

## FAQ



The plastic bottle does not swell up. Does that mean it's not fermenting?



The bottles swell when carbon dioxide is generated by microbial activities. Depending on the condition of the fermentation, it may not always be generated. Even if there's no gas, fermentation is taking place as long as it smells sweet and sour. If a pH test paper shows 3.5 or below, it's ready to use.



How long does it last?



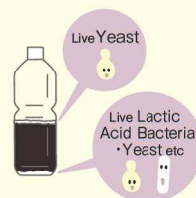
We are dealing with live microbes, and there is no specific "expiry date." However, it is recommended to use it within 1 month after Activated EM-1 is ready, as it works better when the microbes are in top condition. If it starts smelling different, use it to clean toilets or drain pipes. Diluted EM solution should be used up in a day.



What is the white film that appears on the surface of Activated EM-1?



When there is air in the container, yeast gathers up to the surface and produces white film, but there is no problem using it. However, being exposed to the air for a long time gradually changes the quality. It is recommended to use it as soon as possible.



Contact your local EM Distributor about EM products, their application, and anything else about EM.

Find a distributor near you! → [www.emrojapan.com/?findyourlocal](http://www.emrojapan.com/?findyourlocal)

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No.1

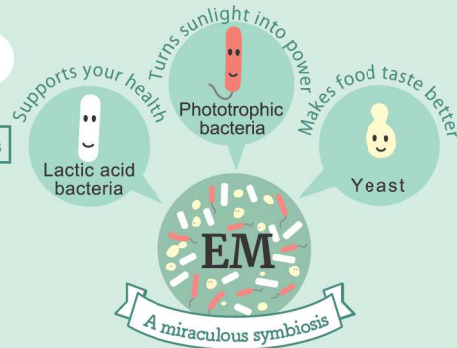
# Let's start EM Life!



## Let's learn about EM!

### What is EM? → A group of beneficial microbes

EM is a people-friendly and environmentally safe product that achieves synergistic effects by combining beneficial microorganisms which exist in nature, such as lactic acid bacteria, yeast and phototrophic bacteria.



### What can EM do? → It makes people, animals and the environment healthier

#### Soil Plants

#### Plants grow healthier and stronger in rich soil!



EM acts as a supporter of beneficial microbes that exist natively in the soil. Soil becomes richer, plants grow healthier and more resistant to diseases and harmful insects.

#### Farm animals

#### Foul odors are controlled, delicious high-quality meat is produced!



Unpleasant odors are reduced by spraying EM in the livestock barns. Adding EM to drinking water and feed makes livestock grow healthier and improves the quality of meat and eggs.

#### Sea Rivers

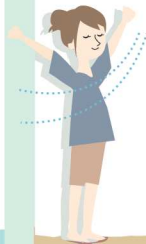
#### Plants grow healthier and stronger in rich soil!



By applying EM into the seas and rivers, sludge will decompose, bad odors are reduced, and aquatic life returns with greater diversity.

#### Home

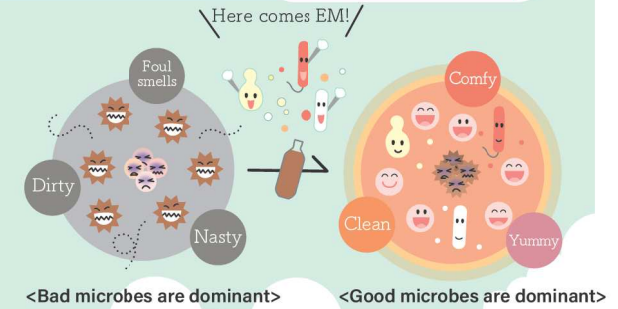
#### Your home becomes more comfortable!



EM decomposes the precursors of unpleasant smells and dirt, as well as preventing dust. Using EM on a daily basis helps beneficial microbes make your home more comfortable.

### How does EM work? → Controls harmful microbes and supports healthy microbes

Beneficial microbes contained in EM and the effective components they produce activate native microbes and control harmful bacteria in soil and water. If good microbes are dominant, they create a happy environment for all living creatures.



