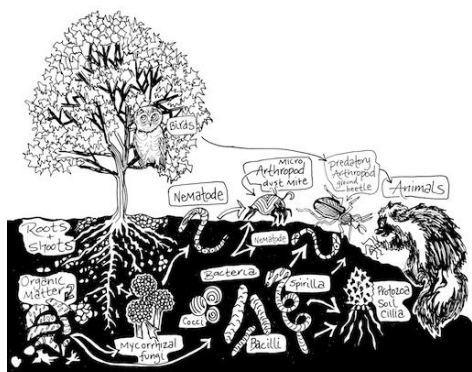


ABOUT COMPOST TEA

It's Causing an Agricultural Revolution!



What is Compost Tea? (It is not the juice or leachate from your decomposing compost pile!)

Compost tea is the product of “brewing” precise portions of:

- High-quality compost,
- Microbe foods,
- Water (de-chlorinated and room temperature), and
- Aeration (vigorous)
- Time (usually 24 hours, but depends on the make of brewer).

Hence the more proper name, **Actively Aerated Compost Tea**.

What is “Brewing”? (Sorry, no china teapot; this is not a hot process!)

Brewing is a breeding process to increase the Micro Herd of beneficial soil organisms.

The above mixture is actively and continually aerated for about 24 hours (depending on the make of brewer). The communities of beneficial microorganisms on the crumbs of compost go into the water solution. There, they rapidly multiply, thanks to food and air supplies. The end result is a tea that contains many hundreds of times more beneficial microbes than the original solid compost.

Microbes are the Product?

Yes, this concentrate contains vastly higher populations of the essential and beneficial microbes than your soil or your original compost contains. Actively aerated compost tea is a powerfully enhanced and beefed-up version of compost.

Why are Microbes Beneficial?

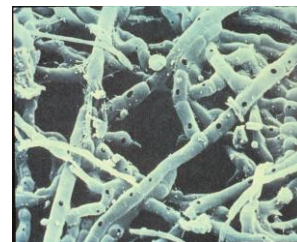
Plants depend heavily on fungi to bring moisture and nutrients to their root hairs. Plants depend on fungi and bacteria convert soil minerals to useful forms and to build soil structure. The plant kingdom depends on a healthy soil food web of bacteria, fungi, protozoans, and nematodes to continuously cycle the nutrients, such as nitrogen, that plants need.

The higher the numbers and diversity of beneficial microorganisms in your soil food web, the higher the disease protection, nutrition, and yield in your plants. If you maximize the biology and in your soil, you will maximize the growth, health, and vitality in your crops, trees, vineyards, orchards, perennials, shrubs, houseplants, and lawn.

Thus, compost tea is a “pro-biotic” to build up that healthy soil food web.

Why Compost Tea Instead of Compost?

Compost (the solid form) is the most excellent, sustainable, and desirable way to build healthy soils and soil food webs. But compost is often in short supply and cumbersome to spread.

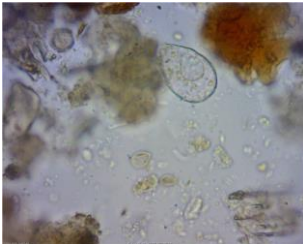


Compost tea (the liquid) can be easily spread as a drench or spray. You start with only a handful of compost. Yet you brew 5 gallons of liquid concentrate that you can dilute and apply to a whole acre of land.

You get all the extraordinary benefits of compost in an extended, economical, and versatile form. Since Compost tea will suppress plant diseases, you can spray it (aim for 70% plant surface coverage). This is a wonderful and non-toxic way to prevent and manage disease infestations.

What will Compost Tea Do?

When you apply the compost tea, these armies of micro-workers can unlock soil nutrients and provide the nutrients and soil balance your plants need— at optimum performance.



Properly brewed compost tea will:

- a. Boost your soil fertility
- b. Make nutrients available to plants
- c. Improve soil structure
- d. Produce plant growth-promoting compounds
- e. Reduce your need for other fertilizers
- f. Decompose toxic residues from herbicides and insecticides
- g. Suppress common plant diseases

How?

