

Emerald Earth

Nature Does It Best

Authorized EM® Retailer*

Discovering the Magic of EM®

"EM® is a collection of microorganisms that do the work of revival... It has been shown to be perfectly safe for people and the environment. We can say that EM® is another indication of hado technology." –Dr. Masaru Emoto

An Earth Saving Revolution



Welcome to Emerald Earth, the "First EM® Retail Shop in America". Emerald Earth seeks to provide the highest quality of microbial products from all corners of the world – and we are proud to offer the largest selection of EM®-based natural health and environmental quality products at the lowest prices in the US. In our view, these beneficial microbial alliances are instrumental to offering sensible solutions for creating a clean and healthy planet.

EM® stands for Effective Microorganisms™, an all-natural blend of beneficial microorganisms that do the work of cleansing and revitalization. This is a remarkable discovery, which allows *nature's little recyclers* to restore the health and balance of the ecosystems, without the negative side-effects so often found in synthetic chemicals and suppressive technologies. EM-1® Microbial

Inoculant is safe and easy to use and is listed with the Organic Materials Review Institute (OMRI). The secret to EM®'s widespread success is its capacity to naturally remove harmful toxins and restore regenerative balance to its environment—whether it be on the soil, plant, animal, or human levels.

EM Technology® is now being used in over 120 countries, and is being hailed as an "earth-saving revolution" that is resolving a broad variety of environmental problems. EM•1® was recently used by all countries impacted by the Tsunami Wave Disaster in curbing the spread of pathogen diseases. The World Health Organization's prediction that more deaths would occur from the spread of these diseases than from the disaster itself never materialized. EM•1® was also recently used in cleaning up the polluted inland seas of China and Japan, where marine life and vegetation have significantly returned. EM Technology® is quietly making history around the world.

Restoring Nature's Balance

There is nothing new about the technology of Effective Microorganisms™. Nature has been using this technology for billions of years. The breakthrough was in creating a symbiotic alliance of beneficial microorganisms that create a chain-reaction of healthy byproducts. The ingredients of EM•1® 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 – which, in turn, help to restore the natural balance and diversification of the micro-ecosystems.

Historic Breakthrough. Effective Microorganisms™ was discovered by the horticultural biologist, Dr. Teruo Higa. It was first marketed in Japan in 1982 for organic agriculture. EM•1® is now being produced in 54 countries and is being used for a broad variety of environmental-quality applications such as:

- Decontamination services for natural and man-made disaster sites.
- Bioremediation of toxic and hazardous wastesites and spills.
- Production of organic fertilizers and silage from recycled green wastes.
- Natural purification and treatment of wastewaters/sludge.
- Maintenance and recycling of quality drinking water.
- Production of renewable and clean-burning biofuels.
- Improved livestock, poultry, and aquaculture health maintenance.
- Remediation of noxious, ozone-depleting gases and odor control.
- Highly-nutritious organic foods and natural health care products.



Many of San Francisco's Golf Courses began using EM in 2001

The Return of the Phoenix. What distinguishes EM•1® from other microbial blends is the unique phototropic strain called "*rhodospseudomonas palustris*". This anaerobic form of bacteria, dating back over 4 billion years, primarily lives in volcanic magma and can survive in extremely high temperatures. When the planet was forming as one huge toxic stew, these microbes could travel through the magma as it spread over the planet's surface. Here they would feast on the toxins. Once these organisms succeeded in decontaminating most of the planet's surface, they could no longer survive in their own wastes and they re-submerged underground about 3 billion years ago. Dr. Higa's breakthrough was revolutionary, as it allowed these toxin-consuming bacteria to function above ground once again in a biodynamic and symbiotic alliance to create a chain reaction of healthy byproducts.

