Welcome to Our Project Team Newsletter!

Organic Reduced Tillage Project

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Scott Harkom (PSU Farm Manager)
Jay Harper (Economics)
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Matt Ryan (Post-Doctoral Res. Assoc.)

Organic Farmers
Elvin Ranck & Kirby Reichert (PA)
Aaron Cooper & Eddie Taylor (MD)
Alan Hoffman & Kenny Haimes (NC)

Oregon State University
Alex Stone & John McQueen (eOrganic.info)

University of Delaware
Mark VanGessel (Weed Sci.)
Barbara Scott (Weed Sci.)

PSU Cooperative Extension
Greg Holsclaw (Agronomy)
Del Voight (Agronomy)

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We’re excited that our project was funded! One of the project strengths is our team, which consists of researchers, specialists and technicians in five states, farmer cooperators in three states, and two extension educators in Pennsylvania. All told, the project team is spread over five states that span the U.S. – from Oregon in the west, to Pennsylvania, Maryland, Delaware in the east, and North Carolina in the southeast. In addition, as the project develops we will be adding technicians, graduate students and a post-doctoral researcher. Quite a crowd! Not all of us have had the opportunity to meet face-to-face or to communicate regularly. To help our widely dispersed team get to know each other better and stay informed, we are instituting this quarterly newsletter. In each issue we’ll focus on some of the team members and project activities. The editorship of the newsletter will rotate among...

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Organic Reduced Tillage Project Funded!

Thanks to a great team effort, the USDA’s Organic Agriculture Research Initiative program funded our project, “Improving Weed and Insect Management in Organic Reduced-Tillage Cropping Systems.” The project is funded from 1 October 2009 through 30 September 2013. Our overall goal for this multidisciplinary research/extension project is to develop sustainable reduced-tillage organic feed grain production systems that integrate pest and soil management practices to overcome production constraints associated with high residue, reduced-tillage environments. We will focus on the interactions between weed-, insect- and soil-management methods for organic production of small grains, corn and soybeans.

The project activities will include research station and on-farm research and extension. Organic reduced-tillage systems experiments will be established at two research stations – the Russell E. Larson Agricultural Research and Education Centre in Rock Springs, PA, and the USDA’s Henry A. Wallace Beltsville Agricultural Research Center in Beltsville, MD.

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Many thanks to our project supporters!

Blue River Seeds/Maury Johnson, Kelley, IA
CROPP/Gerry Cohn, LaFarge, WI
CROPP/Peter Miller, LaFarge, WI
King's AgriSeed/Dave Wilson, Ronks, PA
PA Association for Sustainable Agriculture/Rachel Schal, Millheim, PA

Looking Back, Looking Forward......

It’s early times, but here’s what the research team has been up to so far....

- We have had three teleconference calls to discuss the project in general, team work, and design of the research-station-based organic systems experiments. In the near future we will have calls to discuss the establishment of weed seedbanks in the systems experiments, October 8 at 10 am; entomological research, Oct.14 at 1:30 pm; and soil fertility management Oct. 22 at 1 pm.
- We established our collaborative, web-based worksite at eOrganic http://eorganic.info/node/4348.
- We designated land at the research stations in PA and MD for the systems experiments.

Here’s some of what we’re (optimistically) hoping to accomplish in the first year of the project.....

- Contact farmers, have plans & land designated for on-farm research
- Develop farmer survey, and implement a “before” project survey
- Implement on-farm and systems experiments
- Deliver an organic reduced-till webinar via eXtension.org
- Develop a training workshop on weed biology and its impact on weed management.
- Incorporate an organic topic into an extension in-service workshop
- Hold a farmer-advisory board meeting in MD this winter or early spring
- Arrange for and conduct project team member training on the eOrganic.org work site
- Recruit two graduate students & hire a technician at Penn State
- Write and distribute an annual report

Meet the Team

In this issue we will introduce some of the Pennsylvania Team. Stay tuned for introductions of more team members in future issue of the project newsletter!

Bill Curran is Professor in the Department of Crop and Soil Sciences and the project’s co-director. Bill has an extension-research split and has statewide responsibilities for weed management in agronomic crops. Bill’s extension education program focuses on providing ag constituents with the latest weed management information. Bill conducts research on basic weed biology, integrated weed management in conservation tillage systems including managing cover crops and most recently, he has focused on opportunities for managing weeds in organic crop production systems. Several scientific societies. He’s an active member in the Pennsylvania Agro-nomic Education Society, Pennsylvania Association for Sustainable Agriculture, and is the Pennsylvania Representative for the Professional Development Program for Northeast SARE.

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the team members. Please let us know if you have news about your program or items of interest for the team.

Other avenues of communication that we have been using to-date are conference calls and face-to-face meetings. Future communication plans include web-based conferencing and seminars, farm visits, and an annual meeting of the project team. With the help of our Oregon State University collaborators, we have established a collaborative work site at eOrganic.info. We will be using workspace at eOrganic.info to share information, develop and deliver webinars, and develop web-based extension materials that will be published to the Organic Agriculture Resource Area at eXtension.org.

Meet the Team

Bill has lived and worked in several agricultural settings in the Midwest, western, and eastern U.S. including his native New Mexico, where he was raised on a small, irrigated alfalfa/hay operation. Bill has been married for 25 years to his wife Lucy and they have two kids, Ben 13 and Cristina 12. Bill is an avid down-hill skier/snowboarder, and sneaks away for “ski-bbaticals” when time allows.

