



**SCD Efficient Microbes (EM)<sup>TM</sup> Original, SCD EM Plus<sup>TM</sup>  
SCD EM Food Grade<sup>TM</sup>**

**Usage Guide**

All-natural, organic SCD Mother Cultures intended for industrial and home uses, such as organic agriculture, waste treatment, industrial cleaning and food preparation. All Mother Cultures are ready to use, but can also be activated to improve cost effectiveness.

Only SCD EM Food Grade<sup>TM</sup> should be used for applications requiring a food grade product. SCD Efficient Microbes (EM)<sup>TM</sup> Original and SCD EM Plus<sup>TM</sup> are not intended for human or animal consumption.

These products are sold as a concentrate and should be diluted in water before use in a wide variety of applications. Use as Directed.

**Directions for Use:**

**SCD Efficient Microbes (EM)<sup>TM</sup> Original and \*SCD EM Plus<sup>TM</sup>:  
\*Recommended SCD EM Plus<sup>TM</sup> applications.**

	Dilution	Application
<b>*Agricultural inoculant:</b>	1 gallon per acre minimum	Apply dilution as a spray or as an additive to irrigation water. Use 1-10 gallons per acre per year or according to economic feasibility.
<b>*Seed Soak:</b>	1:1000 water	Soak seeds for 5-10 minutes in dilution. Continue to spray seeded area with standard 1:1000 dilution every 3-4 weeks during crop growth.
<b>*Crop Residues:</b>	1 gallon per acre minimum	Apply 1-5 gallons per acre on top of crop residues or before incorporating into soil
<b>*Orchard:</b>	10 gallon per acre	10-60 gallons per acre per season (diluted with water) Note: Do not spray while blossoming or blooms may drop.
<b>*Hydroponic Systems:</b>	1:10,000 water	Add dilution to system along with nutrient solution
<b>*Lawn and Garden:</b> lawn	1:1000 or 2 Tbsp per gallon of water	Apply dilution as a spray or as an additive to watering system each time you irrigate
<b>*Lawn and Garden:</b> Trees and flowering plants	1:1000 or 2 Tbsp per gallon of water	Spray soil and foliage with dilution for every season. DO NOT spray blooms or they may drop. Prepare soil and let sit for one month before seeding. Add EM weekly while watering.



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		Apply to soil when preparing for fall season.
<b>*Lawn and Garden:</b> Plant propagation from leaf, stem, or root cuttings	¼ Tsp in vase or 16 oz holding container	To propagate in Water: Room temperature. Introducing stem, vine, or root to dilution. When new roots sprout, plant in soil moistened with dilution. To propagate in Soil: Moisten soil with dilution and insert leaf or stem. Continue watering with dilution as needed.
<b>*Lawn and Garden:</b> Cacti and Succulents	1 Tbsp per gallon of water	Apply dilution when watering. When repotting, spray soil with dilution until moist.
<b>*Lawn and Garden:</b> Window Boxes and inside plants.	½ Tbsp per 16 oz spray bottle or watering container	Add SCD EM to watering can or spray bottle. When planting, prepare dilution in spray bottle and mist planting holes and surface of loosened soil before placing and covering seeds. Mist surface. Do not spray blooms.
<b>*Sewer Line and Septic System maintenance:</b>	1:100 parts water	Apply dilution every 2-3 weeks, or as needed
<b>*Oil Spill and Environmental Chemical Clean-up:</b>	1:100 toxic substance	Mist undiluted SCD EM over top of effected water or surface area at a ratio of 1 part SCD EM to 100-500 parts polluted substance.
<b>*Compost and Drain-off Lagoons:</b>	1:100 lagoon water	Spray pile or wind rows before and after turning, then cover with bag. Apply dilution to drainage ever 1-2 weeks
<b>*Ponds, lagoons:</b>	1:10,000 pond water	*Apply once per month by spraying over pond surface or introducing at various central spots and peripheral spots around pond edge.
<b>Swamp Coolers and Dehumidifiers:</b>	1:50	Wipe all surface and deposit areas with dilution as needed.
<b>Gutters and Siding:</b>	1:500 water	Clear leaves and debris and pour SCD EM dilution down gutter. Use dilution to power-wash siding or scrub with sponge or brush and mist with SCD EM dilution. If using primer, wait one week before applying SCD EM to chemically treated surface.
<b>*Drain Maintenance:</b>	1/2 cup undiluted	Pour undiluted SCD EM down drains 1 - 2 times per week
<b>*Grease traps:</b>	Undiluted or 1:50 grease	For normal buildup, continue adding SCD EM every 4 to six months to maintain low grease trap levels. Depending on the type or amount of build-up, additional SCD EM may need to be regularly applied.



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<b>*Food Compost:</b>	1:100 water	Spray compost pile or windrow with dilution before and after turning to decrease odors which may attract flies.
<b>*Yard Compost:</b>	1:100 water	Saturate compost with dilution, DO NOT turn. Cover for best results. Apply monthly.
<b>*Waste Water/ Drainage Lagoons:</b>	1:100 waste water	Spray over or pour SCD EM directly into lagoon. Apply weekly, monthly or as needed.
<b>*Latrine/ Solid Waste:</b>	1:50 waste	Add SCD EM weekly, monthly or as needed. For best results, keep covered.
<b>Waste bins:</b>	1:100 water	Spray inside of bin or wipe out with wet rag. Mist surrounding area as needed.
<b>Pet Odor:</b>	1:300 water	Spray dilution over floors, carpets, upholstery, or any affected area
<b>Smoke Fumes:</b>	1:10 water	Spray dilution over floors, clothing, carpets, upholstery or any affected area. NOTE: for application on light colored fabrics, test for color