Excellent research shows how these microscopic organisms go to work for you in the soil's ecosystem or soil food web. The basic food web members are **beneficial** bacteria, fungi, protozoans, and nematodes. It is bacteria that hold and provide continuous nitrogen supply as they are eaten by others in the food web. Bacteria that secrete sticky substances that "glue" soil particles in aggregates for better air and water flow and nutrient retention. It is fungi that feed the roots of your plants. Fungi strands called hyphae extend far beyond the actual root zones to bring in nutrients and water for plants and trees.

Whether you want optimal productivity in turf, greenhouse plants, or row crops, quality and yield depend on the same thing: a high diversity and high numbers of beneficial soil microbes. It is this healthy soil food web that will provide you with disease suppression, high quality, and high yield.

What if your soil is badly eroded or abused? Left to nature, it can take several hundred years for a soil to fully recover its full biological system. Compost and compost tea can restore a healthy soil food web quickly. Quickly means from a few weeks to 3 years, depending on the soil type, soil temperature, kind of problems, and poisonous residue.

What Compost Tea is NOT:

- Compost tea is not a fungicide— instead, it is a strategy of bio-film or bio-shield. It works like nature does—beneficial microbes out-compete undesirable microbes.
- Compost tea is not a replacement for good horticultural practices. You must insure proper moisture management, provide adequate air flow between plants, provide a foundation of balanced mineral nutrients, etc.
- Compost tea is not an insecticide— it does not kill insects, but does help you achieve soil nutrient balance so insect pests are less attracted to imbalances in your plants.
- Compost tea is not an herbicide— it will not kill weeds. Tea will give a healthy advantage to your chosen crop. But learn to tolerate and even eat more of your weeds.
- Compost tea is not a complete and green magic cure-all by itself. You need to feed your microbes in the soil food web. That is, provide your soil with air, water, and a foundation of soil amendments.

Which Plants Would Benefit?

Annuals, perennials, shrubs, trees, vineyards, orchards, house plants, turf, vegetables, fruits... *even doggie brown spots on the lawn!* Compost tea restores the soil biology killed by too much salty urine.

How to Build a Healthy Soil Food Web: (It's a transition and 4-part program not a quick fix!)

- 1. Stop applying detrimental chemicals.** Herbicides, fungicides, insecticides, and conventional fertilizers significantly suppress soil food web populations. When beneficial microbes die out, your plants become chemically dependent and vulnerable to drought, disease, and insects.
- 2. Apply compost and compost tea regularly.** Compost tea restores the full food web in your soil. Now these microbial workers can unlock nutrients tied up in your soil. The enhanced soil food web can effectively release nutrients to your plant roots— exactly as each kind of mineral is needed, and in the proper amount and balance. Remember that you are making a TRANSITION to a sustainable soil system. It takes some time to change management systems from chemical to biological. it may take up to 3 years to detoxify and fully restore the biology of your soil.
- 3. Apply food for the microbes to eat.** If you want them to stay there, stay alive, and keep working, you must provide the food and moisture. Microbe-friendly foods include fish meal, fishbone meal, soybean meal, cottonseed meal, alfalfa meal, liquid fish emulsion, manure, bat guano, and mature compost. And remember to water deeply and regularly!
- 4. Re-colonize mycorrhizal fungi** Mycorrhizal fungi are a group of fungi that live in and around plant roots. Their long strands or hyphae extend way beyond the root zone. Mycorrhizal fungi are essential to plant health and growth by bringing in water and nutrients to plant roots. They are not necessarily in the compost tea, so add them to your soil as you plant or transplant to maximize a healthy food web and therefore plant growth and health.

What Commercial Users are Reporting:

Compost tea is revolutionizing how agriculture does business. Large-scale operations are purchasing 100 to 500 gallon brewers. They find that compost tea applications drastically reduce the need for pesticides, irrigation and nitrogen fertilizers.

Who's Using Compost Tea?

These operations are replacing conventional fertilizer and fungicide use with compost tea:



- commercial greenhouses
- row crop farmers
- orchardists
- professional landscapers
- nursery owners
- golf course and ball field turf managers
- vineyard growers
- ZOOS
- market gardeners
- home gardeners

They all report that compost tea programs are effectively preventing or suppressing diseases, improving crop quality and yield, vastly decreasing irrigation needs and nitrogen needs. They are finding that compost tea arrests soil erosion, lessens transplant shock, and greens up pet and zoo mammal urine spots in turf. Environmentally, compost tea is benefiting aquifers, farm profits, air quality, surface water quality, wildlife, and human health.