Mary Barbercheck is a Professor of Sustainable Agriculture in the Department of Entomology with a research program that focuses on soil biodiversity and function particularly as it relates to soil invertebrates and biological control of arthropod pests. She transitioned and currently manages 10 acres of certified organic land at the Russell E. Larsen Research and Education Center, the first certified organic cropland at PSU. She co-developed and co-teaches two organic agriculture courses - Principles and Practices of Organic Agriculture and Organic Fruit and Vegetable Production. On the project, Mary will serve as the project co-director, supervise a technician, co-supervise the postdoctoral scientist and graduate student, and help manage investigation of soil aggregate stability, selected soil physical characteristics, insect pathogens, and key beneficial and pest arthropod populations and activities at the PSU and PA on-farm sites. She will also participate in the outreach events and will help coordinate activities with eOrganic. Mary is also involved with the sustainable and organic ag communities outside of her “day job” at Penn State. She has served on the board of directors of the Pennsylvania Association for Sustainable Agriculture since 2003. One of her key activities with PASA is as the co-chair of the annual conference committee. She serves on the Certification Review and Outreach and Education Committees of Pennsylvania Certified Organic. Mary’s main hobbies involve her pets – Buck (dog), Mokie (cat), Wilbur and Elmer (donkeys) and Sonny (horse). She bought her three-year-old Quarter Horse, Sonny, as a yearling, and spends her weekends training him as a trail horse. Her favorite season is winter, if there is snow so that she can cross-country ski around her mountain neighborhood, and down-hill ski (mostly on the beginner slopes!).

Del Voight is an Extension Associate in Agronomy with the PSU Crop Management Extension Group, located in Lebanon Co., PA. Currently he is interim Grain Crop Specialist. Del will be actively involved in the on-farm research and outreach activities conducted at Kirby Reichert’s farm. Check out Del’s blog and twitter sites at http://delvoightcrops.blogspot.com/ and http://twitter.com/dgyjicm. Del is also a grass farmer. He owns and operates 30 acres of grass on which he practices rotational grazing with Angus cattle as a satellite farm for Cash Angus in Centre Hall, Pa. Del has three hobbies: James, 4; Elizabeth, 8; and Hunter, 11. As a result he coaches football, baseball and wrestling. He wrestled at PSU and played trumpet in the Penn State Blue Band. He still goes back for Alumni March and half time. On his own time he bow hunts and fly fishes for trout. He is the President of the Trustees of the Fredericksburg United Methodist Church.

Kirby Reichert is one of the two certified organic farmers in PA who will host On-Farm Research (OFR) projects and serve on our project advisory board. These trials will generate information that will be complimentary or supportive of the research efforts that will occur at the three public research centers. Kirby operates farms in Lebanon and Dauphin Counties, PA. He manages approximately 700 acres of grain crops, about 400 of which are certified organic. During the past five years, he has cooperated on research projects to test no-till planting into rolled cover crops in organic grain production systems. He will also provide direction to the project as a member of the farmer advisory panel. Kirby’s father was a farmer, and currently Kirby works his father’s land. Before farming full-time, he spent 24 years working for the US Postal Service while farming on the side. Kirby has cooperated in numerous research projects. He is a member of Pennsylvania Certified Organic, who certify his farms. In 2006, Kirby won PCO’s “Going the Extra Acre” award for outstanding farming.
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Other sites for research and educational activities will include the Univ. of Delaware Research and Education Center, and 6 farms – two each in PA, MD, and North Carolina.

The research-station based systems experiments will test four approaches to weed management in organic cropping systems: 1) expressive weed management—stimulating pre-plant weed seed germination followed by control; 2) pest avoidance – altering cash crop planting date to avoid early-season insect pests and weeds; 3) pest (weed) suppression – using living and dead cover crops to physically and chemically suppress weed emergence and growth; and 4) supplemental weed control – shallow high-residue cultivation to remove weeds that emerge through cover crop residues. Components of the systems experiment will be investigated on six organic farms to determine performance and farmer acceptability.

In the systems experiment cover crops such as cereal rye will be planted between corn and soybean crops, and hairy vetch between wheat and corn to control weeds and contribute to soil fertility. The biomass the cover crops produce will be rolled down and not plowed under the soil to avoid disturbing the soil before cash crops are planted. The resulting debris left from the cover crops to suppress weeds can present a challenge to producers because it can encourage the growth of early season pests, such as slugs and insects, that feed on germinating crops. We will be investigating how the methods used to control weeds affect pest and beneficial arthropods and soil quality.

Six farmers from Maryland, North Carolina, and Pennsylvania, and Mark VanGessel at the Univ. of Delaware will host at least two research trials. The farmer-participatory, replicated on-farm experiments will consist of components of the larger systems trial at RELARC and USDA BARC. One of the on-farm experiments will be common across all on-farm locations. This trial is intended to quantify the yield penalty, if any, when planting corn or soybean cultivars that are of shorter maturity than those typically planted in a region. The farmers will also provide project input and oversight as members of the farmer advisory panel.

The team is planning the development of outreach programs and materials, including those focused on the economic aspects of organic crop production, for a broad audience and delivery through a variety of means, including eOrganic.info/extension.org, and their effectiveness evaluated. We also plan to create and disseminate easy-to-use decision support materials online and in print to help growers manage crops, cover crops and pests in reduced tillage organic feed grain production systems. Overall, the project addresses may concerns of organic producers: production; evaluation of potential economic benefits and farmer acceptability; determination of desirable crop and cover crop traits for organic production; and conservation and environmental outcomes relating to organically produced agricultural products.

Evaluation of research and extension activities is an important aspect of the project.

Meet the Team

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Christy Mullen is a research technologist in the Department of Entomology. She received her BS in horticulture from PSU and joined Mary Barbercheck’s lab in August of 2005. Christy has abundant experience supporting organic research projects, including conducting and coordinating insect community, plant biomass and nutrient, and soil sampling activities. Christy is currently the project historian, recording minutes of our technical teleconference calls. She has experience documenting field management activities, and maintaining organic certification paperwork. Previously, 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.