

# Compost tea: Can we really turn water into gold?

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Compost tea is everywhere. It was on the program of the latest meeting of the “U.S. Composting Council”, the largest composting conference in North America <sup>1</sup>. It was on the program of the annual meeting of the Washington State Organic Council last December in Seattle <sup>2</sup>. And, for many years, it has been at the annual conference of “Acres USA”, a magazine covering commercial organic and sustainable farming <sup>3</sup>.

Appropriately, one researcher recently concluded: “Compost tea production practices are evolving faster than traditional researchers capacity to evaluate the impact of new practices on disease suppression” <sup>4</sup>.

Is compost tea a procedure worthy of consideration for commercial organic farmers? Or is it hocus-pocus recipes hiding under scientific symbols? Or is it both?

Solid research is now being published in peer-reviewed scientific journals. The results point to compost tea being beneficial to improve plant growth and prevent diseases such as damping-off and Botrytis mold. But success depends on a number of factors as many compost tea applications make no measurable impact.

In the coming issues of this magazine, we will review the science behind compost tea, and offer “recipes” that can be applied on B.C. organic farms. The first article will examine compost tea applications to prevent plant diseases. The following article will examine the preparation of disease-suppressive compost, the cornerstone of high quality compost tea. The last article will review specific recipes and ingredients, for those wishing to tailor compost tea applications to their situation.



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*Left*

Shown is Seannen Hummel from Seattle, Washington State.

Note the advertisement on the side of the truck.

As with many other companies in Canada and the USA, she is now offering compost tea applications to lawns, trees and gardens.

<sup>1</sup> See the website <http://www.compostingcouncil.org/index.cfm>

<sup>2</sup> See the website <http://www.compostwashington.org/>

<sup>3</sup> See the website <http://www.acresusa.com/events/events.htm>

<sup>4</sup> Scheuerell S. 2004. “Compost Tea: Optimizing Disease Control”. Presentation at the Biocycle West Coast Conference. Portland, Oregon.

## **B.C. research with compost tea**

In 2004, compost tea was prepared using a commercial compost tea brewer, and applied on organic apple orchards near Cawston, B.C. Funding was provided by the Certified Organic Associations of B.C. (under the Organic Sector Development Program) and cooperating farmers (J. and G. Dhaliwal, J. and R. Mennell, S. and W. Mennell, L. Edwards and B. Mennell, L. and G. Sellmer).

Trials were conducted in a replicated, controlled design. Two trials tested foliar applications for control of apple powdery mildew. One trial tested soil application for control of root-feeding nematodes. Four trials tested soil application for impact on biology content. In 2005 and 2006, seventeen laboratory experiments were conducted to test variables in recipes by comparing similar brewers operating at the same time. Results were shared with organic farmers at various seminars.

The following are general observations made during this work.

### ***Observation # 1: Making compost tea is easy***

Take good quality water. Take good quality compost. Bubble with lots of air. Bingo, you have aerated compost tea.

### ***Observation # 2: Making good compost tea is not easy***

Two similar brewers from the same manufacturer are operated at the same time with the same recipe. Samples are collected and sent to an independent laboratory for analysis. Result: the two samples are highly different in microbial composition.

A good understanding of important parameters, and high quality start-up ingredients, are paramount to produce quality compost tea that can deliver benefits to the user. Beware: some “recipes” found in trade publications result in tea quality that is highly variable or outright poor.

### ***Observation # 3: *E. coli* is a serious concern***

Compost tea prepared in the early stages of this project contained a high level of *Escherichia coli*. This pathogen could pose a health risk if regrowth occurs during tea preparation and the solution is applied to fresh produce crops.

Situations that increase the risk of contamination with *E. coli* include the use of manure-based compost, the addition of molasses as a sugar source, and improper clean-up of equipment.

### ***Observation # 4: Compost tea is rich in nitrogen, phosphorus and potassium***

With many compost teas, standard laboratory analysis shows an elevated Electrical Conductivity (E.C.) from the rich supply of many nutrients. Are the impressive field results coming from microbial activity, or is it simply plant nutrition via foliar fertilisation?

