

July 2004 SFI E-zine

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1. Compost Tea Quality: Light Microscope Methods Manual

The Manual is done! Pictures galore for each group of micro-critters in soil – bacteria, fungi, protozoa, nematodes and insect larvae. And the perennial favorite – Unknown, Non-Organisms materials!

It is always hard to know if you are looking at a piece of fuzz, thread, leaf materials, or something else when looking at tea, compost, or soil. But this manual will help you know what you are looking at. Full of pictures that show you exactly what you will see, taken while looking through the Leica microscope, or the Alexis Series J microscope, using a hand-held \$200 digital Olympus camera.

The manual is written for use with a microscope with a N.A. 2.5 (or greater) ABBE condenser, with an iris diaphragm (ABBE condensers should come with the iris diaphragm) and 4X, 10X, and 40X objective lenses (that 40X lens is critical), 10X wide field eyepieces.

The microscope manual has the standard curve for compost tea quality, which can be applied to compost quality and soil quality as well. These are qualitative measures, not quantitative measures, however.

Examples of Bacillus, Corynebacteria, actinomycetes - more properly called actinobacteria – are shown, but ID to genus or species is not possible using these kinds of microscopes. You can get an idea of the relative density (lots, good levels, a bit low, or not present) of the KINDS of bacteria or fungi or protozoa, etc.

You can monitor your tea brew hourly if you want to see the changes in critters as the tea matures. You can learn the cues needed to develop for your own tea recipe, to know whether the tea is growing enough of the right organisms, if your tea is “ready”, or if you should brew longer, or add some foods, or even add more compost.

Sometimes, you just should throw smelly tea on a weed patch, because the tea is so bad that

the weeds will be killed by putting that tea on them. So, sometimes, if you do things really wrong, you can make an herbicide. Sometimes, you can add more compost, or more foods, and bring the tea up to par.

Learn what things make a good tea, so that you can tell, time after time, very rapidly, whether you have a good tea or not!

Compost and soil can be mixed with water, and an idea of the quality of the life in the soil or compost assessed as well.

Soil Foodweb Inc. will be offering this assay to clients that don't want to have to learn this way of assessing tea. This QUALITATIVE assay will give you information on the bacteria, fungi, protozoa and nematodes, for only \$15 per sample!

2. “Tea-Off” Planned for Texas

At the Texas Compost Tea meeting in October, a Tea-Off is being planned. Please check the TOFGA web-site, and the SFI website for more details.

The idea for a Tea-Off is:

- A. Anyone who wants to can bring a tea brewer to the meeting
- B. Each brewer must use the same compost, to be provided by SFI and/or TOFGA (Texas Organic Farmers and Gardeners Association)
- C. Use the manufacturer's recipe for nutrients
- D. Demonstrate to the group how to put your machine together and start the brew (how easy is it to use the machine?)
- E. Brew from 8 am on the first day to 8 am the next day (power provided by TOFGA, SFI and ICTC, possibly)
- F. Take the tea out of the brewer (sales can be made), showing people how easy it is to remove tea, put into a sprayer or another tank,
- G. Allow a couple drops to be used to assess Tea Quality using the light microscope and standard curve,
- H. Show people how easy it is to clean the tea maker and tanks

So, some very practical, hands-on demonstrations of different tea makers. Anyone with a tea maker – commercial or home-made – is invited to participate!

3. Hawaii SFI Lab looking possible

During my visit to Hawaii in mid-June (the birthday week in my family), I spoke for the GE-Free Hawaii group. This is a very active, very dynamic group working hard to bring out the issues surrounding genetically engineered plants and organisms. For more info about the group, please see their web site, or e-mail SFI to get more contact information about them.

