Robotic Milker Adds Flexibility to Dairy Farm Life
By Jody Padgham

A typical dairyperson’s life revolves around a regular twice-a-day commitment to milking cows. Not so anymore for Pete Ruegemer of Villard in central Minnesota. With the purchase of two DeLaval robotic milking systems in the spring of 2011, Pete, his wife Sara, and their children, Sara and Jeremy, no longer have regular milking hours for their 150 cows. “The robotic systems have really freed things up time-wise,” Pete said. “Our days are a lot more flexible.” That means that when the Ruegemers received the Horizon Organic Producer Education (HOPE) Award last year, they could leave the farm to receive the award at the Farm Aid concert in Hershey, Penn. in September.

“The robotic system has allowed us to double cow numbers without adding a lot more work,” Pete said. He recommended the systems for anyone that is interested in increasing their herd size.

The Ruegemers farm on 330 acres they purchased across from Pete’s home farm in 1982. They also rent another 160 acres plus some permanent pasture. The farm is focused on the dairy operation, with 140 acres of pasture and home-grown feed crops raised on the 400+ tillable acres. They’ve been shipping organic milk since 2006.

Although all of the seven Ruegemer children help on the farm, Sara and Jeremy, now in their mid-twenties, decided they wanted to join the farm operation. The need to increase cow numbers to support the new farm partners led to discussions of alternatives to the 80-cow tie stall set up they were using. A friend was using a robot, and recommended that option. After much discussion, research and exploration of options, the family decided to go with two DeLaval robotic milking systems, purchased by Sara and Jeremy. “We had the first DeLaval robot on an organic farm,” Pete said, “and the first in central Minnesota. The company has been great to work with and gave the kids a good deal.”

Pete explained that it took about a year for all of the kinks to work out of the robotic systems.

The Pathogen Path: Water-Soil-Plant
By Chris Blanchard

Food safety, as we’ve learned to talk about it in the wake of troubles like the 2006 E. coli 0157:H7 outbreak from spinach, or the 2011 outbreak of Listeria monocytogenes in cantaloupes, has everything to do with preventing the bacterial pathogens that make people sick from contaminating fresh fruits, vegetables, and herbs. Because these bacteria survive and spread in fecal material, the principles of microbiological food safety come down to three critical factors: keeping poop off food, keeping any poop that gets on food from spreading, and keeping anything in the poop from growing.

Up to the point the crop is harvested, the main emphasis is keeping the poop off of the food. This means managing the application of manures and manure-based composts, as well as paying attention to the source and quality of irrigation water. Sometimes the problems are obvious, as when you notice a pile of deer pellets in your field or when the sheep get into your green beans; sometimes it’s more subtle, such as wind-blown fecal material from a feedlot or run-off from an adjacent pasture.

We’ll never eliminate the presence of pathogens in our production fields, but we can take steps to reduce their presence, and to reduce the risk of them making people sick. While the desired degree of risk-reduction is up for debate because of potential environmental and economic costs, knowing more about the dynamics of food-borne human pathogens in the environment can help individual growers optimize decision-making.

Pathogens Can Thrive in Soil
Foodborne pathogens get into the soil through the application of irrigation water, animal-based fertilizers, and intentional or inadvertent animal incursion. Once there, E. coli 0157:H7 has been shown to survive for up to 260 days in the soil; it has been found on parsley leaves up to 177 days after the application of contaminated compost. Heat and moisture can extend the survival of E. coli 0157:H7 and Salmonella; cold and dry conditions likewise reduce the lifespan of these pathogens. Studies show that at 40 degrees F, E. coli 0157:H7 persisted for a third of the time that it did at 60 degrees.

Tillage and the incorporation of manure reduce survival times for foodborne pathogens. Several studies have shown that soils on organic farms, and biologically active soils in any farming system, accelerate the decline in E. coli 0157:H7 levels compared to conventionally managed soils.

To Food Safety on page 10
With the dry weather no one has been doing much out in the fields in my area—nothing is growing enough to need much attention. The eerie quiet lets one know that things are not as we might wish out there. A welcome thunderstorm dropped two inches of rain yesterday afternoon. One of the first things I noticed (after the return of smells!) were the sounds of crickets and grasshoppers. Even they seem to have been suppressed by the lack of moisture. Hopefully we are on the crux of change.

We are in high season for field days. Read Angie’s report on page 9 to see what you’ve missed, and what you can still catch. We’re already thinking of more events for next year if this one looks too busy.

Speaking of activities, we are planning two repeats of our popular “Fearless Farm Finances” 2-day workshop in both November and December, with a follow-up day in January. This event in 2010 drew rave reviews from not-yet-on-the-ground farmers to experienced growers who wanted to really dig into the numbers. See the calendar listing on page 24, for details visit the web at www.mosesorganic.org/farmfinances.html or give us a call at 715-778-5775.

MOSES has exciting news—in late July we hired Jerry Waller as Operations Director, a new position in the office. Jerry’s background as events organizer and sustainability coordinator at UW-River Falls makes him a perfect fit for his new responsibilities in HR management, planning and operations. Hopefully you’ll get a chance in Feb. to say hi to Jerry at the 25th annual MOSES Organic Farming Conference.

Yes, 25 years. Can you believe it? The conference shares it’s birth year with several others- including Organic Valley, USDA-Sustainable Agriculture Research and Education program (SARE) and the National Sustainable Ag Coalition (NSAC), to name just a few. You can bet that we’ve been doing a lot of scheming in the office about how to celebrate. Look for details in your conference registration guide, arriving in your mailbox in early December. We’re already collecting your stories and have conference memorabilia on hand that you can enter. Check it all out now at www.mosesorganic.org/conference.html.

I hope you have enjoyed our expansion to 24 pages. Did you notice? It’s been fun collecting and creating even more quality content for you. If you have ideas of topics you’d like covered, certainly let me know at jody@mosesorganic.org or 715-778-5775.

I hope your summer ends well, Jody Padgham, Organic Broadcaster Editor
The regulations governing organic agriculture in the United States, while being unique in some of their strict provisions and oversight, are still part of the overall U.S. legal system. The legal system mandates a review of the economic impact any proposed or changed regulation would have on those operating under the regulation. Recently, this mandated review has made it difficult for the National Organic Program (NOP) to implement decisions made by the National Organic Standards Board (NOSB) to strengthen the organic standards.

How Changes to the Law are Made
The 1990 Organic Foods Production Act included a provision dictating continuous review and improvement of the regulations written to implement the law. Materials on the National List of approved and prohibited substances are mandated to be reviewed every 5 years by the National Organic Standards Board. This allows for items to be removed from the list if circumstances have changed, such as better alternatives found or the substances have negative effects found to be unacceptable.

The NOSB works diligently, with significant public input, to respond to consumer and producer demands for clarification, improvements and additions to the organic regulations. Stel- lar examples include a more prescriptive posture regulation and clarification of animal welfare standards. The law clearly gives the NOSB exclusive power to add or remove materials from the National List. The NOP cannot add or subtract an item without NOSB discussion and a publically viewed vote.

Recent Troubles
An economic analysis was recently done on NOSB-approved recommendations to oversee the stocking rates and outside access for poultry. These have been contentious issues since the organic regulation was implemented in 2002. The U.S. law for organic poultry is very different from Canadian and European standards. These other countries have very prescriptive guidelines for numbers of poultry per square foot, both inside and outside. There has been pressure on the NOSB to solidify the U.S. organic poultry laws.

Although our regulation clearly states that poultry must have access to the outdoors, a 2002 NOP determination, allowing porches as an acceptable form of outside access, has led to very large organic hen houses that have either a few small porches, or none. This clearly does not meet the spirit or letter of the law. Unfortunately, the recent economic impact analysis on poultry did not review what the law mandates, but instead looked at what is currently being allowed. This was compared to what a stronger regulation with specific sizes of indoor and outdoor poultry living areas might require. The analysis found that the NOSB recommendation would increase production costs of large hen houses that currently offer little to no outside access. However, this determination did not account for the fact that these operations are not meeting the current regulation by not allowing the birds outside. The report did mention that it appears consumers would be willing to pay higher prices for poultry products produced using higher standards, but this was not a “factor” when assessing the negative economic impact.

Economic Analyses Have Limitations
A key weakness of these economic impact assessments is that they only take into account the dollars it might cost to meet a new regulation, without assigning any “value” to the positive impact on an organic label with more consistent and transparent standards for animal welfare. It is important that organic standards continually improve, in a practical way, so the organic community can be proud of our production systems, and consumers can be assured of the strength of the organic label.

It is important that organic standards continually improve, in a practical way, so the organic community can be proud of our production systems, and consumers can be assured of the strength of the organic label.
Mark Shepard is a unique farmer. In fact “farmer” might not really be the right term. Part ecologist, part forester, part farmer, part pioneer, part experimenter, Mark is really better served by the title “Restoration Agricultur- alist,” a title based on his book Restoration Agriculture, published this year by ACRES USA.

This book, which focuses on real-world applications of permaculture concepts for farmers, has generated a lot of buzz and attention for Mark’s work on his farm in the Kickapoo River Valley near Viola, Wis. Mark’s workshop at the 2013 MOSES Organic Farming Conference was one of the best attended and evaluated workshops MOSES has ever coordinated. His calendar is full of tours, trainings, consultations, and presentations, balanced with tending his own farm and a new hard cider enterprise. Many people are very interested in what Mark has to share.

After a MOSES farm tour at Mark’s New Forest Farm in June, I found myself wondering what inspired, motivated, and led Mark to his unique vision for the future of agriculture. Rather than write about his methods (read the book for that), I thought we all might enjoy an exploration into the twisted path that has led him to this place, and what guides him into the future.

The Beginning

Mark was not raised on a farm. He was born and lived in the inner city when very young. When he was 7, Mark and his family moved to his grandmother’s 10-acre hobby farm in Lancaster, Mass., about 40 miles from Boston. Mark’s mother was raised on a Vermont farm and her father was a Maine woodsman in his youth. “Their dream was to get back to the farm,” noted Mark. Mark’s grandmother was a seamstress at a factory and his grandfather worked at a cannery, but they also worked on their large vegetable gardens, chickens, an orchard and had a family cow.

“My grandma was always doing something–gardening, cooking, processing. I learned a lot of cooking from her. This was before the 70s oil embargo; we all pitched in to make ends meet.”

The whole family joined in to grow food. They added goats, bees, a two-acre garden, and a composting enterprise. “Everyone came to my dad to learn how to compost.”

“The area was all apple orchards and dairy farms with very few houses when I was young. As I got older, the first subdivision went in. By the time I was a junior in high school, the first McMansions started going up. By college, the area was totally developed—all farmland to suburbia in the course of a few years,” Mark remembered.