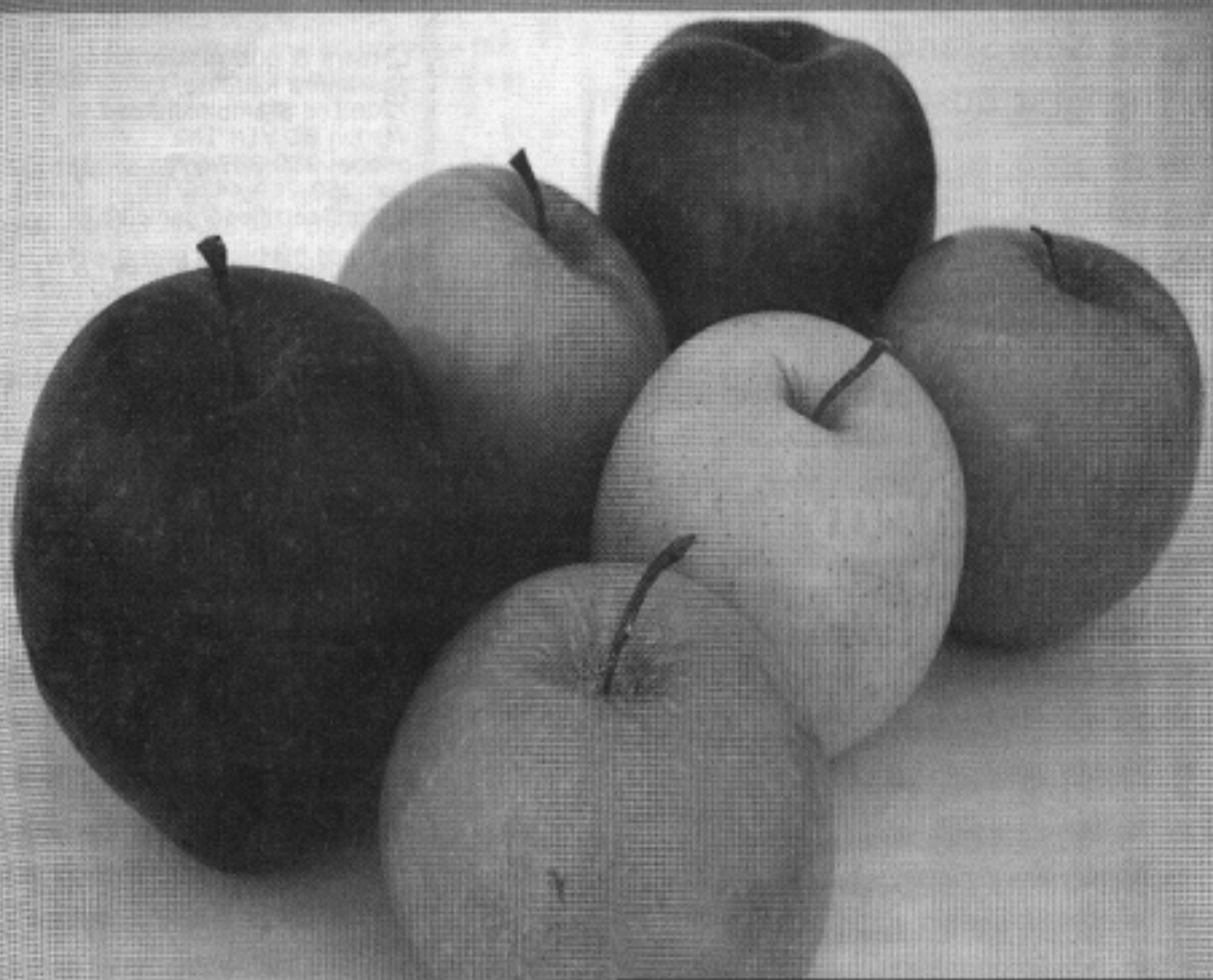
### ***Observation # 5: Sound management of soil and compost is still very important***

High quality soils and composts contain beneficial microbes that colonize plant roots and induce natural pathways against many diseases. This process is solid and published in high-credibility peer-reviewed scientific journals.

Sound composting is the first step in the preparation of high quality compost tea. Procedures are available to produce high-quality, disease suppressive compost. These procedures are generally not implemented on B.C. organic farms.

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