The talk I gave was on Sustainable Alternatives to Root-knot nematodes control in coffee. I had a great time talking to the folks gathered to hear me in a small town just south of Kona. About 35 people showed up for the talk on Wednesday afternoon about 3 pm. A marvelous dinner was held after the talk at a local organic grower's farm. I was shown all the different plants they have – from tropical raspberry (YUM!), to papaya, banana, flowering plants and great compost! The house was beautiful. Dinner was outstanding – and the rainbow papaya soup was a wonderful treat! I also was given a basket of food – including mango – passion fruit jelly (wow!), mac-nut butter, and several kinds of Kona coffee. There can't be any better coffee in the world than Hawaiian-grow organic coffee. Not bitter in any way, and very rich.

On July 2, I flew to Maui, and met with Chuck Boerner and others to talk about the Hawaii Lab location. It sounds like this will really happen! Chuck will be the lead, but we need to locate a lab tech willing to work in the lab. The tech needs to train in the SFI lab in Corvallis for about 2 months, and then work permanently in Hawaii, probably up in the Lahaina area of Maui. Let me know if you are interested. Start up date could be as early as next March.

I stayed at Ono Farms, in Hana and of course, I went surfing! What is it about the surf and me – I started surfing with waves about 3 to 4 feet height, and within an hour, the waves were getting 5, 6, 7 feet high. Those are too big for a mere beginner like me, so when I fell off the board, and the wave tried to make me eat the board, I figured I had had enough. So then my son took over the board. He quit when the waves got to 10-feet. But we had a great deal of fun on our day at the beach.

On July 4, I was part of an all-day seminar with the Maui Aloha A'ina group, Vincent Mina the head operations director. The event was held at a local organic farm on Olinda Road, upcountry, Maui. What a gorgeous spot! We ate food from the farm most of the day - fruit bars in the morning, salad, tofu and free-range chicken for lunch, and snacks all day. The grower showed us practical examples of tropical thermal composting and worm-composting. Very different earthworms in Hawaii than on the mainland. GE-free Hawaii gave a talk, and then there was a raw foods talk and demonstration – I never imagined eating raw kale that actually tasted good! And yet it was not tough, chewy or all that astringent in taste. Amazing!

I had a great time in Hawaii, and I do so want to help Hawaiian growers reduce chemical applications, and not be taken over by the commercial push to sell them genetically engineered plants. Engineered virus-resistant papaya, or root-knot nematode resistant coffee are not needed. There are biological solutions to both problems that do not end up messing up the plant's physiology, with all sorts of potentially devastating effects down-the-line, as so many of the previously released GE plants are starting to show.

4. Texas Organic Farmers and Gardeners Association

I stopped at home for a half-day, and headed out to Austin, Texas. First stop was to stay with Betsy Ross, the grass-fed beef SFI advisor just outside Austin, TX. We checked her brewers

first thing. She has four of them, and we checked tea quality with the little microscope she has. There was variation in the quality of the teas, but she uses them for different systems, so some need to be bacterial, and others more fungal. And she's getting reasonable differences, based on the compost, foods and aeration.

But very interesting how easy it is to see the differences in quality – and in tea age.

The next morning we went out to see her pastures, and you can certainly tell where the tea is working! BIG differences in pasture response. She has an area where she put on 1 gallon of molasses in the tea, 3 gallons molasses in the teas, and then 7 gallons of molasses in the tea, as well as a control area in the same pasture. The silver nightshade response is night-and-day! Where 7 gallons of tea were applied, no nightshade is left, a little nightshade left where 3 gallons was used, but in the 1 gallon and no tea areas, the nightshade is thick!

And she has many more examples of tea benefits for pasture production and animal production, starting out at different stages of degradation. It is a challenge to figure out exactly what needs doin to bring a filed back! But Betsy is doing a great job.

And of course now, she's getting 3 and 4 pounds of weight gain per animal per day now, in some fields. Not all – there are still things to figure out.

I did a field day with Betsy, and some of her clients. Then headed to the home of Dillo dirt, in Austin, and did a two and a half day Introduction to the Soil Foodweb seminar for TOFGA. We had a great time! Great questions, good interaction with the audience, and some great ideas from a few of the participants.

