



Septic Systems Do's & Don'ts

- DO** learn the location of your septic tank and drain field. Keep a sketch and detailed records on file.
- DO** add our septic packs monthly to speed digestion and ensure continued microbial performance.
- DO** conserve water to avoid overloading the system. Try to space out activities requiring heavy water use over several days. Be sure to repair any leaky faucets or toilets.
- DO** divert downspouts, surface water, and other sources of water such as sump pumps away from the septic system and leach field.
- DON'T** allow anyone to drive or park over any part of the septic system or drain field.
- DON'T** use your toilet as a trash can. Septic tanks are designed to handle organic matter. Pouring harmful chemicals and cleansers can destroy the beneficial bacteria that treat your wastewater.
- DON'T** allow backwash from home water softeners to enter the septic system
- DON'T** plant trees anywhere near the septic tank or leach field. The area over the drain field should only have a grass cover. The grass will not only prevent erosion, but will help remove excess water.

Put Your Septic System Troubles Behind You

Your home is equipped with an on-site wastewater treatment system commonly referred to as a Septic System.

Most septic systems in operation today are not functioning well. Common household chemicals like bleaches, caustic cleaners, chemicals, anti-bacterial soaps and detergents inhibit or kill the biological action within your septic system. These compounds are foreign to the natural ecological process and can be detrimental to your entire septic system. Additionally, excessive water usage can potentially flush out untreated solids and a large portion of any beneficial bacterial in your septic tank.

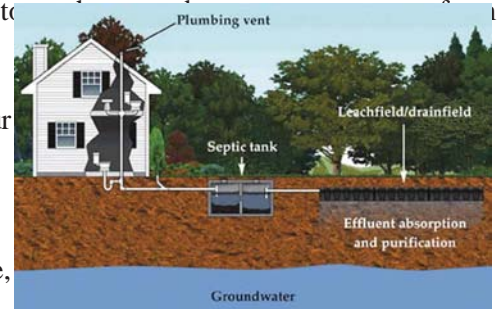
Our "100% naturally occurring bacteria" are superior species that outperform the coliform bacteria normally present in septic systems. Monthly applications of our concentrated septic packets are a convenient way to prevent failure and ensure that your septic system will continue to operate trouble free for years.

The way you treat your septic system will have a significant impact on how long your system leach field will last!

Prevention is prudent and cheap!

Replacement or repair can be costly!

The proper operation of your septic system is essential to your health, property value, and the environment!



**Safeguard Our
Environment**

**Keep Your Septic System
Healthy!**



Benefits Of Our Septic Treatment Program

Environmentally Friendly, All Natural!

Safe for Children and Pets!

Eliminates Odors!

Degrades Paper, Fats, Oils, Grease!

Extends Life of Drain Lines (Drain Field)!

Prevents Drain Line Blockages!

Improves Drain Field Percolation!

Safe for All Plumbing!

Costs Less than the National Brands!

One 2 Ounce Packet Contains More
Microbes than 100's of Pounds of the
National Brands!

Will Reduce or Potentially Eliminate
Pump-Out Costs!

Our Convenient Septic Treatment Works!

It is easy to protect your septic system and ensure that your sewage treatment system is operating smoothly. The initial application restores the natural biological process and boosts the existing biological activity.

Regular monthly applications will keep your septic system free flowing, minimize sludge and scum, prevent costly repairs and will reduce or potentially eliminate additional pump-out costs.

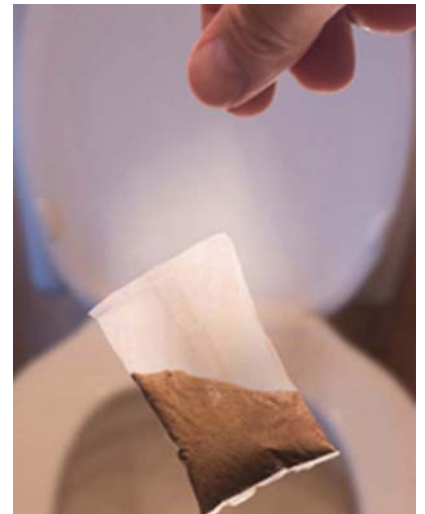
Easily Maintain Your Septic System!

Maintaining your septic system requires very little effort! Each septic treatment container includes 13 water-soluble packets. Simply grab and toss one packet per month. No dilution, measuring, mixing, special equipment or cleanup! Our unique water-soluble septic packets are packaged for easy storage and handling and pre-measured for simplified application. Each 2 ounce packet contains approximately 300 billion facultative microbes that survive with or without oxygen. These natural species of microbes are scientifically selected to rapidly digest organic waste and buildup that can clog septic tanks and leach fields.