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“If I had 30 seconds to tell you just one secret to growing amazing tomato plants (or any plants,) it would be this. Get ‘EM®’, and use it in your soil.”
—Kacper Postawski, Author of *Organic Tomato Magic*

Lawn and Garden Care

Effective Microorganisms™ was originally formulated to promote soil regeneration and microbial diversification for organic agriculture. The results have far exceeded anyone’s expectations! Based on research and development activities in many countries, EM® is increasingly viewed as a means of providing solutions to many problems of: *food production, depletion of natural resources, environmental pollution, food safety and nutrition, and human and animal health.* When added to the soil, EM•1® Microbial Inoculant™ acts as a natural detoxifying agent and promotes the multiplication of beneficial microbial alliances.

- Serves as a catalyst to naturally detoxify and enrich the topsoils—which promotes disease-suppressive soils, improved plant shelf-life, and overall nutritional quality.
- By promoting beneficial microbial alliances in the soil, the plants will progressively become more resistant to pests and disease.
- Promotes photosynthesis and strengthens the vigor of plants, thus increasing their ability to withstand drought, floods, and temperature extremes.
- Naturally remediates harmful substances—such as heavy metals, salinization, and agrochemicals—while restoring the microbial diversity of the topsoils.
- Increases soil temperature through microbial activity, which enables greater cultivation in colder regions.
- Improves soil aggregation, permeability, and water holding capacity—thus reducing overall water usage.
- Helps prevent the erosion of fertile topsoils—and can even convert desert and sodic environments into arable land.
- Detoxifies, conserves, and improves the overall quality of water and runoff tributaries.



Applying Liquid Microbes with Hose-End Sprayer

Learn How to Activate EM®. You can take one liter of EM•1® and turn it into 5 gallons of Activated EM®! When you purchase a liter of EM•1® Microbial Inoculant™, this is a first generation of the EM® Mother Culture—hence the term EM•1®. Because these are living organisms, they can reproduce into a second generation of the EM® culture. This second generation is called “Activated EM®” or simply AEM. However, this second generation of AEM no longer has a shelf life of six months—but has a shelf life of about 4 to 6 weeks. So be sure to activate only enough to meet your needs for that timeframe. Go to our website, www.emearth.com, to learn more.

Gardening. It is recommended that EM® be applied to the soil on a regular basis with an adjustable hose-end sprayer in combination with organic fertilizers and vitamin supplements. For general garden applications to flowers, herbs, and vegetables, apply Activated EM® (AEM) at a ratio of 1:750 or one teaspoon per gallon. For foliar treatment of trees and shrubs, apply AEM at a ratio of 1:250 or one tablespoon per gallon. For turf and lawn care, a ratio of 1:100 is recommended or 2½ tablespoons per gallon. These applications should be done once a week throughout the growing season.

RATIO	GARDEN AREA	PER GALLON	FREQUENCY
1:750	Flowers and Vegetables	1 teaspoon	Once a Week
1:250	Trees and Shrubs	1 tablespoon	Once a Week
1:100	Turf and Lawn Care	2½ tablespoons	Once a Week
1:100	Compost Recycling Piles	2½ tablespoons	Each New Addition

Conventional Composting. EM•1® helps to speed up the natural composting process—without many of the negative side-effects of foul odors and pests. Over two-thirds of our landfills are comprised of organic “green wastes”. We can help to reduce this environmental burden by recycling our lawn clippings, leaves, prunings, and other backyard wastes and composting them into valuable soil amendments. Each time you add new clippings onto the compost pile, spray it with Activated EM® (AEM) diluted to a ratio of 1:100. Also, when you occasionally turn the compost pile, spray AEM onto the inside. This helps to minimize the putrefaction process and speeds up the microbial breakdown of the compost pile. The end result is richer, higher quality compost that your plants will love!

