

Water Facts: Number 2 Microorganisms in your well water

Written by:

ELAINE HASSINGER
Assistant in Extension

THOMAS A. DOERGE
Associate Soils Specialist

PAUL B. BAKER
Associate Specialist,
Entomology

For additional information on this title contact Elaine Hassinger: elaineh@ag.arizona.edu, or your local cooperative extension office.

This information has been reviewed by university faculty.

<http://ag.arizona.edu/pubs/water/az9415.pdf>

Publication number 194015
Published and reviewed
February 1994

Microorganisms in your drinking water can make you sick. Unfortunately, testing for all specific types of harmful microorganisms is expensive and essentially impossible. However, coliform bacteria are good indicators of the microbiological quality of drinking water.

Coliform bacteria live in the soil, decaying plant material, and the intestines of humans and animals. If they're in your water, your well may be contaminated with other, more harmful microorganisms that can cause disease.

A laboratory test for coliform bacteria is simple and costs about \$10 to \$15. Call several certified labs for their costs and sampling procedures. Be certain to follow the lab instructions carefully so you do not accidentally contaminate the sample.

You should sample your well for coliform bacteria:

- when you move into your new home
- once a year to monitor water quality
- when you repair an existing well or drill a new well
- if members of your household have recurring gastrointestinal illnesses, such as dysentery

If lab results show microorganisms in your water, check the integrity of the well casing and grout seal around the borehole. Water and contaminants can seep into the well from the surface if the casing or grout seal is cracked.

You can decontaminate your well several ways. For example, you can shock-chlorinate the system by putting large amounts of household chlorine bleach directly in the well and allowing it to sit undisturbed for up to 24 hours.

To ensure purity, test the water one or two weeks after shock-chlorinating. If your well is still contaminated, you must take other measures. You may have to install a water purifying unit at the well to treat all the water entering your home. These units include continuous feed pumps, ultraviolet lamps, and ozonation devices.

Feed pumps can continually feed a measured amount of disinfectant, such as bleach, into the water line to your home. Ultraviolet light from lamps kills bacteria and viruses but may be ineffective on tiny parasitic cysts like *Giardia*. Ozonation passes air over an electric charge to produce ozone, a very strong disinfectant. Unfortunately, ozone quickly dissipates and leaves no residual in the system to keep the water clean, if it remains in the pipes for several hours. This technology

is also new for household use, and therefore not thoroughly tested.

These systems give you long-term protection, if maintained and operated properly. In an emergency, you might need to treat the water immediately. Boiling water for several minutes is an ideal treatment for emergency disinfection. Bleach is another good disinfectant. Put eight

drops of chlorine bleach in a gallon of water; mix thoroughly and let it sit for at least one-half hour before drinking. You also can use tincture of iodine as an immediate disinfectant. Put 20 drops of iodine in a gallon of water, mix, and allow to sit for 30 minutes.

Testing for coliform bacteria is an easy way to prevent illness from microbiologically impure drinking water.

Any products, services, or organizations that are mentioned, shown, or indirectly implied in this publication do not imply endorsement by The University of Arizona.

Issued in furtherance of Cooperative Extension work, acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, James A. Christenson, Director, Cooperative Extension, College of Agriculture, The University of Arizona.

The University of Arizona College of Agriculture is an equal opportunity employer authorized to provide research, educational information and other services only to individuals and institutions that function without regard to sex, race, religion, color, national origin, age, Vietnam Era Veteran's status, or disability.

For further information on Cooperative Extension, visit <http://ag.arizona.edu/extension>