

October 2005 E-Zine

Special Announcement: Sustainable Studies Institute and Nature Technologies International Present:

Compost Tea in Hydroponics

How to Convert from Chemical to Biological Control

Saturday, December 3, 2005: Learn how to convert a hydroponics system from reliance on salt-based fertilizers and toxic chemical pesticides to a reliance on biology to do the work.

For registration and information about this seminar and other courses, visit:

http://www.soilfoodweb.com/04_news/calendar.htm.

ALSO CANADIAN SEMINAR!!!!!! See www.soilfoodweb.ca for registration information

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1. Notes from Elaine!

a. New Book on Compost Tea

The Field Guide II for Actively Aerated Compost Tea

The most recent updates about practical application and knowledge about compost tea. Questions and answers from the best of the Compost Tea list serve. Compiled and edited by Nature Technologies International.

CD (\$29.95) or paperback book (\$65)

Order from Nature Technologies, www.nature-technologies.com or Earth Fortification www.earthfortification.com.

b. NW Flower and Garden Show

Alan and Bill from the Green Meridian in Seattle have put together a program that Hendrikus and I will present together at the NW Flower and Garden Show next Feb 9, 2006.

It All Starts with the Soil:

From Principles to Practices: The Soil Food Web in Today's Landscape

What happens when two of the world's leading pioneers in soil science and soil practice get together to share their work? Participants leave with new directions, insight and tangible methods that benefit their business and landscape practices, and prepare them for today's ever-increasing environmental and economic demands.

This seminar brings Dr. Elaine Ingham and Hendrikus Schraven together again for a fast paced experience that will both enrich and add practical knowledge to the landscape professional.

For more information contact:

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2. Job Announcement

Microbial Ecologist

The Department of Ecology, Evolution & Organismal Biology at **Iowa State University** seeks a tenure-track **Assistant Professor** focusing on microbial processes that influence population, community, or ecosystem dynamics, or microbial interactions with other organisms. Applicants may possess expertise in any taxonomic group(s) that may be



considered microbial, including fungi, prokaryotes, or protists. The successful candidate will join a dynamic department of 31 faculty (<http://www.eeob.iastate.edu>) who use integrative approaches that bridge disciplines and span multiple levels of biological organization. Applicants must have a Ph.D. in a biological science and are expected to develop a nationally recognized research program and contribute to undergraduate and graduate teaching. Please submit curriculum vitae, statements of research and teaching interests, three reprints and have three letters of recommendation sent to: Dr. Jim Raich (jraich@iastate.edu), Search Committee Chair, EEOB Department, Iowa State University, Ames, IA 50011-1020, by October 31, 2005 to guarantee consideration. Electronic applications are encouraged. *ISU is an Equal Opportunity / Affirmative Action Employer.*

3. Save Organic Standards

SOS-SAVE ORGANIC STANDARDS-Action Alert Update October 6, 2005

Sneak Attack on Organic Standards in Congress Continues--OCA Needs Your Help

Over the past two weeks Organic Consumers Association (OCA) network members have bombarded the U.S. Congress with over 100,000 emails and 15,000 telephone calls. Our calls and letters have urged elected public officials to reject the now discredited Organic Trade Association's "Sneak Attack" rider to the 2006 Agriculture Appropriations Bill that would seriously undermine organic standards by removing traditional organic community control over organic standards and centralizing power in the hands of the White House-appointed US Department of Agriculture.

OCA's allies such as the Consumers Union, the Center for Food Safety, the National Campaign for Sustainable Agriculture, the National Coop Grocers Association, the National Organic Coalition, the Health Freedom network, and several hundred organic businesses have also generated thousands of emails and phone calls. Thank you for taking action. This massive grassroots outpouring prompted the U.S. Senate ten days ago to reject the industry Sneak Attack rider and propose a 90-day study to determine proper organic standards on synthetic substances, animal feed, and commercial availability of organic ingredients.

Unfortunately members of the joint House/Senate Conference Committee on Agricultural Appropriations still seem to be listening more closely to powerful industry lobbyists representing Kraft/Phillip Morris, Dean Foods/Horizon Organic/Whitewave, Dole, Smucker/Knudson's, General Mills/Small Planet, Danone/Stonyfield, Aurora Organic, Whole Foods, Wild Oats, and the Grocery Manufacturers of America (Wal-Mart and the supermarket chains), than they are to us. And because this is a last minute, back door Sneak Attack, most of the media, and even most organic consumers, are not yet aware of what's happening.

We have no choice but to move quickly and raise the volume of our protest, double the number of letters and phone calls pouring into Congress, and aggressively take our message to the media. In 1998, 2003, and 2004 OCA and the organic community successfully mobilized and beat back similar attempts to degrade organic standards. Unfortunately this Sneak Attack is an "inside job," organized and funded by powerful pseudo-organic food processors and supermarket chains who have

seized control of the Organic Trade Association, hired powerful lobbyists who usually represent big Pharma, tobacco, supermarket chains, and liquor interests, and are moving in for the "big fix."

