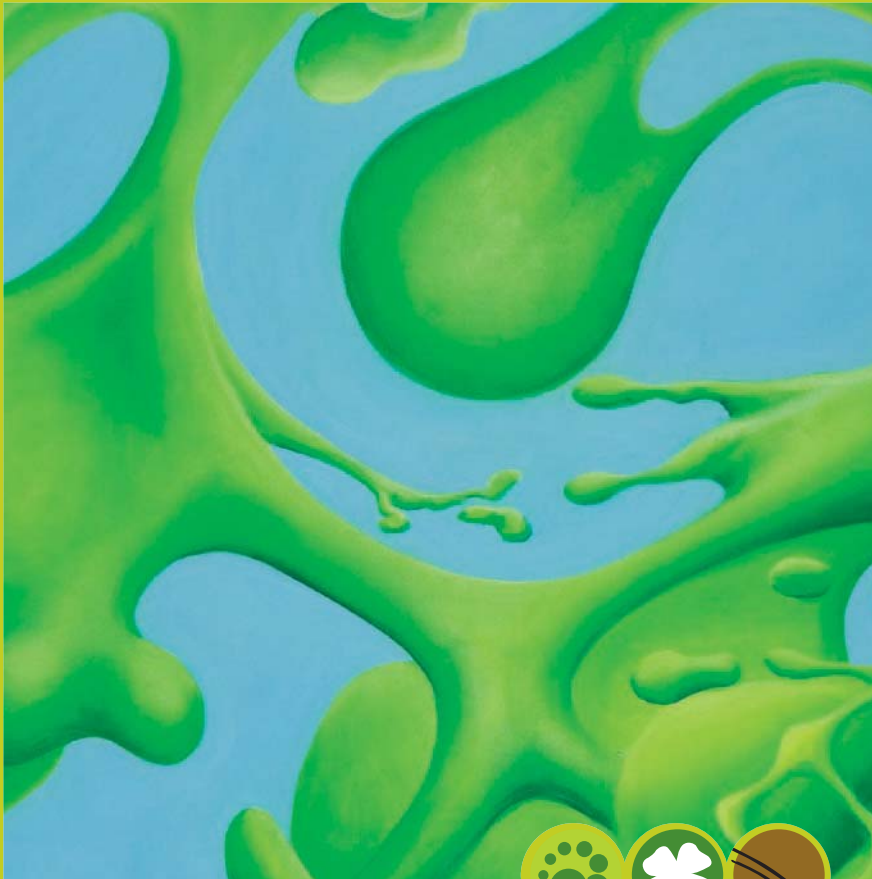


THE ART OF EM IN YOUR HOME AND GARDEN

Introduce EM Effective Micro-organisms into *your* environment ▶▶▶



EM : NATURALLY ACTIVE |

Create a fresh clean house by using EM Effective Micro-organisms, a beautiful garden, healthy plants and vegetables, clean energised water and promote the health of your pets. Compost your own everyday kitchen waste using EM bokashi® and be part of a nationwide recycling solution to alleviate land-fill. It sounds too good to be true but EM "Naturally Active" works!

EM Naturally Active is a non-chemical solution for use in the home and garden. This concept consists of a range of products for use in and around the home, including the garden, for pets, aquariums, swimming pools, making compost from kitchen waste and household cleaning. It boosts the immune system of soil, plants, water, pets and yourself.

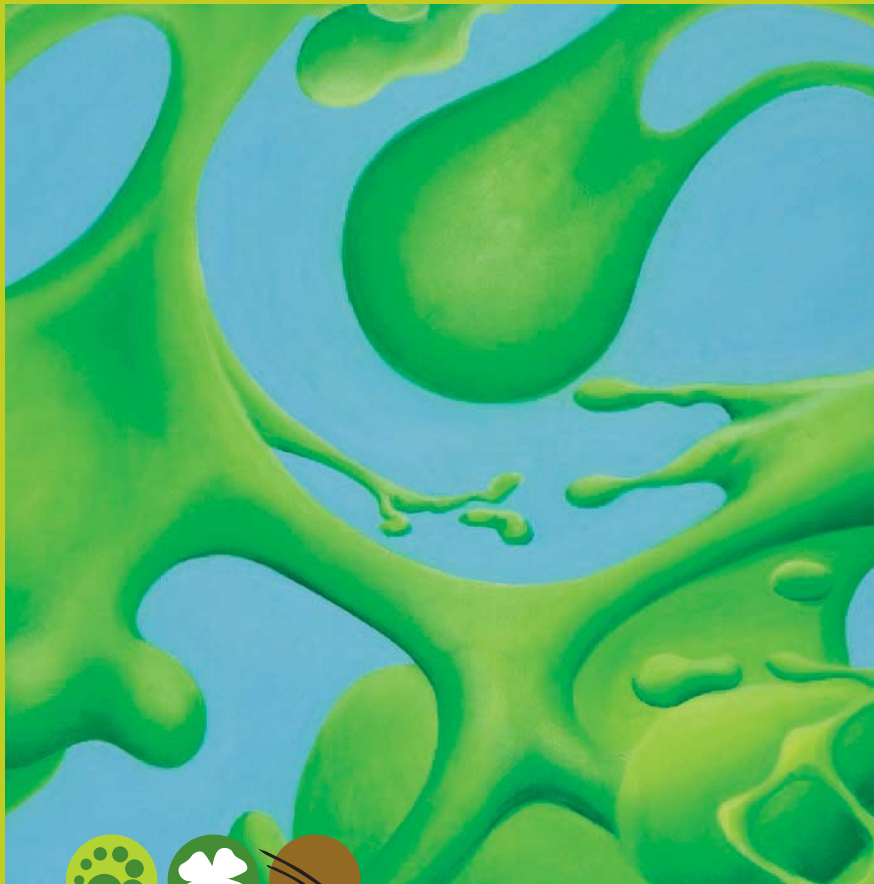


EM : NATURALLY ACTIVE |

This brochure is an introduction to the concept of EM Naturally Active. If you have any questions or comments after reading this brochure please do not hesitate to contact us.

On our website at www.em-naturally-active.com you can subscribe to our newsletter and find more information regarding EM Technology.

A list of retail outlets will give details of where you can buy these products.



