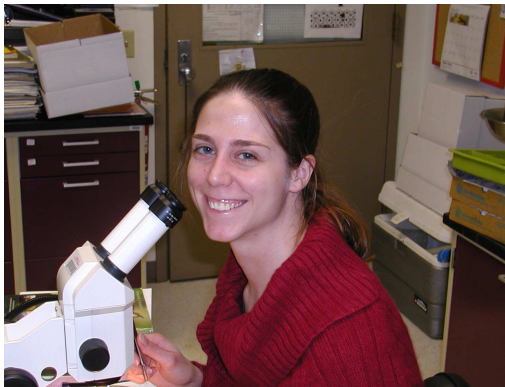


THE ROCK SPRINGS ROTATION

A monthly newsletter from the Organic Cropping Systems Project team

July 2009

Meet the Team



Christy Mullen

Christy is a research technologist in the Department of Entomology. She received her BS in horticulture from PSU and joined the Transition to Organic project in August of 2005. Christy has many responsibilities within the project, including conducting and coordinating the insect community, plant biomass and nutrient, and soil sampling activities. Christy is also the project historian, recording minutes of our weekly technical and annual advisory board meetings. She also documents all of the field management activities, and maintains the organic certification paperwork required for our project. Prior to working with us, Christy helped maintain an Asian Longhorned beetle colony for PSU Associate Professor Kelli Hoover.

Christy is originally from Honesdale, PA, where she often returns to visit. She enjoys spending time with her family and playing with her niece and nephew. Christy also enjoys gardening, catching butterflies,

reading, and spending time with her cat, Lily.

Kore Yoder

Kore is a certified organic feed and dairy producer and has been an advisor to the project since we began the organic transition phase in 2003. Kore owns Yoder Farms (300 acres) near Lewisburg, PA, where he grows a number of crops including corn, soybeans, spelt, sorghum Sudan, forage oats, and peas. Kore also milks over 45 cows and intensively grazes much of his land.

Kore began transitioning his farm in 1998, and was certified organic in 2000. Kore attributes his good soil quality and relatively low pest pressures to a good rotation. He tries to maintain soil fertility and manage weeds and insects by not planting crops in successive years. Kore maintains his soil by using dairy manure and clover cover crops, and is very interested in the role that soil biology and microbes play in contributing to soil health.



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We're on the Web!

<http://TransToOrg.cas.psu.edu>

We've been "blogged"

- Our research is attracting attention!
- The organic cropping systems experiment was recently commented on by PSU blogger Steve Williams.
- See the June 25 blog entry at: <http://agtheory.blogspot.com/>

Thinking back, looking forward...

Highlights from the “Weed Suppression and Biodiversity through Cover Crops and Field Edge Plants” Field Day

On June 17, members of the organic cropping systems project and PSU weed scientists conducted a field day at the Russell E. Larson Agricultural Research farm at Rock Springs aimed at demonstrating and assessing ecosystem services provided by cover crops and field edge plants. The field day, which centered on



Weed ecology graduate student Matt Ryan demonstrates to field day participants how to assess the multiple functions of a rye cover crop.

the theme of “multi-functionality” was co-sponsored by PASA and was attended by 39 participants with backgrounds ranging from full time farmer/producers to home gardeners. The all-day session began in the morning with a tour of some of the field research being conducted by PSU weed scientists investigating the use of cover crops for weed suppression.

The afternoon session, which had to be held indoors due to unseasonably cold and wet weather, focused on evaluating other ecosystem services provided by cover crops and field edge plants. In the first afternoon session, Dave Mortensen and weed ecology graduate student Nelson DeBarros discussed how native plants grown in and around agricultural landscapes can attract plant pollinators and other beneficial insects to cropping systems. Dave and Nelson had plant specimens on hand to demonstrate how specific field edge plants attract specific suites of insects and also introduced a new PSU publication developed by Nelson and Tara Pisani-Gareau on bee conservation in PA using perennial plants.

The second afternoon session was led by Tara Pisani-Gareau and Rich Smith and involved an activity

designed to let participants evaluate first-hand how five different cover crops can vary in their potential to provide ecosystem services such as weed suppression, soil erosion protection, beneficial insect attraction and conservation, and soil quality and fertility benefits. The five cover crops, which were planted specifically for the field day, included winter wheat, rye-vetch, pea-triticale, buckwheat, and mustard. Field day participants broke into small groups to conduct activities aimed at assessing each cover crop for multifunctionality. Among the activities, participants assessed cover crop biomass production by weighing cover crop samples, examined specimens of beneficial insects collected on sticky and pitfall traps, and searched for earthworms in soil removed from under each cover crop.

After the groups finished collecting their data, each group constructed a “spider plot”. A spider plot looks like the spokes on a wheel, with each spoke representing a different ecosystem service. Once the dots are connected, the resulting shape resembles a spider’s web, and indicates the potential for a given cover crop to provide a range of



Dave Mortensen, Rich Smith, and Tara Pisani-Gareau discuss the cover crop “spider-plots” that display the ecosystem service data that were collected by the field day participants.

specific ecosystem services. Participants compared the spider plots of each of the five cover crops and discussed the potential trade-offs associated with each species.

Participants left the field day with a new analytical tool, the spider plot, and a better understanding and appreciation of the multiple beneficial services that cover crops and field edge plants can provide to agricultural systems.

