

Soil Regeneration Experiment

for Development Work in Tsunami-affected areas

Beneficial Microbes

Mr. Balbir Mathur, president of Trees for Life, was recently in the Andaman Islands, a hotspot of the tsunami disaster. Destruction of crops and pollution of the soil with seawater is a big problem. People there are seeking a non-chemical way to improve their soils and crops. Chemical fertilizers and pesticides have affected their drinking water and are starting to leech into the surrounding coral and kill the fish and plant life there. So they want to find an alternative.

Several years ago, Trees for Life heard of a process for culturing beneficial microbes that can regenerate degraded soils and stimulate plant growth. The process simply used animal manure, water, yeast and sugars. Trees for Life volunteers started searching for detailed information on the process, intending to share it with farmers in developing countries.

For anyone who is interested in experimenting with the process, here are the instructions. (For other amounts, simply use the same ratio of materials.)

Recipe for Microbe Tea



4 pounds of manure



10 gallons of water



2 quarts of molasses



4-6oz of baker's yeast



Aquarium air stone



Add in some agitation

I. Materials

	1 gallon	10 gallons	500 gallons
Tank	5-gallon bucket	12+ gallon	600+ gallon
Manure	6½ oz.	4 lbs.	150 lbs.
Molasses	1 cup	2 quarts	30 gallons
Baker's yeast	½ oz.	4-6 oz.	5 lbs.
Water	1 gallon	10 gallons	500 gallons
Pump	aquarium air pump with air stone	aquarium air pump with air stone	70 watt/600 gph submersible garden fishpond pump
Bricks	none	several bricks	none
Extension cord	— long enough to reach from tank to outlet —		

II. How to mix

The tank should be open, in the sun, and near a source of electricity.

1. For a submersible pump: place a few bricks in the tank, just high enough to hold the pump above the manure.
2. Add manure, and spread it evenly around the bottom of the tank.
3. Add water to the tank.
4. Add molasses.
5. Break up baker's yeast into small particles and add it to the tank.
6. For a submersible pump: attach plastic pipe to the outlet of the pump—enough to reach about 1 foot above the water surface. Put a screen around the intake so it does not become clogged. Then, holding it by the pipe, place the pump on the bricks.

For an aquarium air pump: place the stone into the tank so that it settles on the bottom.

7. Plug in the pump, and turn it on.

For a submersible pump: the pipe from the outlet should pump a jet of the mixture about 1 or 2 feet above the surface.

For an aquarium air pump: bubbles should continually rise from the stone to the surface.

In three to five days, depending on temperature, the manure is used up, and only brown microbe culture is left. It is ready for use now. The mixture may now be aerated with the pump for only 6-8 hours each day. With this maintenance, it will be useable for a month or two. After that, empty the tank and start over.

III. Application

Depending on the amount of microbe tea you have made, select some vegetables in a garden, a houseplant, or start some plants from seeds, or use field crops.

Make three applications of microbe tea:

(Apply the tea to the soil in all cases.)

1. Add tea to the soil when you plant the seeds.
2. Add more tea to the soil when the plants begin to sprout.
3. Add a final application of tea to the soil as plants begin to flower.

Amount of microbe tea

One acre of land normally gets ten gallons of tea, diluted in irrigation water. That's not very much! So, for a pot, add 10 drops of tea per quart of water, or about 1 teaspoon per gallon of water.

Control Plants

Have a "control" group of plants for comparison. Plant an equal number of the same kind of seeds at the same time, but do not add any tea to the soil of those plants.

Make sure, with your "microbe tea" plants and "control" plants, that there is no other difference in their care and feeding other than the microbes. For example, if you put a quart of water with 10 drops of microbe tea on the test plants, you should put a quart of water without microbes on the control plants. Both should get the same amount of water, sun, talking to, etc.

Testing

Make records at several times during the growing cycle:

- Measure both groups of plants at the same time and document the sizes.
- Take photos of both groups of plants at the same time to show development.

Keep records of your results, and send them to Trees for Life. Your results will help develop programs for tsunami-affected areas, to help revitalize their land.

Sharing Test Results

Please send your test results, as well as any questions you may have along the way, to:



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