I liked Malcolm Beck's idea of applying pressure to the top of a tea brew, to push it out of the tank without running it through a pump. Pretty nifty, if you can pump air into the tank top.

I got to see the bats come out from under the bridge in Austin the last night I was there! Now that's a belfry of bats! Or whatever you call a stream of bats so dense that you can see them for a good half mile as they fly away to eat insects. But you know, the fruit bats in Australia have them beat. I now have seen the "sky darken" from flying critters so dense that they block the sunlight as the bats settle on the mango orchard across the street from the lab!!!!

I will be back in Austin October 21-22, 2004 to do the AACT (Actively Aerated Compost Tea) workshop. Please visit the Texas Organic Farmers and Gardeners Association web site for registration information www.texasorganicgrowers.org. Hope to see you there.

5. Grower Experiences

1. This is a response to questions about how "yardeners" can use compost tea. You can tell the concerns from the response, I hope -

Dear Jeff -

I would like to take an opportunity to mention a few things.

First, there is a new test for the quality of compost tea. It costs \$15 to have the lab run the test, and you get a qualitative assessment of the quality of the tea.

You will find that Soil Soup mixes lack fungi, protozoa and beneficial nematodes. Soil Soup is a bacteria-alone brew. Bacteria may be able to improve conditions on leaf surfaces, but will not give you ALL the benefits that you should be getting from compost or compost tea.

When I talk about what the soil foodweb can do for you, you should expect to be able to get them all, not just the benefits that anaerobic bacteria give. Anaerobic bacteria can make things that can be quite harmful to plants – such as the most plant-toxic material we know about.

Use your nose to detect when the liquid is in fact harmful. If it doesn't stink, then very different things have happened in the Soup machine, and you can get some limited benefit.

But just think, if the benefit you have seen is better if you use the real thing, why not get the whole nine yards instead of just the first foot? You need to have beneficial bacteria, fungi, protozoa and nematodes in order to have the full foodweb. You only achieve that with an aerobic compost or compost tea.

With the new, less-expensive test, you can assess ALL four groups. The test takes about 30 seconds to do. You can send the sample to the lab, or, you can go to a tea center where they know what they are doing, and get the test done there. Or you can buy a microscope and do the test yourself. The microscopes cost between \$400 and \$1200, depending on what whizzes and bangs you get with the machine.

The question about bacteria versus fungi can be answered by getting the Compost Tea Brewing Manual (www.soilfoodweb.com). Alternatively, think about it this way:

If you want Italian neighborhoods, you make sure to have Italian food, right?

Same with organisms. You want fungi? Add in fungal foods. More bacteria? Add bacterial foods. Bacteria like structurally simple foods - simple sugar, simple proteins, simple carbs.

Fungi like more complex foods, such as fish oils, humic acids, complex proteins (soy meal, alfalfa meal, oatmeal).

You can look at the compost too - make it more bacterial by adding bacterial foods. Make it more fungal by adding fungal foods. Pretty simple, don't you think?

But you cannot depend on just "no meat" to assure no human pathogens in the compost. You have to buy compost that has been tested, but it should be the compost seller that documents that the product they sell you is E. coli - free.

If someone makes compost in the backyard, they need to put together a good mix of materials. IF MANURE IS USED, then the pile must be documented to have reached temperature at day 5 to 8, so you know you killed the pathogens. No manure? Then when the pile has reached a decent temperature, or two years old with adequate moisture, things should be fine.

The SFI website goes over many of these things, and gives a recipe and process for back-yard growers to make a good compost, which we can practically guarantee will be pathogen-free, REGARDLESS of whether manure is used, or not. You turn twice, once when you start the pile, once again seven days after starting the pile. We've done that work with the Master Gardeners in Eugene Oregon.

So, hope this helps. And please feel free to ask more questions, if you want.