EM : NATURALLY ACTIVE |



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EM

This mixture increases the natural resistance of soil, plants, water, humans, and animals

4

A+

The A+ is the nutrient that activates the micro-organisms and is derived from sugar-cane molasses



EM AND A⁺

This solution of Effective Micro-organisms is made from a unique mixture of micro-organisms that freely occur in nature.

The A⁺ is the nutrient that activates the micro-organisms and is derived from organic sugar-cane molasses and is a residual thick syrup obtained from sugar production.

EM

EM is the abbreviation for Effective Micro-organisms that are microscopical small living organisms.

EM is a combination of useful regenerated micro-organisms that exist freely in nature and are not manipulated in any way. This mixture increases the natural resistance of soil, plants, water, humans, and animals.

EM has a shelf life of 12 months and is available in 250ml and 1 litre bottle.

EM considerably improves the quality and fertility of soil as well as the growth and quality of crops. The possibilities for using EM are numerable and include the following:

- In the home and for use in daily life for everyone.
- In recycling kitchen waste and turning it into valuable compost material.
- In ornamental gardens, for the maintenance of forests, municipal parks, and gardens.
- Solving all kinds of environmental problems such as water, air, and soil pollution.
- In agriculture and horticulture, fruit and flower cultivation.
- In animal husbandry and for all kinds of pets.
- In fisheries, aquariums and swimming pools.
- In personal bodily hygiene and for the prevention and treatment of health problems.



Composition of EM

EM consists of many different kinds of effective, disease-suppressing micro-organisms. Each of these effective micro-organisms has a specific task. In addition, the micro-organisms enhance each other's working. This means there is synergy! The micro-organisms are collected from nature, are not modified or manipulated in any way and are cultured according to a specific method.

EM consists of the following five families of bacteria

- **Lactic acid bacteria:** these bacteria are differentiated by their powerful sterilising properties. They suppress harmful micro-organisms and encourage the quick breakdown of organic substances. In addition, they can suppress the reproduction of Fusarium, a harmful fungus.
- **Yeasts:** these manufacture anti-microbial and useful substances for plant growth. Their metabolites are food for other bacteria such as the lactic acid and actinomycete groups.
- **Actinomycetes:** these suppress harmful fungi and bacteria and can live together with photosynthetic bacteria.
- **Photosynthetic bacteria:** these bacteria play the leading role in the activity of EM. They synthesize useful substances from secretions of roots, organic matter and/or harmful gases (e.g. hydrogen sulphide) by using sunlight and the heat of soil as sources of energy. They contribute to a better use of sunlight or, in other words, better photosynthesis. The metabolites developed by these micro-organisms are directly absorbed into plants. In addition, these bacteria increase the number of other bacteria and act as nitrogen binders.
- **Fungi** that bring about fermentation¹: these break down the organic substances quickly. This suppresses smell and prevents damage that could be caused by harmful insects.

¹ In the West, many effective micro-organisms are used traditionally in raw products such as: flour, milk, fruit, vegetables, and cereals. The process of fermentation produces other food products with new valuable properties such as: sourdough bread, cheese, yoghurt, wine, cider, sauerkraut, alcohol and wheat molasses.

Value and domination principle of EM

What makes EM unusual is the combination of aerobic and anaerobic micro-organisms. The meaning of aerobic is living with oxygen and anaerobic means living without oxygen. The scientific world has always accepted that these two groups could not possibly live side-by-side because the conditions for survival are completely opposite. Both groups, however, naturally occur in the soil.

Before the discovery of EM, the natural assumption was that aerobic micro-organisms were the “goodies” and anaerobic the “baddies”. This, however, is a misconception. Both groups contain elements of both causatives and suppressors of diseases. Effective micro-organisms control the disease causatives.

The aerobic and anaerobic micro-organisms both have in common the ability to change substances into antioxidants. These substances hinder the process of oxidation such as occurs in rust and rotting and are therefore beneficial for improving the health of soil, plants, humans and animals.

Different groups exist in the world of micro-organisms including those of a small group of dominant “effective” micro-organisms **+** and a small group of dominant “harmful” micro-organisms **-**. The largest group is the group of followers that can go either way (see Figure 1).

The two groups of effective and harmful organisms struggle against each other to be the strongest. The millions

of other micro-organisms wait on the sidelines to see which group will win. They then adjust themselves in order to follow or imitate the winning group.

Harmful micro-organisms are currently dominating as much as ninety percent of culture grounds. This is due to many reasons including monocultures, too little crop rotation, an abnormally high use of artificial fertilizers, chemicals, bad or faulty tillage, the use of too heavy materials and exposed unprotected soils.

Harmful substances coming from industry traffic or from households also account for the growth in the number of harmful micro-organisms. Together, all this is unfavourable for the condition of soil, the quality of food and the health of humans and animals.

If the effective micro-organisms are allowed to have the upper hand, they will begin to activate their accumulative and disease-suppressing properties in all kinds of areas such as:

- soil, air, water
- plants, trees
- agricultural and horticultural crops (meaning safe food)
- health of humans and animals

The correct use of EM in agriculture, horticulture, and homes and gardens will encourage the environment to increase the number of effective micro-organisms!

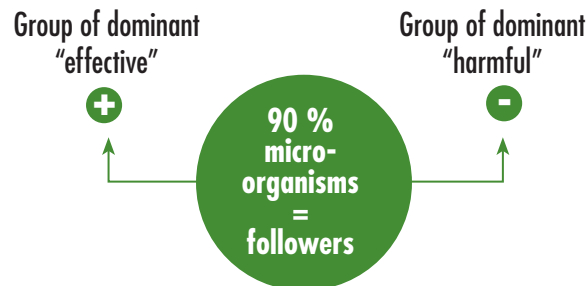


Figure 1: The domination principle.

Permanent activity of EM

- The environmental techniques that are used today frequently look at simply alleviating the symptoms. A better approach is to look at and treat the causes of the symptoms. In our environment, there are millions of living micro-organisms with widely divergent activities. The aim is to stimulate and improve the activities of the effective micro-organisms so that our environment can recover.
- The recovery of nature's balance is made possible by correctly utilising the natural processes. This means that more diverse soil microflora will exist due to a more varied cultivation. By adding various sorts of organic material, a more extensive variation will occur in the micro-organisms. The repeated combination of various crop remnants, animal manure, and green manure will lead to a much more intensive microbial life in the soil than when only one sort of organic substance is used. Each organic substance has its own specific microflora that can ensure that the inoculated micro-organisms of EM increase more quickly.
- The full power of the effective EM micro-organisms is only achieved if the substance is used correctly. In addition, the nature and condition of the environment

plays an important role in how effective the EM is. During the first year of use, it is especially important to use EM at the correct frequency and concentration. Once the new microflora have been established and stabilised, the beneficial effects will remain in the soil for some time.