College and Early Professional Career

Mark did well in high school and went on to attend Worcester Polytechnic Institute on a scholarship where he majored in mechanical engineering. His first civilian job was for a company where he helped develop the Kevlar infantry helmet. He stayed a year and a half. “I hated it. I had a 45-minute commute each way. It was good money, but a lot of it got sucked up in the clothing, a car and the engineer lifestyle. It was a shallow and expensive way of life that was so much different than what I grew up with. Around that time I began reading Living the Good Life by Helen and Scott Nearing.

That was very influential. Having read that and growing up the way I did–I decided to quit my job. I literally stood up, yelled an expletive and then walked into the boss’s office and quit.”

That is when Mark decided to homestead in Alaska, at least until he panicked and decided it would be more practical to go back to school to be an ecologist. He picked Unity College in Maine, at the time the only 100% environmen- tal program in the country. He chose to study forest ecology. He wanted to study how forests work. “I ate it up. This really interested me. I graduated with the highest GPA in my class,” said Mark. “Unity College was a really cool place. When President Reagan pulled down the solar panels from the White House, Unity College was there to take them and put them back up.”

Alaska and the Book that Changed Everything

Mark never gave up on his Alaska dream while at Unity. During his first summer break, he hitchhiked to Alaska to look at some land 3500 feet up a mountain and five miles from the nearest road. “How else was I going to get land? I was 22 and buried in debt, and at the time, there were no jobs for ecologists.”

Immediately after finishing at Unity, Mark married his sweetheart, Jen, and they both moved to Alaska. They each claimed five acres of land next to each other. To claim their land, they had to build a cabin and live in it for five months out of the year for three consecutive years. They would spend five months in one cabin and then switch, all while working in town. Mark worked at a tree and shrub nursery and in landscaping. They stayed for eight years. “The place was barely sub-arctic. There were a dozen glaciers visible from our land. There was frost and snow every month of the year,” recalled Mark.

The time there allowed for a lot of reflection and thought. “What kind of life would it be to work three months a year and then work on so- cial justice and environmental movements? We had a lot of time to be fulfilled human beings. We were poor, but we were OK. We had what we needed. I did a lot of reading. I got more of an education in Alaska than in college.”

Mark started experimenting with planting nursery stock next to each other; making an edible property. He removed the non-edibles. He took a lot of notes about the results and what he was trying to do. “I thought I might make a book. I took the idea and notes to a friend who said ‘that book has already been written,’” laughed Mark.

That book was Permaculture: A Designer’s Manual by Bill Mollison. “I ate that thing up. Here was a practical application of ecological principles in the human sphere. I committed to the idea that every piece of green should be doing something for us. I was in landscaping and wanted to use permaculture in my business, so I decided to take the permaculture design course at Central Rocky Mountain Permacul- ture Institute in Colorado. Once there, I ended up teaching the soils and agroforestry sections of the course.”

“The Nearings [Living the Good Life] were self-sufficient in vegetable production, but they still had to buy their proteins and oils, just like we did when I was growing up. But permaculture allows us to design a farm that can grow all the food crops, including proteins and oils, in a sustainable way. Two of the guys that were at the course with me were enthralled with the idea of such a farm. We wrote up a partner- ship agreement on a napkin in the sauna at 2 a.m. One of them ended up coming up with the down payment. The other guy chicked out. My new partner was from Milwaukee and sug- gested the driftless area of Wisconsin as the best place to find land. He found the farm, and we went through with the purchase. We never saw the land before arriving.”

The New Farm

“My wife, my infant son and I moved to Wis- consin in the middle of winter. We were even more in debt now. Within six months my part-

To Shepard on page 19

Mark Shepard explains his philosophies at a recent MOSES field day at New Forest Farm.
“With your eyes to the west, You keep watch - ing the sky. While the leaves start to curl, ‘Cause the crops are so dry. It’s like everyone says, Does no good to complain, But it gives you something to do, While you wait for the rain.” – *While You Wait for the Rain.*

Susan Werner’s rich voice, accompanied with a wry smile, settled on my soul as I shared a beautiful concert space with farm neighbors and co-workers on a recent hot, sunny Sunday afternoon. The insightful singer-songwriter clearly knew what our days in the fields have been like this summer.

Proud of her eastern Iowa farm heritage, Susan packs a recording, “Hayseed,” with evocative, funny, touching, and bittersweet songs about farming, soybeans, corn, eggs, Iowa, the land, herbicides, and childhood jealousies of “city kids.”

“All the city kids, They never did no chores. We were baling hay, Milking twice a day, They were making smores. All the city kids…” — *City Kids.*

Using her voice like an instrument, knowing when to bang out the lyrics and when to fade to soft, Susan is an in-your-face performer in the world of country music. “I wanted to show that farmers are just like everybody–from the First Lady to Dodge Trucks making smores. All the city kids…” — *City Kids.*

A classically trained vocalist, Susan masterfully uses both the guitar and piano to create moods that enhance the lyrics of her songs. It’s rare to find such a talented songwriter and singer who is also such an outstanding musician.

The Hayseed album was commissioned by the University of Nebraska’s Lied Center for the Performing Arts and the Institute for Agriculture and Natural Resources. The project began with seed money from fans during a successful PledgeMusic campaign. Susan rewarded pledgers with unusual treats, such as signed ears of corn from her folks’ farm. A percentage of the money raised was donated to three farming organizations: Practical Farmers of Iowa, the Land Institute in Salina, Kansas, and MOSES in Spring Valley, Wis.

Hayseed is the fourth in a series of concept albums. “I like concept albums because they give the audience and the artist a place to meet, something in common to talk about, right from the word ‘go,’” Susan says. “And it seems everybody—from the First Lady to Dodge Trucks—has something to say about food, farms and farmers these days.”

“I wanted to show that farmers are just like everyone else,” she says with a laugh, “Honest, hardworking, kind, generous, resentful, and murderous.” Underneath its glib, satirical wash, Hayseed is tender and benevolent, an homage to her upbringing. “Growing up on a farm is part poetry and part child labor,” she jokes. “But it’s the landscape, the land itself, your love for that that stays with you—the fields, the fences, the creek. And I’ve found you can love a place as much as you can love a human being.”

“The ultimate purpose of making Hayseed, though, is broader, more light-hearted. ‘Maybe the reward of it all is just this simple: to write a song like ‘Egg Money’ or ‘City Kids,’ to see a song like that make my parents laugh, my brothers laugh, my cousins, my high school friends, and see people all across the country laugh,” she finishes. “Well, there you have it. Mission accomplished!”

I’m thrilled to find a musician that is not only incredibly talented, but also sings about my life and my neighbors’ lives. What greater satisfaction than tapping one’s foot along to a song titled “Barbed Wire Boys”? Susan’s dedication to organic production and local marketing offer additional reasons to support her.

The MOSES staff attending Susan’s recent show highly recommend our readers follow this bright star’s career. You can purchase “Hayseed” or one of her other recordings and check out several music videos at http://susanwerner.com.

Review by Jody Padgham, with contributions from Susan’s web bio, and MOSES colleagues Audrey Axwell and Eric Hatling.
Question: I shipped one load of organic corn, and it was rejected by my buyer as having GMO contamination and was then sold to a conventional buyer. What should I do for my next load?

**Answer:** by Organic Specialist Harriet Behar

Under our organic regulation, the GMO contaminated organic corn is still certified organic, although your buyer may have stricter purchasing preferences that include a specific tolerance level for GMOs, such as less than 1%. It would have been a good idea to send a sample to your buyer before you shipped the entire load to make sure it would not be rejected. Once it has been loaded and shipped off the farm, it is difficult and expensive to bring it back to your farm.

Before signing a contract for purchase of your crop, or selling a crop on the spot market, it would be a good idea to find out what, if any, GMO testing is done and what level of GMO contamination would cause the load to be rejected by the buyer you are considering. You can also find out what level of GMO contamination your previous load had, and try to take some precautions next year when planting corn to lower your risk and level of contamination. You might try planting later than your neighbors to avoid cross pollination, increasing the size of your buffer strip, or choosing to grow corn where it is more isolated from neighboring GMO corn. Even though corn pollen will travel great distances, higher levels of contamination will occur when the non-GMO and GMO corns are grown in close proximity.

Typically, all organic crops sold for direct human consumption are tested for GMOs, some-times numerous times in the process of clean-up. If you have any infested plants in a greenhouse or high tunnel, you should begin control options since their numbers can explode quickly.

Here are your options as an organic farmer:

**Biological control**

There are a number of predators and parasites available for purchase and release. Ladybug larvae are very effective to stop aphids and many other sucking pests. Ladybird beetles and their larvae are effective at controlling aphids. There are also many ready-to-use brands that are OMRI listed including the common Safer Insecticidal Soap.

**Non-Chemical spray**

Soapy water will kill aphids. The soap strips away their waxy cuticle and they die of dehydration. In order for this to work, they must be directly sprayed with the soapy water. Use a sprayer and mix one tablespoon of liquid soap per gallon of water. (Dr. Bronner’s is pure soap. Be careful not to use soaps with perfumes, dyes or other synthetic additives.) There are also many ready-to-use brands that are OMRI listed including the common Safer Insecticidal Soap.

**Allowed chemical sprays**

Remember that all insecticides approved for organic use are “restricted use” products. You can use them only when your other control options have failed, and you must notify your certifier if you intend to use a new product and the reason you must use it. Pyrethrum/pyrethrin-based sprays will work on aphids, but have a very short residual effect and must come in contact with the aphids. The product Pyganic works well, since it is pyrethrum mixed with oil, which coats and kills aphids and many other sucking pests. Your certifier should be able to provide a list of approved pyrethrum/pyrethrin sprays or check the OMRI website for a list: www.omr.org.

Aphids also love plants that are over-fertilized with nitrogen. If they are a constant problem despite other control efforts, you might be adding too much nitrogen to your potting mix or through fertilizer applications. A tissue test to determine nitrogen levels may be in order if you are having ongoing issues with aphids and other sucking pests.