Buy or Brew your Actively Aerated Compost Tea. Be sure to use de-chlorinated water and high-quality compost for brewing.

A word of caution to Do-It-Yourself -types. Follow the recipe exactly from your brewer manufacturer. That person has spent thousands of dollars on lab tests to perfect the correct proportions of foods, compost, and aeration for that brewer system. Don't mix recipes from other brewers. Don't try to guess at ingredients. Don't try to substitute your home compost. If you want to use local compost, have it tested at Soil Foodweb, Inc. **You can kill your plants with improperly brewed tea.** Consult the Compost Tea Brewing Manual available from www.soilfoodweb.com.

How Do I Dilute the Concentrate?

Dilute with de-chlorinated water to apply.

For disease treatment— spray straight concentrate; do not dilute

For disease prevention— dilute 3:1 spray

For general fertilizing— dilute 5:1 foliar feeding with spray,
or water it in to drench roots,
or/or dip roots for bare root transplanting.

There is no danger of over-applying the compost tea. Full strength tea is not hazardous to anything. The concentrate means it simply has more organisms per tablespoonful. Just don't drink it!

How to Apply Compost Tea: Drench, Spray, & Dip

Spray:

Spraying is a foliar feeding AND a disease prevention.

Use a pump sprayer that is clean and has never been used for poisons.

Be sure to coat ALL surfaces of stems, upper and lower sides of leaves.

This creates a bio-shield of beneficial organisms. A disease organism has trouble finding an available site and take up residence.

Sometimes adding a "spreader sticker" helps the tea to adhere, but is not necessary for general applications.

Dip:

Especially for bare root transplanting.

Dip the roots into your compost tea solution, then plant, then drench.

Drench:

Water deeply with compost tea so solution penetrates root zone.

Soak established plants and new transplants.

A watering can works well. Simply fill the can about 4/5 full of dechlorinated water, then top it off with compost tea concentrate.

Use Immediately!

--Remember **COMPOST TEA IS ALIVE !!!** You have a burgeoning micro-herd in your tea.

They are breathing and eating in there!

--Use **within 5-8 hours of brewing.**

--Don't apply in direct mid-day sun when spraying or dipping.

UV rays can kill your microbes. Apply in early morning or late afternoon/evening.

What If I Can't Use All the Tea within 8 Hours?

As they use up oxygen, these beneficial populations begin dying out. Quickly store your tea in a

refrigerator under 40⁰ F up to 5 days, preferably uncapped. If tea is left capped and warm, it will go anaerobic and kill plants!

How Often Do I Apply Compost Tea?

For disease prevention— weekly

For disease outbreak— every 3 days until clear

For sole fertilizer (to resuscitate abused soils)-- every 2 weeks plus apply compost or organic fertilizer when you add the first tea application.

For soil food web booster— (non-abused soils)-- 2-3 times per season plus regular organic fertilizing.

Remember! Compost tea by itself is not enough to optimize your soil's health.

For a complete soil program that is fertilized, balanced, and enlivened to cycle nutrients, you need to apply a minimum of:

1. aerated compost tea (1-3 times per growing season)
2. compost or an organic fertilizer* to feed microbes (1/year)
3. mycorrhizal fungi (1/year).
4. regular and adequately deep moisture
5. break up compacted soil

Examples of organic fertilizers include

- blood meal,
- fishmeal,
- alfalfa meal,
- cottonseed meal,
- soybean meal,
- fishbone meal,
- liquid fish hydrolysate.

Is there a Tea with Longer Shelf Life?

YES! A new product called *Soil ProVide* by Earthfort.com, developed over 8 years by Matt Slaughter, who bought the lab from Dr. Elaine Ingham. He has the microscope data to reassure us that it's true--tea in a bottle that lasts a year with the full, optimal microbe counts & diversity. Get the combo pack that gives microbe foods along with microbes. Available at:

- AK Mill & Feed, Anchorage
- Good Earth Garden School.com, Palmer and
- Cad-Re Feeds in Kenai/Soldotna.

Where Can I Learn More?

Compost tea is a very new science, and the research is building...and very exciting. Please keep reading and studying. More research is coming out constantly! For more information about soil food webs, see Dr. Elaine Ingham's work, see www.soilfoodweb.com , www.Earthfort.com , and Appropriate Technology Transfer for Rural Areas, Steve Diver at www.attra.org .