Elaine R. Ingham
Soil Foodweb Inc., Corvallis, Oregon
Soil Foodweb Inc., Port Jefferson, New York
Soil Foodweb Institute, Lismore Australia
Soil Foodweb Institute Cambridge, New Zealand
Soil Foodweb Inc., Hilversum, The Netherlands
Laboratorios de Soil Foodweb, Culiacan, Mexico
Soil Foodweb Inc., Jerome, Idaho

2. From: Linda Crum **Sent:** Sunday, July 11, 2004 6:24 PM
Subject: applying compost tea

I have a question about the best way to apply compost tea to plants. I have been using a pump-up sprayer that I only pump up enough to deliver a small amount of tea at a time. I know that the pressure will rupture the good bacterial cell wall and that is the reason I do not fully pump up the sprayer. Also a hose end sprayer would introduce chlorine into the mix which kills the bacteria you are trying to apply to the plants. Trying to apply with a watering can is not efficient. The underside of the leaves are left out with this method. I usually mix a liquid organic fertilizer such as seaweed extract or Ocean Harvest with the tea and want to apply it to the underside of the leaves.

So what is the best method to apply compost tea considering all of the above?

Linda Crum
The Woodlands, Texas
organicgardener@sbcglobal.net

Dear Ms. Crum:

The bacteria in the tea are somewhat less fragile than you fear. You want to keep pressure in the sprayer below 100 psi (below 60 being ideal) and you don't want the tea to hit any surfaces (ie. leaves) harder than 80 psi, around 20 to 40 psi being ideal. Protozoa are more easily damaged than bacteria or fungi, but they're also less critical for foliar coverage.

Seaweed extract is fine. So are saponins such as Yucca and Aloe Vera extracts, which will improve adhesion of the microbes to the leaves.

So you can pump up that sprayer a bit more and not worry, or--if your garden is small--use a spritzer bottle with adjustable mist. I would strongly recommend applying tea in the cool hours of early morning or late evening, to avoid the UV wavelengths in sunlight harming the microbes.

Yours truly,
Brian Pearson

*****3.

From: [Kv9Sm](#)
Monday, July 12, 2004 12:50 PM
Subject: compost tea

I just bought an Alaska bounty brewer and I tried to brew my own compost and worm castings with fish emulsion and kelp with molasses and crushed lava rock after de-chlorinating the water and brew it for 24 hrs it smelled fishy and no foam or fungi on the top. What am I missing or doing wrong? Kevin

PS I brewed 3cups compost and 1 cup of worm castings 1 cap full of fish emulsion and one cap full of kelp and a splash of molasses with 5 or 6 lava rocks crushed of course..

Hi Kevin -

First you need to determine if there are enough fungi in your starting compost. If there are no visible mats of hyphae there may not be. You can try "pre-activating" the compost a week before brewing by mixing in some powdered organic oatmeal in about a 1:20 ratio and letting the mixture sit, in a ventilated container, in a cool dark place. This will usually stimulate a rapid growth spurt of fungi.

Assuming your brewer provides sufficient agitation to separate some fungi from the compost and suspend them in the liquid, you need to provide some good fungal foods to get them to grow in the tea. This means refined humic acids, or natural humic products such as Alaska Humus or Turf Pro.

Fish emulsion will definitely contribute a fishy odor. It is not a very good fungal food because the complex oils--the Omega 3, 6, and 9 fatty acids--have been removed. Fish hydrolysate, which contains these oils, is preferable. Molasses is also primarily a bacterial food. Kelp particles suspend well in water, providing surfaces for fungi to grow on, and are considered a secondary fungal food.

The lack of surface foam is not necessarily bad. Heavy foaming indicates a rapid growth of bacteria, which can lower the dissolved oxygen below optimal levels. Fungal strands will not be visible to the naked eye--you need a scope with at least 200 x magnifications to see the hyphae in tea.

Next time you brew, I would recommend that you send us samples of both the mixed compost and the tea for analysis. Once we know with a high level of accuracy exactly which kinds of organisms are present at what population levels, we can advise you better.