### Basic EM products for your home



Ready to use!  
For home cleaning  
and deodorizing

EMW  
500ml

— more on —  
p3



Ready to use!  
For your kitchen garden

EM Garden  
500ml

— more on —  
p5



Use straight  
or Expand!  
Dr. Higa's Original

EM-1  
500ml

— more on —  
p6, 7, 9, 12



Standard Feed  
for EM

Molasses  
500ml

— more on —  
p7, 9, 12



# How to use EM

— Housekeeping —

Ready to use

## EMW

The beneficial microbes in EM are very effective in housekeeping applications such as cleaning, deodorization, and air purification. EM decomposes dirt and foul smells, controls bad microbes, and helps to create a comfortable space at home.

Challenge! /  
Expand EM at home

Let's try making Activated EM-1

Step UP! Once you are familiar with EM,  
try expanding it yourself!



Deodri-  
zation

Cleaner

Comfortable with clean air!



Go to p7  
for  
more details

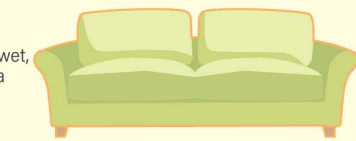
Basic Method  
Dilute EM  
in a sprayer.  
Spray and wipe  
with a dry  
cloth!



## Make your room cozier!

Couch, ▶  
Carpet

Spray EM until wet,  
and tap it with a  
dry cloth.



Natural and  
safe for children!



▶ Floor

Spray EM and mop  
lightly. The floor will  
shine when you  
continue mopping  
with EM.



▶ Clothes

Spray EM generously on  
clothes with unwanted  
smells like sweat or  
cigarettes, and you can  
barely smell them the  
next day.



▶ Window

Spray EM and wipe  
with a microfiber cloth  
to prevent dust.



▶ TV, PC,

Home Appliances

Wiping home  
appliances with a  
damp cloth will  
prevent dirt and dust.



▶ Blankets

Spray EM until wet and  
dry them out in the sun.  
The blankets will be  
extra fluffy.



## How to use EMW and Activated EM-1

- 1 Dilute EM 50 fold, and  
make "EM dilute solution."  
This is only a guide. Measurements  
need not be precise.
- 2 Adjust the mixture according to  
your tools and working  
space.

For a 500ml sprayer



EM diluted with water does  
not last long. Drain if there is  
any leftover and wash the  
sprayer every day.

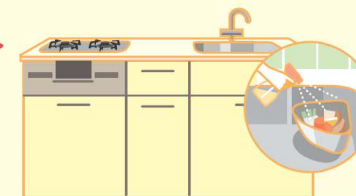


The drain  
also  
becomes  
clean!

## Have a sparkling kitchen!

Stove,  
Sink

Spray EM and wait.  
Wipe after the dirt is  
lifted up.



▶ Ventilation Fan

Clean regularly before it gets  
covered with heavy dirt. Spray  
EM and wait. Wipe off after a  
while.

▶ Garbage/Trash Can

Spray EM on kitchen  
waste to prevent  
unpleasant odors.



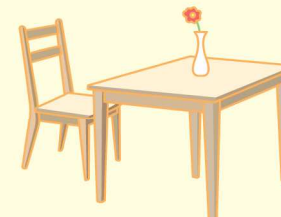
▶ Pots, Pans

Add a little bit of EM  
when soaking dishes or  
pans, and dirt will come  
off easily.



▶ Tables, Chairs

Use EM to keep the table  
clean every day.



▶ Refrigerator

Spray EM inside the fridge  
and wipe. Unpleasant smells  
will be reduced.

## EM helps you in every aspect of your life!

▶ Pets

Spray frequently on the cat's  
litterbox or the dog house.



▶ Car

Spray inside the car to  
remove smells such as  
cigarettes and sweat.  
Spray on the car body  
and windows, too, and  
wipe off.



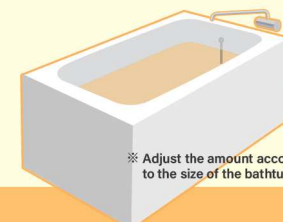
▶ Shoe shelf,  
Entrance

Spray plenty to  
reduce unpleasant  
odors.



▶ Bathtub

Pour 200ml\* of  
undiluted solution in  
the bathtub. It will be  
easier to get rid of  
scum and slime.



▶ Laundry

Soak laundry in EM  
overnight, and dirt and  
smells will come off  
more easily.