As always, crop rotation and good sanitation practices can help control aphids in the long run.
Impact of Organic Management on Dairy Animal Health

Comparisons of herd health to management of organic and conventional dairy farms

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<tr>
<th>HERD CHARACTERISTICS AND PERFORMANCE</th>
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<th>CON-GR</th>
<th>CON-NG</th>
<th>P VALUE*</th>
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<tr>
<td>Total lactating and dry cows (head)</td>
<td>76</td>
<td>75</td>
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<tr>
<td>(% of farms)</td>
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<tr>
<td>Large 200 or more cows</td>
<td>11</td>
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<td>23</td>
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<tr>
<td>(% of farms)</td>
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<td></td>
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<tr>
<td>Prominent breed</td>
<td>63</td>
<td>72</td>
<td>86</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>(%) of farms</td>
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<tr>
<td>Prominent breed</td>
<td>10</td>
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<td>5</td>
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<tr>
<td>(%) of farms</td>
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<tr>
<td>Mean percentage of first-lactation animals</td>
<td>31.6</td>
<td>33.9</td>
<td>37.3</td>
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<td>Mean milk per cow per day (lbs)</td>
<td>42.9</td>
<td>54.0</td>
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<td>Milk composition</td>
<td>Mean protein percentage</td>
<td>3.12</td>
<td>3.19</td>
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<tr>
<td>(g/L)</td>
<td>Mean fat percentage</td>
<td>3.98</td>
<td>3.92</td>
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<th>NUTRITION AND GRAZING</th>
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<tr>
<td>Amount of grain fed (lbs/cow/d)</td>
<td>11.4</td>
<td>19.4</td>
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<tr>
<td>Mean number of days grazed (d)</td>
<td>190</td>
<td>182</td>
<td>--</td>
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<tr>
<td>Mean DM% from pasture: heifers</td>
<td>21</td>
<td>33</td>
<td>--</td>
<td>0.058</td>
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<tr>
<td>(% of farms)</td>
<td>7</td>
<td>14</td>
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<tr>
<td>76–100%</td>
<td>72</td>
<td>53</td>
<td>--</td>
<td></td>
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<tr>
<td>Mean DM% from pasture: adult cows</td>
<td>51</td>
<td>69</td>
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<td>(% of farms)</td>
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<tr>
<td>76–100%</td>
<td>25</td>
<td>0</td>
<td>--</td>
<td></td>
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<tr>
<td>Use of rotational grazing (% of farms)</td>
<td>95</td>
<td>81</td>
<td>--</td>
<td>&lt;0.001</td>
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<tr>
<td>Regular use of a nutrient (% of farms)</td>
<td>46</td>
<td>89</td>
<td>97</td>
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<td>Routinely scheduled veterinarian visits</td>
<td>No visits (%) of farms</td>
<td>64</td>
<td>44</td>
<td>23</td>
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<tr>
<td>(per 100 cows per year)</td>
<td>Few: 0.5 to 7.5</td>
<td>12</td>
<td>11</td>
<td>13</td>
</tr>
<tr>
<td>Some: 7.6 to 19</td>
<td>17</td>
<td>39</td>
<td>33</td>
<td></td>
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<tr>
<td>Many: 20 or more</td>
<td>7</td>
<td>6</td>
<td>31</td>
<td></td>
</tr>
<tr>
<td>Vaccination of adult cows (% of farms)</td>
<td>64</td>
<td>100</td>
<td>97</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Vaccination of calves (% of farms)</td>
<td>67</td>
<td>100</td>
<td>98</td>
<td>&lt;0.001</td>
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<tr>
<td>Use of DHIA testing services (% of farms)</td>
<td>53</td>
<td>69</td>
<td>70</td>
<td>&lt;0.001</td>
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<tr>
<td>Written records kept of health treatments (% of farms)</td>
<td>79</td>
<td>28</td>
<td>30</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Replacement stock from outside sources (% of farms)</td>
<td>15</td>
<td>36</td>
<td>36</td>
<td>0.001</td>
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</table>

MEASURES OF HERD HEALTH

<table>
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<tr>
<th></th>
<th>ORG</th>
<th>CON-GR</th>
<th>CON-NG</th>
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<tbody>
<tr>
<td>Mean reported bulk milk (1000 cells/mL)</td>
<td>221</td>
<td>208</td>
<td>213</td>
<td>0.171</td>
</tr>
<tr>
<td>Median reported bulk tank plate loop count (1000 cells/mL)</td>
<td>4.9</td>
<td>4.2</td>
<td>6.8</td>
<td>0.216</td>
</tr>
<tr>
<td>Mean rate of clinical mastitis (cases per 30% lactating cows)</td>
<td>0.193</td>
<td>0.284</td>
<td>0.238</td>
<td>0.018</td>
</tr>
<tr>
<td>Mean percentage of herd culled</td>
<td>6.4</td>
<td>7.1</td>
<td>10.6</td>
<td>--</td>
</tr>
</tbody>
</table>

*P-value <0.001 represents statistical significance.


The long-term, multistate research project aimed) to identify organic management factors influencing dairy herd health and milk quality is complete. Led by University of Wisconsin dairy science professor and extension milk quality specialist, Dr. Pamela Ruegg, researchers from Cornell University, Oregon State University and UW-Madison collected animal health and management data on nearly 200 organic and 100 size-matched conventional dairy farms across the U.S. Data included herd health records, milk samples, body condition scores, production and herd characteristics, disease treatment and diagnostic methods, veterinary usage and vaccinations, livestock housing, feed, and routine milking procedures.

The findings present new information about the perception of disease and treatment strategies among conventional herd in confinement, conventional grazing herds and certified organic herds. Associations of risk factors for mastitis, bulk tank somatic cell count and the role of veterinary care were also identified.

Overall, the outcomes indicate that dairy animal well-being was not compromised by use of organic management practices. Small- to medium-sized organic dairy herds enrolled in the study produced less milk, but used similar definition and disease detection strategies compared to similarly sized conventional dairy herds. Organic dairy producers also identified fewer production-related diseases in their herds compared to conventional herds in their region. In general, although approved treatments are limited for organic dairy producers, mortality rates and culling of cattle in organic herds were similar to those in conventional herds.

The lack of resources for organic farmers to prevent and effectively deal with several animal diseases caused by bacterial infections (such as pneumonia and subclinical mastitis) as well as the need for increased communication between dairy veterinarians and the organic dairy community was apparent from the results of the research.

With the goal to develop and disseminate recommendations for cost-effective, preventative health management programs, the project provided participating farmers with diagnostic animal health and milk quality data on their farms, coupled with comparisons to benchmarking data from other conventional and organic herds participating in the study. These reports collectively became the database for a suite of interactive herd health and performance tools now available online for all dairy farmers to access. Using the web-based management tools allows farmers to track herd progress over time compared to other farms around the country. The benchmarking approach helps farmers identify areas of strengths and weaknesses in their own system and set performance goals.

Dairy herd management tools and other resource materials from the project, including published peer-reviewed journal articles, fact sheets presenting the analyzed results and educational videos, can be found on the UW Milk Quality project’s website: http://milkquality.wisc.edu.

Funding for this project came from the USDA National Institute of Food and Agriculture. Additional support was provided by the University of Wisconsin-Extension. Participants include: P.L. Ruegg, M. Gamroth, Y.H. Schukken, K.M. Ciccon, R. Richert, K.E. Stiglbauer, and N. Lennart.
Radishes – A New Cover Crop for Organic Farming Systems

The following is condensed from an article published in July 2012 by Organic, where university content providers gather and produce new educational and information resources.

Over the past decade, radishes have been redefined; once known almost exclusively as a pungent vegetable, radishes have recently gained recognition for their cover cropping potential.

Radishes have made rapid inroads as a cover crop for several reasons. First, the radish phenotype is well suited to perform many valuable cover crop functions—provide soil cover, scavenge nutrients, suppress weeds, and alleviate compaction—while creating few of the residue management challenges associated with many other cover crops. Second, recent research including many on-farm trials has documented beneficial effects of radish cover crops on soil properties and subsequent crops. Third, the seed industry has ramped up production of radish seed, brought new branded products to market, and promoted radish as a cover crop.

In response to the growing interest in radish seedstock, some public and private sector varieties are large rooted selections of daikon radish (i.e., Nitro radish, Sodbuster, and Bio-till radish) are large rootstock selections of daikon-type oilseed or forage radishes, but are not the product of formal breeding programs. All are marketed for cover cropping (e.g., GroundHog radish™, Nitro radish, Sodbuster, and Bio-till radish) are large rootstock selections of daikon-type oilseed or forage radishes, but are not the product of formal breeding programs. All are marketed for cover cropping (e.g., GroundHog radish™, Nitro radish, Sodbuster, and Bio-till radish). These are morphologically similar to the large white daikon radishes traditionally used in Asian cooking. Hybrid daikon-type culinary radish seed is prohibitively expensive (more than $100/lb for bulk seed) for use in cover cropping, but open pollinated culinary daikon varieties may have some potential with bulk seed available for about $5/lb. Standard oilseed radish cultivars (e.g., Adagio, Colonial, and Defender) tend to have a stubbier, more branched taproot, greater winter hardiness, and lower seed cost than larger-rooted daikon types. (Ngouajio and Mutch, 2004)

All radishes are insect pollinated and cross-pollinate easily, increasing the likelihood of genetic variability if not grown in strict isolation. In recent years, some farmers who purchased inexpensive radish seed have reported high levels of variability including early bolting.

In response to the growing interest in radishes for cover cropping, some public and private breeding programs are starting to select for radishes with superior cover crop attributes. More research is needed comparing radish varieties with respect to traits such as winter-hardiness, hard-seededness, seedling vigor, nutrient scavenging, root penetration strength, and biofumigation potential.

The information that follows should be generally applicable to all radish cultivars used for cover cropping unless otherwise noted.

Benefits of Radish Cover Crops

Effects on Soil Structure

The radish attribute that has captured the most farmer interest is their robust rooting ability. Under favorable growing conditions, radish roots can extend more than 5 feet deep in 60 days, with the thickened storage portion of the root (commonly referred to as the tuber, though not botanically correct) extending more than 12 inches. Plants with roots more than 1 inch in diameter normally have a significant portion of the root exposed above ground (often more than 4 inches, even in uncompacted soils) (Fig. 1).

Effects on Nutrients

Research at the University of Maryland has shown that radish roots have greater ability to penetrate compacted soil than cereal rye and rapeseed. (Chen and Weil, 2010) Subsequent research found twice as many corn roots penetrated compacted subsoil after radish cover cropping as compared to cereal rye, with both cover crops promoting more rooting than bare-fallow. These results suggest that radishes may be useful as an alternative to deep ripping and other mechanical methods of alleviating soil compaction.

Effects on Weeds

Radishes have made rapid inroads as a cover crop for several reasons. First, the radish phenotype is well suited to perform many valuable cover crop functions—provide soil cover, scavenge nutrients, suppress weeds, and alleviate compaction—while creating few of the residue management challenges associated with many other cover crops. Second, recent research including many on-farm trials has documented beneficial effects of radish cover crops on soil properties and subsequent crops. Third, the seed industry has ramped up production of radish seed, brought new branded products to market, and promoted radish as a cover crop.

Effects on Seed Bed Preparation

After winter-kill (or other causes of mortality), radish residues deteriorate rapidly. As a result, fall biomass production is unlikely to interfere with spring field work. Typically a good stand of winter-killed radishes leaves the soil surface weed-free and perforated with open root holes in early spring. As a result, the soil warms up and dries out faster than soils covered by either winter weeds or a growing cover crop and is conducive to earlier spring planting.