**Contact Us Today to learn how to get
started!**

**Eagle View Inc
406-465-1593**

www.eagleviewinspections.com



UNDERSTANDING THE BASICS: THE BACTERIAL DIGESTION OF WASTE

INSTRUCTIONAL GUIDE ON THE FUNCTION OF OUR BACTERIAL DIGESTANTS AND HOW THEY GO TO WORK TO DIGEST ORGANIC WASTE

Our Bacterial digestant products contain three necessary components:

1. BACTERIA CULTURES

2. ENZYMES

3. ESSENTIAL NUTRIENTS

Read on to see how these three components work in harmony to digest organic waste **QUICKLY** and **EFFICIENTLY**, with **NO ODOR** or **NOXIOUS GAS**.

The following discussion outlines the biological process of **BACTERIAL DIGESTION**. This process is responsible for the digestion of organic waste, no matter where it occurs. With minor variations, this same process digests waste in:

*Grease Traps, Drains & Plumbing, and Septic Systems
Hog, Cattle, Chicken Manure Pits, Leaf and Grass Mulch
Municipal Sewer Treatment Operations including Digesters,
Oxidation Tanks, Trickling Filters and Ponds.
Also, Industrial Wastewater, Food Processing Wastes and other Waste
Disposal Systems.*

WHAT IS BACTERIAL DIGESTION?

Bacterial digestion is the process of bacteria consuming organic matter. The bacteria feed on the organic waste, deriving nutrition for growth and reproduction. Using complex chemical reactions, the organic waste is metabolized down to water and carbon dioxide (the final metabolic waste products), providing the bacteria with energy to sustain their life. It may be simply shown by the following equation:

Organic Waste + Oxygen **Bacteria** Water + Carbon Dioxide

Organic waste is consumed by the bacteria, used as nutrients by the bacteria, and is no longer present to produce clogs, odors, sludge, pollution, or unsightly mess.

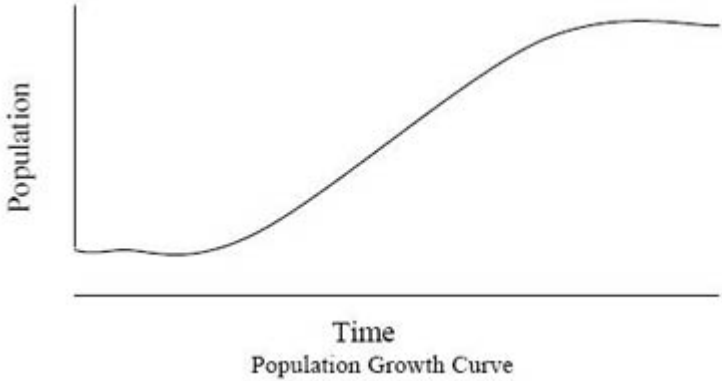
BACTERIA CULTURES

Thousands of different types of bacteria exist everywhere in our world, and most of them carry on bacterial digestion in some way. However, some of them are found only in a particular place (environment) and require specialized types of food and/or have very unique biological roles (niches).

Bacteria are single cell life forms – each individual cell is a separate, unique organism. Bacteria often grow into colonies that appear as jelly- like masses, but each cell remains an independent, individual life. Bacteria reproduce by a process called cell division. Mature bacteria reproduce by dividing into two daughter cells, each identical to each other and the parent bacteria. Under ideal conditions, bacteria can reproduce very rapidly, producing a new generation every 20 to 30 minutes.

Following this reproduction process, we see that the number of individual bacteria doubles with each generation. The population explodes as the number of organisms increases logarithmically. This population boom begins soon after the bacteria are introduced into a favorable environment, after a short lag time when the bacteria become acclimated to the new conditions.

Obviously, this population cannot increase forever. At some point, the food source will be depleted, waste products will accumulate, or some other change in the environment will cause the population to level off or decrease (such as change in the pH, temperature, or oxygen content of the environment). Also, introduction of any poisons into the environment may have negative effects on the population, as well as competition from other types of bacteria. This is demonstrated by a population growth chart for a typical bacteria culture.



Bacteria can be classified into different types:

- **Aerobic types (which require oxygen to live) and**
- **Anaerobic types (which can live without oxygen).**
- **Facultative types can thrive under both aerobic and anaerobic conditions.**

For waste digestion, we can identify several beneficial characteristics that we desire in our chosen bacteria. The "good" bacteria that we choose must do the following:

1. Consume (digest) a wide variety of organic material that is present in wastes.
2. Digest waste quickly and completely, without producing significant odors or noxious gas.
3. Not cause any disease in man or animals – they must be non-pathogenic.
4. Grow and reproduce quickly and readily in the environmental conditions found in waste disposal systems.

