Soil Foodweb Insights

July 2010

This Month

In this issue we're checking in on one of our SFI trained advisors, Doug Weatherbee. We're also exploring how our methods affect corn growing. You can still register for the workshops happening in August, 16-19. Registration forms are now available at http://www.soilfoodweb.com/calendar.html - if you have any difficulty finding or downloading the forms, call David at Sustainable Studies Institute: 541-257-2614, or send email to info@sustainablestudies.org - he will make sure you get the information you require. Finally, Earthfort has a new offering for the cost minded consumer seeking to improve their operations with SFI's methods.

Compost Tea Boosts Corn Production in Mexico

By Bob Rost

Compost tea is making quite a splash in the central highlands of Mexico.

Doug Weatherbee, a Certified Soil Foodweb Advisor, is working there with several local growers to introduce compost tea as a sustainable alternative to the chemical fertilizers agricultural producers have used for years.

Last year, he conducted a planting trial on the Lane-Hooper Ranch in Jalpa, Guanajuato, Mexico, in which he used permaculture techniques as well as compost tea in corn production.

In the trial Weatherbee compared corn production from two fields. Each field was just under a hectare (2.47 acres), with the first field receiving the usual chemical fertilizer treatments during the growing season; and the other field receiving compost tea sprays at planting, midway through the growing season and a few weeks before harvest.

Weatherbee then randomly selected a 735 sq. ft. area in each field and harvested all plant material for analysis and comparison.

Weather was a significant factor in the trial as 2009 turned out to be the worst drought year in the central highlands of Mexico since 1945.

The results of the test showed a dramatic difference. Weatherbee harvested 105 lbs. of high quality corn (shucked) in the sample area in the field treated with compost tea. The sample area in the other field yielded 31 lbs. of corn of significantly lower quality.

In addition, Weatherbee added, the sample area in the field treated with compost tea produced 527 lbs. of biomass (all plant material), while the other field produced 114 lbs. of biomass.

"Comparing the two fields, the productivity that came out of the field treated with compost tea was enormous," Weatherbee said. "Considering that the 2009 trial took place under extreme drought conditions in the region, the results were incredible."

The compost tea sprays significantly improved the structure of the soil so that these soils were able to better absorb and retain moisture, Weatherbee explained. This allowed corn plants in the compost tea treated field to make much more efficient use of the relatively small amount of moisture available, he added.

Edited by Michael Rost
Designed by Adam Lindsley

The success of the 2009 planting trial with compost tea has attracted a lot of attention in the area.

"Some large corporations interested in expanding corn production here are very interested in the potential of compost tea to boost crop yield and quality," Weatherbee said.

Weatherbee is conducting a second round of planting trials in 2010 on a larger scale.

"We will compare corn yield and quality from two fields that are 15 hectares each in area," he said. "As before, one field will receive the usual chemical fertilizer treatments and the other will receive compost tea treatments."

Weatherbee added that the larger trial will require 1,000 gallons of compost tea compared to the 21 gallons used in the 2009 trial. Soil Foodweb Inc. worked with Weatherbee to design and construct two 250 gallon capacity brewers that will provide the large quantity of compost tea needed for the 2010 trial.

Visit Doug's site www.soildoctor.org for more information and updates on his projects!

More on corn...

Corn growing has become a huge part of America's agricultural landscape and has defined the diet of a generation. In 2000, we dedicated 72.7 million acres of farmland to growing corn. This corn is used to feed almost all of our factory farmed livestock and also becomes a nutrient supplement in many of our processed foods. Though detrimental effects of those practices are still being discovered, one result from corn growing has been documented in the form of dead zones.

Dead zones are an awful consequence of our current corn growing practices. To grow the corn we use for livestock feed and human consumption, we apply incredible amounts of chemical fertilizer (to the tune of 138 lbs of nitrogen per acre as of 2005 - about 500,000 tons nationwide). Plant soluble chemical fertilizers leach out of soils very rapidly, and only a minute portion of what was applied is actually utilized by the corn. The remainder washes out into rivers, streams and eventually the ocean. One such dead zone is at the mouth of the Mississippi River. The amount of fertilizer that washes out into the ocean from the Mississipi sparks massive phytoplankton blooms that feed oxygen absorbing bacteria. This environment - now devoid of oxygen - is uninhabitable by sea life. Click on the links below for more information:

http://www.nasa.gov/vision/earth/environment/dead_zone.html
http://www.epa.gov/agriculture/ag101/cropmajor.html
ftp://ftp.fao.org/docrep/fao/010/a0701e/A0701E03.pdf (starting on page 86)

Dead zones add extra motivation to search and work toward more sustainable, environmentally responsible methods of corn production, as well as a strong reason to move away from monoculture in general. Ultimately, we are all part of one ecological system and we must endeavor to recognize our part in it.

Soil Foodweb Workshops, August 16-19

We're busy gearing up for the workshop happening August 16-19. Registration is still open and it's promising to have a great turnout. We just recieved word from the Landscape Contractors Board of Oregon, that our courses are now certified as Continuing Education in Technical Subjects, so if you need those course hours, we've got you covered.