Effectivity of EM

EM is a living substance and does not work in the same manner as antibiotics or a chemical substance. **EM increases the population of beneficial micro-organisms.** There is absolutely no way that the same effect can be achieved with chemical fertilizers and agricultural pesticides. Artificial fertilizers act on the salt and acid content, which can have a negative effect on the environment.

EM does not kill other living things. It is a probiotic and works by a mechanism that eliminates harmful insects and at the same time stimulates the increase and distribution of beneficial insects. The advantage of this process is that no new anomalous insect species with even higher increased resistance will develop.

The effect of EM is accumulative. Results are dependent on application and area of use. Depending on application, results may be noticeable after a few days (as in eliminating foul odour), or after several months (in the case of soil rejuvenation).



EM "GARDEN YOGURT" ACTIVATOR

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Optimum activation of Effective Micro-organisms



EM "GARDEN YOGURT" ACTIVATOR

This appliance is designed to achieve optimum activation of Effective Micro-organisms. The activator, that has a built in heating element, ensures a constant climate, resulting in the proper fermentation. The appliance can, for example be placed in the kitchen in order to regularly prepare a new batch of activated Effective Micro-organisms.

Preparation of EM-Active

Effective Micro-organisms (EM) should be activated before using in the home or garden by adding water and A⁺.

Dosage

Use the following calculation to make 1 Litre of EM Active.

50 ml. Molasses (A ⁺)	[Dissolve in luke-warm water]
50 ml. EM	[Effective Micro-organisms]
950 ml. Water	[950 ml. Mix the EM, A ⁺ and water]
= 1 litre EM-Active (A small amount may evaporate during the fermentation process)	



Method

1. Take a 1-litre measure
2. Half-fill the measure with lukewarm water
3. Dissolve 50 ml of A⁺ in the measure, stirring well.
4. Stir in 50 ml of EM solution.
5. Top up to 1 litre with lukewarm water.
6. Place the solution in the EM ACTIVATOR holder.
7. Close the lid of the inner container and put a little warm water in the space between the inner container and the outer unit.
8. Close the outside lid of the EM ACTIVATOR.
9. Switch on the activator.
10. The red lamp will show that the liquid will be fermented at the correct temperature.

11. Allow the solution to activate for 7 days and then transfer to a plastic bottle with cap.

EM Active is diluted accordingly before use. Dilution percentages are specified in this brochure according to specific use.

Practical tips on EM

- A good fermentation process leads to white yeast flakes on the surface of the EM-Active. These flakes are harmless and do not affect the product or its use.
- EM-Active has a shelf life of 4 weeks. The sweet and sour smell is a good indicator of perishability. If the EM has a rotten smell then it is no longer suitable for use.
- EM preparations are best kept in plastic bottles or containers. Do not keep in glass or metal containers (because of the formation of gas).
- It is important to use good quality water to make EM preparations. Rain water, spring water or filtered water is better than mains water that usually contains chlorine. The effectivity of EM is reduced by the presence of chlorine and other chemicals. Water that has been treated with EM ceramics (see page 15) is ideal.
- The bacteriological activity is reduced at temperatures lower than 6 °C. The micro-organisms are not dead, just lying dormant and are reactivated again when the temperature increases.
- Spraying, atomizing or scattering of EM preparations should be done with a diluted solution of 1:100. This is best carried out in the morning or evening or during wet weather.



BOKASHI-STARTER

10

Active ingredient for the fermentation of kitchen waste



BOKASHI-STARTER

A few words on Bokashi

The organic materials must be air tightly packed so that a fermentation process can take place whereby metabolic elements consisting of micro-organisms are produced. This means that Bokashi compost, just like sauerkraut has a higher nutritional value than organic substances that have not been fermented.

Bokashi is suitable for use as a soil improver and also as a nutrient in cattle fodder.

Bokashi is a source of nourishment for micro-organisms that grow in the soil. These establish themselves on a permanent basis in the soil, multiply and then dominate the harmful bacteria, viruses and fungi that are present.

Bokashi has been traditionally used in Japan in order to increase the level of microbial diversity in the soil and provide plants with bioactive foodstuffs such as growth hormones, antibiotics, vitamins and amino acids. This means that plants receive more essential energy and have an increased resistance to harmful bacteria and fungi.

The neutral micro-organisms existing in a pathogenic soil that would normally choose the dominant harmful micro-organisms will now follow the EM effective micro-organisms. This means that the soil that initially was a potential cause of disease is now turned into a disease suppressing soil.

Within the areas of agriculture and horticulture, there is no other sustainable method of getting as much as possible out of the soil as that described above.

Bokashi, also to be used as a unique organic soil conditioner

To rejuvenate soil a unique product has been developed incorporating EM Effective Micro-organisms which has a long-lasting effectivity in the soil. Bokashi is made by mixing organic bran with EM, A+ and water. After a careful drying process the properties of the activated micro-organisms remain stable for a longer period than in a solution of EM active.

Due to the longer lasting activity of the micro-organisms in Bokashi it is the preferred product to use for the fermentation of kitchen waste with the Bokashi kitchen waste compost bin. If EM Active is used to spray the kitchen waste a higher moisture content is obtained which is undesirable and may lead to an increase in odour.

By producing your own 'home-made' compost from your everyday kitchen waste and introducing this into your flower beds, vegetable plot, potting plants and gardens the soil will automatically be conditioned by the presence of the bokashi in the compost. The results will be seen in an improved structure of the soil, better root growth, disease resistant and an improved irrigation.



Fermenting your kitchen waste into rich organic compost



BOKASHI KITCHEN WASTE COMPOST BUCKET

The Bokashi compost bucket enables you to make compost at home from your kitchen waste. By sprinkling a handful Bokashi (bran fermented with EM) each time kitchen waste is added to the bucket, valuable organic material can be derived. The added micro-organisms from the Bokashi ensure a complete fermentation process. The Japanese word for good fermented organic material is Bokashi.

