

ANTIBACTERIAL PRODUCTS IN SEPTIC SYSTEMS

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An onsite sewage treatment system or "septic system" is an effective way to safely recycle household wastewater back into the natural environment. As a homeowner or business person with a septic system, you are in the wastewater treatment business.

A septic system with a properly functioning, soil treatment-based, leachfield should reduce bacterial and pathogen levels to an acceptable level, if not completely. Potential organic and inorganic nutrient pollutants, those commonly found present in septic tank effluent, should also be reduced or eliminated. The key to effective treatment is proper design, system installation, responsible operation, and periodic maintenance. Note: "Operation" refers to everything we do or put into the system.

To achieve proper treatment, a septic system is very dependent on millions of naturally-occurring bacteria throughout the system. Daily, we add many beneficial bacteria to our septic systems; bacteria typically found in wastewater, our bodies, and other waste materials we dispose of via our septic system. Two very important types of septic system bacteria are anaerobic (do not require oxygen) and aerobic (require oxygen). Anaerobic bacteria decompose organic materials inside the septic tank. Aerobic bacteria, in the leach field soils, destroy disease-causing pathogens and finish the breakdown of molecular waste products. Simply stated, we normally and naturally add more than enough of the "right kind" of bacteria to our septic systems; there is no need or reason to use expensive, unnecessary additives.

The use of "antibacterial," "disinfectant," or "sanitizing" products in the home can and do destroy both good and bad bacteria in septic treatment systems. "Normal usage" (according to directions) of these products will destroy some beneficial bacteria. Fortunately, the normal bacteria population within the septic system is sufficient and adequate to quickly recover. Significant treatment problems, with conservative use, should not occur. Excessive use of these products in the home can cause significant and even total destruction of the bacteria population. Normally, the use of any single product or single application will not cause major problems.

The University of Arizona Cooperative Extension Septic System Owner's Guide suggests:

To improve septic system performance:

- Do not use "every flush" toilet bowl cleaners.
- Reduce the need to use drain cleaners by minimizing the amount of hair, grease, and food particles that go down the drain.
- Reduce use of cleaners by doing more scrubbing with less cleanser.
- Use the minimum amount of soap, detergent, and bleach necessary to do the job. Frequent use of detergents with bleach additives is considered "excessive amounts" of bleach.
- Choose products that meet your needs safely. When you are shopping, always read the instructions on the product labels. Labels provide information on a product's content, as well as instruction on how to use it safely. Check to see if the product contains ingredients that, when used properly, can harm people or the environment.
- Use minimal amounts of mild cleaners, as needed only.
- Divert chlorine-treated water from swimming pools and hot-tubs outside of the septic system.
- Dispose of all solvents, paints, antifreeze, pesticides (insecticides, fungicides, herbicides, slug bait, moth balls, wood preservatives, and flea and roach powders, to name a few), and other toxic chemicals through local recycling and hazardous waste channels.
- Do not flush unwanted prescription or over-the-counter medications down the toilet.

However, the accumulative affect of using too many such products and excessive application may cause serious problems and damage to the septic system.

More research is needed to determine what is excessive and which products are more or less harmful to systems. Increasingly, many products are being marketed as "antibacterial." Consumers and onsite system professionals working to diagnose treatment system problems have many questions about individual products. Typical questions being asked are: "How antibacterial is antibacterial?" and "Which products are better or worse than others?"

Anecdotally, several professionals have reported problems with low or no bacterial activity in systems. Upon removal of such "antibacterial" products from the home, beneficial bacterial activity returns and the desired treatment functions resume. "Antibacterial" products affect all treatment systems, some more than others.

Special attention is being paid to new "alternative" septic treatment technologies being introduced into the onsite industry. It appears that some alternative systems may be more affected by "antibacterial" products than other systems. Additional and more conclusive research is needed.

What are common "antibacterial," "disinfectant," and "sanitizing" products found and used in homes and

businesses that might affect your septic system? The list of products include: "antibacterial" hand soaps; sink/counter top cleaners; tub, tile, and shower cleaners; drain cleaners; toilet bowl cleaners; laundry bleach products; and many industrial strength cleaners used commercially. Antibiotic drugs (prescribed medicines) should also be included. These are products that are found in nearly all homes. Such medications often carry a "safe for septic systems" statement printed on the label. A relevant question for using these products and medications may be "how safe?"

All of these practices work toward preventing the loss of beneficial bacteria throughout the system. Bacterial additives (enzymes, starters) are not necessary, may not compensate for excessive use of antibacterial products, and are costly.

It might be that, in an effort to be "super clean" and protective of our family's health through the use of antibacterial products in our homes, we might be compromising our health in another way — by damaging our onsite sewage treatment system!

There is more information on household septic systems at the University of Arizona Extension publications web page (<http://ag.arizona.edu/pubs>).

This fact sheet was adapted from *Anti-Bacterial Products in Septic Systems*, by Ken Olson, University of Minnesota Extension news release. <http://septic.coafes.umn.edu/Homeowner/index.html>.



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