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The Myth of Compost Tea:

"Compost tea is an effective alternative to traditional pesticides"

The Myth

Well, maybe it's too early to call this one a myth. Let's just say (to paraphrase Mark Twain) that news of its effectiveness has been greatly exaggerated. What troubles me is the speed at which this statement has been accepted as a demonstrable fact, when in truth there are only a handful of peer-reviewed publications on compost teas or extracts. There are, however, a number of articles published in popular magazines (such as *Biocycle*), but such articles are not subject to peer review and are considered to be "gray literature" by the scientific community.

Compost teas and extracts are traditionally used as liquid organic fertilizers, but recently have been touted as powerful antimicrobial agents capable of combating pathogens associated with foliar and fruit diseases. Anecdotal evidence abounds, but controlled, replicable experiments do not. A quick search of the Internet revealed that most of the websites containing the phrase "compost tea" are .com sites: most are selling something. The few .edu sites that do exist are cautious in regard to the miraculous properties associated with compost teas.

The Reality

One of the biggest problems with compost, and by extension teas and extracts, is the high variability among composts from different sources as well as different batches. Before we can attribute any benefit to a specific compost or compost tea, the following criteria must be defined:

- What organic material is in the compost?
- What are the chemical properties of the compost (%N, pH, etc.)?
- What are the active ingredients? Are they chemical agents (allelopathic compounds)? Are they beneficial microbes?

With the variability that exists among batches of compost tea, it is difficult to interpret results in any scientifically meaningful way. Some compost teas apparently contain large numbers of beneficial microbes that compete for space on leaves and fruits, denying pathogens space to colonize. Others apparently contain antimicrobial chemical compounds produced through decomposition and inhibit pathogen growth. But in the peer-reviewed literature, the only article I was able to find on field-tested compost tea reported no difference in disease control between compost tea and water.

We are currently conducting research on the effectiveness of compost tea in alleviating cherry blossom brown rot at the Washington Park Arboretum in Seattle. At the end of the experiment, we will be able to report results that will either support or reject the hypothesis that our specific compost tea prevents cherry blossom brown rot. Although our study is not characterizing the compost tea (e.g. what its chemical properties are), we will be able to recommend what direction future research should take.

In addition to the fuzzy science that accompanies compost tea usage, I am also very concerned with the potential high nutrient load when such teas are used as fertilizer. Unlike compost used for mulch, which provides a slow release of nutrients, compost teas most certainly add increased levels of nitrogen, potassium, and other minerals all at once. It is unlikely that these are completely absorbed by the plants and instead may contribute to the eutrophication of watersheds.

The Bottom Line

- Properly composted organic material makes a wonderful mulch
- Compost teas have not been suitably characterized, nor have their purported benefits been validated scientifically
- Compost teas can be overused and potentially contribute to ground water pollution

A recent article in a weekly paper I receive suggested that we (at the University of Washington) “need to be more cutting edge with our horticultural practices.” As an academic and a horticultural scientist I agree completely, but practices need to be validated through the scientific process before they can be recommended.

For more information, please visit Dr. Chalker-Scott’s web page at <http://www.theinformedgardener.com>.