Yours truly,
Brian Pearson
Soil Foodweb, Inc wrote:

4. From: Yves Laurent
Sent: Monday, July 05, 2004 12:56 PM
Subject: Compost leachate...

Hi Dr.Ingham,

Is it possible to « aerate » compost leachate and gain the beneficial properties of compost tea? What if we mix leachate with non chloride water and add molasses to it? Would it work? What are the "potential" capacities of leachate. And finally, is leachate the right word or "percolation" would be the right one?

Thank you

Loreta.
Ps: I appreciate your book very much.

Dear Loreta:

Aerating your leachate will reduce the populations of anaerobic bacteria and increase the

aerobes, but may not get rid of all the phytotoxic metabolites left behind by the anaerobes. Adding molasses to an already anaerobic product is a BAD idea--it will stimulate the growth of all the anaerobes including facultative (or "fermenting") anaerobes which produce alcohols and organic acids, AND potential human pathogens like E. coli.

Leachates typically contain some water-soluble nutrients (especially nitrates and phosphates) and a wide diversity of bacteria, some of which may be beneficial under some circumstances (actinos, pseudomonas, etc.) and others of which may produce toxins.

"Leachate" is the standard term for the liquid which drips out the bottom of an over-saturated compost pile.

Yours truly,
Brian Pearson

5. From: Yves Laurent]
Sent: Wednesday, July 07, 2004 1:32 PM
Subject: RE: Compost leachate...

Hi Brian,
Thank you very much for your prompt answer. I was wondering if I have use the right term with "leachate". In fact, I bought a domestic composter (the Envirocycle) and the manufacturer proclaims that I can recuperate the "compost tea".

After reading through the e-group articles, I realize that this is not real tea but more and extract or a kind of "percolation juice". This is more like the real question: is this "juice" good and can it be upgrade by adding stuff, etc. Their web site is: <http://www.envirocycle.com/>. I realize that I might look stupid with my little composter but this is my way to help the earth...The juice that I already recuperate is brownish and liquid. I mixed it with tap, evaporated water (1:5 parts) and water my flowers garden. Is it harmful (flowers look great...) or good and what is in (nutrient, aerobic or anaerobic, bacteria's...). What goes in the composter is essentially table food waste (no meat, dairy or fish products), grass clipping and dry leaves. Neither human or domestic pets' feces nor manure...Can you guide me to where to get more information concerning ways to improve my little production...

Thank you again for your help,
Regards,
Loréta

Hello again:

I looked at the EnviroCycle drum composter info and it looks like a simple, effective device. It addresses the issues of turning and aeration nicely and should certainly produce good compost without a lot of extra work. The instructions on the website are very useful. This paragraph in particular caught my attention:

Moisture and aeration during composting are inversely proportional. The more water there is, the less air, and vice versa. There must be enough aeration to ensure aerobic decomposition. Many more micro-organisms flourish in the presence of air.

Proper aeration also eliminates the risk of unpleasant odors. Moisture content should be between 50% and 60%, about as damp as a sponge that has been wet and squeezed out.

In other words, if the moisture content is correct, there shouldn't be much leachate to collect. By all means use what there is, as long as the plants seem to like it. As I mentioned before, it contains some good things (beneficial bacteria, available nutrients) but also probably has some anaerobic bacteria. It probably does NOT contain any fungi, because they don't like to grow in liquid and it takes a fair amount of agitation and supplementary foods to get decent fungal levels even in aerated tea.

Your recipe sounds good, and if your ratio of brown to green materials is about 50/50 it should yield well balanced compost.

If you want to experiment with aerobic tea on a small scale, you can make a pretty good brew in a 5 gallon bucket. All you really need is a high-volume air pump and a diffuser, like a fish tank air stone or a coiled garden soaker hose; you can put in the bottom of the bucket. Add the water and some compost and bubble it for 16 - 24 hours. A little bit of molasses added in will feed the bacteria; a little humic acid or fish hydrolysate will feed the fungi.