“Thanks to apartment-friendly composting bins (like the Happy Farmer Kitchen Composter Kit—now called ALL SEASONS INDOOR COMPOSTER™ kit last night's dinner can easily be turned into something good for Mother Earth.” —Oprah Magazine’s 100 Things Getting Better

Anaerobic Composting. The kitchen offers a unique location to turn our food wastes into wonderful compost! This is done by fermenting kitchen wastes in an airtight plastic bucket or container. Under normal circumstances, food wastes decompose in a *putrefaction process*—that is readily detected by the nose! But when treated with EM•1®, food wastes are recycled through a *fermentation process*. This allows for the microbial interactions to create a regenerative breakdown that actually creates a pleasant aroma.

1. After each meal, chop your food scraps into small pieces. This allows greater surface area for the microbes to feast on. You can use dairy products, coffee grounds, and meat, as well as all fruits and vegetables. Add food scraps in layers up to 3 inches. Dust each layer with a healthy handful of bokashi, which is an all-natural starter for fermenting your food wastes. Use a wooden spoon or spatula to mix in the bokashi. Once mixed, add a little more bokashi on top.
2. Minimize exposure to air by adding a paper plate and/or a plastic bag with sand inside over the top of the food wastes. Leave in place until next use. Close the lid tightly. Repeat steps each time food is added until the All Seasons Composter is full.
3. Drain the “compost tea” every 2 or 3 days, or as needed. Dilute the tea at a ratio of one tablespoon per gallon of water. Use immediately for your garden plants.
4. When the bucket is full, dig a hole in the garden, and bury the compost about 12 inches deep. The compost will break down in approximately two weeks to produce the highest quality soil amendment teaming with nutrients and beneficial microbes.



EM® Ceramics for Hexagonal Water

For billions of years, water has been hexagonal – an organized matrix of small clustered water molecules, often referred to as "structured microwater". When water is exposed to pollution, however, the molecules hold onto this new traumatic memory and cluster into what is commonly described as "nonstructured macrowater" – conglomerations of water molecules that have no symmetric shape or form. Even after water has been filtered and purified, it retains this negative memory imprint and continues to macrocluster.

In 1993, Dr. Higa discovered that the energetic information contained within the phototropic bacteria of EM® could be transferred to ceramics. This led to the idea that when mixed into the clay ingredients, then the ultrasonic benefits of the phototropics could indefinitely be incorporated into the ceramics. EM® Ceramics have the unique ability to remove this pollution imprint from the memory of the water molecules through what is referred to as "far infrared signals". By removing the pollution memory from the purified water, the molecules restructure back to the hexagonal microclusters.

The regular consumption of the liquid crystals known as hexagonally-structured water has been recognized as one of the most important keys to improved health. It has been associated with: *rapid hydration, which in turn promotes heightened immune function, the efficient removal of toxins, better nutrient absorption, longevity, weight loss, and overall greater health.*



nonstructured macrowater



structured microwater

"I use the EM® Ringstone in my glass of water, and I give a regular glass of filtered water to my cat. Needless to say, my cat started fighting me for my glass of water, which became an ongoing battle. So I bought a ringstone for her, and I'm happy to say that kitty is no longer demanding my water." —Gail C.

EM® Ceramic Ringstones come in two sizes—small and large. Both are made with high quality ceramics. The ringstones DO NOT PURIFY THE WATER—they energize and microstructure the water molecules. The cleaner the water, the better they energize. The best purified waters are distilled, deionized, and reverse osmosis – in that order. Purified mineralized or spring waters also work well. Tap water with chlorine counteracts the microstructuring. So if you use chlorinated tap water, be sure to let the water set for a couple of hours – so that the chlorine can fully offgas.

Instructions: The small ringstone is designed to work in water containers up to three gallons in size. For containers up to one gallon in size, simply add the ringstone into the container at room temperature and wait 30 minutes for the water to microstructure. It also helps to stir the water.

For containers one gallon in size or larger, add the small ringstone and let the water activate overnight. When the water in the container is emptied down to the bottom inch or so, add the new water to the remaining water. The original water will act as a concentrate and will enliven the molecules of the new water within 30 minutes. The larger ringstone works on the same premise for containers three to ten gallons in size—as well as for bath tubs. The ringstones will always work and never need replacing.

