

http://www.rodaleinstitute.org/20120112_assessing-soil-health-test-observe-talk

Assessing soil health: Test, observe and talk

Soil health workshop at Rodale Institute attracts area farmers and provides real-life solutions to common problems.



Photos by Eric Winter

Area farmers came out to the Rodale Institute late last year for a chance to both learn and share techniques and innovations related to soil health, soil life, cover crops and organic no-till. Bob Schindelbeck, Extension Associate from Cornell University, presented the morning session focusing primarily on the components of the Cornell Soil Health Test including how to sample for it, how to read the results and what to do with the information once you have it. The Cornell Soil Health Test is known to provide an overview of a holistic understanding of soil functional behavior to underscore the soil chemical, biological and physical processes. Attendees spent the afternoon actually looking at the soils from their farms and talking about real-life issues and potential solutions.

Right before lunch we asked for everyone to go around the table and talk a little bit about their farm. This opened up avenues of conversation as attendees identified with other farmers who had experience in the same areas of interest. Discussions overheard included questions about raising cows and goats directed at someone who managed a 250 head Black Angus herd, and shared challenges and solutions for getting rid of asparagus beetle problems and what to do with asparagus residue. There was a lot of give and take between experienced farmers and everyone was willing to share advice on everything from planting certain crops to trying new practices.



The break out session after lunch took advantage of the conversations that began before the meal as attendees were divided into three groups for a hands-on exercise. Soil samples had been collected on about a dozen farms in the spring and sent to Cornell for the Soil Health Test. Schindelbeck selected results from three of the farms to be used as “case studies” and discussed in detail by the attendees. This allowed the farmers to address the specific problems on each farm (compaction, high phosphorus, low aggregate stability, etc.) while at the same time keeping the unique situation of each farm in mind.

While saying “just grow cover crops” might work as a theoretical answer to a particular soil health issue, Schindelbeck wanted attendees to consider the other circumstances that might be present when applying a solution to a real-life situation. What are the implications of working a cover crop into an existing rotation, does the farm have the equipment, labor and experience needed to make the suggested changes? He calls this “context-sensitive” problem solving scenarios as part of an adaptive management style - a contrast to the prescription approach.



Dr. Elaine Ingham gave an overview of the life in the soil including information on bacteria, fungi, the importance of the right ratio, and examples of what the right biology can do for a farm’s success. Seven farmers also brought soil samples from one of their fields to the workshop for viewing under the microscope. Most of the attendees picked their problem fields to sample and were looking forward to learning more about what the microbiology could tell them.

Dr. Elaine Ingham provided a quick training session on how to use the microscope and a 10-minute mini-analysis of their soil microbiology. The farmers all had the opportunity to take a look at their soils under the microscope and get direct feedback from Dr. Ingham on how to interpret what they were seeing. Most of the soils were high in bacteria and low in diversity so each

session also brought up an opportunity to troubleshoot their soil health problems personally with Dr. Ingham.



Attendees were invited to come back to the Institute to look at their soils or send along samples for further review and many were enthusiastic about buying a microscope for their farms. One attendee noted at the end of the day that a microscope seemed “an essential and affordable tool for assessing soil health on the farm.”

The workshop wrapped up with an overview on organic no-till including how it works, results from both years past as well as 2011, and the economic benefits. Since three of the attendees were farmers with whom we conducted on-farm no-till field trials, we asked them to share the experiences they had in 2011. Each farmer was pleased with the overall results of the rolled cover crop treatment and all stated yields were basically the same as compared to the standard treatments of black plastic/biodegradable plastic, cultivation or herbicide. There were some challenges with weeds mentioned allowing the attendees to discuss pros and cons and Institute researchers to help troubleshoot. Many of the challenges we hope to avoid next year by making a few adjustments to the project.



Several people stayed long beyond the end of the workshop to get additional information from Schindelbeck and Dr. Ingham. The farmers took home information on what is important in terms of soil quality, soil health, how can it be measured and quantified, how can it be improved, what resources are available to them. And, hopefully, they came away better equipped to, as Schindelbeck put it, “invigorate the soil” on their farms.

This publication was supported by a U.S. Department of Agriculture Northeast Sustainable Agriculture Research and Education grant, agreement No. LNE08-268 and by a private foundation.