



BLC COMPOST TEA RECIPE

updated 5/22/2020

Water Temperature

50° 72 hours	60° 48 hours	70° 24 hours	80° 24 hours
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For Soil Drench teas, apply full strength or dilute up to 1:20

Basic Compost Tea

Gallons of Dechlorinated Water

	5	30	50	300
Compost (thermophilic green waste and/or aged forest product)	2 cups	6 cups	8 cups	1-2 gallons*
Worm Castings (Red Wiggler and/or African Nightcrawler)	1 cup	3 cups	4 cups	1 gallon*
BLC Fish Fusion (fish/crab/shrimp hydrolysate w/o phosphoric acid)	4-8 oz	12-24 oz	16-32 oz	0.75-1.5 gal
Liquid Kelp (or Soluble Kelp Powder)	3 tbsps (1 tsp)	1.5 cup (2 tbsps)	2 cups (1/4 cup)	12 cups (1.5 cups)
Liquid Humic Acid (or Soluble Humic Acid Powder)	3 tbsps (1 tsp)	1.5 cup (2 tbsps)	2 cups (1/4 cup)	12 cups (1.5 cups)
<i>Note on Kelp and Humic: liquids are best, but soluble powders can be substituted for one or the other</i>				
Trace Minerals/Glacial Rock Dust/Azomite/Diatomaceous Earth	1/4 cup	3/4 cup	1 cup	5 cups
OPTIONAL: Molasses (add no more than 12 hours before application)	2-4 oz	24-32 oz	24-48 oz	1-2 gallons

Advanced Compost Tea (the above ingredients with these) (add after diluting, before application)

BLC MicrobeZen	0.5-1 oz per gallon
Primordial Solutions Sea Green	0.5mL - 1mL per gallon
Primordial Solutions PaleoBloom	VEG: 5mL per gallon - BLOOM: 10-20mL per gallon

Upgrade Ingredients (add sometimes, switch up for maximum biodiversity) (don't add all at once)

Nearly anything can be an upgrade ingredient if used at the correct amount. Less is more! A microscope is the only way to know.

Bokashi	1/4 cup	2/3 cup	1 cup	5-6 cups
Frass (mealworm and/or black soldier fly)	1/4 cup	2/3 cup	1 cup	5-6 cups
BLC Bacillus Blend (<i>Bacillus subtilis</i> and more)	1 tbsps	6 tbsps	1/3 cup	2-3 cups
Fulvic Acid Powder (or liquid fulvic as directed)	1 tsp	2 tbsps	3-4 tbsps	1-1.5 cups
Amino Acid Powder (use sparingly to avoid excess N)	1 tsp	2 tbsps	3-4 tbsps	1-1.5 cups
Yucca (add near the end of the brewing process if using an extract)				---- as directed on label ----
Guanos, Meals, Etc... (organic NPK/minerals)				Varies

Flower Tea Sidebrew

We suggest brewing this separately and adding in to your final tea before application

Brew for 24-48 hours

	<u>5 into 50 gallons</u>	<u>5 into 300 gallons</u>
High Phosphorous Guano (smallest particle size best)	1 cup	2-3 cups
Molasses	1 oz	2-3 oz
True Blooms	10-20 mL	20-30 mL

Please note this flower tea is not for nutrients, but to culture phosphorous solubilizing bacteria

For foliar teas - apply full strength or dilute up to 1:2

Foliar Tea (brew only 24 hours) 5 gallon batch

Worm Castings	2 cups	
Soluble Kelp Powder	1 tsp	
Baseline or Anasazi Gold Liquid Humic Acid	1/2 oz	
BLC Bacillus Blend (<i>Bacillus subtilis</i> and more)	1 tbsps	
Sea Green (add after brew before spraying)	2.5 mL	<--- if veg
True Blooms (add after brew before spraying)	5-10 mL	<--- if flowering
BioMitigator F	1tsp - 1tbsps per gallon	(1/2 in beginning, 1/2 in end)

**ALWAYS REMOVE TEA BAG
AFTER 24 HOURS OF BREWING
FOR ALL SOIL DRENCH & FOLIAR TEAS**



Beneficial Living Center and Garden Supplies

148 South G Street (across from the Arcata Marsh)

707-633-6125

About Compost Tea

The Substrate - Quality in quality out. Worm castings, regular compost (thermophilic), and ancient forest humus are among the most popular. You can only extract and culture the organisms that are in your substrate. Diversity is key and make sure to include something produced locally. Locally made compost will have organisms that have adapted to compete with local pathogens. No two worm castings are alike, nor are any composts... Choose among the highest quality sources and mix them together for maximum diversity and density. Play with ratios and have fun with going all mad-scientist in this department. Please note, in order to extract fungal hyphae you need a 400 micron mesh bag. A nylon stocking will make a compost tea, but it's not the best option for the most diverse tea possible.