We're very excited to be hosting so many people interested in sustainable growing practices! Next month's workshop includes:

The Soil Foodweb

The course begins with an introduction to soil biology that encompasses the living and structural components of soil and how they contribute to plant productivity, and efficient use of water. Topics covered include the soil food web, which describes the range of organisms that may be present in various types of soils and the relationships of these organisms. Instructors will describe and explain the role of bacteria, fungi, protozoa, nematodes, arthropods, and earthworms in the soil food web.

Making compost

This section of the workshop will begin with a complete definition of what compost is and what it is used for. Presenters will describe the organisms that are present in compost, their life expectancy, and how to feed them so as to energize the plant-growth-promoting properties of compost. Recommended composting materials and processes will be covered. A key point will be how to make compost that is tailored to the needs of specific plants, types of soils, and climate conditions.

Compost tea

This part of the course covers the uses of compost tea and why/how it can be especially beneficial to plant health and growth. Participants will learn the process of making liquid compost tea by extracting soluble nutrients, bacteria, fungi, protozoa and nematodes from compost that is in solid form. Also covered are methods of making compost tea and the various types of compost tea brewers in common use.
Compost tea as a foliar application promotes the health of plant leaves, stems, blossoms and fruit. As a soil amendment, compost tea improves nutrient cycling, water infiltration & holding characteristics, as well as soil structure. Presenters will explain the characteristics and components of foliar health, which will include an overview of the foliar foodweb as well as the soil foodweb.

Field tour

The four-day workshop includes a field tour to Harmony Jack where participants will observe a growing operation that not only utilizes compost and compost tea technologies, but is also a commercial compost producer. In addition, attendees will visit French Prairie Gardens to see how a small community farm integrates compost and compost tea applications, and how they achieve healthy plant growth without the use of chemical fertilizers and pesticides.

Microscope work

Course time devoted to working with microscopes helps learners discover and observe the wide range of microorganisms present on plant leaves and in the soil; and learn to understand and identify the microorganisms that must be present on plant leaves and in the soil for optimum plant growth. In addition, The microscope work in the course will prepare learners to assess the components of soil and foliar food webs. According to workshop instructors:

"Methods have been developed that allow the numbers and type of each important group in the soil and on plant surfaces to be quickly assessed. The kinds of assessments used are:

- Number of individuals each group
- Type of organisms present and who is dominant
- How active the organisms are
- Relation of soil organisms to plant available nutrients

All of these methods need to be performed by direct microscopy, not by plate counts, enzyme assays, or other indirect assessment methods."

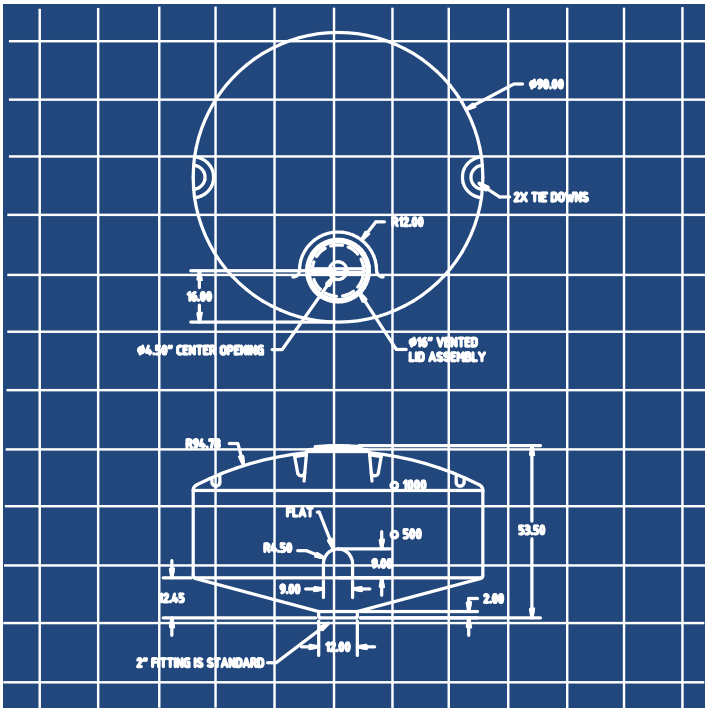
Registration is still open so be sure to check http://www.soilfoodweb.com/calendar.html for the registration forms and if you have any questions or problems call David at Sustainable Studies Institute: 541-257-2614, or send email to info@sustainablestudies.org.

Soil Foodweb Workshops, October 2010

Can't make it to the August workshop? We are currently planning a workshop for October. It will be held in Corvallis, OR. We'll have more information in the coming months.

New service offering from Earthfort

Need help building your own custom brewer? We can assist you in designing a quality brewer that will function in your distinctive project for a more manageable cost!



BREW PRINTS

We can help provide ideas, plans and parts to supplement equipment you might already have. Call on our expertise at (541) 257-2612 or email us at info@earthfort.com. Earthfort is also currently working on instructional videos and documents to further assist in the production of personal brewers. Keep an eye out for those in the coming months!

That's all for now. Stay tuned for next month's article about a landscaper operating in New York who worked on a restoration project for the Brooklyn Bridge Park. From all of the staff here at Earthfort, happy sustainable growing!