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<b>Livestock and Stable Operations:</b>	1:300 water	Once per week or as needed to decrease odors which attract flies.
<b>Poultry Pens:</b>	1:100	Once per week or as needed to decrease odors which attract flies.
<b>Garbage Disposal:</b>	1:10 water	Plug and Fill sink. Add SCD EM and let sit for 5 minutes. Unplug and run disposal.
<b>Bathroom, Tub and Toilet:</b>	1:50	Use in conjunction with non-antibacterial soap 1-2 times per week, or as needed.
<b>Food Preparation Surfaces and Processing Equipment:</b>	1:50 hot water	Use in conjunction with non-antibacterial soap Daily, or as needed.
<b>Degreasing and bio-sanitizing tile, hardwood, linoleum and other hard surfaced Flooring:</b>	1:100-50 hot water	Use instead of chemicals in your daily mop routine. Add 5% acid white vinegar for tough grease. (optional) For grout, apply dilution and scrub with course brush. Follow by mopping with SCD dilution. For wood floors, dry immediately.
<b>Linens:</b>	Undiluted ¼ cup per load	Fill washbowl with warm water and add dilution as needed.



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<b>Pools/Hot Tubs:</b>	1:1,500 pool water	Apply every 2 - 3 weeks. (It is a good idea for any public or municipal pools to have oxidizers as well.)
<b>Sinks/ Counters:</b>	1: 500 water	Wipe surface with dilution weekly or as needed
<b>Aquaculture: Fish</b>	1: 10,000 water	To improve water quality and develop good micro flora in water, first treat soil in beds by laying bokashi/organic fertilizer 500kg/ha and spraying with dilution of 1:200-300 SCD EM per 50-60 L/ha. Let dry for seven days. Fill ponds/tanks with 1:10,000 SCD EM dilution per 20-30 L/ha. Introduce hatched fish seven days after. Continue applying SCD EM at 1:10,000 dilution per 20-3- L/ha every other week after fish are introduced. If desired: add bokashi with every feeding 1:10,000 feed per 100kg/ha.
<b>Aquaculture: Shrimp/Prawns</b>	1:1,500 water	Preparation: Spread bed with Bokashi (350-500 kg/ha) and spray SCD EM using 1:1000 dilution per 50-60 L/ha. Let dry for 4 days. Fill holding tanks/ponds and add EM to water at 1:1,500 per 20-30 L/ha, 7 days before adding fries. Activate aerators 4-5 hours daily before adding fries. 10 days after adding fries, apply 1:1500 ratio every 7 days for 2 months. Check pH twice daily to ensure it is not lower than 7.4 and does not fluctuate more than 0.5 between readings.

**SCD EM Dilution Guide**

	<u>SCD EM<sup>TM</sup></u>	<u>TO</u>	<u>WATER</u>
1: 50	1 tsp		1 Cup
	4 tsp		1 Quart
	5 Tbsp		1 Gallon
1: 100	1 tsp		2 Cups
	2 tsp		1 Quart
	2.5 Tbsp		1 Gallon
1: 500	3/4 tsp		2 Quarts
	1.5 tsp		1 Gallon
	2 Tbsp		4 Gallons
1: 1000	3/4 tsp		1 Gallon
	1 tsp		6 Quarts
	1.5 tsp		2 Gallons
1: 10,000	3/4 tsp		10 Gallons
	1 Tbsp		40 Gallons



SCD Mother Cultures

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## How to Make Activated EM (AEM)

A secondary fermented product made from SCD Mother Culture<sup>™</sup>

### Supplies:

- SCD Mother Culture<sup>™</sup> (SCD EM Original<sup>™</sup>, SCD EM Plus<sup>™</sup>, or SCD EM Food Grade<sup>™</sup>)
- Molasses
- pH meter or pH paper in the 2.0 to 5.0 range
- Airtight container for activation / brewing

Optional supplies include a container with pressure-relieved lid, thermometer, heat source (during winter season), EM ceramic powder, mineral powder plus sea salt, ORP meter and measuring unit.

**Ratio:** 1 part SCD Mother Culture<sup>™</sup>, 1 part molasses, 20 parts water (no chlorine), 0.01% EM Ceramic Powder or 0.3% mineral powder and 0.3% sea salt.

To make 1 gallon of Activated EM (AEM), use  $\frac{3}{4}$  cup SCD Mother Culture<sup>™</sup>,  $\frac{3}{4}$  cup blackstrap Molasses, 1 gallon of un-chlorinated water, and approximately 1 tsp. of EM Ceramic Powder or 1 tsp. mineral powder and 1 tsp. sea salt.

**Procedure:** Dissolve the molasses into 120-130 degrees chlorine-free water. Then add powder ingredients and sea salt into the liquid content. Stir well and add SCD Mother Culture<sup>™</sup>. Make sure that the temperature is still at or above 110 degrees. For optimal results, maintain a fermentation temperature of 95 degrees during first 4 days. The AEM is ready when pH drops below 3.7 and best at 3.5. If your pH does not drop below 3.7, either the process is not finished or your EM did not extend properly and should be discarded. If your pH continues to drop (to 3.0 or even 2.0) this is perfectly normal and the EM is fine. The end product should smell slightly sweet and pickled.

**Note:** Unlike the first generation SCD Mother Culture<sup>™</sup> you receive from SCD, Activated EM is best used within 7 days. It may last up to 1 month but should be used within this time. Do not try to activate AEM. We cannot guarantee the results.

- The activation will work better if **clean water** is used. If un-chlorinated water is not available, let tap water stand in extension container for a couple days to allow the chlorine to evaporate or use boiled water.
- **Organic or untreated cane sugar black-strap molasses** is the preferred sugar source.
- **Room temperature** is acceptable for activation. A heat source is ideal but not necessary.