Effects on Soil Nutrients

Because of their deep root system, rapid root extension, and heavy N feeding, radishes are excellent scavengers of residual N following summer crops. Radishes take up N from both the topsoil and from deeper soil layers, storing the N in their shoot and root biomass. With favorable fall growing conditions, radishes typically take up more than 100 Ib/ac of N. Early planting promotes high biomass production and associated nutrient accumulation but research at the University of Maryland has shown that late planted radishes can still take up substantial quantities of N despite low biomass production due to shifts in plant C:N ratio. (Dean and Weil, 2009)

Unlike cereal rye and other small grains whose residues decompose slowly and continue to immobilize N for an extended period, radish residues decompose and release N rapidly. Timely crop establishment following radishes can result in an early boost in growth and N uptake similar to following a legume cover crop.
Farmers Share What Works through MOSES Field Days

By Angie Sullivan

We're halfway through our field day season, and already have learned how to: "hack" tools to make farm chores easier; choose plants that thrive in permaculture; rotate and cultivate to yield abundant row crops; steps to make an organic dairy more profitable; and, establish on-farm entrepreneurial businesses run by women. It has been quite a season!

Our field day season started with “Farm Hack” in May at Gardens of Eagan, in partnership with the Organic Field School. Grant Schulta and Lindsay Rebhan discussed resources and how-tos for farmers interested in designing and building their own implements. Participants brought some of their own designs and described how these tools help to make their farm more efficient. Grant brought his Allis Chalmers G that he converted to electric power and taught the group how to accomplish some-thing like this on their farm.

In June, we toured New Forest Farm in Viola, Wis. and listened to Mark Shepard as he walked the group around his farm and taught us about restoration agriculture. To see the progress Mark and his family have made over the last 10+ years was inspiring. The group got plenty of chances to ask Mark questions to help them accomplish similar endeavors on their own farms. Another highlight for the group was the chance to see Mark’s home and learn first-hand all the ways his family uses alternative energy, both in the home and on the farm.

We filled two tour buses for the field day at Charlie Johnson’s farm in Madison, South Dakota! Over 115 people saw first-hand what large-scale organic crop farming looks like, and learned what the 2013 MOSES Farmer of the Year and his family do to farm organic success-fully. With over 2,500 acres of organic crops, this was a model farm to show attendees that organic can be accomplished on a large scale. Charlie is a third-generation farmer. His family farm has been certified organic since 1976.

Lisa Kivirist of the MOSES Rural Women’s Project led three In Her Boots—Sustainable Farming for Women by Women workshops in August. What a great place for women to come together, learn from each other and open up many networking opportunities. This informal setting opens the door for women to sit and ask all sorts of questions about farming, business, family and life. With a complete mix of ages, life-stages and experience, the women at these events are eager to share their stories to help other women feel confident about dipping their toes into the farming world.

In August, we toured an Organic Calley dairy farm in Minnesota. Dennis and Ruth Bock showed us their new free stall barn, bio-fuel trailer, and corn test plot.

Next up on Aug. 27 is “Grass-fed Beef, Row Crops and Poultry,” a triple-header at Sandy Ridge Farm in Tampico, Ill. The Shrock family has 140+ cattle, 15,000 certified organic layers, and 1,200+ acres of row crops. Bovine genetics expert Gerd Pry, who helped guide the farm’s cattle program, will join us on the pasture walk.

In September, we head to Iowa for two field days with Practical Farmers of Iowa. The first is on the Rossman Farm Family in Harlan, Iowa and the second at Radiance Dairy in Fairfield, Iowa. On Sept. 6, the Rossman will be discussing outcomes from the many research projects conducted on their certified organic farm. On Sept. 14, Francis & Susan Thicke, 2012 MOSES Farmers of the Year, will show us how to use alternative energy on a farm.

Women’s farm-based businesses will be featured on the Sept. 8 Soil Sisters farm tour. Seven farms in south central Wisconsin will open to the public for this free event.

On Sept. 16, we will visit PrairIHer Farm in Bloomington, Ill. Hans Bishop will show us how to scale up a vegetable operation and diversify to include small-scale livestock or value-added products. In addition to vegetables, this two-generation operation raises poultry, beef and pigs. Marketing outlets include a CSA, farmers’ market and other direct-to-consumer channels. The Bishops will show how farming can be a viable career option, especially when there are a variety of income streams.

Learn more about these field days on our website, www.mosesorganic.org. Choose one or more that suit your schedule, and join us to see what works on the farm!

Angie Sullivan is a MOSES Organic specialist. angie@mosesorganic.org

MOSES
ORGANIC FIELD DAYS
2013

Current events:
Grass-fed Beef, Crops & Poultry
Sandy Ridge Farm, Tampico, Ill. • Free
Tuesday, Aug. 27, 8–4:30
Tour 1,200+ acres of certified organic crops plus 15,000 hen poultry and 140-head grass-fed beef operations. Gerd Pry, renowned expert in cattle genetics, leads the pasture walk.

Grass-finished Beef, Row Crops & Poultry
Sandy Ridge Farm, Tampico, Ill. • Free
Sunday, Sept. 8, 11–4
Experience the bounty produced on small family farms run by women commited to a healthy future.

Harvesting Energy: Wind & Solar
Radiance Dairy, Fairfield, Iowa • Free
Saturday, Sept. 14, 2–5
See how the 2012 MOSES Organic Farmers of the Year, Francis and Susan Thicke, put alternative energy to work on their farm.

Vegetable Diversification
PrairIHer Farm, Bloomington, Ill. • Free
Monday, Sept. 16, 12:30–4:30
See how to diversify your vegetable operation with small-scale livestock, value-added products and more, while marketing directly to consumers.

To register or get details, call 715-778-5775 or visit www.mosesorganic.org.

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Food Safety... from page 1

Once in the field, pathogens don’t move freely in the soil. While irrigation and fertilizer applications spread contamination evenly around the field, spot applications of manure—which as those performed by deer or errant livestock—don’t get spread around by themselves. Workers, equipment, and overland water movement can spread bacteria, so manure should be removed from the field if it’s present, and a no-harvest buffer of five feet established around any manure incident.

The Path from Soil to Plant
Pathogens do move from the soil onto and into plants. Rain and heavy irrigation droplets can cause soil containing the pathogens to splash onto the above-ground portion of the plant, and roots are clearly susceptible to colonization by these bacteria. It is unclear whether E. coli 0157:H7 and Salmonella that have been internalized in the roots can move into other parts of the plant.

While one study showed that 90% of romaine lettuce leaves inoculated with E. coli 0157:H7 had fallen below normal detection limits in just 7 days, advanced lab work was able to detect its presence up to 35 days after inoculation. Because it only takes a few live cells of E. coli 0157:H7 to make a pathogen detection, any survival presents a potential health risk.

The surface of a leaf is a very active place biologically, and field-grown romaine lettuce has been shown to have bacterial populations that keep E. coli 0157:H7 from growing; presumably this would also be true of other pathogenic bacteria. On the other hand, plant diseases extend from the outside of the plant to the inside of the plant, making it easier for human pathogens to get inside the plant. For example, if a bird does its business on a chard leaf with cercospora leaf spot, the bacteria in the dropping has done its business on a chard leaf with cercospora leaf spot, the bacteria in the dropping has been shown to harbor and transmit E. coli O157:H7, and bacteria can be transferred from the outside of the plant to the inside of the plant. Rain and heavy irrigation droplets can cause soil containing the pathogens to splash onto the above-ground portion of the plant, and roots are clearly susceptible to colonization by these bacteria. It is unclear whether E. coli 0157:H7 and Salmonella that have been internalized in the roots can move into other parts of the plant.

Human pathogens can be transmitted to plants by more incidental means as well. Flies have been shown to harbor and transmit E. coli 0157:H7, and bacteria can be transferred up to 300 feet by wind from flocks. For both of these means of transmission, air movement and proximity matters. Wind breaks can cut down air movement, reducing the movement of both flies and dust. Pollinator habitat may also reduce the incidence of contaminated flies contacting vegetable plants.

Water Moves Pathogens
Irrigation water has been implicated in foodborne illness outbreaks, which isn’t surprising when you consider the number of cows that spend hot days standing in rivers and streams. The Proposed Produce Rule for the Food Safety Modernization Act establishes a standard for fecal bacteria in irrigation water; testing would be required to demonstrate the water’s suitability for irrigation. The Proposed Rule would require weekly testing during the growing season for systems using water from streams, rivers, and lakes; and monthly testing for water transferred into a man-made on-farm reservoir.

Developing a testing program to evaluate the food safety implications of a given irrigation source requires an understanding of the risks inherent in that body of water. For example, water from a deep well tends to have a relatively steady water quality, while the bacterial load of a shallow stream changes frequently with changes in upstream livestock location and local weather events. A testing program could help establish whether rain events result in higher fecal bacteria counts, and sampling schedules could be adjusted accordingly.

Sunlight penetration and a lack of nutrients help to reduce the bacterial load in a body of water. Turbulence can cause bacteria to settle into the mud, as well as bringing bacteria previously in the mud up to the surface. E. coli can survive for months in stream sediments, and has been shown to overwinter in streambeds when embedded in the underwater sediments. Fortunately, following a contamination event, the majority of the pathogen load dies off in a short time. E. coli counts increase in streams closer to feeding operations, so irrigation pumps should be located at a distance wherever possible; for example, you might consider locating an irrigation pump at the downstream end of your property (assuming you don’t have a feedlot contributing to the problem). Holding water, as in a pond, can increase concentrations of foodborne illness organisms. Ponds also invite contamination by livestock and wildlife, unless they are fenced out; geese can be a particular concern because they are known to land in sewage treatment ponds and can transfer bacteria to clean sources via their feet or feathers. Keeping livestock out of both ponds and streams can be extremely effective in reducing the potential impact of their manure on the microbiological quality of the water. In pastures, perennial grasses can filter up to 99.995% of leached E. coli in just four inches, and continue to reduce bacterial load with additional distance. Creating buffers of perennial grasses between grazing areas and water sources can dramatically reduce the potential pathogen load of run-off.

Irrigation application methods, such as drip or furrow irrigation, that don’t contact the edible portion of the plant can also reduce foodborne illness risk; however, research has demonstrated the potential for root crops to be contaminated when grown in contaminated soil.

Most of this is good news for organic and conservation-minded farmers. Biologically active soils and leaf zones combined with tillage and cover crops reduce pathogens in the soil. Good pasture management increases filtering of manure run-off. And good stream-bank management reduces sediment flow and disruption. All of these contribute to an improved farm as well as an improved food safety environment.

