wellcare® information for you about

TANNINS & WELL WATER

What are Tannins?

Tannins are a natural organic material that can be the byproducts of nature's fermentation process, created as water passes through peaty soil and decaying vegetation. This can cause water to have a faint yellow to tea-like color, and can cause yellow staining on fabrics, fixtures, China and laundry. Tannins may give a tangy or tart aftertaste to water. They may also cause water to have a musty or earthy odor.

Tannins – also known as fulvic or humic acid – are more common in surface water supplies and shallow wells than in deep wells. Water in marshy, low-lying, or coastal areas is also more susceptible to tannins.

What are the health effects of Tannins?

Tannins are considered an aesthetic problem. While they may make water unappealing to drink and stain laundry, they present no health risk.

Should I test my water for Tannins?

Tannins create a light yellow to dark brown discoloration in the water. A simple test for tannins involves filling a clear glass with water and letting it sit overnight. If the color settles to the bottom of the glass, the discoloration is most likely caused by iron and/or manganese and not tannins. If the intensity of the color remains intact, it is most likely caused by tannins. This test is not guaranteed and should be followed by a certified lab test to confirm the presence of tannins in your water.

You should also test your water alkalinity, chloride, hardness, iron, pH, sodium, sulfates, and total dissolved solids (TDS) as these may help determine which treatment method(s) will be most effective for your situation. There is another reason to test for iron along with tannins; iron creates a false positive for tannins and must be subtracted from the tannin result to determine true tannin concentration.

Contact your state or local health department or use our **interactive map** for a list of state-certified laboratories in your area.

What can I use to remove Tannins from my water?

Common tannin treatment technologies include anion exchange resin, ultrafiltration and, oxidation followed by filtration.

Anion exchange uses an organic scavenging anion exchange resin which trade negatively charged ions for tannins in water. If using anion resin, it is important to understand that the resin is also sensitive to hardness. Therefore, most anion systems include a water softener as pretreatment. The water softener extends the life of the anion resin and increases tannin absorption.

Anion exchange resin systems should be regenerated occasionally with a baking soda and saltwater solution to improve the effectiveness of the resin. When cleaning is needed, the water will have a "fishy" odor caused by the fouled anion resin. Anion exchange resin systems can also change the alkalinity, chloride, and sulfate levels of the water, so you should monitor these substances more closely once the system is installed.

Ultrafiltration can capture the fulvic and humic acid tannin particles if their molecular weight is large enough. Before ultrafiltration is selected, a pilot test should be conducted to ensure that the tannin particles are large enough to be captured by the ultrafilter.

Oxidation and filtration is another method to remove tannins. It involves oxidizing the tannin particles to make them larger, then filtering them. This type of treatment includes multiple technology steps and is more complicated than anion exchange or ultrafiltration.

It should be noted that tannins can sometimes interfere with equipment used to treat other water problems. For example, the resins or medias in iron filters, cation exchange filters and neutralizing filters can become coated by tannins and may no longer work properly. It is recommended to test for tannins before installing these types of water treatment devices.

Look for treatment systems that are certified by **NSF** or **Water Quality Association (WQA)** when possible. Certified water treatment professionals can help you select the right treatment. To locate a certified water treatment professional in your area, visit **WQA's website**. It is necessary to maintain treatment devices as specified by the manufacturer or your water treatment professional. You should also retest your water after treatment is installed and after maintenance to confirm the effectiveness of the device.

For More Information on Tannins & Well Water

Contact your licensed well contractor, local health department, or the wellcare® Hotline for more information on Tannins and well water.

Information to help maintain and protect your water well system:

wellcare® is a program of the Water Systems Council (WSC). WSC is the only national organization solely focused on protecting the health and water supply of an estimated 23 million households nationwide who depend on private wells (according to the U.S. EPA).

This publication is one of more than 100 wellcare® information sheets available FREE at www.watersystemscouncil.org.

Well owners and others with questions about wells and well water can contact the wellcare® Hotline at 1-888-395-1033 or visit www.wellcarehotline.org to fill out a contact form or chat with us live!

JOIN THE WELLCARE® WELL OWNERS NETWORK!

By joining the FREE wellcare® Well Owners Network, you will receive regular information on how to maintain your well and protect your well water.

Contact us at 1-888-395-1033 or visit www.wellcarehotline.org to join!