Keep the ringstone in the container at room temperature at all times—as the phototropics prefer the warmer temperatures. Once the water is energized, then that water is stabilized and can be refrigerated in a separate container. Use the energized water for drinking, use it for cooking, for watering your house plants, or for your pet's drinking water. Everything in nature is designed for hexagonal water!

EM® Ceramic Jewelry. As an added health benefit, EM® Ceramics are available in beautifully designed bracelets and necklaces. In that the circulatory system and the brain are over 90% water, it is important to keep these molecules microstructured as well. Enjoy the additional health benefits of hexagonal water, including improved circulation, joint lubrication, lower stress on the body, improved sleeping and relaxation, and greater mental clarity. The EM® Ceramic Jewelry works great for pets too!

Various EM® Ceramics. EM® Ceramics come in a broad variety of shapes and sizes—including powders. There are essentially two types of EM Ceramics. There are those types which are fired at very high temperatures to produce dense ceramics for microstructuring water. Then there are those types which are fired at lower temperatures to produce porous ceramics for absorbing harmful chemicals and substances.

Water Quality Treatments

There are a variety of factors which contribute to maintaining clean and healthy water quality systems. Regular applications of EM•1® will help to keep enough beneficial microbes in the system to keep the nutrient levels low enough to reduce the growth of algae and the buildup of other harmful contaminants.

Water Gardens and Ponds. Healthy water gardens and small ponds offer a valued aesthetic attraction to the home or business. These ponds, however, develop their own eco-systems that can easily go out of balance. If the water is left stagnant for too long, mosquitoes will start to inhabit the area, algae begins to form in the water, and odors can start to occur.

Adding a water-circulating device will help to cut down on these problems. Depending on the water quality, however, algae and calcium deposits may still form.

The weekly application ratio is 1:40,000, which is 1 part Activated EM® (AEM) for every 40,000 parts of water. For example, if you have a 40,000 gallon pond, then add one gallon of Activated EM® (AEM) once a week. The water temperature should be 5°F above freezing. EM® Bokashi Balls and EM® Ceramic Pipes are also recommended. Allow several weeks for the microbes to do their work. Where there are heavy amounts of algae, some sludge from the bottom will likely surface creating an unsightly scum. Leave it and let nature do its bioremediation – as it will disappear shortly.

Hot Tubs and Swimming Pools. Many of us would gladly use hot tubs and swimming pools more frequently, if it weren't for the harsh chemicals that can be so irritating to the skin and eyes. Conventional treatments attempt to use toxic antibacterial approaches for creating a sterile environment in the water.

As a low-chemical approach for hot tubs and swimming pools, it is recommended to use Activated EM® (AEM) in combination with the K-Type Ceramic Beads (2-3 bags) – placed in the skimmer box. The EM® Ceramics contribute to the revitalization of the water molecules. Keep reducing the chemical additives that you normally use, until you reach an optimum level of water treatment quality.

Under normal circumstances, the application ratio for swimming pools is 1 part AEM to 10,000 parts water. For hot tubs, the application ratio is 1:2500. Application rates depend on frequency of use. If the swimming pool or hot tub is used on a daily basis, then the AEM application ratio should be once every week. If they are used moderately, then apply AEM every two weeks. If used infrequently, then apply AEM once every month.

Aquariums and Fish Ponds. Water quality management is crucial for keeping aquariums healthy and clean. In that fish droppings and residual foods also pollute the water, it is important to mix the AEM in the water at a ratio of 1:1000 every month to help remediate the water. This would be ¾ of a teaspoon per gallon of water or 1 ounce for a ten gallon fish tank. It is recommended that this dosage be applied in weekly increments, rather than all at once—so divide the monthly dosage by 4.