We need more letters, and we need money now, to lobby Congress and to take our message to the media. Please forward this Action Alert to everyone you know who is concerned about preserving strict organic standards and organic community control over these standards. If you haven't already, please click here to send a letter to your members of Congress <http://www.organicconsumers.org/sos.cfm> And please click here to send OCA a tax-deductible donation so we can continue to defend the integrity of organic standards. <http://www.organicconsumers.org/sos.cfm>

Time is running out. We must stop this Sneak Attack in Congress and beat back this unfriendly takeover of the organic industry. For the sake of the Earth and the health of the People, please **[Take Action Now!](#)**

Ronnie Cummins, Co-Founder and National Director, Organic Consumers Association

4. Observations from Tea users

a. Saving Trees

Dear Ms Appel,

My name is Ross Larsson and I am based in Sydney Australia, I have a business down here in Sydney called Mara Organics and I market a lot of organic composts and compost teas for the home and garden market. The tea side of things is something that I am only just starting to get off the ground but have a meeting soon with a man who is known as somewhat of a treedoctor and he is coming down to examine cases of phytophthora, armillaria and phellinus. I was wondering in your vast knowledge of the working of these, if you had come across any literature or experienced any forms of use of compost and compost teas to try and reduce or eradicate the onset of these.

A community of trees here in Sydney at Hyde park have been identified as containing the problems and therefore they are being cut down and removed. I just wondered what treatments you were aware of for these and if you could send me in the right direction for literature. I would hate to see some of these old figs destroyed purely due to lack of experimentation with alternative methods to the common engineering one of cut everything down and then remove all the soil and start again. I'd love to see the soil food web cycle fixed and the return of organisms that may be able to help the trees and reduce the impact of the problems.

Any help would be greatly appreciated, I was given your email by Elaine Ingham and she thought you may be able to help me.

Kind Regards
Ross Larsson
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www.maraseeds.com.au

We get a fair amount of Phytophthora, Armillaria and Phellinus in chemical landscapes that seem to be caused by excessive moisture at the base of the tree or plant. It is usually caused by cooling temperatures and too much water. This allows the fungal species to get out of balance – and therein lies the problem.

Conventional wisdom states to cut and burn.

We believe in cutting – but then adding the cutting to the compost pile.

Phytophthora lives in the soil for 10+ years – it is always there and only blooms when the conditions are right.

Cut off the part of the tree affected by Phytophthora and add a 2” ring of compost under the entire drip line of the tree. We make a proprietary blend of Vitamins to add to the compost to increase the fungal capacity of the compost or you can spray the compost with 5 gallons of fungal dominated compost tea. (Try the fungal dominated tea first – because the shipping port at Houston just got messed up by Rita and the cost to ship what you need may be time and cost prohibitive at this time.) Repeat the tea application each week for 4 weeks.

Armillaria is onset after the tree or plant is weakened by other forces – it is a secondary phase invader. You can tell it will happen because of the yellowish colored 2” mushrooms that appear at the base of the tree. Kick the mushrooms over. Leave them there to compost and add a 2” ring of compost under the entire drip line of the tree. Spray the compost with 5 gallons of fungal dominated compost tea. Repeat the tea application each week for 4 weeks.

Phellinus is also a secondary phase invader. It affects the heartwood where the others affect the xylem. This is not going to be as easy to eradicate as the others. However the process is the same – increase the diversity of species in the soil and wait for nature to do her thing. Add a 2” ring of compost under the entire drip line of the tree. Spray the compost with 5 gallons of fungal dominated compost tea. Repeat the tea application each week for 4 weeks.

Do NOT water these trees other than to water in the compost with the compost tea. Additional water will have an adverse effect creating a larger problem than the one you started with. Also – when you add the 2” ring of compost – make sure that no compost is placed within 12” of the root collar (ever!).

If you will send me a picture of an affected tree and show the soil in the picture I can give you a more straightforward explanation. The problems you are experiencing are secondary symptoms. They will persist until the original problem is solved.

If composting the trees is cost prohibitive – send SFI a soil sample and your tea sample. Have SFI send the results to me. Also – give me a list of all the products that have been used on the trees within the last 6 months. I can work up a blend of Vitamins and sell you the recipe that you can make in Australia based on the test results.

On the projects that have gotten Phytophthora – after we have composted and tea’d – we usually do not see a re-emergence unless someone adds a high nitrogen source (synthetic, bat guano, alfalfa, straight fish application) or over waters in cool temperatures (below 74F).

Jennifer

b. Roses

Hi all!