Chris Blanchard provides consulting and educational services for farming, food, and business through Flying Rutabaga Works. He has worked in farming for the past 24 years, managing farms and operations around the country. As the owner and operator of Rock Spring Farm since 1989, Chris raised 20 acres of vegetables, herbs, and greenhouse crops, marketed through a 200-member year-round CSA, food stores, and farmers markets. chris@flyingrutabagaworks.com, www.flyingrutabagaworks.com

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Amid reports of an “explosion” of glyphosate-resistant weeds, such as kochia, waterhemp and ragweed, Monsanto Company, BASF, Dow AgroSciences, and Bayer Crop Science are ramping up the corporate chemical war on Roundup resistant weeds with serious implications for organic and specialty crop producers, CSA and farmers market growers, and gardeners.

Glyphosate and GE-Roundup Ready technology is the principal method of weed control on 90% of the nation’s 60 million acres of soybeans, and more than 70% of corn and cotton. (Parker, 2011, pg. 11). 404 million more pounds of pesticides have been applied since GE herbicide-resistant (HR) crops were first introduced in 1996. (Clark, 2012) Intensive, wide-scale adoption led to rapid selection of 21 species of glyphosate-resistant weeds. (Parker, 2011, pg. 11) Biotechnology companies propose to “fix” the weed resistance problem with new GE crops resistant to even more toxic herbicides by stacking the herbicide resistant traits.

2,4-D, Dicamba, Isoxaflutole and the Threat to Specialty Crops

Dow AgroSciences is developing 2,4-D tolerant corn, soon to be followed by cotton and soybean, designed to be used in combination with its new Enlist herbicide which combines 2,4-D and glyphosate. Dicamba tolerant crops being developed by Monsanto are stacked with glyphosate tolerance as part of their new GE Roundup Ready Xtend program. In the line of fire of these new threats are broad-leaf plants in neighboring fields, gardens, orchards, shelterbelts, hedgerows, and yards in rural communities.

Potential for Non-target Injury

Felsot (2005) purports, despite efforts to train pesticide applicators, spray drift and non-target injury has not been satisfactorily mitigated. “Organic and specialty crop grower concerns over crop damage and damage to non-crop vegetation are well-founded.” (Parker, 2011)

Dicamba and 2,4-D mimic the plant hormone auxin, causing uncontrolled cell division and growth, damaging the vascular tissue. These two herbicides are similar in structure and mode-of-action. All herbicides have the potential to drift during application. However, 2,4-D and dicamba can volatilize days after application and move long distances, killing, deform ing, and causing bloom drop. 2,4-D and dicamba cause injury to broadleaf (non-cereal) crops, like soybeans, dry beans, green beans, peas, tomatoes, grapes, cucumbers, squash, melons, pumpkins, and other fruits and vegetables, particularly at flowering stage. (SOCC, 2013)

According to the Save Our Crops Coalition (SOCC), a grassroots coalition of specialty crop producers, a survey of state pesticide control of ficials listed 2,4-D as the herbicide most often involved in pesticide drift incidents and dicamba as the 3rd most commonly involved. This incidence far outpaces the relative use of these herbicides. 2,4-D ranks as 7th on EPA’s list of most commonly applied pesticides; Dicamba did not even make the top 25 list. (SOCC, 2013)

Implications of Stacking and Tank-mixing

A significant complication will be the stacking of new herbicide-resistant traits with glyphosate resistance, necessitating the use of mixes with glyphosate. (Wright et al. 2010, Seifert-Asche 2009, Dicamba Stacking) “Research indicates that injury resulting from very low-dose combinations of 2,4-D or dicamba with glyphosate can be more damaging than with either herbicide used alone. (Wolfe et al. 2011)” (Parker, 2011, pg.11)

“Environmentally-induced” plant diseases are an “understood outcome” of off-target herbicide spray drift (Walker 1969). “The well-known history of disease syndromes caused by off-site movement of 2,4-D, dicamba and glyphosate is such that many specialty crop growers fear that their crops cannot be grown in a future landscape that will be inundated like never before with all of these active ingredients.” (Parker, 2011, pg. 12)

Petitions for Deregulation

Dow Agroscience and Monsanto both petitioned the U.S. Department of Agriculture (USDA) for deregulation and release of their new generation, GE, herbicide-resistant crops. Dow petitioned for deregulation of its Enlist corn, hoping to release it in 2015. Monsanto petitioned for deregulation of dicamba-resistant soybeans (MON 87708) with a target release date of 2014.

In May 2013 the USDA announced it will conduct full Environmental Impact Statements (EIS) for 2,4-D- and dicamba-resistant crops rather than the less stringent Environmental Assessment. Both the Center for Food Safety (CFS) and the SOCC were calling for a full EIS. The CFS pointed out the USDA in the past for failure to conduct a full EIS during the approval process for both Roundup Ready alfalfa and Roundup Ready sugar beets. CFS won the lawsuits and the courts ordered the USDA to consider an EIS. Bill Pates, a CFS policy analyst, states, “This is the first time that they’ve done an EIS voluntarily.”

Slow “Roll-out” Despite the delay, Monsanto has begun a “slow roll-out” of its new program, planting large, field-sized “Ground-Breaker” demonstration plots in North and South Dakota and in research plots in undisclosed locations. Steve Valenti, a Monsanto crop management technical representative for North and South Dakota, told AgWeek they are “confident that a ‘good, sophisticated’ clientele of farmers will be able to safely and effectively handle the complexity.” Valenti said Monsanto is working to develop [herbicide] products that are less volatile, so they won’t accidentally drift to non-target crops, even at low-wind speeds. The company recommends nozzles that deliver coarser spray, spraying at no more than 15 mph, 20 inches above the weed canopy.” (Pates, 2013)

Monsanto and BASF have entered into a licensing agreement to commercialize use of BASF’s new proprietary “lower volatility” dicamba herbicide formulation, EngeniaClarity, for use with Monsanto’s GE dicamba-tolerant soybeans.

Steve Smith, Director of Agriculture for Red Gold, a tomato processor, is not buying it. “Di camba is one of the nation’s most dangerous herbicides for non-target crop damage. Monsanto and BASF have not offered sensitive crop growers effective measures to protect against non-target crop damage.” (SOCC, 2012) Smith is President of the Board of Directors, Chairman of the SOCC. “I am convinced that in all my years serving agriculture and the CPA industry, the widespread use of dicamba herbicide poses the single most serious threat to the future of spe-
Land Stewardship Project Course is Raising Farmers to the Trade

By Parker Forsell

The New Farmer Corner highlights issues of particular interest to those new to farming, no matter what age. If you have an idea for an article, contact Lindsay at neworganicstewards@gmail.com. See The New Organic Stewards webpage www.neworganicstewards.org.

New Farmer Corner

"Contrary to popular assumption, good farmers are not in any simple way part of the 'labor force.' Good farmers, like good musicians, must be raised to the trade." (Another Turn of the Crank–Wendell Berry)

The Minnesota-based Land Stewardship Project (LSP) is excited to announce the Farm Beginnings Journeyperson Course, a new opportunity planned to help beginning farmers succeed through the middle years of farm start-up. Sign-up for the 2014 program closes on Sept. 16, with spots for up to 15 farms.

Identifying the Need

LSP’s Farm Beginnings® Program is a training program for new farmers that is farmer-led, community-based and focused on sustainable agriculture. Created in 1998 in Minnesota, Farm Beginnings has graduated 622 beginning farmers and farmers transitioning from other production models. In the 10-month course, farmers learn firsthand about whole farm planning, low-cost, sustainable farming methods, and develop a strategic farm plan. For many of these individuals, the Farm Beginnings course represents the beginning of a 5-10 year journey toward establishing a viable farm enterprise.

Although satisfied with Farm Beginnings’s success, LSP staff wanted to do more to help new farmers succeed. In July 2012 Farm Beginnings graduates completed a survey that identified their needs as they begin to farm. This survey confirmed LSP’s observation that there are unique challenges for beginning farmers in years 3 to 5 of their farm start-up. Specifically, the survey showed that beginning farmers in this phase of development need one-on-one mentoring, farm-based production skills and financial management skills (recordkeeping, accounting, etc.). These three areas were closely followed by securing financing and capital.

The survey results didn’t surprise us as, in 15 years of running Farm Beginnings and over 10 years of administering a Livestock Loan program, we have learned that long-term success for beginning farmers must be based on good financial management practices. We know that the best way to learn these practices is with support from mentors and resource people who will sit down at the kitchen table to look over numbers.

For strategies on how to respond to these needs, LSP gathered ideas and inspiration from our farmer steering committee, in conversations with organizations like MOSES and Minnesota State Colleges and Universities - Farm Business Management educators, and through the Farm Beginnings Collaborative, a national alliance of independent regional groups of farmers and farmer-training support organizations working together to promote Farm Beginnings. We learned about a unique approach to supporting 3-5 year beginning farmers from the Maine Organic Farming and Gardening Association (MOFGA), a new member of the Farm Beginnings Collaborative. MOFGA’s Journeyperson Program, started in Maine in 1999, has been a core component in their success in getting more farmers on the land.

Modeled after MOFGA’s successful program, the LSP Journeyperson Course has been created to fill the continuing education gap between farm start-up and farm establishment. The goal is to provide resources and opportunities for beginning farmers who have completed some initial farm planning and have gained some experience on their own, but feel a need to further develop the skills to farm independently and successfully. The program is largely shaped by the farming interests and goals of the participants, and is intended to enable aspiring new farmers to gain advanced farming experience, skill, and perspective in the relatively safe and supportive environment of a peer-to-peer learning network. Journey people also benefit from participating in the LSP Farmer Network, which includes over 150 farms with everywhere from one year to decades of experience.

It Takes a Community

One of the successes of the Farm Beginnings training program is an intentional approach to connect participants as peers, through one-on-one and group work throughout the course. With the majority of presenters being farmers, the peer networking that happens during Farm Beginnings separates the course from other farm planning or business planning courses.

When students graduate from the course, an informal community is maintained through field days, workshops, and farm visits available through the farmer network. The new Journeyperson Course aims to build on this, creating a more formal continuing community through peer-to-peer networking and one-on-one mentoring from an experienced farmer and a financial advisor. Each participant in the program will network with another participant through monthly phone calls and periodic visits. LSP staff will organize two group retreats, one around winter planning and one around seasonal wrap-up.

The course would not be possible without the added community of other organizations that LSP has looked to for support and training in the past. The MOSES Organic Farming Conference, Organic University, Mentorship Program and field days have been invaluable to Farm Beginnings graduates. LSP is excited to further solidify our long-time partnership through the Journeyperson Course—where each farm participant will be paired with an experienced farmer mentor in the MOSES Farmer-to-Farmer Mentoring Program.

