



HOME BREWING MANUAL

**THANK YOU FOR
PURCHASING OUR
5-GALLON ECO-TEA
BREWING KIT.**

**Please review the following
information before using
your new unit.**

We provide a 2-year guarantee on the disc diffusers, a 5-year guarantee on the aerators and a 10-year guarantee on the brewing unit.

**EACH 5 GALLON ECO-TEA BREWING KIT
COMES WITH 1 x 5 GALLON APPLICATION**

QUESTIONS OR CONCERNS? CONTACT US! 204.417.4122 | INFO@ECOTEA.CA | WWW.ECOTEA.CA

COMPOST TEA MAKING & APPLICATION GUIDELINES

Please follow instructions for setting up the 5-Gallon Eco-Tea Brewing Kit.

- 1) Please ensure that your kit contains all the following components:
 - a. 15-L/min aerator (Alita)
 - b. Clear Tubing
 - c. Square diffuser apparatus
 - d. Filter sock
 - e. Instruction Manual
- 2) 5 gallon eco-tea ingredients:
 - a. 300 mL Premium Compost
 - b. 100 g Microbial foods
 - c. 200 mL Catalyst
- 3) Remove the Alita aerator from the box.
- 4) Attach the black rubber connector piece onto the end of the aerator and attach the end of the tubing to the adaptor of the 5 gallon pail.
 - a. This is built to snugly fit into the bottom of a standard 5-gallon pail
- 5) Fill the pail with water to the 20 liter mark
- 6) Plug in the aerator and allow the water to aerate for at least 30 min. This **DECHLORINATES** the water. (Chlorine found in our water is harmful for the microbes in EcoTea).
- 7) After the water has been de-chlorinated add the pouch of 100 g Microbial Foods directly into the aerated water. Allow a few minutes for the product to homogenize. (Keep the air pump on)
- 8) Empty the 300 ml Premium Compost into the filter sock.
- 9) Twist the filter sock several times and tie it with a zip tie or rubber band.
- 10) Place the filter sock with compost into the 5-gallon pail. (Make sure the air pump is still on)
- 11) Your Eco-Tea is now brewing. The brewing process will be complete in 24 hours (depending on temperature). The ideal brewing temperature would be 20-25°C.
- 12) The Eco-Tea will be good if left aerating for up to a week. Afterwards the tea will go anaerobic. (Starts to smell like ammonia).
- 13) Put in 200 ml of the catalyst just prior to application. This product will drastically increase microbial activity so it is imperative to use the product within 1 or 2 hours after putting the catalyst in. Please note that the catalyst will cause a lot of bubbling – if this is the case add 1 tbsp of vegetable oil to break the surface tension.
- 14) Eco-Tea can be applied concentrated or diluted 1 part Eco-Tea to 3 parts aerated water (1:3 ratio) to cover a larger area.
- 15) If you have any questions regarding Eco-Tea please feel free to contact us.

There are quite a few factors that can affect the quality of the final compost tea so it is important to understand a few basics:

- 1) Compost is the inoculum, so it must be of the highest quality. We do not recommend that you substitute another compost source without testing the biology of the new compost source before using it.
- 2) Compost should always have room to move around in the compost bag. Do not use more than the recommended amount without emptying the bag first.
- 3) The aeration tube should always go to the bottom of the filter sock so that good thorough agitating action is achieved.
- 4) Disc diffusers provide sufficient mixing and aeration and maintain good levels of oxygen in the water thereby allowing the growth of beneficial fungi, bacteria, and protozoa. Eco-Tea should always end with a good earthy smell. If it has any kind of a bad or foul odor, then something has gone wrong in the brewing process.
- 5) We recommend that your starting water temperature be a few degrees warmer than soil temperature, but never over 21°C (72°F). Brewing at lower temperatures 13°C (55°F) requires more like 72 hours to complete the process whereas brewing at 21°C (72°F) will allow brew to be done in 24 hours.
- 6) The foods we provide are specially selected to promote beneficial microbe growth and quantities are matched to the amount of aeration that the machine is capable of doing. Do not increase food amounts over the recommended rate or use other food sources without testing oxygen levels, or your tea may go anaerobic and harm your plants.
- 7) Make sure to use good clean well water or equivalent. Chlorinated or Fluoridated water can kill the organisms before they have a chance to grow.
- 8) Clean the machine regularly after each use. A black scum buildup can ruin subsequent batches of tea due to the anaerobic toxins produced in the slime layer.
- 9) There will be a fair amount of small compost particles left in the tea after the brewing cycle is complete. These particles may clog an ordinary sprayer. We provide a second filter so you can pour the tea through this screen before application, but you may need to increase your sprayer nozzle and/or filter size to prevent plugging. There is lots of beneficial microbial life resident in the organic matter particles, so the more you have to screen out, the less beneficial life will be left in the tea.
- 10) Due to the beneficial organic matter and biology in the tea, it will settle quite rapidly without aeration. Eco-Tea should be kept mixed while being applied.
- 11) Sometimes the Eco-Tea may foam up some during the brew cycle. If this happens, don't be alarmed; just add a small amount (1 tsp) of sunflower oil or similar vegetable oil. The oil will reduce the foaming and be an added food for the microbes.
- 12) The tea is ready for use in about 24 hours, but as long as the extraction chamber has been removed, the Eco-Tea can be stored between 5 and 7 days provided the aeration is kept going.
- 13) We know of no adverse side affects from over-applying. Suggest you apply to the soil at least twice per year and up to as often as monthly. For foliar applications, suggest you apply every one to two weeks during stressful periods.
- 14) We always add catalyst to the Eco-Tea when we apply it, in order to feed the biology as it finds a new home in the soil and on the leaves. Once these additional foods are added, the Eco-Tea should be applied right away - definitely within two hours maximum. The microbes eat these foods rapidly and the subsequent oxygen demand is high. If not sprayed out soon, the oxygen levels can drop and cause damage to the microbes in the brew.

- 15) Over years of trials and developing recipes, we've come up with custom foods for a variety of applications. These recipes will be provided in the recipe section.
- a. **Fungal blend**
 - i. For trees, shrubs, and bushes
 - ii. Can be customized for species specific cultivars
 - b. **Balanced blend**
 - i. For general gardens and turf applications
 - ii. Can be customized for species specific cultivars
 - c. **Bacterial Turf blend**
 - i. For golf courses and areas needing a boost in bacterial growth
 - ii. Can be customized for species specific cultivars
 - d. **Foliar blend**
 - i. For foliar applications of Eco-Tea.
 - ii. Can be customized for species specific cultivars
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AEROBIC COMPOST TEA

Aerobically made compost tea offers ecologically and economically sound answers to problems faced by farmers, landscapers, and tree care professionals from chemical build ups in soils and in ground water sources. At the same time as helping to overcome the chemical toxicity problems, other benefits include healthier plants, increased yield, less irrigation necessary, and more resistance to stress and drought conditions. These benefits have been seen in many places of the world including across the US, Australia, New Zealand, Mexico, and many other countries.

While aerobic compost tea applications have many benefits to the grower, the tea must be applied keeping biological laws in mind in order to ensure that the treatments are successful. Aerobic compost tea is a liquid containing a rich diversity of living bacteria, fungi, protozoa, and more that are ready to go to work, but they must be given what they need to live and multiply.

Background:

With the age of chemicals, growers have become accustomed to the idea that we need to use pesticides, fungicides, weed killers, etc. We think that if there is a bad pest or disease, we must get out there and kill it; therefore we use an "-icide" meaning to kill. What we fail to realize, is that there is an enormous amount of beneficial life that goes on in the soil and on the leaves. When we get out there to kill the disease, we kill off many of the beneficial organisms as well. If we are fortunate, the disease disappears and we are satisfied with the success, not considering the long-term effect we are having on the current crop, future yields, and future pollution problems. Over time we kill off more and more of the beneficial microbes that perform many helpful jobs including converting and releasing nitrogen into the soil. As time goes on, we find we need more and more fertilizer because the microbes are not producing as much nor are they holding these nutrients in the soil.

Brief History of Compost Tea:

For many years, farmers made their own compost or manure tea by placing a bag of compost in a barrel and letting it sit for a while. This mixture usually went anaerobic and was often smelly. In the late 90s, a new technology was developed, where a "brewer" that oxygenates the water keeping the "brew" aerobic with good oxygen levels replaced the old barrel style. This produces a much more consistent product with microbes that are ready to go to work in the soil, which, if the soil is healthy, is also an aerobic environment.