Frequently, I'm checking the quality of compost tea that I brewed. I check with microscope but I have a lot of doubts, because although I see a great quantity of bacterias, actinos... but I don't achieve see fungus, I mean, the hyphae doesn't appear!

I have been included in the recipe, ingredients like more humic acids, more fish but the fungus are still absent. The compost that which I prepare my compost tea, have some woody material but I think that isn't enough for my purpose...

Could you give some advice in order to increase the fungal population in my tea??

Other thing!, are there some other way to "qualify your compost tea" every time that you check with microscope?? I mean, are there another parameters (maybe numerical parameters) for qualify the compost that you are producing??

Thanks!!!! cloud

Hi,

Because I use the compost for Roses (higher in successional plants) it has to be fungal to really help the plant.

If your compost does not have fungi in it, your compost tea will not have it either. You need to get an inoculum of the fungal types you want to develop, add them to your compost and feed them fungal foods and give it a little time to develop before you make your tea.

<http://www.earthfortification.com/shopexd.asp?id=32>

This compost is wonderful. Leon Hussey has done a great job of producing high fungal compost. There may be others out there but I know this one is great. The fungal numbers are posted too.

Use water extracted Humic acid. Make sure the materials you use don't contain preservatives. Don't get carried away with the kelp as it may be too high salt. Matt at Earth Fortification can direct you to excellent products.

Matt suggested that I add oatmeal pablum (baby food cereal) to the worm compost I had, along with the fungal compost inoculum (see source above). Let it grow for a couple of weeks. This worked great. You can see the fungal strands develop and the compost will hold together in clumps because of this fungi. It really looks like the picture in the website above.

When brewing, the compost must be agitated enough to dislodge the fungi from the compost, but not too much to destroy it all. The fungal grow later in the brew cycle too.

There is more information on developing fungal tea in Elaine's new book: 'The Compost Tea Brewing Manual' 5th edition, page 53 and 54 under 'The right foods'. 'The Microscope Manual' has information on accessing the compost tea fungal biomass. Has picture examples too. Generally desired hyphae are >2.5, 3.0 micrometers and higher are better.

Hope that helps.

Janice

c. Making Non-aerated Brews

Dear Elaine,

I am working (unfunded) as part of the research for my dissertation in Kolkata India with resource poor farmers on a project for the intensification of indigenous biotechnology.

Local farmers are using manure teas and adding some microbial foods (molasses) as their fertilizer. However they are fermenting for long periods of time without sufficient levels of dissolved oxygen, as they have neither air pumps or D.O meters.

I have procured both and intend to use local vermicomposts (very nice quality). The soils here are bacterially dominated, as such I am intending to add rock phosphate (fungi) and molasses (bacteria) and use the 'bucket bubbler method' and ferment for 24-48 hours. Any suggestions on amounts?

I would greatly appreciate any advice that you may choose to offer to improve my methods.

Best. Stephen Walsh. Kolkata-India.

Hi Stephen:

Just got your e-mail! Sorry the route to me was so slow!

I would suggest NOT using molasses, as molasses is a bacterial food, and will just make the situation even more bacterial.

You need to switch to foods that will feed fungi.

But if you have no way to mechanically stir and aerate the tea for 10 to 12 hours, or 24 hours, depending on how much food you add, then you need to let the organisms use up the foods in the compost BEFORE adding any other food.

Or you add something like lactobacillus, and propionic acid-producing bacteria, a few actinomycetes, which will grow BETTER than the pathogenic organisms in reduced oxygen conditions.

The ferments from which you get these bacteria are any of the sour-kraut like, or kobashi, or preparations of sour milk or cabbage, for example. The sweetened, soured milk base sweets made in India are a perfect place to get the bacteria needed for addition to the fermented teas.

Next, please make sure the manure has been composted. Which means that the pile of material has been held between 55 C and 65 C for at least three days (turn whenever the pile begins to approach 65 C), then turned so the outside layers of the pile get turned to the middle, held at temperature for another 3 days (turned if needed before that temperature reaches 65 C), turned and held another 3 days.

Then allow the pile to cool off without turning. This allows the fungal component and beneficial nematode populations to grow.

Then, given good organisms present in the compost, you make the tea with that properly composted material.

For a non-aerated situation, it would be best to blast the organisms off the compost, into the water and then use that solution, called an extract. Great for direct application to soil.

For foliar applications, however, you need active organisms. So, then add the compost into the water (in a bag if you are going to use a mechanical sprayer, so the chunks of compost don't plug up the sprayer). Agitate as much as possible, and let the compost - water combo incubate overnight, THEN add the foods to grow fungi, and let incubate about 4 to 5 hours. Apply to leaf surfaces BEFORE you get bad smells.

The warmer the temperature, the shorter the incubation times.