Minnesota and Wisconsin Farm Business Management advisors have been a key asset for many Farm Beginnings graduates in setting up and monitoring record-keeping and financial systems. The Journeyperson Course will provide access to both a financial advisor and an experienced farmer, which will provide a solid foundation for beginning farmers ready to plan their next stage of growth.

With these key partnerships, LSP is able to do what we do best: organize the community, assure networking is occurring between mentor farmer, financial advisor, and peer farmer, and facilitate connections in a way that moves the Journeyperson nearer to his or her farming goals.

Capitalizing the Farm

Journey people will also be able to enroll in a Matched Savings Account through LSP, to help in building assets that can allow them to scale-up their new farm businesses. A matched savings account for Journeypersons offers a combination of money and education. Participants save a given amount during the life of the program, while completing a detailed financial plan that helps them determine where to invest their matching fund at the end of the course. The Matched Savings Account will help beginning farmers develop good record keeping systems. The Journeyperson Course has been a core component in their success in getting LSP is excited to further solidify our long-time partnership through the Journeyperson Course—where each farm participant will be paired with an experienced farmer mentor in the MOSES Farmer-to-Farmer Mentoring Program.

Minnesota and Wisconsin Farm Business Management advisors have been a key asset for many Farm Beginnings graduates in setting up and monitoring record-keeping and financial systems. The Journeyperson Course will provide access to both a financial advisor and an experienced farmer, which will provide a solid foundation for beginning farmers ready to plan their next stage of growth.

With these key partnerships, LSP is able to do what we do best: organize the community, assure networking is occurring between mentor farmer, financial advisor, and peer farmer, and facilitate connections in a way that moves the Journeyperson nearer to his or her farming goals.

Capitalizing the Farm

Journey people will also be able to enroll in a Matched Savings Account through LSP, to help in building assets that can allow them to scale-up their new farm businesses. A matched savings account for Journeypersons offers a combination of money and education. Participants save a given amount during the life of the program, while completing a detailed financial plan that helps them determine where to invest their matching fund at the end of the course. The Matched Savings Account will help beginning farmers develop good record keeping systems. The Journeyperson Course has been a core component in their success in getting LSP is excited to further solidify our long-time partnership through the Journeyperson Course—where each farm participant will be paired with an experienced farmer mentor in the MOSES Farmer-to-Farmer Mentoring Program.

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New Farmer Spotlight
Are You Ready to Work on the Land!!

By Lindsay Rebhan

Have you felt the urge to work outside, provide for your community and build a resilient local economy? The New Agrarian movement is here, and now is the time to farm. Listen to that calling and take a step—or leap—into it! No money, no capital, no land? Join the club. Join the growing community of those seeking creative solutions and opportunities to enter into farming.

I’ve had the pleasure to get to know an amazing group of individuals building a local food community in Amery, Wis. It’s a story of hope, community, determination, and ultimately the ancient ethic of hard work and perseverance.

Meet Heather Saliba and Brandon Wiarda of Sleepy Root Farm, a young couple making their way as beginning farmers.

When did you start farming, do you come from farming backgrounds?
Brandon: I started farming with Kevin Karl in the spring of 2011. I come from a conventional corn and soybean operation in South Dakota, and also lived on a farm and went to college at the University of Minnesota. I wanted more practical skills, and to get back into the countryside. I interned for two years at farms around Minnesota. We started renting land in Howard Lake, Minn. with Jerry Ford of Living Song Farm.

Heather: I grew up in Oklahoma riding horses and helping my parents grow large vegetable gardens. I met Brandon and began helping him farm on nights and weekends. In 2013 I gave up my career as a head chef. It was a beautiful natural transition from making food to really making food.

Brandon: Even though Heather does not have a formal farming background, she has brought to the table things that most new farmers don’t: managerial skills, timeliness, and efficiency.

How did you come to find your current farming opportunity?
Brandon: We were renting land at Living Song Farm at a very fair rate, with water and equipment sharing. The main issue was that we didn’t have any housing. In the winter we were working odd jobs in the city, and then living in the country in the summer. It was very inconsistent. We needed a place to continue the operation, but also have a home. An opportunity to farm as the dedicated supplier for a restaurant came up. We made our plans to move, and wrote business plans for the restaurant farm, but in the end it didn’t work out. We were in an extraordinary position in February 2013: no farm, no prospects.

There’s an awkward situation in the farming world where you don’t want to go work on the conventional farm, aren’t making enough money on your pilot operation yet, not making enough to get capital or loans, and trying to move to a more permanent position. You need money to amend the soil, and work the land. It could all go away when you move. We want to have money to get land, to have a small farm, and produce on scale.

Around this time my original farming partner, Kevin, had decided to continue his education, starting with a natural building course in Canada. He had made a contact with a couple, Kari and Peter, in Amery, Wis., who were looking for people interested in permaculture and sustainable farming. When the restaurant deal ended up not working, we called Peter and Kari. We explained our plans had fallen through, and we had heard they wanted people to work the land. They asked for business plans. We went through a vetting process, and it felt like we could work well together from a shared vision. Within two weeks, we visited, met, and signed a lease!

Tell us how this emerging incubator model works?
Brandon and Heather: Kari and Peter run an organization called Resilient Northern Habitats. They are taking steps to build a local food economy around Amery, to provide the ability for farmers to get set up and farm sustainably. The farmers all own their own business-es, markets, marketing. We are independent. They want people on the property to get certi-
Radishes... from page 8

or N fertilizer application. In contrast, if planting is delayed (e.g., northern locations) and weather/soil conditions are conducive to leaching or denitrification, the availability of N scavenged by radishes to subsequent crops may be limited. Radishes are excellent accumulators of P and K (root dry matter commonly contains more than 0.5% P and 4% K), and elevated levels of soil test P have been measured following radish cover cropping, particularly within 1–1.5 inches of radish root holes (White and Weil, 2011). Despite radish being a non-host of mycorrhizal fungi, mycorrhizal colonization of corn following radish does not appear to be suppressed (White and Weil, 2010).

Effects on Soil Erosion, Runoff and Organic Matter

Radishes grow rapidly when planted in late summer or early fall and 10 lb/ac drilled on 7.5-inch rows can provide full canopy closure in about three weeks. This canopy intercepts rain drops minimizing surface impact and detachment of soil particles. Even after radishes are killed by a hard freeze, a layer of decomposing residue remains on the soil surface throughout the winter and into the early spring providing erosion control. In addition, runoff and sediment transport are reduced because of the rapid infiltration facilitated by open root holes. For more complete protection against erosion, radish can be mixed with other cover crops that are winter hardy (e.g., cereal rye) or winter kill but leave more persistent residue cover (e.g., oats).

Total dry matter production by radish cover crops can exceed 3.3 tons/ac (5000 lb/ac aboveground and 2,000 lb/ac below ground) after 2 months with favorable growing conditions (1.1 lb fresh weight per square foot at 90% moisture = 5000 lb/ac dry matter). It is important to keep in mind however that radish biomass is highly decomposable and increases in total soil organic matter (SOM) levels following radish cover crops are unlikely.

Effects on Crop Yields

On-farm comparisons and limited replicated trials in Maryland, Ohio, Pennsylvania, and Illinois (Fig. 2) have reported significant increases in corn and soybean yields following radishes as compared to fallow or other cover crops. Radishes have expanded corn and soybean yields following radishes were significantly different at the different row widths (a = 0.05), but corn yields with radishes at both row widths were significantly greater than with oats alone. Figure credit: Joel Gruver, Western Illinois University.

Cover Crop Radish Seeding

Good stands of radishes can be established by drilling 6–10 lb/ac or broadcasting at 8-12 lb/ac. When using a drill, seed should be placed ½–1 inch deep. When broadcasting, establishment is enhanced by culti-packing or light tillage. Aerial seeding has been successful using 10–16 lb/ac broadcast into standing corn and soybean canopies when soil surface moisture was favorable for germination for several days. It is important that the seedlings quickly have access to light so aerial seeding should not occur until the crop begins to senesce (~50% yellowing of lower leaves), early harvest also improves growth. Mixing radish seed with other cover crop species (e.g., oats, annual ryegrass and/or crimson clover) can improve seed distribution and stand establishment and reduce total seed cost.

There is growing interest in planting radishes on wider rows spacings, often in combination with other cover crop species. This can be accomplished by blocking off rows in a drill or using a planter with appropriate plates or another seed metering system appropriate for radish seed.

Radishes germinate rapidly, emerging within 3–4 days when environmental conditions are favorable. Seed broadcast on the surface can establish well if seeding is followed by a timely rain or irrigation. Radishes have a very flexible and aggressive growth habit and will spread out in a rosette to fill available space. Radish plants (roots and shoots) grow much larger at lower plant densities but it is not clear that gigaspecimens (e.g., greater than 3-inch diameter roots) have any advantage over good stands of radishes with 1-inch diameter roots.

Radishes grow best when planted early enough to allow 6 weeks of growth before regular frosts. Later-planted radishes tend to be more cold-hardy and less likely to winter-kill. When planted in the spring, most radishes bolt quickly producing much less root and shoot biomass than fall plantings.

Winter Hardiness

Radishes are tolerant of light frosts but generally show injury when temperatures drop below the mid-20s. In regions where winter temperatures regularly drop below 20 F, radishes normally winterkill but it should be noted that overwintering was reported at some northern locations in 2010 and 2012, likely due to early and persistent snowcover and unusually mild winter conditions, respectively. Young radishes in the rosette growth stage are more winter hardy than radishes that have developed a sizable storage root.

Cultivation may be needed to control weeds in radishes planted on 30-inch rows without a companion species. Photo by Joel Gruver, Western Illinois University.

Crop Rotations

Radishes fit well following small grains, corn silage, and early harvested vegetable crops (e.g., sweet corn) that allow cover crop planting before September 1. Later plantings can scavenge significant amounts of N but may accomplish little biodrilling or weed suppression. Nutrients scavenged by radishes are released rapidly making radishes a good fit ahead of early planted crops with high nutrient requirements. Caution should be taken when adding radishes to rotations that already include brassicas.

Cover Crop Mixtures

Many farmers and researchers are experimenting with cover crop mixtures that combine radish with other cover crops that fix N, provide more persistent residues or simply have cheaper seed. As a general rule, radish rates should be cut by at least 50% when included in cover

Figure 2: Impact of 3 cover crop systems: volunteer oats (O), volunteer oats with radishes planted on 30-inch rows (PRO) and volunteer oats with radishes drilled on 7.5-inch rows (DR0) on the relative yield of a following corn crop. Corn yields were not significantly different with radishes drilled at the different row widths (p=0.05), but corn yields with radishes at both row widths were significantly greater than with oats alone. Figure credit: Joel Gruver, Western Illinois University.

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Radishes... from page 14

crop mixtures because of their capacity to out compete other species.

