

Brewing Compost Tea

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There's quite an interest "brewing" in the gardeners world over how we can take a more organic and less chemical approach in our gardening. Increasing numbers are turning to an alternative that is right under our noses. Combine a little bit of science with plain old Compost Tea, as we used to know it, and you have Brewed Compost Tea. Many organic and non-organic farms and orchards are cashing in on the benefits and so can you for a few bucks and a little effort. I have been using it for two years and am very pleased with the results.

Plants and soil work together as an ecosystem. When all of the components of that ecosystem are present and working like they should be your plants can thrive. Chemical products or synthetic fertilizers on the plant or in the soil kill a range of the beneficial microorganisms thereby disturbing that ecosystem. Compost Tea helps to restore and increase the populations of those beneficial microorganisms. Compost Tea, in this article, refers to the modern "aerobic brews" also know as Actively Aerated Compost Tea or AACT.

Compost Tea can be used as a spray or as a soil drench and it serves two main purposes. It adds beneficial microbial life to the soil and foliage. It is helpful any time these organisms in the soil or on the plant surfaces are lacking and unless you drown the plant you can't overuse it. The benefits of Compost Tea are:

- it doesn't kill beneficial microorganisms as chemical sprays and fertilizers do
- improved nutrient retention in the soil reduces the use of chemical fertilizers and their leaching into our water sources
- increased nutrient availability to the root system as biological activity increases
- improved water-retention in the soil decreases watering needs
- improved soil structure
- it acts as a foliar fertilizer
- foliage is protected by beneficial organisms which occupy plant surfaces and deter or eat disease-causing organisms
- supplies greater quantities of beneficial microorganisms than large volumes of compost
- it has been used effectively to suppress blackspot, powdery mildew, downy mildew and many other plant diseases so it might be worth a try before using a more toxic method

What is Brewed Compost Tea?

If you add water to compost, mix it up, give it a little time, then drained off the liquid before it goes anaerobic you get Compost Leachate. Soluble nutrients, enzymes, beneficial microorganisms, etc., are leached off of the compost. It's good stuff but it could use a lot more of the microorganisms. Enter science!

By brewing Compost + Warm Water + Air + Sugar we can grow a massive culture of the beneficial organisms that are so valuable in our end product. The experts say that 1

teaspoon of compost contains around 1 billion bacteria. A small amount of compost is used to brew a large amount of Brewed Compost Tea which contains about 4 billion bacteria per teaspoon. That would equal over 3 trillion bacteria in 1 gallon of compost tea, not to mention the increased numbers of beneficial fungi, etc. The production is, literally, a brewing process like making wine or beer but is much faster. Brewing Compost Tea is quite easy if you just follow some good basics and it can really increase the performance of your roses.

The Basic Ingredients

- Use at least room temperature water. The oxygen carrying capacity of water decreases as the temperature increases so stay below about 80° F. Buy a submersible aquarium heater that is rated at twice the gallon capacity of your brewer. Hey, this is electricity and water. Be careful! Submersible heaters are safe if used correctly.
- De-chlorinate the water by aerating it for a minimum of two or three hours. Letting it set overnight helps too.
- Aerate thoroughly. Don't scrimp on the air pumps. Get an air pump rated for at least a 60 gallon aquarium for a 5 gallon brewer. Use one or two air pumps rated for a 100 gallon aquarium for a 30 gallon brewer. An internet post even shows someone's shop vac blower being used to aerate a 25 gallon unit. Pretty much, the more air the better.
- Use good aerobic compost. Either homemade or purchased is fine. Use up to 4 cups for a 5 gallon batch or up to 20 cups for a 30 gallon batch. Measurements do not need to be exact.
- The beneficials that you are breeding need to be fed. The bacteria like natural food and they have a sweet tooth. Add un-sulphered molasses (available at natural grocers), or any fruit juice. Don't use anything with preservatives. Use about 2 tablespoons per 5 gallons or water.

About the Process

- UV rays kill the microorganisms so keep the sun off of the brew.
- Brew for 12 to 36 hours. Temperature, amount of aeration, type of compost and what you feed the brew all affect the brewing time.
- A good brew should smell like fresh soil or compost. It has gone anaerobic if it smells bad and you should adjust your process by increasing the aeration or decreasing the brewing time.
- Filter it and apply as a foliar spray or apply it directly to the soil. I water with 1 gallon of Compost Tea per plant at least monthly.
- It does not keep long so use it right away.

Bioslime

No, I'm not kidding, bioslime or bio-slime is a real word. It is the black film that builds up on surfaces of your brewer during use. The bioslime will start to grow anaerobic bacteria and ruin your next batch if you don't clean it off. You can spray most of it off with a jet of water. The experts recommend that you wash it off with a 3% hydrogen peroxide solution if still wet or use a 5% baking soda solution if it has dried on. I use a mild antibacterial

soap solution, rinse well, let it dry overnight and have never had a problem with this method.

Fungal or Bacterial Dominant Brews, Additives, etc.

Feeding the brew with a type of sugar will create a higher bacterial balance. Roses benefit from an increased fungal balance in the soil. Add kelp or humic acid to increase the fungal balance in the brew. Worm castings can be substituted for compost and a variety of additives or alternatives can be used to feed the brew. Refer to the resources listed below for a thorough discussion of these subjects, application rates and commercially available units.

To Build or Buy?

Many good units are available on the internet and at some nurseries from around \$60.00 to \$150.00 for a 5 gallon unit up to thousands of dollars for large commercial models. You might be able to build a 5 gallon unit with spare parts or you can build something for under \$50.00. My 30 gallon units cost about \$100.00 each to build where one equivalent retail unit would cost me around \$280.00 plus shipping. The money I saved went into new roses, of course. Plans for building your own brewer will be in the Rose Window and posted on our web site, www.denverrosesociety.org, next month. I hope that many of you benefit from using Compost Tea and that you have as much fun with the learning and brewing as I have. Another benefit; you'll really keep the neighbors guessing.

The first article I read on Compost Tea was a study by the Institute of Ecosystem Studies (www.ecostudies.org) that was republished April 2006 in American Rose under Organics: Do They Really Work?

The main resources for this article were Dr. Elaine Ingham's www.soilfoodweb.com and Teaming with Microbes by Lowenfels and Lewis. These are both outstanding resources for information on compost tea, soil biology and organic gardening.