▶ Toilet

Spray EM in and  
outside of the toilet  
bowl, leave it for a  
while, and wipe off.  
EM will neutralize and  
decompose ammonia  
and dirt.



\* Adjust the amount according  
to the size of the bathtub.

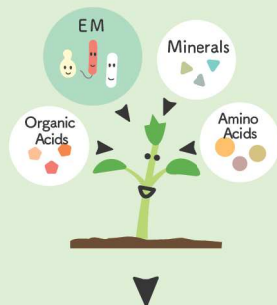
# How to use EM

— Home Gardening —

## Ready to Use

### EM Garden

EM Garden contains live microbes which exist in nature, such as lactic acid bacteria, yeast, and phototrophic bacteria, as well as nutrients which help plants grow healthy, such as organic acids, amino acids, and minerals. Beneficial microbes create healthy environments for plants, making it hard for them to get sick, enhance their photosynthetic ability, and help vegetables taste more delicious.



## Challenge! / Expand EM at home

Let's try making Activated EM-1

Step UP!

Once you are familiar with EM,  
try expanding it yourself!



Go to p7  
for  
more details

## Expected Effects

### ✓ Plants grow healthier!

EM increases the number of beneficial microbes in soil. As a result, putrefactive bacteria and pests decrease, and plants grow healthier.



### ✓ Tastes even yummier!

In rich soil, plants do not get pests easily and do not need chemical fertilizers or pesticides. Vegetables grown without agrochemicals taste sweeter and richer.

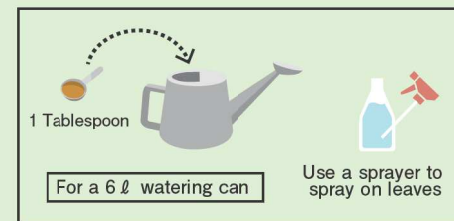


### ✓ Vivid colors!

Flowers bloom more vividly and leaves start to shine. Your flowerbeds will look even more beautiful. You can also enjoy the flowers longer.

## How to use EM Garden / Activated EM-1

- 1 Dilute EM 500 fold\* to make "EM dilute solution."  
\*EM : Water = 1 : 500  
This is only a guide. Measurements need not be precise.
- 2 Sprinkle EM dilute solution onto soil and plants with watering cans.



Watering

every day in summer  
once or twice/week in winter

Water plenty (until water comes out from the bottom of the planters).



Foliar spray

once or twice/week

Spray the front and the back of the leaves where pests tend to attach. It keeps the plants healthy.



With organic matter

when necessary

When you apply fully matured compost or humus on the soil surface, spray plenty of EM all over.

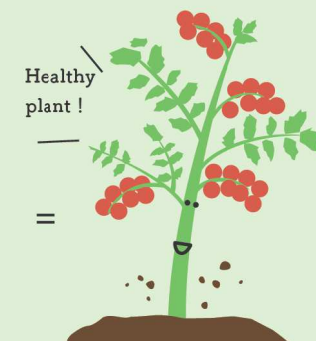
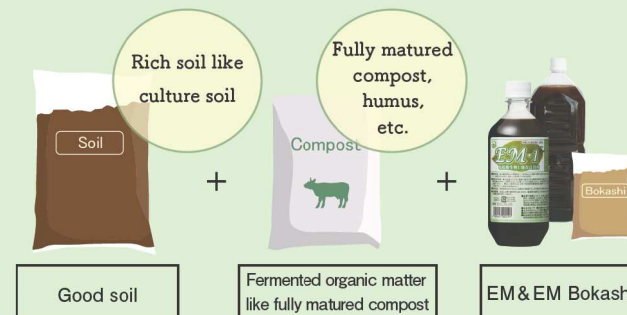


3 weeks later



## 3 essentials for plant growth

Seed and compost alone won't make plants grow. They need the help of beneficial microbes to grow up.

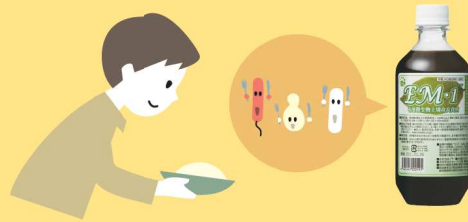




## Expand EM !

### Q1 What does it mean to "expand EM" ?

By feeding the microbes in EM, they become active and increase their number.