An alternative method of managing radish competition in mixtures is to plant separate rows of radishes and companion species. This can be accomplished by blocking off or compartmentalizing the rows in the seed boxes of a grain drill or by attaching an additional seed metering/distribution system (e.g., Valmar air-floro Cady Orbit air). In addition, some farmers are using split-row planters to plant alternating rows of radish and companion species on 15-inch spacing or planting twice on 30-inch rows with a 15-inch off-set using GPS guidance.

Spring oats and sorghum-Sudangrass (Sudex) compete well with radish and provide longer lasting residues to immobilize some of the N released from radish residues in the spring. These additional residues may also help maintain soil moisture, reduce weed growth, and reduce erosion during the next growing season. When cereal rye is mixed with radish, the rye overwinters and scavenges N released by the decomposing radish. Hairy vetch is a winter-hardy legume that has also performed very well interseeded with radish (both mixed and in separate rows).

Potential Problems

Radishes have little tolerance of wet soils, so planting in fields that collect standing water or are prone to prolonged wetness should be avoided. Enhanced growth directly over tile lines is common and plugging of tile lines has been reported but appears to be a rare occurrence. Radishes are very responsive to N, and N deficiencies produce a powerful rotten egg-like odor, particularly during winter thaws.

Summary

Radishes have much potential to perform valuable functions within organic cropping systems. Realization of this potential depends upon timely establishment, favorable environmental conditions, and adequate fertility. As described in this article, a solid research foundation supports the value of radishes as a cover crop but farmer innovation is needed to fine-tune strategies for integrating radishes in specific organic cropping systems.

Citations


This is an eOrganic article and was reviewed for compliance with National Organic Program regulations by members of the eOrganic community. Always check with your organic certification agency before adopting new practices or using new materials.

This entire article can be read at www.extension.org/pages/64400/radishes-a-new-cover-crop-for-organic-farming-systems#.UggZaG1z_CM

Authors: Dr. Joel Gruver, Western Illinois University, Dr. Ray R. Weil, University of Maryland, Charles White, Penn State University, Dr. Yvonne Lawley, University of Manitoba.
but he is now very pleased with the way things are working. An 88 x 188 foot free-stall barn is a key element. The free-stall houses the cows, the two robots, holding areas, an office and a milk house. The cows are allowed free access to the outdoors and pasture year-round, unless the Minnesota weather dictates closing them in the barn. Roll-down sides allow free flow of air, with fans to help with circulation on really hot days.

The robots run “24/7,” Pete explained, and the cows themselves choose when they want to get milked. A computer system identifies each cow as she comes through a sorting “smart gate,” and decides if it is appropriate for her to go into the robot. “The robot is set to allow fresh cows to get milked as often as every six hours,” Pete noted. “And, we have some that choose to be milked that often.” Members of the farmer team check the robots a couple of times a day, where they get a listing of number of hours since each cow has been milked, showing the longest time first. If any cow hasn’t visited the robots within 12 hours, she will be rounded up and put through the system. “If a cow doesn’t come in, it means she has some foot or health issues, which, though rare, does happen. The computer helps us keep on top of things.” The farmers also walk amongst the cows a few times a day to monitor them.

After the first nine or ten months of adjustment, Pete said that milk quality and quantity are more or less the same as in the old tie-stall system. Their yield is 55-60 pounds of milk per cow, which Pete felt was OK with, but would like to increase. “We had some trouble with PI at first, mainly due to some early equipment misfunction and adjustments needed,” Pete explained. “But, milk quality is pretty steady now.” The Ruegemers, who are more nervous than others, and will kick or resist the milker arm, but this will be seen in any milking set up. These animals will be managed for a period of time when they come into the milking system to help them adapt. Ruegemers have only had one cow in the 2 1/2 years not adapt to the system, she ended up dying of an unrelated injury. Pete feels the cows actually seem more comfortable coming into the robotic system.

Being the first organic system for DeLaval meant the company representatives were learning, too, as they were setting up. Lower average yield than many large operations that push cows mean the refrigeration in the tanks needed to be set differently; at first there were struggles with milk freezing. But, the systems are working fine now. Pete’s son is learning how to do routine maintenance, and has had good luck troubleshooting problems over the phone with the local DeLaval tech person. With the systems running 24 hours every day, parts need to be replaced more frequently than in a traditional system. There’s only been one occasion when both robots were not working, and that was just for a few hours. Pete explained that “the cows will back up a bit if one robot goes down, but they can catch up pretty quickly.”

Heifers coming into the system are first brought into a holding pen in the free-stall for a few days, so they can get used to the smells in the barn. They are isolated, as Pete has noticed that the older cows “like to push the heifers around a bit.” A new heifer will be walked around the barn four times, in and out of the robot holding areas and gates. Pete said that it takes most animals a week to 10 days to get comfortable with the system. Some cows are more nervous than others, and will kick or resist the milker arm, but this will be seen in any milking set up. These animals will be managed for a period of time when they come into the milking system to help them adapt. Ruegemers have only had one cow in the 2 1/2 years not adapt to the system, she ended up dying of an unrelated injury. Pete feels the cows actually seem more comfortable coming into the robot system than they did coming into the tie-stall.

Cows receive 1/2 to 2-1/2 pounds of protein on a feed table in the milking system—generally ground flax and soymeal. They’ll also get 3-1/2 to 5 pounds of a grain—such as shell corn, barley, peas—whatever is available from the farm. The grain draws the cows in, with quantities auto-customized for each individual by the computerized system. The feeding system is what led the Ruegemers to the DeLaval robotic system. Another system they were considering for their future. TMR is fed in the feed alley free choice, which the cows can get to after they go through the robotic milker. Pete noted that the cows tend to choose to be milked most of the time in the morning and late afternoon—toed to when there is activity in the barn that gets them moving, such as cleaning and feeding.

One caution Pete had for other farmers using robotic systems or not, is to watch for stray voltage, which he’s seen significantly affect their cows. Luckily, a fellow handy at helping diagnose stray voltage has helped solve several issues not caused by the robot, but affecting it. At one point the cows wouldn’t go into the robots, but after a stray voltage issue related to a bad switch was solved, they were soon back in service. Pete pointed out that you can have a bad breaker or compressor with no other negative symptoms that will be creating voltage problems. The only way you know is by observing animal problems and testing for stray voltage.

Pete didn’t have figures about how much the system cost. He did note that the operational costs for energy and water for cleaning (the units self-clean twice per day) are about the same as a “high-end automatic parlor” would have. The robots must be kept above freezing, and the Ruegemers are able to keep them warm with the heat generated from the other equipment in the area, saving some expense there. Coming from the minimal costs of a tie-stall, investment obviously went up for the robotic system.

Though there were significant set-up costs, overall Pete feels that it has been a very worthwhile change. He likes that the cows get to choose when they get milked—and when they get to move around.

“We went from 80 cows to 150 without adding a lot of labor,” he added. He has freed up a lot of time available for other things, especially more family time—a priority for the Ruegemers. “There’s always more to get done on the farm, though,” Pete said. “I haven’t run out of things to spend time on.” In fact, he mentioned that now that he doesn’t have the regular hours milking used to dictate, he’ll often find himself in the barn later than before, putting a bit of work on something else. “We’re not ‘done’, like we used to be,” he chuckled.

Jody Padgham is the editor of the Organic Broadcaster. Photos contributed by the Ruegemen family.

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Perennial Wheat Shows Potential as a Versatile Crop

By Vicki Morrone

Organic farmers know there is no silver bullet to address all crop and soil needs. But, what if you planted a crop that one-year produced grain and straw and the next year provided grazing for your sheep—without having to replant? A new crop, ‘perennial wheat,’ may have that potential.

Perennial wheat is a crop now under development by plant breeders. Winter wheat that is commonly grown is an annual crop. This new crop was developed by crossing annual winter wheat with several perennial grass relatives using conventional breeding and selecting techniques. Multiple crosses were made with annual wheat, introducing the ability to regrow after the grain is harvested. The new crop, 'perennial wheat,' has about 75% genetic material from annual wheat, and about 25% from Intermediate Wheat Grass (Thinopyrum intermedium) and other perennial grasses.

At Michigan State University (MSU) we have grown perennial wheat for the last five years at Kellogg Biological Station to test how well it does under low organic matter and sandy soil conditions. The “p-wheat” (as it is called) lines were developed at The Land Use Institute in Kansas and at Washington State University in Pullman, Wash. The Snapp lab at MSU, which focuses on systems to provide agro-ecological services, has been testing the top 15 lines to compare economic and ecological features including grain weight, heading uniformity, erosion control capacity, ability to prevent nitrogen loss, and regrowth potential.

Thus far, the greatest challenge farmers face with p-wheat is its regrowth vigor in the second year. Following harvest, the p-wheat lacks ability to outcompete weeds. The plant is a bit slow to regain its ‘strength’ and shade out weeds.

It is important to be aware that the lines developed are experimental; they are not yet varieties, and sometimes they produce a variable crop, with grain heads that are inconsistent in size, shape and maturity.

Farmers who are collaborating with us are not seeking a silver bullet, but are keen to share their expertise to resolve production issues and learn about the potential of this new crop. Farmers will implement different management systems on test fields so everyone will learn how the new perennial wheat lines perform in different soil types, and how management practices impact the growth and regrowth, grain, fodder, and overwintering capacity of perennial wheat lines.

Cooperating farmers are considering intercropping p-wheat with white clover, and under-sowing sorghum-sudan grass in the second year of p-wheat to prevent weeds from establishing. The cover would winter-kill, allowing the wheat to regrow with less weed pressure. The killed sorghum-sudangrass residue acts as a mulch. These are just two examples of innovations proposed by farmers who will participate in the on-farm research beginning this fall.

We look forward to sharing results through field days in the future. If you want to keep up with this work, you can visit us at www.ggrain.anr.msu.edu. This website offers an opportunity to share your thoughts and questions.

Vicki Morrone is the organic farming specialist at the Center for Regional Food Systems at Michigan State University, East Lansing, Mich.

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MOSES Farmer-to-Farmer Mentoring Program

The MOSES Farmer-to-Farmer Mentoring Program is now taking applications for the 2014 session. In this effective training program, experienced organic farmers provide guidance to farmers who have a year or two of farming experience. The formal partnerships help the new operations grow into economically viable businesses, obtain organic certification, and improve production techniques and crop quality.

Both mentors and mentored farmers have expressed enthusiasm for the quality of the relationships developed, and information exchanged through the program.