The Players - Meet the family: bacteria, fungi, protozoa and nematodes. Those are the major players. Bacteria are easy... they bloom quickly and there are bacteria adapted to eat most food sources. Protozoa are easy too, you just need to make sure you have diversity in your substrate. Fungi are challenging to get to grow in the tea; temperature and appropriate food sources are tricky, your best bet is to extract the fungi from a high fungal substrate. Beneficial predatory nematodes won't reproduce in the tea because their life cycle is too long, you need to get them from your substrate and they are only in high quality substrates. Mycorrhizae also will not reproduce in a compost tea, they need a plant root to colonize to reproduce, so only add them to the end of your tea brew if at all.

Air - More is better. The microbes living in your compost tea are aerobic, they will "breathe" the dissolved oxygen out of your tea at an astonishing rate. Don't cut corners here. It is hard to overdo the aeration. You want the air bubbles to agitate your substrate and knock off organisms from the organic matter into the compost tea. It is possible however to have bubbles that are too big or too small. Extremely large bubbles will disrupt fungal hyphae and small bubbles may cut them like a knife. Sandstone air diffusers or airstones do work decently enough, but aren't ideal because they are hard to clean and can house bacteria that throw off your future brews. We use PVC blowers with appropriately sized holes to aerate our tea.

Water - The life-blood. Municipal tap water has chlorine and sometimes chloramines. These chemicals are designed to kill microorganisms. Chlorine will off gas whereas chloramines do not. If you are on municipal water check your water district for chloramines. Well water is good if it is not too full of minerals. You may still brew decent tea but high levels of any given mineral will change the conditions and select for some organisms over others resulting in less diversity. Reverse osmosis water works perfectly fine. Consider filtering your water and consider "structuring" your water for maximum results.

Food For the Microbes - Organic matter. Most organic matter can be used as food by some kind of microbe. By organic I don't mean certified by some agency, but something carbon based that was likely recently alive. Many microbes can even utilize "inorganic" things like minerals and salts. Kelp and fish are popular additives, but you can add guanos, various plants, or just about anything else in the right proportion. The key being the words "the right proportion," which is difficult to determine as there are so many variables in compost tea. Every new food source will change the conditions and therefore the entire tea. Exercising restraint is advised without a microscope because too much food can disrupt the balanced diversity and create potentially harmful brewing conditions. Be very mindful about what quality of each ingredient you put in too, fish for example can range from heat treated dry powders to enzymatically digested cold-process hydrolysate. Hydrolysate is most ideal for tea, but beware of what is used to stabilize the pH, most use a lot of phosphoric acid which disrupts microbial diversity. Find a fish where the phosphorous levels are lower than the nitrogen. A fish that is 2-4-3 is likely full of phosphoric acid even if it doesn't say it on the label.

Cleanliness - Clean your bucket/barrel between each batch, clean the air bubbler, clean the tea bag. You don't need sterility, don't worry about bleach or peroxide, but you need to scrub off all the old biofilm that develops from the last batch or else you'll throw off your tea culture.

Water Pumps & Sprayers - They can mess up your hard work. Propeller water pumps may bash the fungal hyphae, as will the mechanism that sprayers use to disperse the water into a spray. You can buy special diaphragm pumps to pump the tea, as well as special nozzles for sprayers that don't damage the fungi in your tea. But don't stress, it's not the end of the world if you don't have this gear, most of the bacteria will be fine and even bashed up fungal hyphae can often regrow into full fungal colonies. Any tea is better than no tea, we just want you to be aware how to be an experts like us! Just avoid pumping the tea if possible (use gravity), and if you can avoid using an atomizer to spray it that would be best.

The Conclusion - There are a hundred ways to brew good compost tea, and many ways to brew excellent compost tea. If you follow the general principles explained here, you'll likely brew something your plants benefit from and you'll avoid brewing anything damaging to your garden. Remember that everything you add will change the whole brew. Every variable that changes will change the types and numbers of each organism. Without a microscope it can be challenging to know if you are creating a diverse and dense culture. The more biology the better: more numbers, more diversity. Since you can never brew two brews exactly alike, tweak the brew slightly each time, playing with different inputs in small amounts, sometimes adding some things, and omitting them other times. We offer free compost tea brewing consultations and analysis at the Beneficial Living Center and Garden Supplies, so bring your tea down and we'll throw it under the scope and give you some pointers.