If you want to make pest-killing solutions, then you add the foods with the compost, add the lactobacillus- proprionic acid bacteria mix, and let incubate a couple weeks. That way, the mix goes through an anaerobic phase, the organisms use up all the soluble foods, and start chewing slowly on the wide C:N ratio foods. Since growth on wide C:N foods is slow, the use of oxygen will be minimal, so the anaerobic phase is alleviated during the several weeks of incubation.

OK? Did all this make sense? any questions? More questions? Please let me know!

Elaine

5. New Prices at Soil Foodweb Oregon Lab

Greetings to all Soil Foodweb customers and subscribers to Dr. Ingham's E-zine,

On September 1, 2005, Soil Foodweb – Oregon was created as an affiliate lab in the worldwide network for Soil Foodweb, Inc. All the testing services you are familiar with are still offered at the "New" lab. Matt Slaughter is the new director of this lab. Dr. Ingham is still in charge of Quality Control and will maintain Soil Foodweb, Inc. as the central point of all the labs.

In an ongoing effort to provide quality service at reasonable prices we have made a few reductions to the prices of the testing services.

First, I want to apologize for some incorrect information in the September E-zine. There was a mistake in the announcement of the new price of the Total Foodweb package. It should have read that there will be a 10% reduction in each Total Foodweb package price. Other discounts will be applied to these new prices, as applicable.

Here is a breakdown of the new prices:

Compost Tea:

Old: \$210.90

New: \$188.00

with the paperwork discount: \$169.20.

Compost:

Old: \$218.50

New: \$195.00

with the paperwork discount: \$175.50.

Soil:

Old: \$268.85

New: \$240.00:

with the paperwork discount: \$216.00.

I hope this makes the new prices clear. Of course, if you have questions, give us a call.

In addition to this 10% reduction in all the Total Foodweb package prices, to make calculations simpler we are slightly reducing the Bacteria and Fungi Package to \$98.00 for Soil or Compost, and to \$90.00 for Compost Tea.

The Leaf Organism Assay price is dropping from \$45.00 to \$30.00.

The policy for samples arriving on a Friday has also changed. The old policy of not giving a discount and adding \$5.00 to each sample is discontinued. All samples arriving on Friday will now receive all the discounts that would normally apply.

Please note: this does not change the fact that E. coli cannot be performed on a Friday. So be sure to get those samples to us by Thursday or earlier in the week.

Some of these policies have been in effect since October 1. The rest are coming into effect as of November 1. These new prices will apply to Soil Foodweb – Oregon. Download the latest submission forms to make sure you have the most current prices.

Similar reductions are planned by Soil Foodweb – New York; check their web site and submission forms when sending samples to them.

I want to thank all of you for your ongoing support and to let you know that we truly value you as customers and look forward to many more years of successfully restoring the biology in our soils.

From all of us at Soil Foodweb, thank you!

Matt Slaughter

Director

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Upcoming Events

Workshops

SFI Corvallis

Dr. Elaine Ingham teaches three in-depth workshops at the Soil Foodweb, Inc. Laboratory in Corvallis, Oregon. The workshops include classroom instruction, hands-on laboratory work and field demonstrations.

February 1—3, 2006

Introduction to the Soil Food Web

February 4, 2006

Compost Technology

February 5, 2006

Compost Tea Technology

http://www.soilfoodweb.com/04_news/calendar.htm

In-depth descriptions of the three workshops are available as a PDF download.

http://www.soilfoodweb.com/04_news/pdfs/05_SSI_Workshops.pdf

For more information call (541) 752-5066 or email info@soilfoodweb.com

Microscope class – February 6, 2006 Register now to secure your place!

Light Microscope Class - SFI Corvallis

This class will give you the ability to assess your own compost teas. Discover the difference between fungal hyphae and organic matter; recognize bacteria, protozoa and nematodes.

Cost: \$200 per person (limit 20) all supplies will be provided in the class as part of the fee, as well as the new Microscope Manual. Microscopes are an additional cost.

Two scopes have been recommended by Dr. Ingham. Alexis J-model \$425.00 or Leica CME-\$1400.00 (includes case). If you want to bring your own scope please contact us at the lab to discuss the specific requirements and be prepared to “upgrade” if necessary. To register for the microscope class, use the registration form you will find on our calendar page:

http://www.soilfoodweb.com/04_news/calendar.htm

(This is the same form used for the three workshops listed above.)

For more information call (541) 752-5066 or email info@soilfoodweb.com

Last but not least, there may still be time to register for ACRES this December – Dr. Elaine will be presenting a seminar on soil microbiology, with an expert using EM inoculum to modify the soil. These presentations will go hand-in-hand, as Dr. Elaine explains what bacteria, fungi, protozoa, nematodes and microarthropods do in soil to retain nutrients, suppress diseases, build soil structure and reduce water use. How are these processes altered or enhanced by EM? What specific functions does EM do? A microscope course will be offered as well, but participants must bring their own microscopes, or purchase microscopes that will be made available at the course.