

Aerobic (Aerated) Compost Tea

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Background:

Microorganisms play a critical role in soil health and maintaining plant growth and productivity. One way to maximize the beneficial effect of microorganisms in soil and plants is through the use of compost tea.

For centuries, in order to increase harvest, farmers steeped burlap sacks of manure in barrels of water for days and then applied the extract to crops. Resulting in increased productivity. However, this anaerobic liquid did not maximize beneficial microorganisms and the anaerobic steeped manure created a high potential for pathogens, namely the presence of *E. coli* in the produce.

On the other hand, unlike this steeped extract, aerobic modern compost tea is aerated. Resulting in increasing microorganisms activity and reducing the potential for pathogens. Compost tea is brewed by placing a few cups of high-quality, finished, compost or vermicompost into a bucket of de-chlorinated water and using an aquarium pump and stone to aerated the elixir for 24 to 36 hours. The aeration process separates the microorganisms from the compost. The finished elixir is then applied directly to plant foliage and/or soil. The finished elixir is best applied immediately after the brewing process is complete; (within 4-6 hours,) because the brewed microorganisms have a short-shelf life and begin to died off as soon as the brewing process is ended.

Research into Compost Tea:

- ✓ Empirical evidence into the benefits of compost tea is in short supply, mainly because the quality of the tea is so dependent on top-quality compost or vermicompost. Poor quality compost and improperly brewed elixir results in poor compost tea.
- ✓ However, anecdotal evidence abounds. Organic farmers and gardeners swear by the benefits of properly brewed compost tea.

Benefits of Compost Tea:

- ✓ Micronutrients and beneficial microorganisms can be delivered directly to a plant's root zone and/or applied to foliage
- ✓ Compost tea provides immediate beneficial results to plants whereas regular compost applied to the soil takes longer for plants to reap benefits.
- ✓ A few cups of compost used in compost tea goes farther than yards of compost spread over and worked into the soil. This saves time, effort and compost.

- ✓ The bacterial population in a teaspoon of compost grows from 1 billion in compost to 4 billion in aerated compost tea.
- ✓ The good bacteria in quality compost tea can fight disease in plants by killing the bad bacteria.
- ✓ Compost tea can be applied to improve soil quality.
- ✓ Compost tea can be applied as often as you like without damage to the plants or soil.
- ✓ Use of compost tea will reduce or eliminate the need for chemical fertilizers: saving money and the environment.

Cautions:

- ✓ Improperly cured manure compost that is used in compost tea can still pose a risk of pathogens in the tea. Properly heated Hot Compost piles should eliminate the pathogens. However, to be safe compost tea comprising manure should be used on non-edible plants, such as lawns, shrubs, trees. etc. It's probably best to apply manure-free compost tea to edible plants. Just be aware, there is a school of thought that believes compost tea should not be used on edible plants 90-days prior to harvest; especially leafy produce.
- ✓ Compost Tea is best applied immediately after the brewing process is complete, within 4-6 hours.
- ✓ Ultraviolet light from the sun can kill the microorganisms. So, the elixir should be applied to plants and soil in the early morning or late evening.
- ✓ Bad compost equals bad tea. Good compost tea smells good and bad tea smells bad.
- ✓ Use de-chlorinated water. Chlorinated water will kill the microorganisms from the compost. To de-chlorinated water let it sit in a bucket in the sun for a day, or place the chlorinated water in a bucket with the aquarium pump and stone running and bubbling for two hours.
- ✓ Clean the brewing equipment after each brew to remove the residual bacteria.

Equipment and Supplies:

These materials can be purchased individually and assembled by the brewer or purchased as a complete brewing kit. Individually items can be purchased online or at your local hardware and pet stores. Brewing kits are available online.