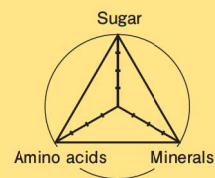
EM-1 is a basic product consisting of 3 kinds of beneficial microbes that live symbiotically. The microbes in EM-1, with some feed, work actively and increase their number.

### Q2 What is the best feed ?

It is best to give feed that contains sugar, amino acids, and minerals in good balance.



Molasses



Molasses is a byproduct of sugarcane. It contains not only of sugar, but also amino acids and minerals in good balance, thus it is the best feedstock for EM.

### Q3 How much does it expand?

You can make 1 bottle into 20-bottles worth.

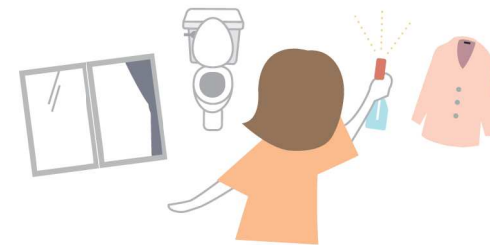


1 bottle of EM-1 (500ml) can make about 20 bottles (500ml) of Activated EM-1.

The quality is not exactly the same as EM-1, but it works in the same way as EM-1.

### Q4 Why do you have to expand it?

Because you can use EM everywhere.



Experiencing the effects and comfortableness of EM makes you want to use EM wherever and whenever possible. In doing so, you can save money by expanding EM at home.

**Enjoy expanding EM and start a happy EM life!**

## Activated EM·1 Recipe①

Molasses feed

## Activated EM·1

This recipe is for Basic Activated EM, made with EM·1 and molasses. Use it for kitchen garden, deodorant, cleaning, and everything else.

| Use            |      |
|----------------|------|
| Kitchen Garden | ★★★★ |
| Deodorant      | ★★★★ |
| Cleaning       | ★★★  |



### What to prepare

- 1 2 ℓ plastic bottle (see the chart for other sizes.)



Stains become hotbeds of unwanted bacteria. **Make sure to wash the bottle thoroughly** before use.

Point 1

- 2 Warm water 1.8 ℓ  
(40°C: about the temperature of shower water)



It is ideal if the liquid is 38°C after mixing all the ingredients.

Point 2

- 3 EM·1  
100ml



- 4 Molasses  
100ml



- 5 Other utensils



measuring cup



bowl



funnel

Choose the size  
to fit your lifestyle

Make sure to use strong  
containers.



2 ℓ Standard size for plenty of uses

|          |       |
|----------|-------|
| EM·1     | 100ml |
| Molasses | 100ml |
| Water    | 1.8 ℓ |

1 ℓ Perfect for small households

|          |       |
|----------|-------|
| EM·1     | 50ml  |
| Molasses | 50ml  |
| Water    | 900ml |

The amount of EM·1  
and Molasses is always  
 $\frac{1}{20}$  (5%)  
of the bottle

500ml To carry with you!

|          |       |
|----------|-------|
| EM·1     | 25ml  |
| Molasses | 25ml  |
| Water    | 450ml |

The organic acids produced by microbes are effective for deodorizing, cleaning, and plant growth. The above recipe shows the suggested blend ratio to produce enough organic acids.



### How to make Activated EM·1

Preparation (10 min)



1

Put molasses into a bowl and add warm water (500ml). Stir until dissolved.



2

Pour the liquid into a plastic bottle using a funnel. Add the rest of the warm water (1300ml), and add EM·1.



3

Close the cap tightly and shake.

Fermentation·Storage (1 ~ 3 weeks)



4

Place the bottle in a warm place indoors and keep the liquid temperature at 25°C or more (ideally 38°C).

in Winter

Let it ferment in warm places, such as...

- In the bathtub
- By the sunlit windows
- Somewhere with thermal effect



5

When the fermentation is active, generated gas inflates the bottle. Make sure to let it burp occasionally.