How to use the Bokashi kitchen bucket

Bokashi compost can be made from everyday kitchen waste that is cut up into small pieces and other sorts of organic materials such as straw, weeds, crop wastage, animal manure hay and mown grass. The fermentation process ensures that rotting and bad smells do not have a chance. Tapping-off the collected juices at the base of the bucket is recommended every 2 days.

Method

1. Cut up vegetable and green waste into small pieces.
2. Spread a small amount of Bokashi bran over the bottom of the kitchen-waste bucket.
3. Put a layer of kitchen waste into the bucket.
4. Spread a small amount of Bokashi over the kitchen waste.
5. Press the material down lightly (using a flat plate).
6. Close the lid of the bucket.
7. Repeat this process until the bucket is full.
8. Draw off the liquid that has accumulated in the base of the bucket. Dilute this liquid at a concentration of 1:100 parts water. This can then be used as plant feed for house and garden plants. Or alternatively poured undiluted down the sink to clear pipes.
9. Leave the contents of the bucket to ferment for at least 2 weeks.
10. The contents of the bucket are ready to use after this time and has a sweet and sour smell.
11. This bokashi compost can either be directly applied to the garden (dug into trenches) or collected in a covered compost heap in the garden.

12. A layer can also be added when potting plants. For more practical tips on Bokashi, please see our website: www.em-naturally-active.com

The value of Bokashi compost

In contrast to other kinds of compost, Bokashi compost retains its energy. Bokashi ensures the following:

- Faster availability of the nutritional elements that will be absorbed by the plant.
- Good environment for micro-organisms.
- Detoxifying effect on the soil.



The Effective Micro-organisms that are present in the Bokashi ensure the following

- The production of all kinds of important bio-active substances such as enzymes, natural antibiotics, growth hormones, vitamins and antioxidants.
- A shift towards an increasingly disease suppressive soil.
- An increased microbial diversity and activity.

EM ceramics are excellently suited to be used in water



EM CERAMICS

EM in CERAMICS

The Effective Micro-organisms can be fermented and baked in clay to form the products known as EM ceramics. The micro-organisms cannot escape from the clay. Their positive activity can therefore be retained for a long time. EM ceramics are therefore excellently suited to be used in water.

In baked clay the effective micro-organisms work at an optimal level. All of their properties are preserved. Moreover, if the organisms have enough food they will multiply. Once the process of multiplication has started, the newly-formed organisms will not be retained in the clay but are free to move where they want and perform their natural functions.

Various types and forms of EM ceramics

EM ceramics can be found in the following forms:



hollow cylinder



rings



powder



labels



35 mm pipes

EM ceramics in water

The EM ceramics are placed in water and have an immediate effect on the water through a process of resonance. The longer that the EM ceramics remain in the water, the better the results will be.

The recommended amount of EM ceramics depends on the amount of water. The EM ceramics must amount to one thousandth part of the water mass. Therefore, one cubic metre of water will require one kilogram of ceramics. Where larger and constant masses of water are concerned, such as ponds or swimming pools, the amount of ceramics can be reduced by ten to twenty percent.

Please look elsewhere in this brochure for practical tips on the application and dosage.



Use of EM ceramics in the home

- ◆ In bottles of water and containers of soft drinks: place a few EM pipes in the bottles or containers and leave them there.
- ◆ In the water jug, tea, or coffee pot.
- ◆ In the bath: just place a few pipes or a ceramic bath ring in the bath during bathing and re-use as necessary.
- ◆ In the toilet water tank; eliminating the necessity for other deodorizers and cleaners.
- ◆ In water taps and shower heads.
- ◆ In spray water for flowers and plants.
- ◆ In the washing machine: place either a few EM pipes inside a flannel bag or a bath ring in the washing machine with each wash. The EM ceramics ensure clean washing with only half the amount of detergent normally used.
- ◆ In the dishwasher: place a few pipes in a bag or just loose in the cutlery holder; this will allow you to reduce the amount of detergent and is good for the environment.



EM ceramic powder

EM ceramic powder can be used as a soil enhancer and can also be used for the fermentation of kitchen waste (Bokashi compost). It can also be added to building products such as paint, paste, cement and concrete.



Discover more about micro-organisms



BOOKS AND DVD'S

An Earth Saving Revolution volumes 1 and 2

by Professor Teruo Higa

These books are recommended to everyone who would like to know more about the principles and uses of EM. Everyone from gardeners to farmers and civil servants who are interested in preserving both their own health and the environment will gain from reading these books.

Volume 1

- Prologue: EM hope for the planet
- chapter 1: EM: The complete solution to all food problems
- chapter 2: Resolving environmental problems
- chapter 3: A way out of our medical malaise
- chapter 4: Creating a society based on coexistence and co-prosperity

Volume 2

- Prologue: EM initiating a new kind of industrial revolution
- chapter 1: Recycling organic kitchen waste; a major step to a cleaner environment
- chapter 2: The variable option in agriculture: Higher yields of better quality crops
- chapter 3: Transforming Japan's livestock industry
- chapter 4: EM's novel approach to water pollution
- chapter 5: The international face of EM Technology: its applications and enthusiastic welcome in other countries
- chapter 6: EM Ceramics: A revolutionary new technology

DVD Life in the soil

This film encourages people to think about how we are living!

The healthy soil is portrayed as an extremely complex living organism. The soil life is filmed in wonderful natural colours with the use of an electronic microscope.

The message coming from the film is clear: recognise the importance of sustainable agriculture and learn the nature of the soil life in order to completely understand it.

The soil is a vulnerable living organism. In order to ensure a sustained productivity and stability, the soil must be continually fed.

The film covers various aspects such as an introduction to soil science, soil microbiology, sustainable agriculture, agricultural ecology and environmentalogy.

The film is suitable for all levels of agricultural colleges and universities. The film is also appealing for the general public and of course the keen gardener.



Household uses of EM active for cleaning and health



IN THE HOME

Generally speaking, everyone wants to preserve the environment and the earth. According to Professor Teruo Higa, there are two effective methods that can achieve this:

- Arrange our daily life in such a way that we cause as little pollution as possible.
- Acknowledge the fact that we are all responsible for the waste that we make.