When changing the water, it may be best to change approximately half of the water on a regular basis. If your tap water is chlorinated, let it set overnight in a large container in order to allow the chlorine to offgas – and be sure to include the K-Type Ceramics, which promote the microstructuring of the water. Before adding the replacement water, be sure to include the AEM at the 1:1000 ratio.

Additionally, N-Type Ceramics (one bag for every 10 gallons) are effective in adsorbing nitrogen, which produces algae growth. S-Type Pipes help to remove chlorine. The K-Type Pipes and the Yugo Ceramic Balls work well for microstructuring the aquarium water.

Natural Septic Treatment. EM® 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 the septic system. For best results, it is recommended to use all-natural cleaning and health products that 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.

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

Three Essentials for Optimum Health

“Considerable laboratory evidence from chemical, cell culture, and animal studies indicates that antioxidants may slow or possibly reverse the development of cancer.” —The National Cancer Institute

What are the best ways of addressing a world this is constantly being bombarded with toxic chemicals, so that our body's own natural immune systems have a fighting chance to cleanse and purify themselves? The solutions may be far more simple and inexpensive than we realize. Here are three simple ways of building a strong natural defense system—using the advances gained through the application of beneficial microbial health products.

Living Structured Water. Virtually all organisms living on the planet are primarily comprised of water. We are water beings, living on a water planet. It therefore stands to reason that the quality of water that we drink makes a significant difference in our overall health and wellbeing.

Recent scientific studies are verifying that water can hold significant levels of energetic information. But when water is distressed by pollutants and filtering, then water is highly deadened of these vital energies. Further studies indicate that the molecular structure of these deadened waters actually macroclusters, which causes the water to become thicker and denser—thus causing greater levels of dehydration, no matter how much water we drink.

The solution is quite simple. Once our drinking water has been cleaned and purified, an additional step of revitalization is needed. **EM® Ceramics**, when added to drinking water, emit regenerative energies that erase the traumatic memory imprints of water and restore the molecular structure back to its natural crystalline microclusters.

Clinical studies indicate that **the consistent consumption of quality structured water is the most important component for optimum health**, as it promotes: *rapid hydration, heightened immune function, the efficient removal of toxins, better nutrient absorption, improved oxygenation to the bloodstream, enhanced muscle tone, enzyme activation, cholesterol reduction, fewer headaches, decreased water retention, weight loss, improved longevity, and overall greater health.*

Cleansing Probiotics. Bacteria were the first organisms on the planet, and it is through these microscopic beings that the building-blocks were formed for the gradual emergence of more complex organisms—such as plants, animals, and humans. Without these interactive micro-ecosystems, all other life forms would cease to exist.

Building healthy, regenerative alliances of beneficial bacteria are what strengthen and keep our immune systems vital. **Pro-EM1®** is the first probiotic health product on the market to contain *phototropic bacteria*, a group of beneficial microorganisms known to break down and remove toxic substances on the cellular level. This “cleansing probiotic” is specially formulated for human consumption—made with the EM-1® ingredients, honey, and aloe vera gels to enhance the taste and strengthen its natural cleansing benefits.

Fortifying Antioxidants. Antioxidants are substances or nutrients in our foods which can prevent or slow oxidative damage to our body. Antioxidants are present in foods as vitamins, minerals, carotenoids, and polyphenols, among others.

When our cells use oxygen, they naturally produce free radicals as byproducts, which can cause cellular damage. Antioxidants, by their very nature, are capable of stabilizing free radicals before they can react and cause harm. Because oxidation is a naturally occurring process within the body, a balance with antioxidants must exist to maintain optimum health.

Antioxidants have been shown to enhance immune defenses and therefore lower the risk of cancer and other degenerative diseases. Since the body's ability to eliminate free radicals decreases with age, it is necessary to increasingly replenish the body with antioxidants to strengthen and maintain these natural defense systems as we mature.