Why Aerobic Compost Tea:

High quality, aerobic compost tea is made from diverse sources of composts and other natural ingredients. The “brewer” extracts the beneficial microbes from these composts etc. and with the addition of food sources for the microbes to grow on, these microbes will multiply many times over. Oxygen levels are maintained at a high level to ensure that only the beneficial aerobic microbes reproduce and grow – not the potentially harmful anaerobic microbes. These microbes will repopulate the microbial population in the soil and on the leaves provided they are given what they need. These microbes have a variety of jobs including,

In the soil:

- * Breaking down crop residues, reducing sites that over-winter disease
- * Attacking disease organisms
- * Fixing nitrogen
- * Releasing soil nutrients
- * Adding organic matter back into soil as they build humus

On the leaves:

- * Protect leaf surfaces
- * Symbiotic relationship with leaves - (they feed each other)

By adding these beneficial microbes back into the soil and onto the leaves, you are replenishing this invisible army, so it can go to work for you.

Biological Factors to Consider:

In order to keep plants healthy, beneficial microbes need to be established in the soil and on the leaf surfaces ahead of times of stress or pathogenic invasion.

In the soil the beneficial microbes have a large variety of jobs including retaining nutrients and unlocking nutrients, as the plant needs them. Over the years growers are finding they have to use more and more fertilizer to keep up with their crops. They have to add lime on a regular basis. A major reason for this is the fact that the beneficial microbes gradually get killed off in the process of intensive farming due to pesticide use, soil compaction, extensive tilling, etc. If these microbes are not replaced, nutrients will no longer remain held in the soil and will leach away into the ground water. By replenishing these microbes with good quality aerobic compost tea, you are putting the biology back into the soil where it can again work for you.

When the beneficial microbes are not present in sufficient numbers, the disease organisms multiply in abundance causing more need for chemicals. The beneficial microbes in the soil take time to multiply and grow, so applications are best done the previous fall for a crop this spring, although spring applications are still beneficial if none were done last fall. Many diseases over winter in the soil and the microbes need time to find food, multiply, and start their work. These microbes need food. Applying the microbes without any food to grow on, will have limited benefit. If applied to the leaves, you need to spray the tea on with an activator or microbial food, so the microbes can get started. An active bacteria secretes a sticky substance that will stick it to the leaf. After the microbes have established on the leaf, they will feed on exudates from the leaf and the leaves will feed on the exudates from the microbes. If fungicides are used and/or certain insecticides, these beneficial organisms are likely to be destroyed. If it becomes necessary to use a fungicide, a follow up application of tea will help replace the beneficial microbes lost.

Aerobic compost tea contains only a small amount of available nutrients, however it contains biological life that will significantly increase the benefits of the nutrients already in the soil. It is still important that these nutrients be well managed and balanced. Failure to do so, will decrease the benefits obtained by the tea.

Application:

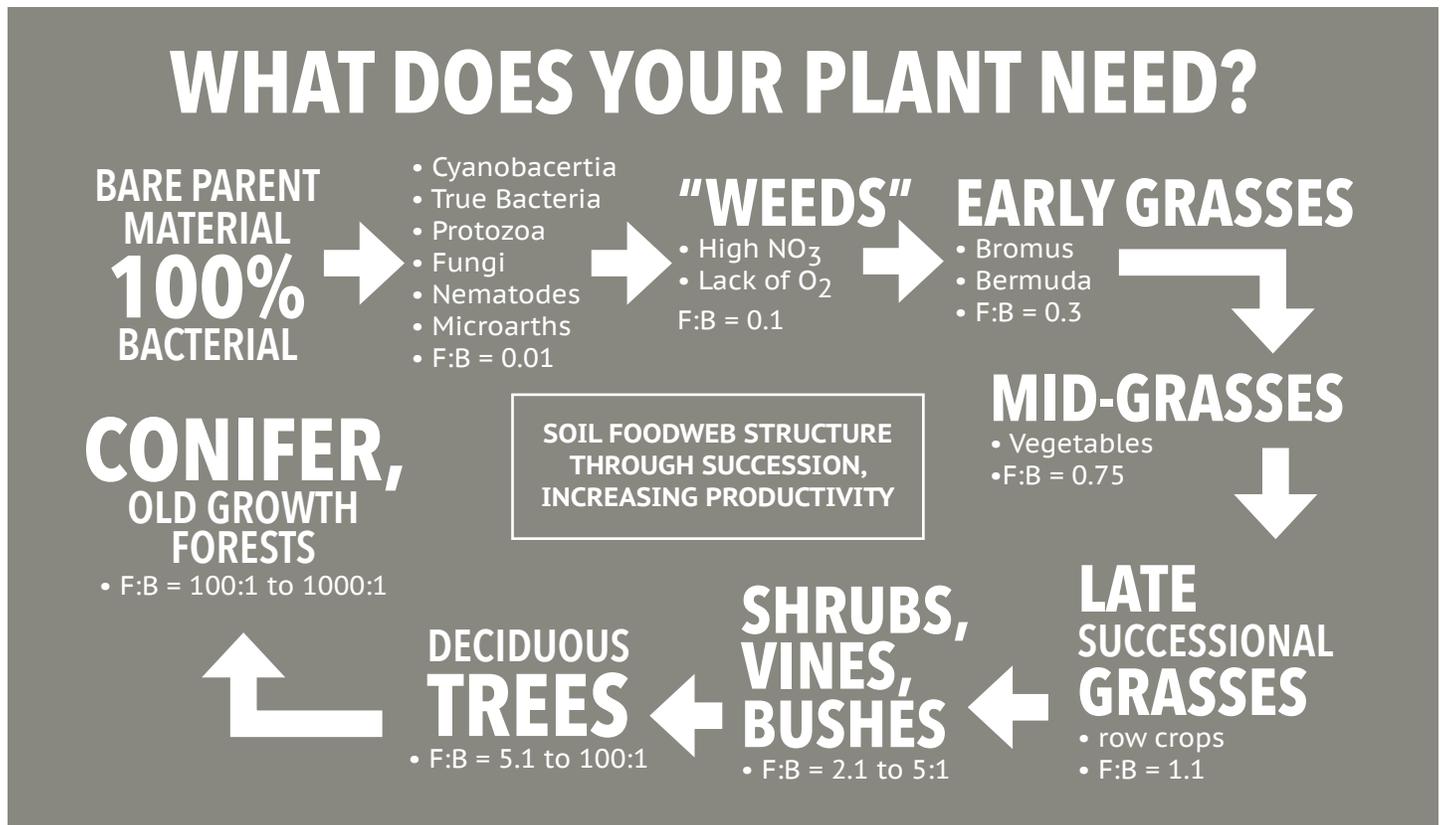
With the above background, it is not hard to realize that there are certain principles that must be kept in mind during application. Oxygen levels must be kept up until application, but this is quite easy using simple fish/aquarium equipment. There is some particulate matter in the tea, so larger filters (>25 mesh) and therefore larger nozzles are necessary. A diaphragm pump is recommended if possible. Applying the tea with a sprayer containing pesticide residues may reduce effectiveness. Also, too much pressure will harm the organisms as they are sprayed onto the leaf or soil surface (keep it under 45 psi.) These things need to be worked out ahead of application time so that the fungi and bacteria are not screened out or damaged too much in application.

If applying to foliage, it is important that there be good beneficial organism coverage on both sides of the leaf. Applying with equipment that will ensure uniform coverage and using appropriate microbial foods to stimulate microbial growth will help to ensure that the microbes get well established.

Aerobic compost tea is best applied in the cool of the morning or the evening so the microbes get a chance to establish before the sun is too bright. On the leaves, it is important to apply when it is not raining, so they are not washed off before they can stick on. If doing a soil application, during or just before a light rain would be ideal. If applying with large volumes of water as in during an irrigation event, then bright light is not a problem due to water volume.

Compost Tea Recipes:

We have come up with a basic set of recipes that work in most applications. Use the succession chart along with biology testing to help you determine what your specific soil and crop needs. Alternatively, you can use some generalizations based on history and the crop you are growing to come up with a program to get started.



Premium compost blends are the most important part of compost tea making. It must have high levels of a diversity of beneficial biology (bacteria, fungi, actinomycetes, protozoa and nematodes). This gives you the best chance that your application will be successful and helpful.