Yours truly,
Brian Pearson

6. **From:** John Harder]
Sent: Friday, July 02, 2004 4:37 PM
Subject: Compost production

I need a referral to someone who can consult with me concerning a composting project that I am exploring on my farm.

I estimate that there is about 300 cubic yards of a mixture of manure, mud, & fodder in my livestock corrals. Since I need to clear this material out of the facilities for repairs, and since I am in need of some fungal dominated compost for my crop fields, I wonder if a low cost composting method is readily applicable to my situation.

This is a situation where I can't practically wait until the November 2004 compost class. If there is someone who can help me, I'd really appreciate the referral.
thanx!

John Harder

Dear Mr. Harder:

The best method for composting this material will depend a lot on the supplies and equipment you have available. Thermal composting in windrows may be the most effective if you have a bulldozer capable of pushing the material around and turning the piles. Worm composting might result in a better product, but would involve an initial outlay for lumber to build the bins and worms to inoculate them. You don't say where you are located, so here is a link to a list of all our certified advisors by geographical region:

http://www.soilfoodweb.com/sfi_html/07_advising/index.html

One of these advisors should be able to assist you with the specific details for composting your material.

The one caveat I would mention, given your description of the materials available, is that it may be difficult to make fungal-dominated compost from these substances. A fungal compost should start with 70% brown, woody matter (carbon source) to 30% manure or green waste (nitrogen source). So you should be looking for as much cellulose material (straw, brown leaves, wood chips, etc.) as you can find to supplement the corral waste.

Yours truly,
Brian Pearson

7. Hello Brian:

I have a question that I'm pretty sure you can answer for me. I received a sample today with no fungal activity, but when I looked using DIC, I saw a low but with very good diameter population of fungi, so my question is:

How long does usually takes to bring back activity on the fungi after you have added the foods? I will send you the report tomorrow, once I have the dry weights, you will see that the temperature was above 65 for a few days.

Thanks a lot Brian

Vic

Hi Victor -

With proper moisture and foods, fungal activity should resume within 2 to 3 weeks. Dormant fungi respond very well to oat flour and may also like finely ground cornmeal.

The high temperature reached in the pile may have inhibited some fungal growth at the time, but they should recover.

Hope this helps!

8. From: Jorge Domenech
Sent: Sunday, July 04, 2004 12:02 PM
Subject:

Dear Dr. Ingham,

I am a farmer, mainly soybean producer in Argentina, have read sfi literature, in particular the ct brewing manual, I have ordered the Microscope manual (though not received it yet). I am very enthusiastic about your approach to agriculture based in the knowledge and care about biology. I am very interested in the use of compost tea, but I can't find anyone to provide the elements to do it here in Argentina.

As My wife and I are planning a tour to the USA this year starting August 21st, where we will spend 2 weeks to see fields, ag. machinery factories and the Farm Progress Show, we would also like to have the opportunity to contact with people using act, in order to find a way to implement it in our farm.

I think there is a very interesting opportunity, because pesticide companies are making a big campaign to move us to use a huge amount of fungicides on soybeans, based on the alleged danger of asian rust, a fungus capable of very important damage on this crop. They are doing so in the USA as you might be aware. The effects of asian rust appear to be hard to distinguish from other less important foliar diseases, particularly in the early stages, and they say you should apply fungicides in these early stages, so a lot of fungicide will be applied not knowing if it really was the asian rust. They have a great plan to sell a lot of fungicide, fungicide that sure will shortly be ineffective and will worsen the health condition of the whole system.

¿Wouldn't compost tea be a solution or a preventive measure?

I would very much appreciate if you could guide me to find contacts with equipment manufacturers, users, and anything that would help me start working with compost tea in Argentina. The only thing that I think you can find here is many people making vermicompost. I don't know of any quality program they would have. No equipment or foods. I would be willing to build a brewing device and to prepare the foods, but for that, I need to learn a lot.