We will have to spend time and energy on processing our wastage. This will not solve all environmental problems in one go but all contributions are a step in the right direction. The more people who think and act in this way, the quicker and more beneficial changes will take place. The microscopical small beings in EM can help us to process our wastage. **Their wastage is good for humans! The cycle continually repeats itself, just as the cycle of inhalation and expiration of oxygen.**

Final results and advantages of using EM Naturally Active in the home:

- A fresh and clean environment in your home and garden.
- Efficient use of everyday kitchen waste transformed into nutrient rich organic compost.
- Nutrient-rich liquid fertilizer derived from fermenting your kitchen waste.



In particular, objects with smooth surfaces are suitable for cleaning with EM.

- Water used for cleaning immediately cleans itself and the process of purification continues.
- Household objects retain their shine or regain their shine and feel smooth to the touch.
- No foam formation which means less water necessary.
- There are no dirty cleaning cloths or damaging substances from detergents.

The seven points mentioned above are salutary for the environment, people's general health and financial saving.

Maintenance of floors, tiles, kitchen and bathroom furniture

EM can be used on a daily basis for cleaning purposes. In particular, objects with smooth surfaces are suitable for cleaning with EM, such as:

- Floors, freezers, fridges (inside and out).
- Cookers, kitchen cupboards (inside and out).
- Glass, windows, mirrors, painted surfaces.
- Cups, saucers, plates.
- Plastic buckets, basins, toys, garden furniture, floor mats.
- EM is also ideal for cleaning bicycles, cars and other metal objects.

Method: You can clean in exactly the same way as when you use traditional or biological cleaning substances. You will however, see the effect of EM immediately because it does not create any foam. Rinsing is therefore not always necessary.

Advice: 1 litre EM-Active to 10 - 100 litres water

Drains and waste pipes (septic tanks)

Unpleasant smells coming from drain pipes and drains can be removed by using EM-Active regularly. For this purpose, the EM solution should be put undiluted down the sink or toilet. This also prevents the clogging up of drains and waste pipes.

Advice: 1 litre EM-Active **concentrated** or diluted with 10 litres of water

Cleaning dirty objects

Objects or tools that are soiled with deposits or sediment should be soaked in concentrated EM-Active solution for a number of hours or days. Sometimes the sediment or deposit will loosen by itself whilst in other cases it will need to be rubbed off after the soaking process and further rinsed.



- Stubborn stains on floors, tiles, kitchen and bathroom furniture, should be treated by thoroughly soaking. Leave for a while then follow by scrubbing and rinsing.
- After a few hours the deposits left, for example, on coffee and tea cups will loosen and disappear. Thermos cans may also be treated in the same way.
- Grey deposits from mains water that are left on the inside of buckets or water containers will loosen. Rub gently and rinse off.
- Plastic objects can be easily cleaned after a few hours of soaking. The objects will be smooth and shiny once more unless the plastic has been unduly damaged.
- Place a few EM pipes in the kitchen water kettle. This will help to prevent the formation of 'fur' sediment. Then, fill the kettle with a solution of EM-Active and leave it to soak for a whole day. This will easily loosen the sediment.
- Copper and silver objects will become smoother and shinier following a soaking in a solution of EM-Active. Extremely soiled objects will probably also need rubbing or brushing and possibly also a second soaking in EM-Active solution.
- The bottom of pans that are soiled due to frequent and lengthy use can be cleaned by soaking in a solution of EM-Active. Sometimes a little cleaning help may be needed to get a better result.
- Mats that have acquired a nasty smell should be thoroughly soaked with a solution of EM-Active and then left to dry. Scrubbing with a brush and then rinsing is an alternative.

Advice: 1 litre EM-Active **concentrated** or diluted with 10 litres of water

Washing machines and dishwashers

One of the most frequently occurring problems of washing machines and dishwashers is calcification of the elements. EM ceramics make water softer and glaze on dishes shinier. You can reduce the amount of detergent you use in the washing machine and dishwasher if you use EM-Active or EM ceramics.



Choose the most suitable solution or combination:

Advice: 30-50 ml EM-Active **concentrated**

A few EM ceramic pipes in a closed flannel or bag with each wash

Or 1 EM ceramic bath ring stone with each wash

Or place an EM ceramic water improver inside the water supply pipe

Culture and maintenance of house plants

Add EM-Active solution, diluted 1 to 100 parts water, to the plant watering can or spray regularly, for example, once every 14 days. This will increase the natural resistance of the plants and the microbial diversity round their roots.



For soil and plant feed regularly add the liquid drawn from the Bokashi kitchen waste bucket to the watering can or sprayer diluted 1 to 100 parts water. This is a natural substance that provides essential and easily absorbed nutrients.

For planting up house plants, EM potting soil is ideal. This potting soil consists of pure natural raw materials in which Bokashi, Mest Best, clay minerals and seashell lime are incorporated. EM potting soil does not contain any artificial

fertilizer additives. It promotes a long-term and strong development of the roots and the plants.

Dosage: 1 x per 14 days water with EM-Active diluted 1:100 parts water
1 x per 14 days use liquid from Bokashi kitchen bucket at a dilution of 1:100 parts water
EM Agriton potting soil for planting house plants
Scatter or mix EM Ceramic powder in the soil of your house plants

In an aquarium

EM concentrate (not activated) can be added to the aquarium in order to advance the natural balance in the water and the vitality of the fish.



The recommended dosage is once a year. Sometimes the addition of extra oxygen is necessary after adding the EM. The use of EM ceramics in the filter system or just added loose to the aquarium floor stimulates the quality of the water. This positive reaction occurs because EM ceramics give a positive resonance to the aquarium water. The ceramic pipes should be rinsed off when the filter system is cleaned.

Advice: 1 litre EM **concentrated** 1000 litres of water (not EM-Active!)
1 kg EM ceramics placed in the filter system for an aquarium of 1000 litres

Household pets

EM-Active and EM ceramics can be used for small pets such as dogs, cats, birds, rabbits and guinea pigs.



EM enables pets to retain their natural resistance whereby they are able to live in a better environment. The EM products can be added to their drinking water as well as being used for cleaning out baskets, hutches or runs etc.

