



EM Applications for Septic Systems

EM stands for Effective Microorganisms™, an all-natural blend of beneficial microorganisms. EM-1® Microbial Inoculant is made through a natural process of fermentation. Nothing has been genetically altered or chemically engineered. EM is safe and easy to use and is listed as a fully organic product by OMRI. EM is now being used in over 120 countries, and is resolving a broad variety of environmental problems.

The primary ingredients of EM are comprised of three main genera: phototropic bacteria, lactic acid bacteria, and yeast. These naturally-occurring ingredients work synergistically together to secrete beneficial substances such as vitamins, hormones, enzymes, organic acids, bioactive minerals, and various antioxidants when in contact with organic matter.

The key ingredient in EM that distinguishes it from other microbial blends is the phototropic strain of bacteria called *rhodopsuedomonas palustris*—an ancient group of beneficial microbes known to break down and digest toxic substances. This unique ingredient has been shown to produce a broad variety of antioxidant byproducts including: *inositol, ubiquinone, saponin, low-molecular polysaccharides, polyphenols, and chelates of minerals*. These antioxidant alliances act to promote natural defense systems that suppress the growth of detrimental bacteria.

EM was discovered by the horticultural biologist Dr. Teruo Higa. It was first marketed in Japan in 1982 for organic agriculture. EM is now being produced in 54 countries and is being used for a broad variety of environmental-quality applications.

EM for Natural Septic Treatment

EM-1® Microbial Inoculant has the unique ability to shift the conventional onsite wastewater operation from a putrefactive breakdown system to a regenerative bioremediation system. This helps to reduce the overall loading demand on septic system. EM helps to offset imbalances caused by overloading, harsh detergents and cleaners, antibiotic soaps, drain cleaners and a wide variety of other materials that make their way into the onsite septic system. But for best results, it is recommended to use all-natural cleaning and health products that will minimize the impact on the microbial remediation process taking place in the septic system. Monthly applications of Activated EM (AEM) help to build these regenerative microbial alliances that promote:

- A more complete breakdown of organic matter, thus lowering the BOD and density of sludge.
- Reduction of noxious odors and corrosion caused by hydrogen-sulfide (H²S) offgassing.
- A natural suppression of putrefactive and pathogenic bacteria.
- Reduction in the amount of suspended solids that pass into the leach field.
- Enhances the stabilization of complex proteins and antioxidants.
- Overall reduction in sludge buildup and frequency of septic pump-outs.

Method of Application

For the conventional 1000 gallon septic system, it is recommended that you begin with a large dosage of 1 gallon of Activated EM to serve as a “shock treatment”. Following this, the dosage rate would be one quart per month of AEM, or 2 cups per week.

It is recommended to apply the AEM mixed in warm water (90°-110°F) at a ratio of 1 part AEM to 5 parts water to various drain lines throughout the house. It is best to apply it in the evening before going to bed, so that the AEM can set overnight in the pipes and help to clean those drainage lines of grease and sludge buildup.

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