Certain bacteria belonging to the Bacillus species have these desirable characteristics. They consume organic waste thousands of times faster than the bacteria that are naturally present in the waste. They grow and reproduce easily, are non-pathogenic, and do not produce foul odors or gas as they digest waste.

These "good" bacteria are cultured (grown by artificial means) on a liquid or dry nutrient medium. These cultured bacteria are then freeze dried to put them in a state of suspension. They remain alive, ready to swim, eat, and reproduce as soon as they are activated (re-hydrated) and put into the proper environment.

The proper environment needed for rapid growth and reproduction of these "good" bacteria must have these characteristics:

1. A water medium containing food (organic waste) for them to eat.
2. Dissolved oxygen (for the aerobic types that require it).
3. Proper pH – not too acid or too alkaline (between 6 and 9 On the pH scale is ideal).
4. Moderate temperatures, not exceeding 120 degrees Fahrenheit.

ENZYMES

What is an enzyme and how does it aid digestion? An enzyme is a chemical catalyst that breaks up long, complex waste molecules into smaller pieces, which can then be digested directly by the bacteria.

Enzymes are simply chemicals – they are not living things, and they cannot grow or reproduce themselves. Enzymes are manufactured and used by the bacteria in order to digest waste. The extra enzymes that are mixed into digestant products are actually produced by special bacteria, extracted from them in dry form, and blended into the digestant mixture.

Enzymes are added to digestants to help them go to work faster. When added to the organic waste, the enzymes immediately go to work breaking down the waste. The large, complex molecules of starches, proteins, carbohydrates, and cellulose are broken into smaller, simpler pieces. These enzymes act like chemical "knives", chopping the large molecules of waste into smaller pieces of "prepared food" for the bacteria. The growing bacteria will then start to produce more enzymes on their own, creating a continuing cycle of enzyme production.

The following four types of enzymes are often incorporated into digestant products:

LIPASE..... breaks down fats and greases.

PROTEASE..... breaks down proteins.

CELLULASE..... breaks down cellulose.

AMYLASE..... breaks down carbohydrates and starches.

Enzymes are specific, so that one type of enzyme can work on only one type of molecule. Thus, protease enzyme will break down complex proteins into simple pieces, but will have no effect on fats or greases. Likewise, lipase will attack animal fats and grease, but will not work on paper or wood (cellulose).

ESSENTIAL NUTRIENTS

Special nutrients are added to supply the vitamins and minerals required for the fastest growth and greatest activity of the bacteria. These vitamins and minerals may not be present in the waste, and a lack of any one of them may seriously inhibit the growth, reproduction and waste digesting performance. They must be added to the digestant product to assure the fastest, most efficient digestant action.

CASE HISTORY: THE PROVERBIAL "BUCKET OF WASTE"

Now that we have a basic understanding of the process of bacterial digestion, let us follow what happens when digestant is added to a hypothetical bucket of organic waste. Our bucket contains several gallons of liquid, a slurry of water with several pounds of cow manure. Note that this waste bucket environment may be compared to conditions that exist in a septic tank, a sludge digester, or even a clogged drain.

First, the digestant product is re-hydrated with warm water, about 100oF. This warm water will re-activate the dried bacteria cultures, preparing them to go to work (hot water, above 180oF would kill the bacteria!) At the same time, the enzymes are dissolved and ready to begin the initial breakdown of the waste.

When the slurry of digestant is added to the waste, the enzymes go to work immediately. The protease begins to split the large protein molecules, and cellulose begins to break down grass and hay fibers. Cow manure contains no significant fat or grease, so the lipase does little or no work. But if this was a grease trap ...!

The re-activated bacteria have a short latent period to get acclimated to the new environment, giving the starter enzymes time to produce many small fragments of food that can be immediately consumed by the bacteria. Under these favorable conditions, the bacteria soon begin to multiply, doubling their number every 20 to 30 minutes. This population explosion results in a tremendous number of bacteria living in the waste within a short time. The huge number of bacteria are able to digest large volumes of waste quickly. Remember that these bacteria were specifically chosen for their ability to digest waste quickly and efficiently, without odors or gas!

As digestion continues, the bucket of waste will change in appearance. The solid particles are liquefied, and the whole bucket will turn to a black liquid. As the process moves toward completion, the bucket would eventually clear up as all the organic matter is digested, with only a small amount of indigestible (inorganic) matter remaining. In real life, the process is a bit more complicated.

We hope that this guide sheds a little more light on how our bacteria go to work to keep your organic waste production under control.