After fermentation

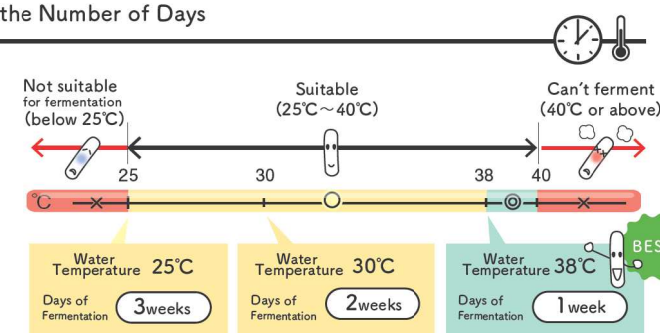
- ★ Store in a cool place and avoid direct sunlight.
- ★ Continue to deflate if gas is still generated.

Quality Check!

Check pH with a test paper.  
It should be pH3.5 or below.

### Water Temperature VS. the Number of Days

The number of days required for fermentation varies depending on the water temperature.



38-40°C is the temperature at which the microbes in EM become active in better balance and make high-quality Activated EM·1.



## Activated EM-1 Recipe ②

### Fermented Rice-rinsed Water

Utilize the water left out after rinsing rice, and reduce waste. Use it to activate EM-1 and save the environment!

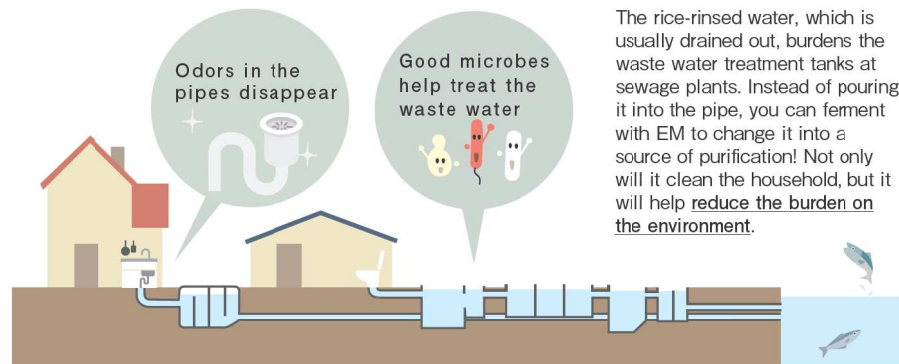
Why

ferment the rice-rinsed water?

Use  
Kitchen Garden ★★★★★  
Deodorant ★★  
Cleaning ★★★★★

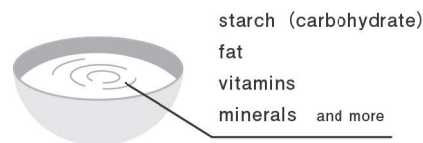


### Change a waste product into a source of purification.



### Fermentation helps more!

Fresh rice-rinsed water is difficult to handle as it goes bad easily due to the nutrients it contains. Fermenting it with EM turns it into something better that can be used for cleaning or watering the flowers.



### What to prepare

1 2ℓ plastic bottle



Point 1

Stains become hotbeds of unwanted bacteria. Make sure to wash the bottle thoroughly before use.

2 Rice-rinsed water 1ℓ

Point 2

Use rice water immediately, as it easily goes bad when germs get in.

Clean water 2/5  
Rice water 1/2  
EM-1 1/20  
Molasses 1/20

3 Warm water to adjust the temperature. About 50°C in summer, 65°C in winter 800mℓ



4 EM-1 30mℓ



5 Molasses 100mℓ



6 Other utensils



The above ratio works for bottles of different sizes as well.



### How to make it

#### Preparation (10 min)



1 Pour the rice-rinsed water into a bottle. (Up to 1ℓ at the right temperature.)



2 Dissolve molasses into warm water (800mℓ) and add to the bottle.



3 Add EM-1, close the cap tightly and shake.

#### Fermentation・Storage (1 ~ 3 weeks)



4 Place the bottle in a warm place indoors and keep the liquid at 25°C or higher (ideally 38°C).



5 When the fermentation is active, gas inflates the bottle. Make sure to let it burp occasionally.



#### After fermentation

- ★ Store in a cool place and avoid direct sunlight.
- ★ Continue to deflate if gas is still generated.

#### Quality Check !

Check pH with a test paper. It should be pH3.5 or below.

※ Refer p.10 for fermentation period.