EM Naturally Active promotes soil rejuvenation and healthy plants



IN THE GARDEN

The use of EM Naturally Active solutions in the garden mean that artificial fertilizers and pesticides are no longer necessary. The EM solutions ensure better crops and healthier plants and flowers and are ultimately cost effective.

The use of natural compost

This compost consists of natural raw materials and contains no elements of artificial fertilizer. It can be used for potting up and re-potting plants. EM potting soil promotes the long-term, strong development of the roots of plants both in the house and garden.

Planting and maintenance of lawns

EM-Active holds various possibilities and combinations for the natural planting and maintenance of lawns. A general guideline for types and amounts is shown below.

Choose the most suitable solution or combination:

Advice: 10 kg	clay minerals	/ year	/ 100 m ²
10 kg	seashell lime	/ year	/ 100 m ²
50 kg	Bokashi	/ year	/ 100 m ²
40 litres	Mest Best	/ year	/ 100 m ²
0,5 kg	EM ceramic powder	/ year	/ 100 m ²
<i>(can be gently raked in to the surface)</i>			
1 -2 litre	EM-Active	/ year	/ 100 m ²
Dilute EM-Active 1:100 parts water and water or spray in one or more goes per growth season to the plants or soil surface			

The clay minerals, the seashell lime, the Bokashi and/or the Mest Best and the EM ceramic powder can be applied to the lawn before rainy weather is expected. These products can be gently raked into the ground about 2 weeks before the grass seed is sown. Larger amounts of clay minerals can be used for sandy ground.

For maintenance, dilute the EM-Active to 1:100 parts water and spray, preferably during wet weather. Avoid spraying

in hot sun. The recommended amount can be divided up and used more than once.

Planting and maintenance of borders

EM naturally Active can be used for the planting and maintenance of shrubs and borders. This method is unique for successful gardening without the use of chemicals. The concept incorporates various products that can be used separately or in combination with each other.

Choose the most suitable solution or combination:

Advice: 10 kg	clay minerals	/ year	/ 100 m ²
10 kg	seashell lime	/ year	/ 100 m ²
50 kg	Bokashi	/ year	/ 100 m ²
40 litres	Mest Best	/ year	/ 100 m ²
0,5 kg	EM ceramic powder	/ year	/ 100 m ²
<i>(can be gently raked in to the surface)</i>			
1 -2 litre	EM-Active	/ year	/ 100 m ²
Dilute EM-Active 1:100 parts water and water or spray in one or more goes per growth season to the plants or soil			

The clay minerals, the seashell lime, the Bokashi and/or the Mest Best and the EM ceramic powder can be applied to the surface of the plant border before wet weather. These products can be gently raked into the surface and mixed with the soil from the pots of the new plants as they are added to the border.

Larger amounts of clay minerals can be used for sandy ground.

For maintenance, dilute the EM-Active 1:100 parts water and spray, preferably during wet weather. The recommended amount can be divided up and used more than once.



Practical use in the vegetable garden

The concept of EM naturally Active can be used for sowing and growing vegetables and herbs without the use of chemicals. Various products can be used, either separately or together in order to produce healthy vegetables. These products can be added to the surface soil or spread around the vegetables.

Choose the most suitable solution or combination:

Advice:	10 kg	clay minerals	/ year	/ 100 m ²
	10 kg	seashell lime	/ year	/ 100 m ²
	50 kg	Bokashi	/ year	/ 100 m ²
	40 litres	Mest Best	/ year	/ 100 m ²
	0,5 kg	EM ceramic powder	/ year	/ 100 m ²
		<i>(can be gently raked in to the surface)</i>		
	1 -2 litre	EM-Active	/ year	/ 100 m ²
	Dilute EM-Active 1:100 parts water and water or spray in one or more goes per growth season to the plants or soil			

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The clay minerals, the seashell lime, the Bokashi and/or the Mest Best and the EM ceramic powder can be applied to the surface ground before wet weather and gently raked into the soil.

For purposes of planting and sowing vegetables, the Bokashi is best added to the soil 14 days beforehand.

During the growth season, the products should be gently raked into the soil between the rows of vegetables. For maintenance, dilute the EM-Active 1:100 parts water and spray, preferably during wet weather. The recommended amount can be divided up and used more than once.

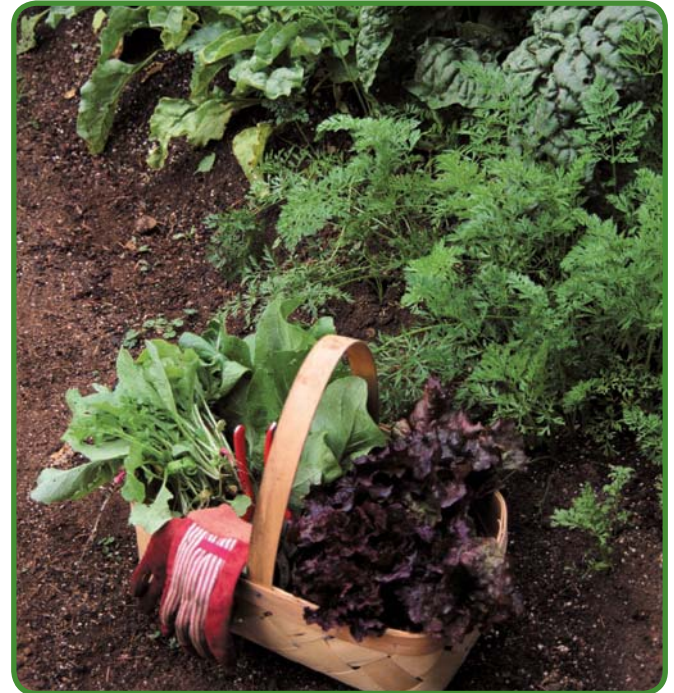
The making and use of a Bokashi compost heap

Choose a combination of organic materials that have either a high or low ratio of carbon and nitrogen, e.g. wood and or grass. In order to increase the microbial diversity as much as possible, it is recommended that at least three different materials are used.

The method for making a typical Bokashi compost is as follows:

1. Organic material (kitchen waste) 100 litres (volume)
2. EM-Active 200 ml (dilute with water)

Dilute this EM-Active solution slightly so that it can be mixed with the various fresh organic materials such as grass, weeds, shredded cuttings etc. Subsequently heap the material up in layers and press down firmly so that as much oxygen as possible is released from the heap. Finally cover



the heap with a plastic cover or piece of carpet. Leave this to ferment for at least six weeks before using the material as plant fertilizer.