We could stay a few more days in USA if you would tell us where to go. ¿Anytzing we could find in the Farm Progress Show?

Thank you very much for your time to read this message. I would be very happy to hear from you.

Cordiales saludos,
Jorge Domenech

Dear Mr. Domenech:

It would be great if you could come visit our lab while you are in the USA. We are located in Corvallis, Oregon and can give you directions if you would like a tour. Or if you will be in the Northeast, you could call Paul Wagner at our New York lab:

Soil Foodweb New York, Inc.
555 Hallock Ave.
(rte 25a) Suite 7
Port Jefferson Station
New York 11776
phone: 631-474-8848
fax: 631 474-8847
soilfoodwebny@aol.com

Good compost tea will alleviate most fungal disease problems on soy. I haven't seen specific research on Asian Rust but unless it is extremely virulent it should be possible to out-compete it with beneficial organisms from tea. Here is a page documenting the suppressive effect of vermicompost tea on a variety of pathogens:

http://www.wormgold.com/test_1.html

In those instances where tea alone doesn't quite eliminate the problem, less toxic fungicides like sulfur, copper sulfate or Bordeaux mix may be preferable to complex chemical formulations--certainly they do not remain toxic in the soil for as long.

It sounds like you have some commercial sources for vermicompost. You could also build or buy worm bins and make your own. It is easier than thermal composting to do right, but generally will not be able to produce as great a quantity of compost. Both processes yield the best product when a variety of starting materials (wood chips, green waste, vegetable scraps, manure, straw, leaves, etc.) are used. Worms cannot process larger woody chunks, but they love leaves and paper. Please check our "Compost Foodweb" audio CD lecture if you want to start your own composting--it is full of valuable information.

Making a small brewer (up to 250 liters or so) is not so difficult. You need a high capacity air pump, a diffuser near the bottom of the tank that produces many streams of fine bubbles, and probably a second air source to make large bubbles to agitate the compost and extract the microbes. You can either put the compost in a porous basket that is suspended in the brewing tank, or put it in the tank loose and strain the tea. There are several different design approaches which give acceptable results, as you will see when you start looking at commercial brewers.

The main supplemental foods you would need are molasses, humic acids, fish hydrolysate, and soluble kelp. We can advise you on recipes once your brewer is up and running.

We currently have two customers in South America who are working with compost and tea, and might be able to advise you. They are:

**Carlos Vidal
Citricola Ayui SAAIC
Avda Mons Rosch 5005
Concordia, Entre Rios, Argentina 3200
cvproduccion@citricolaayui.com**

**Fabiola Valcarcel
Jardines de los Andes
Calle 37 No 16-52
Bogota, Colombia
invest2@jarandes.com**

Here are some weblinks to manufacturers of good tea brewers. Depending on where your itinerary takes you, you may be able to visit some of these.

**In California:
http://www.wormgold.com/extr_a.html
<http://www.nature-technologies.com/ext.html>**

**In the Pacific Northwest:
<http://www.simpli-tea.com/>
<http://www.bobsbrewers.com/index.html>
<http://www.composttea.com/>**

**In Alaska:
http://www.alaskaqiant.com/alaska_bounty_brewers.htm**

In Canada:

<http://www.ecovit.ca/>

In New York:

jamsot@aol.com

Please contact our New York lab or one of our certified advisors in the region to find out if anyone is currently making good brewers in the Northeast. I think some of the information I have on this area is outdated. Here is the link to our complete list of advisors:

http://www.soilfoodweb.com/sfi_html/07_advising/index.html

Here is another page of potentially useful links for you to follow

http://www.soilfoodweb.com/sfi_html/links/products_resources.html

Let us know your travel itinerary in the States and we will direct you to people in those areas who are experts in the use of compost tea. I'm sure most of them would be very happy to meet with you. And I hope you will be able to come visit us at SFI!

**Yours truly,
Brian Pearson**