- ✓ One 5-gallon bucket



- ✓ One aquarium pump



- ✓ One aquarium stone



- ✓ Four feet plastic tubing with two metal clamps



- ✓ 4 to 5 cups of top-quality, cured, compost or vermicompost

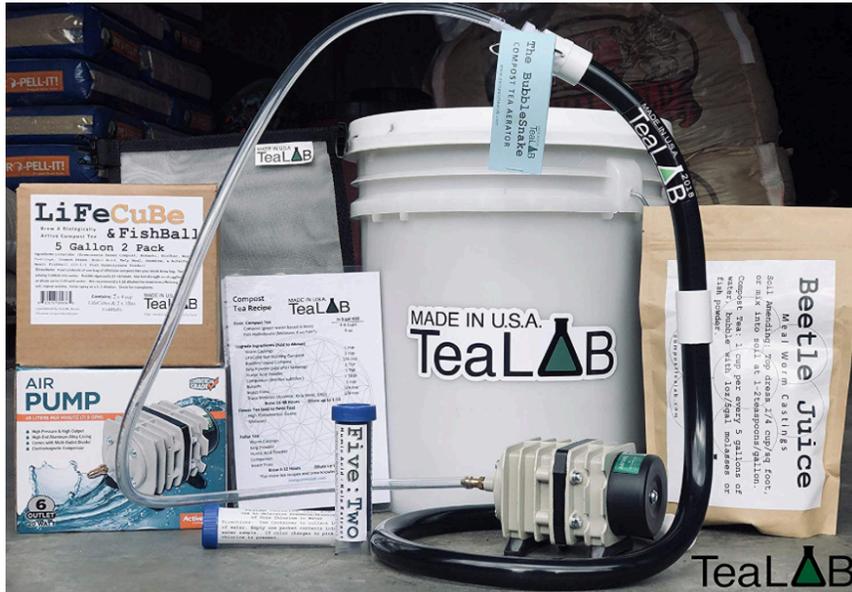


- ✓ Fine mesh bag for holding compost (nylon stocking will work)



- ✓ 5 gallons of De-chlorinated water

- ✓ In lieu of the above equipment, you can purchase an-all-in one Compost Tea Brewing kit



Making and Dispensing Compost Tea:

You can find an abundance of videos on YouTube that will teach you how to setup your equipment and will explain techniques on brewing compost tea. Simply search “compost tea” or “brewing compost tea.”

- ✓ Set up the compost tea brewing kit close to a GFCI electrical outlet and out of the sun. Also, select a place where you are not concerned about spillage.
- ✓ Fill the bucket with de-chlorinated water and connect the aquarium stone to the aquarium pump with the plastic tubing and secure the tubing with metal clamps. The stone goes in the bucket of water to produce the bubbles and the pump is placed outside the bucket.
- ✓ Fill the mesh bag or nylon stockings with 3 to 4 cups of compost or vermicompost. If you choose to not use a mesh bag you will have to strain the finished elixir prior to placing the elixir in a sprayer or the sprayer may clog from the compost.
- ✓ Turn the aquarium pump on and aerate the tea for 24 to 36 hours. Brown foaming is normal. Check the pump periodically to make sure it is still running. Also, periodically swish the mesh bag of compost around in the tea.
- ✓ Pour the finished tea into the container you plan to use to dispense the tea. This could be pump type sprayer, a watering can, etc. If you have leftover tea simply pour it on your soil.

✓ For best results use the tea right away or within 4 to 6 hours. Apply directly to the soil and foliage. Spray a coating on both the top and bottom of the leaves. The leaves should be 70 percent covered. The tea can be sprayed direct on the soil or the soil can be drenched with buckets of Tea. Also, remember to dispense the tea early in the morning or late evening to avoid the ultraviolet light of the sun. Compost tea can be dispensed as often as the gardener or farmer sees necessary.

✓ Clean your brewing equipment to remove bacteria residue so future brews are not contaminated. Use 1 part chlorine bleach to 9 parts water.

Finally:

As mentioned, there is little empirical evidence to support compost tea; however, there is an abundance of anecdotal evidence from organic farmers and gardeners to support the benefits of it 's use. So, experiment with different types of top-quality compost and vermicompost, and experiment with the frequency of applications.

BREW SOME TEA!

Resources:

Pleasant B. and Martin D. 2008. *The Complete Compost Gardening Guide*. Storey Publishing: North Adams, MA.

Gershuny G. 2004. *Compost, Vermicompost, and Compost Tea Feeding the Soil on the Organic Farm*. Chelsea Green Publishing: White River Junction, VT.

Lowenfels J. and Lewis W. 2010. *Teaming with Microbes the Organic Gardner's Guide to the Soil Food Web*. Timber Press: Portland, OR.

Fisher E. 2019. *Compost Tea for The Organic Grower*. Permanent Publications: White River Junction, VT.

Stell E. 1998. *Secrets to Great Soil A Grower's Guide to Composting Mulching, and Creating Healthy, Fertile Soil for Your Garden and Lawn*. Storey Publishing: North Adams, MA.

Murphy E. 2015. *Building Soil A Down to Earth Approach*. Quarto Publishing Group: Minneapolis, MN.