



Measure the Nitrate in Your Water!

What is Nitrate?

Nitrogen is an important nutrient that all plants require. It is found in many forms in our natural environment, but nitrate is the most common dissolved form found in lakes, streams and groundwater. Although nitrate naturally occurs in our water, human activities can greatly increase the amount that we find. Sources of nitrate include septic systems, fertilizers, animal manure and discharge from sewage facilities.

Why should I care about Nitrate?

Measuring the levels of nitrate in our water is important not only for humans and animals, but also the environment.

Environment

Nitrate is a form of nitrogen that plants can easily use. When we over fertilize our waters with nitrate we can cause excessive plant growth. These plants can clog canals and streams, and when they die and decay, can use up too much oxygen causing fish to die. Concentrations greater than 4 parts per million can lead to these environmental impacts.

Human Health

High concentrations of nitrate in drinking water can cause methemoglobinemia (blue baby syndrome) in infants. Concentrations greater than 10 parts per million can be harmful to young babies, and should be avoided by nursing mothers.

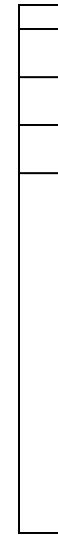
Livestock

High nitrate levels can be harmful to ruminant animals as well. Concentrations over 100 parts per million are toxic to these animals.

Nitrates are undetectable in water or feed without testing because they are colorless, odorless, and tasteless, but you can use the attached nitrate litmus strip to test your water.

How do I test my water for Nitrate?

1. Collect a water sample in a clean container.
(Rinse the container several times with the water you will be testing.)
2. Holding the end of the litmus strip as shown below, dip the strip into the water for 1 second and remove. Do not shake excess water from the test strip (Litmus strips can be purchased at a chemical supply store or from USU Water Quality Extension).
3. Hold the strip level, with pad side up for 60 seconds. Compare the color of the pad at the end of the strip to the color chart below. Estimate results if the color on the test pad falls between two color blocks.

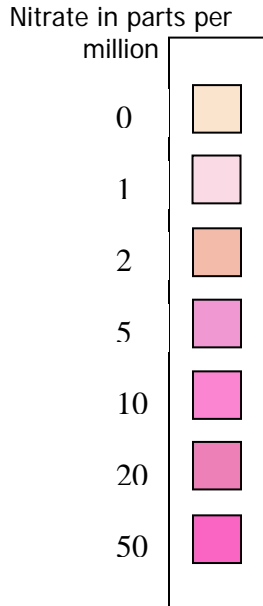


← Compare this pad with the colors below.

← Hold here

What do my results mean?

Use the table below to interpret your results –



Nitrate level (parts per million)	Interpretation*
0-4	Safe for humans and livestock. Concentrations of more than 4 ppm are an indicator of possible pollution sources and could cause environmental problems.
10-20	Generally safe for adults and livestock. Not safe for infants.
21-40	Short-term use acceptable for adults and all livestock unless food or feed sources are very high in nitrates.
41-100	Risky for adults and young livestock. Probably acceptable for mature livestock if feed is low in nitrates.
Over 100	Should not be used.

* Interpretations are primarily based on short-term effects. Chronic, long-term risks are not fully understood.

Source: Cooperative Extension Service, Pennsylvania State University
Cooperative Extension Service, Kansas State University

For more information on water or water quality -

Please visit our web site at www.extension.usu.edu/waterquality/

Or contact: Nancy Mesner at (435) 797-2465, nancy.mesner@usu.edu