NOTE: the final product is not composted but fermented. This means the EM-Active will transform the heap into valuable fertilizer for ground and plants. The end result will not look the same as traditional compost but it is pre-fermented so that soil organisms can make

optimal use of the material and there is absolutely no wastage which occurs in a rotting process.

The amount of water you use to dilute the EM-Active depends on the moistness of the material used. The degree of moistness of the heap must not be higher than thirty percent. You can check this as follows: press the ready-made Bokashi with your hands into a lump – the lump should remain whole and no moisture should leak from it. EM potting soil is made from a mixture of brewery-spent grain, wheat bran and spelt, Edasil clay minerals, seashell lime bran, and EM-Active.

Almost all organic materials are suitable for making Bokashi. If you are a keen gardener, there is nothing to stop you making your own at very little cost.

However 'ready-made' quality Bokashi is available from our UK Bokashi producer. See last page for details.

Advice: 0,5 kg Bokashi / m²

Use of EM-Active as starter for traditional compost

The traditional way of making compost from kitchen waste can be advanced by applying EM-Active regularly to the compost heap or container.

Advice: 1-2 litres EM-Active / 1 m³ of 1000 litres

Eliminate odour on the compost heap

By spraying or sprinkling EM active in a diluted solution of 1: 10 on the top of the compost heap, odour is suppressed and fermentation enhanced. By changing the compost process to fermenting as opposed to rotting, the compost will not heat up and thus valuable nutrients are retained. Extra bokashi can also be sprinkled on the compost heap

which will also contribute in eliminating odour and stimulating the composting process.

Advice: 1 litre EM-Active / 1 m³ of 1000 litres

Treating ponds

The use of seashell lime adjusts the way that light is reflected from the sun. In order to promote the natural balance of the water, EM-Active can be used in the pond once a year.



In addition, regularly add an amount of seashell lime and use the Bokashi pond balls. These balls have been fermented with EM-Active and provide good microbial diversity in the pond water for a long time. The Bokashi pond balls can just be thrown into the pond where they sink to the bottom.

Apply during Spring, Summer and Autumn. Choose the most suitable solution or combination:

Advice: 1 litre	EM-Active	/ year / 1 m ³
1	Bokashi pond ball	/ 1 m ³ (= 1000 litres)
1 kg	Seashell lime	/ 1 m ³

Fermentation of leaf waste

During Autumn, fallen leaves can be collected and made into a kind of leaf compost. The same procedure ensures that the nutritional elements that are still in the leaves can efficiently be made into fertilizer for the soil.



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A mixture of Edasil clay minerals, Ostrea seashell lime and EM-Active can be used to ferment leaf wastage. The mixed material must have a moisture level of at least thirty percent in order to reach a satisfactory fermentation process. When all the materials have been mixed together, cover them with a plastic cover. Leave this to rest for at least six weeks (longer is better) in order to complete the fermentation process.

Requirements:	For 100 kg leaf wastage:	
Edasil clay minerals	5% in weight.	5 kg
Ostrea seashell lime	5% in weight.	5 kg
EM-Active	2% in weight.	2 litres

The fermented product can be used as a covering layer between plant borders.

Advice: 0,5 kg fermented foliage / m²

Practical advice for taking plants cuttings and grafts

Before taking cuttings and grafts, drench the material briefly in a solution of water with EM concentrate.

Advice: 0,1 litre **EM-1 concentrate** in 10 litres water

Once the new plants have established themselves, further growth can be promoted by adding EM-Active to the watering can. The proportion is: 0.1 litre EM-Active to 50 litres water.

1. Take 50 litres water for spraying and mix it with 0.1 litre EM-Active.
2. Spray this mixture over the cutting/grafting materials.
3. Add EM-Active as described above with each spray.

Practical advice for soft fruit and fruit trees



EM Naturally Active for ground cultivated strawberries

For the planting of strawberries the following advice should be followed. Work these products into the top 10 cm of soil and leave the ground to rest for 7 to 14 days. Then plant the strawberry plants.

Choose the most suitable solution or combination:

Advice: 1 kg	Clay minerals	/ 10 m ²
1 kg	Seashell lime	/ 10 m ²
5 kg	Bokashi	/ 10 m ²
4 liter	Mest Best	/ 10 m ²
50 gr	EM ceramic powder	/ 10 m ²

After planting the strawberries, use EM-Active for the duration of the growth season by watering or scattering before wet weather.

Advice: 0,1 to 0,2 litres EM-Active / 10 m² diluted in 1:100 parts water

EM Naturally Active for fruit trees

The EM naturally Active concept is a unique way of cultivating and maintaining fruit trees and healthy fruit without the use of chemicals. Various products can be used either separately or together to achieve optimal results.



The clay minerals, the seashell lime, the Bokashi and/or the Mest Best and the EM ceramic powder can be applied to the surface before wet weather.

These products can be gently raked in to the top soil and/or mixed with the earth in the trench when planting new trees. Larger amounts of clay minerals can be used for sandy ground.



EM-Active should be diluted 1:100 parts water and sprayed or watered preferably in moist or wet weather. The recommended amount to be used can be divided up and used more than once.

Choose the most suitable solution or combination:

Advice: 10 kg	clay minerals	/ year	/ 100 m ²
10 kg	seashell lime	/ year	/ 100 m ²
50 kg	Bokashi	/ year	/ 100 m ²
40 litres	Mest Best	/ year	/ 100 m ²
0,5 kg	EM ceramic powder	/ year	/ 100 m ²
	<i>(can be gently raked in to the surface)</i>		

1 -2 litre EM-Active / year / 100 m²

Dilute EM-Active to a proportion of 1:100 parts water and water or spray in 1 or more goes per growth season to the plants and/or ground



USES FOR LARGER PETS AND THEIR PENS/PADDOCKS

For horses

In the stable

The EM Naturally Active system can be used in the stable. This system promotes fermentation of the manure and suppresses the smell of ammonia.

- Spread 25-50 grams of clay minerals daily per m² over the layer of straw in the stable.
- Spread 100 ml EM-Active per m² over the layer of straw in the stable at least once a week.