The health supplement known as **Xtra Immunity®** is made from antioxidant-rich rice bran, papaya, and sea kelp ingredients. This product is made through a unique fermentation process using beneficial, cleansing microorganisms—with an end-product that is **extremely high in antioxidants**. The result is a golden colored extract, containing an exceptional composite of vitamins, minerals, enzymes, amino acids and phytonutrients designed to synergistically maximize the overall health and immune power of the body.

Healthy Pets and Animal Care

“Our cat is fourteen and is never playful. We started giving her EM® in her food and water... and now she thinks she's a kitten again. We've never seen her so playful in years!” —Lynn S.

Our Favorite Pets. For thousands of years, dogs and cats have been our favorite pets. No other animals have been so close to our lives and hearts. Health care applies to our favorite friends, as well as for humans. Keeping them clean, well fed, protected from the harsh elements, and giving them plenty of tender-loving-care are essential to their health and wellness.

Promoting a clean environment—inside and out—also helps to keep our pets healthy. Studies are confirming that keeping strong and beneficial microbial alliances are what promote resilient and healthy immune systems for the soil, water, plants, animals and humans. EM•1® acts as an important catalyst for building these strong probiotic alliances.

Where to Start. For your pets health and wellness, start with hexagonal water. Use the EM® Ceramics to micro-structure your water for the entire household—for your own drinking water, for your pets, your plants, and for cooking. Your pets will especially notice the difference in the water—and they will often demand it!

Put about 10% of ProEM•1® and 90% structured water in a spray bottle (1:10 ratio). Use the spray bottle to mist your pet's fur, to mist your plants, cleanse the air, and spray on your own food as well. And be sure to bathe your dogs with about a quarter cup of EM® added to their final rinse water. Watch how clean and fluffy the fur gets. Also, sprinkle EM® Bokashi in the cat litter box to reduce odors. Your pets will thank you for using EM®!

The Story of Cosmos

My dog Cosmos, a Black English Labrador, had severe skin allergies for eight years. It started when she was a puppy. There was lots of itching with red spots on her skin, as if she had the measles. She would lick and bite herself until she had raw spots with no fur, especially on her belly, tail, and legs. She was diagnosed with allergies to various food items and especially to dust mites. The food can be changed, but what can you do about dust mites? They are everywhere!

We tried a de-sensitizing shot at the vet. The lowest dose made her head swell up and she started scratching her face frantically. I was afraid she would scratch herself bloody. For the first eight years of her life, we would go from vet to vet and only get a temporary break from the itching by giving her cortisone shots and steroid pills. I hated doing this, since she would become lethargic, hungry, and thirsty all the time. I knew that it was not healthy for her. But at least she wouldn't bite herself to pieces for a short while. We tried everything from natural to controversial products – and nothing worked!

Cosmos had just finished a dose of steroid pills. Unfortunately, this time it didn't give her any relief. It only made her tired. So two weeks later, I decided to try EM®. I started by bathing her and adding two capfuls of EM® to a half gallon of water for a final rinse. I poured it all over her body - from the neck down. I applied it everywhere possible! Cosmos came out of the bathtub and laid on some towels that I placed on her pillow. She licked the EM® off her fur and then fell asleep. **NOT ONE MORE BITE!** This seemed to be working, so I decided to add EM® to her food and water as well. I also sprayed it on her fur when I brushed her. She started looking like a different dog—**all shiny, happy, playful, and ITCH FREE!**

When I decided to repeat the EM® rinse a few weeks later, Cosmos pipped up on my preparations. She responded by eagerly waiting for me in the bathtub with her favorite toy in her mouth, a yellow duck, and a wagging tail. I could have cried. Here was my dog - voluntarily coming into the bathtub! In the past, I had to drag her on a leash into the bathtub with her shivering and shaking throughout the whole ordeal. Now she was coming into the bathtub by herself because she knew how much it helped her!

So this is the story of Cosmos. My hope is that EM® can help your animal friend the way it helped my Cosmos! - **Sabine S.**



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