



Aeromaster TE500

Compost Tea Extraction System



Stainless steel construction including piping and water pump



Simple, easy to use controls

Aeromaster TE500 Compost Tea Extraction System

Compost provides minerals, humus, organic matter, and diverse microbes for the soil as well as a shelter and food source for the microbes. Compost tea is an economic way to deliver many of the benefits of high-quality compost efficiently and effectively. Compost tea made with the TE500 is a water based extraction of the soluble minerals, humic substances, and microbes from high-quality compost. A food source is also added to the compost tea to stimulate microbial activity and reproduction.

High-quality compost tea is a source of diverse beneficial microbes which, along with microbial food sources, multiply numerous times on crop leaves and in the crop's root zone. Compost tea is typically broadcast on the soil or applied in the furrow, applied as a foliar, by spraying or through an irrigation system, to the leaves of a growing crop, or sprayed on crop residue to capture the nutrients. The active microbes in compost tea help the plant's leaves extract nutrients from the air and as they find their way into the soil, they help the plant's root system extract nutrients from the soil.



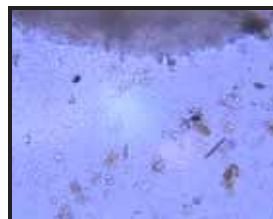
Amoeba and Fungi



Ciliates



Group Nematodes



Mass of Growth of Bacteria

Maintaining the same microbial diversity in compost tea as existed in the compost from which it was made is essential for maximum effectiveness. If the tea making process favors only a few species, some beneficial species may be crowded out and not available to help the crop grow.

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The Process Makes the Difference

The quality of any compost tea is dependent on the quality and quantity of the compost used. The method of production, however, also impacts the stability and effectiveness of the final tea product. The two most commonly used methods for producing compost tea are tea brewing and tea extraction. The two methods are considerably different as is the potential effectiveness of the product they produce.

Compost Tea Extraction vs. Brewing

Compost Tea Extraction

The **Aeromaster Compost Tea Extraction System** is a high production compost tea production process. The basic principle of the extraction system is to use more high-quality compost per gallon of finished tea, effectively extract the soluble minerals, humus, and microbiology. No food sources are added immediately, allowing the inactive microbes to remain inactive, thus conserving oxygen. This extends the useful life of the tea to 10-14 days. Because the microbial population was not made active by adding food, the microbial diversity that existed in the compost is preserved. Aeromaster Tea Activators are added to the compost tea just prior to application. The Activators are specific food sources that "wake up" the microbial population causing it to become active and begin rapid reproduction. The active microbes are immediately applied to the crop where they continue to multiply in a natural environment that favors preserving the original microbial diversity.

Both brewing and extraction are batch processes, however the production capacity of the two systems is significantly different. The brewing method extracts the minerals, humus, and microbes in what is typically a 24 hour process that includes time for the microbe population to expand. The brewing equipment is therefore only capable of producing one batch of compost tea each 24 hours. To expand capacity, additional tea brewers must be added.

The AE500, by comparison, produces compost continuously as 500 gallons of water passes through the extraction system. When the 500 gallon batch is complete, the spent compost sludge is flushed from the systems. Once a fresh charge of compost is put in the extractor, production of the next batch can begin. The Aeromaster Compost Tea Extraction System can produce as many as three, 500 gallon batches in an hour or 1,500 gallons of high-quality compost tea per hour.

Compost Tea Brewing

Compost tea brewing is based on removing the soluble mineral nutrient and humus portion of a small amount of very high-quality compost, along with the diverse microbe population held by the compost, using water and air pressure to brew. Microbial food sources are added to the tea solution which cause the microbes to become active and multiply rapidly. Brewed compost tea must immediately be applied to the crop, ideally within 24 hours. The delivery of a large, microbe population helps the plants gather needed nutrients from the air, through the leaves, and from the soil through the root system, provided the original microbial diversity has not been lost.

There are two aspects of the compost tea brewing process that have the potential for limiting the effectiveness of the tea, specifically maintaining microbial diversity and the limited useful life of the compost tea.

Maintaining the Original Microbial Diversity Profile

Microbial diversity is essential for crop production. Each microbe species performs a specific function related to the growth and development of the crop. A diverse population of microbes is required to insure all of the necessary functions will be performed. If any single microbe species begins to dominate the others, soil fertility and plant health issues can arise. The environment the microbes grow in influences whether or not diversity can be maintained. If the environment or available food favors one species over another, the favored species reproduces faster than the other species and the microbial diversity and balance are compromised. The tea brewing process can upset microbial diversity because of the food sources used and the fact that the growing environment is water, as opposed to soil or a compost windrow. Some critical species, for example fungi, require being in contact with organic matter to reproduce and therefore do not grow well in a turbulent water environment.

Useful Life of Brewed Compost Tea

The other potential problem with brewing is the very short useful life. Adding a food source at the start of the process to encourage the microbes to multiply causes them to become very active. Being active is good when the microbes are applied to crop leaves, however they consume much more oxygen than when they are inactive. The increased oxygen consumption, rapidly depletes the oxygen available in the water, causing the microbial population in the compost tea to become dominated by anaerobic species in a short period of time. If the compost tea becomes anaerobic, its effectiveness is limited and may even prove detrimental to the crop.