In the paddock

- Once a year, spread 1000 kg seashell lime per ha over the paddock surface.
- Once a year, spread 1000 kg clay minerals per ha over the paddock.
- Once a year and divided up into at least five times, spread a minimum of 100 litres EM-Active per ha over the paddock. This is the equivalent of 5 litres EM and A+.

Feeding with Bokashi

In order to increase the natural resistance of horses, a daily amount of 50 gram Bokashi bran can be fed as a supplement. Bokashi is a fermented organic material that is rich in probiotics.

Ensiling with EM-Silage

Use EM-Silage for ensiling horse feed. This will prevent the formation of heat and fungi. In addition it will ensure a very good fermentation. See website for detailed information: www.effectivemicro-organisms.co.uk

Drinking water

Use EM ceramic products in the drinking-water trough or container. Use a proportion of 1 kilo ceramics to 1,000 parts water in the container.

Alternatively fit an EM water improver.

For goats and sheep

Treatment of paddocks

- Once a year, spread an amount of 1000 kg seashell lime per ha over the paddock surface.
- Once a year, spread 1000 kg clay minerals per ha over the paddock.
- Once a year and divided up into at least five times, spread a minimum of 100 litres EM-Active per ha over the paddock. This is the equivalent of 5 litres EM and A+.

Silage treatment

Use EM-Silage to ensile grass. This prevents the formation of heat and fungi. In addition it ensures a very good fermentation process. See website: www.effectivemicro-organisms.co.uk

Fertilizer treatment

Spread EM-Active over the goat or sheep manure once a week. Use 1 litre for every 10 animals.

Drinking water

Use EM ceramic products in the drinking-water trough or container. Use a proportion of 1 ceramic to 1000 parts water in the container.



For poultry



Treatment of chicken shed and run

In order to ensure a healthy climate with no unpleasant odours, spread 0.5 kg Bokashi per m² over the surface of the shed. Regularly spray EM-Active in order to counteract unpleasant smells and to efficiently convert the manure into fertilizer.

Drinking water

Use EM ceramic products in the drinking-water trough or container. Use a proportion of 1 kilo ceramics to 1000 parts water in the container.

For pigeons

EM is a new and healthy method of achieving top condition and maintaining it for pigeons. Improve their environment by making up a rich fertilizer from their droppings with EM-Active and Edasil clay minerals.

Use

Dilute EM-Active to a solution of 10 ml to 1 litre water. Add this solution to the pigeon drinking water.

Dilute 10 ml to 1 litre water and spray this in the loft. Spread 15 to 25 grams of Edasil clay minerals per m² over the surface of the loft.



EM PHILOSOPHY

EM Naturally Active is based on the ideas of Professor Teruo Higa. He was born on December 28, 1941 on the Japanese island of Okinawa. His studies concentrated on the further development of agriculture and horticulture. During his studies, he constantly grappled with the question of how best to apply technological theory to agriculture in order to make it more efficient. After many ups and downs he introduced a new technology: the EM technology. EM takes care of the balance in the fields of environment, health and food supply.



Professor Teruo Higa distances himself from the uncompromising competition going on in the world today. According to him this competition has a negative effect on issues of world peace, health, and the environment. This means that conditions are ripe for wars, food shortages and health problems to take place. Higa argues in favour of solidarity, peaceful coexistence and shared wealth. In short, he calls for more balance in the world. Professor Higa has published his ideas in the books *An Earth Saving Revolution*

Professor Teruo Higa wants to put his philosophy into practice with the help of EM. He believes that EM is necessary in order to live in harmony with each other and share the existing wealth in the world.

EM AROUND THE WORLD

The EM Naturally Active concept and range of products is part of a worldwide research organisation (EMRO) whereby profits are re-invested to promote new technologies towards a cleaner, healthier environment. In Europe alone 15 countries strive to bring this concept into communities, with the support from EMRO.

Our goal is to educate individuals to an alternative, chemical free food production, restore the balance in nature and promote an alternative recycling of waste products.

This ultimately leads to an ecological wellbeing of our planet providing a better future for the generations who will follow us. By increasing the natural immunology of our surroundings we may hope for a healthier future.

EM Naturally Active has been developed through scientific investigation. The results give us a choice to diminish the use of synthetic detergents, artificial fertilizers, agricultural chemicals and livestock pharmaceuticals.

This concept is introduced to the UK by:
EM Effective Micro-organisms Limited

Information:

www.effectivemicro-organisms.co.uk
email:info@effectivemicro-organisms.co.uk

More information and Retail outlets:

www.em-naturally-active.com

Appointed UK Bokashi producer:

Wiggly Wigglers Limited
Tel: 01981 500391
www.wigglywigglers.co.uk

This world map shows the countries who are actively involved in promoting the use of EM Effective Micro-organisms

EM Around the Globe

EM is manufactured in 54 countries, and has been introduced or distributed in over 130 countries.

2004年8月現在、EMは使用、または使用を勧誘としてコンタクトを取った国は130ヶ国以上で、そのうち54ヶ国ですでに製造が行われています。

List of 54 countries where EM is currently manufactured

EM製造国一覧

Argentina
Australia
Austria
Bangladesh
Belarus
Bhutan
Bolivia
Brazil
Cambodia
China
Colombia
Costa Rica
Cyprus
Ecuador
Egypt
France
Germany
Guatemala
Honduras
India
Indonesia
Iran
Japan
Jordan
Kenya
Lao
Lebanon
Malaysia
Maldives
Moldova
Nepal
Netherlands
New Zealand
North Korea
Pakistan
Panama
Papua New Guinea
Paraguay
Philippines
Poland
Russia
South Africa
South Korea
Spain
Sri Lanka
Sudan
Syria
Taiwan
Tanzania
Thailand
U.S.A.
Uruguay
Vietnam



■ Country where EM is manufactured
EMが製造されている国

■ Country where EM has been introduced or distributed
EMの使用、または情報提供が行われている国

The distribution of EM and its network have been rapidly spreading throughout the world. Today, every continent has at least one organization to provide EM and technical advice.

EMのネットワークは急速に広まり、現在では世界中の地域でも技術情報が提供され、EMの入手が可能です。



www.em-naturally-active.com