DAVE GREENE ESTATE CARE, INC.

COMPOST TEA APPLICATIONS

The production and application of Compost Tea is a concept with roots in organic farming that is gaining momentum among specialty growers, particularly those of grapes, vegetables and, yes, even turf. Compost Tea "an aerobic, water-based solution of high bacterial and fungal count microbial cultures and extracted nutrients derived from high quality, diversified compost, microbial food sources and aerated water that can be locally produced and applied to enhance soil biology, fertility and plant health by inoculation with soluble nutrients, beneficial microbes and their metabolites." Compost Teas have been shown to enhance nutrient availability and resistance to environmental stresses. Carrying the torch in the research and dissemination of information about compost teas is Dr. Elaine Ingham, a microbial ecologist and former associate professor at Oregon State University, who founded Soil Foodweb, Inc. (SFI), several years ago. SFI, located in Corvallis, Oregon, is a commercial lab dedicated to the microbial analysis of soils, composts and compost teas. SFI's tag line is "The lab measuring the life in your soil"

Dr. Ingham's work is global in nature (she is also an adjunct professor at Southern Cross University in Australia) and spans many agricultural and horticultural disciplines. Much of her work with compost teas today is in analyzing and quantifying the microbial counts and the bacterial/fungal balances of prepared teas, evaluating the efficacy of various food source additives, and testing the commercially available compost tea brewing machines.

Earthworks introduced its first generation compost tea brewing system for turf which includes a 60 gallon cone-bottom tank, compost basket, air-pump aeration system, transfer pump (for transferring the tea to a sprayer), pre-blended multi-source compost, activator (a food source to support microbial growth), and a cleaner kit. Unfortunately, soil biology is a dynamic and expansive phenomenon, and there is no magic bullet. We're following the opposite, expansive path by introducing as great a quantity and as broad a range of beneficial microbes each performing different functions as possible.

The soil foodweb, as coined by Dr. Ingham, is the richly diverse community of micro- and macroscopic organisms living within the phyllosphere and rhizosphere (the biologically-active regions around the leaf and root surfaces). These organisms included bacteria, fungi, nematodes and protozoa. Proponents of the soil foodweb philosophies argue that overall plant health (and hence, agricultural productivity or turf quality) is directly tied to the health of the soil foodweb itself.

Compost Teas, focus on actively extracting live microbial populations (bacteria and fungi in particular) from the compost, providing a food source to grow the microbes, and then keeping them alive with supplemental aeration until they can be applied. Proper aeration is key to ensuring an extraction of active aerobic microbes that most aggressively compete with pathogens.

Good compost tea starts with good compost, one that has been created using standards developed by the National Organics Standards Board regarding C:N ratios, microbial count, soluble salts, organic matter content, particle sizes, pH, and NPK concentrations, and appropriate for its intended use. It must be allowed to reach a temperature of 131 F for three days to kill pathogenic organisms.

Among the various critters present in compost tea, bacteria and fungi weigh heaviest in importance. Once the bacteria and fungi are extracted from the compost (in the case of fungi, enhanced by the physical turbulence caused by aeration of the water), food sources and catalyst materials are supplied to increase their numbers. Food sources can include molasses, kelp and fish powder, while catalyst amendments include yucca extract (saponin), rock dust, and humic and fulvic acids. Certain food materials promote bacterial growth, while others tend to favor fungal populations.

It is important to have realistic expectations of compost teas. Nobody is claiming total disease control here. Might a compost tea program suppress turf diseases to the point of delaying the need to spray, or lengthening spray intervals in periods of moderate disease pressure, and ultimately reduce the cost of disease control? Early indications are that it will.

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