pdf](#)

Water Recycling FAQs
[az1568.pdf](#)

CONTACT

Please contact us with questions, collaboration ideas, or to schedule an outreach event:

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