2013 Mentored farmer Cecilia Coulter says this about the program and her mentor, Paul Otten: “Participating in the mentor program is a great opportunity all around; being mentored by one of the premier berry growers in the area is a dream come true. I am sure that for many mentees the chance to be able to ask questions and request the mentor’s presence at their farm is a huge bonus. Oftentimes, beginning farmers are reluctant to ask questions or take an experienced farmer’s time; through this program, the mentee almost ‘owns’ the expert. I don’t feel I need to curtail my questions or limit my requests for visits. Of course, Paul is amazing as a mentor anyway, but I do think being part of a program makes it so much easier to impose on the experts!”

All participants attend the MOSES Organic Farming Conference at the beginning and end of their year in the program. Participants also receive admission to a pre-conference Organic University course at the start of their program.

Now in its 7th year, the MOSES Farmer-to-Farmer Mentoring Program has helped hundreds of farmers who are new to organic, or new to farming, establish a strong foundation for future farming success. Mentored farmers pay a $200 fee. Mentors receive a small stipend. Both mentors and mentored farmers must complete applications to be considered for the program. Farmers are paired based on the farming specialty and location. The program covers farms in Illinois, Iowa, Michigan, Minnesota, North Dakota, South Dakota, and Wisconsin.

To be considered for the 2014 Farmer-to-Farmer Mentoring Program, please complete the appropriate application on the MOSES website: www.mosesorganic.org/mentoring.html. If you do not have Internet access, you may call Harriet Behar at 608-872-2164 or 866-632-9992 to have an application mailed to you. Applications are due by Nov. 15, 2013. Participants will be notified of their acceptance in the program by mid-December.

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Cecilia Coulter learned how to plant elderberry cuttings on one of her days at Natura Farms.
What does your current Sleepy Root Farm operation look like?
Brandon: We are a 100-member CSA with a small amount of restaurant sales. We also participate in the Amery Saturday farmers’ market (which Peter and Kari established this year). We are running our farm on 5 acres, with 3 of us working full time. Brian Mitchell is our third farmer, working the high season mid-May through mid-September.

What is the dynamic with the other farmers involved in this grand experiment?
Heather: The other farmers are good to know. I was worried when I left my family and friends in the city. I knew we might be the only people under 40 miles around. We are very blessed to know Kari and Peter. They’ve helped many other young farmers in the community. Although we are all independent businesses, it’s an instant community, within a few minutes’ drive of each other. I understand this is pretty rare. Unofficially, it is a support network. Officially, we share the large equipment, Skidsteer, tractor, implements and wood chipper. There are monthly potlucks that happen. Where anyone who comes after us will have a system set up, and built-up soil. We currently have a hoop house on the property and plan on building a greenhouse next to it. Eventually an education center will be built—so stay tuned!

Meet Kari Wenger and Peter Henry:
Kari: Our organization is Resilient Northern Habitats (RnH). The project started with a desire to re-establish and protect nutrient-rich, high-organic-matter soil for organic/ecological farmers and the nutrient-rich, fresh food they produce. Then, create a way that this lovely soil is passed from one organic farmer to the next organic farmer, rather than being bulldozed for a housing development or re-chemicalized for conventional corn. The belief is that by having several farms close together synergies between farmers can happen and the farm community may eventually attract the next set of farming-related entrepreneurs as well as more farmers.

Peter: The main entity here is Resilient Northern Habitats. Hungry Turtle is the name of the main farm and education center, but it’s kind of in mothballs right now, waiting for the right people to breathe life into it.

Kari: RnH helped five farms get going this year for a total of four farm couples with six to eight interns working on these farms. All the farmers have multi-year farming experience and established farm entities, but differing levels of customer base—from a couple who just moved to the region to a couple with an established customer base. I don’t know if I’d call them beginning farmers as much as looking for “good land & good community” farmers.

I’ve heard you are restoring a building in downtown Amery. What are your plans?
Kari: The building in Amery is for some of these farm-related entities that build on the products and/or needs of this budding farming community and bring back some of the local food culture that has been lost in the last 50 years in this rural community. We are not sure who will show up. Some of our imaginations are: green-grocer, deli, restaurant, value-added production, brew pub, creamery, butcher, bakery or combination or something we haven’t thought of....

You are demonstrating a diversified response to the immediate needs of farmers. We know that in general, capital, land and resources are the biggest hurdles for beginning farmers. Can you give us a little insight from your research/work in financial structures that could leverage new farmers?
Kari: The capital costs of farming versus the income potential is an equation I haven’t been able to make work. The small-farm infrastructure is a cost often forgotten in the calculus. This infrastructure, if it exists on a farm, has often been run down or repurposed beyond its needed purpose. What I am thinking about is fencing for animals or vegetables, wells to water plants and animals, pack shed for safe food handling, refrigeration, outbuildings for equipment, tools, hay, and trucks/trailer.

My current belief is that clean, nutrient-rich food has to become a priority for a community. The community builds, protects and makes available organic farmland in an Agricultural Land Park. Communities make infrastructure, financial assistance, and land available in Business Parks again because of the high barrier to entry. It addresses many challenges for rural communities: attracts young families to the community to build a food to food economy, and keeps money in the local economy.

Peter: We believe in the power of business to make things happen, as opposed to the government or nonprofits. It’s a democracy. We believe that’s the way our economy and our society functions best over the long term. Small markets and small businesses are creative, resilient and continually adjusting their practice to realities of their customers. We believe in all of that. And, as we have seen with government crises and political conflicts, you have to be independent, carve out a niche and make money to be sustainable over the long term. In any case, the farm business needs to be in order to continually improve, raise a family, pay their people and bills, and transfer ownership to the next generation.

The real story out here is in the farmers themselves—hardworking, knowledgeable, courageous—and, the variety of the different operations, their skill and creativity, and their personal stories. The story does not necessarily mean it is going to happen. But as we have discovered, just because we can imagine it does not mean it is going to happen.

We don’t really want to talk very much about what we are doing, mainly because it is so experimental and expensive, which is just not much for people to learn in all this right now, except: Do not try this on your own!

What this is, no one really can say. But, we need more organic producers. We need more entrepreneurs, visionaries, leaders—there’s no limit to what we need, not just here, but across America. This is the new food economy. It is not premised on corporate concentration, government handouts, or farm conservation. We believe that the new small producer-local food economy is a better model for the 21st century: resilient, collaborative, creative and grounded in a long-term consideration of what makes a lasting contribution to human welfare. And, it is a far better bet to withstand the ravages of climate change and energy shocks.

Follow the farming adventures of Sleepy Root Farm at www.sleepyroooffarm.com and Resilient Northern Habitats at resilientnorthernhabitats.com.

Lindsay Rebhan works with Renewing the Countryside in partnership with MOSES on the New Organic Stewards project.
Shepard... from page 4

Once he found stock that thrived on his farm, searched for the best sources of nursery stock. The first few years, he planted fewer trees as he developed a philosophy—sheer, total, utter neglect. For the most part, he planted native and well-adapted varieties that could survive under his S.T.U.N. (Sustainable Tree Utility Network) Extension-recommended varieties. He wanted to grow hazelnuts, cherries, grapes, raspberries, currants and other edible plants.

The keyline water management system was originally designed by Australian farmer and engineer P.A. Yeoman. The keyline is a topographic feature of a farm “key” to water flow. Through careful design of fields and by capturing water with swales, berms and ponds, which Mark calls “pocket ponds”; rainwater is carefully redirected back into fields instead of running off. “Once the keyline was in place, it set the pattern for the rest of the farm. Each field has a swale with a berm on the downhill side. In between is the alley. We grew as much produce as we could, while we were planting trees, shrubs and other edible plants.”

With nursery sales picking up, the farm generated more income. Jen began working as a massage therapist, Mark’s parents moving to the area and most of the rest was overgrazed by cattle. “We were living in a trailer. We had no jobs. No well. No money.”

Fortunately, Mark discovered that his new 106-acre farm was very near a new organic cooperative called CROPP (Coullee Region Organic Produce Pool at the time). “I signed up to grow squash and Jen got a job at a bakery. I also took on two part-time jobs trucking and bartending to make ends meet. While working, we started building a house and a chicken coop. I also started designing our keyline water management plan for the farm.”

Permaculture got ‘fluffy’ and was not practical. Permaculture: A Designers’ Manual, by Bill Mollison, 1994, J. Russell Smith depicted permaculture as ‘feel-good’ design, not redesigning human habitats. Mark states permaculture got ‘fluffy’ and was not reality-based. I wanted to distance myself from that permaculture and get more science-based tenets of permaculture and ecology,” noted Mark.

“Restoration agriculture to me is about using plants that thrive in the ecosystem without a lot of inputs, and it is about farm enterprises that are sustainable and profitable. My farm gives evidence that we can revegetate the planet in 15 years with what we need. We do not need to wait for a perennial small grain pipe dream; we have the ability to do it now,” stated Mark emphatically.

Mark believes that any farmer wanting to incorporate permaculture concepts should start with alley cropping and silvo-pasturing, which are simple systems that can be kept simple.

Mark’s final suggestion, “Plant trees everywhere and save the seeds from everything that thrives.”

To Learn More about Mark Shepard and Restoration Agriculture:

- Restoration Agriculture Institute
  http://restorationag.org/
- Forest Agriculture Enterprises
  www.forestag.com
- Permaculture Resources:
  - Geoff Lawton www.geofflawton.com/sq/26801-absolute-in-abundance
  - Sepp Holzer www.holzeragroecology.com
- Agroforestry:
  - National Agro-Forestry Center
    http://nac.unl.edu/
  - Association for Temperate Agro-forestry
    www.altaweb.org/
  - University of Missouri Center for Agro-forestry
    www.centerforagroforestry.org/
- Books:
  - The Resilient Farm and Homestead, Ben Falk
  - Tree Crops, J. Russell Smith
  - Permaculture: A Designers’ Manual, Bill Mollison
  - Restoration Agriculture, Mark Shepard (available from MOSES, www.mosesorganic.org)
- Joe Pedretti is a MOSES organic specialist.

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**USDA Approves Non-GMO Label for Meat**

USDA Food Safety Inspection Service has approved the first label for meat and liquid egg products that includes a claim about the absence of genetically engineered ingredients. The label claim attests that meat certified by the Non-GMO Project came from animals that never ate feed containing genetically engineered ingredients. The USDA verified the Non-GMO Project’s standards, requirements and auditing processes before giving its approval. www.nonmoproject.org

**Sustainable Vegetable Production Website**

A new Sustainable Vegetable Production website from Iowa State University Extension shares the results of research by Ajay Nair of the ISU Department of Horticulture. Nair has explored the use of soil amendments such as compost and biochar, various ways to extend the growing season, cover cropping systems, and transplant production. Project results, publications, videos, and other resources can be found at the site. www.extension.iastate.edu/vegetablelab

**New NOP Fact Sheet Summarizes Allowed and Prohibited Substances**

The USDA National Organic Program has released a two-page fact sheet that offers summaries and direct links to lists of allowed and prohibited substances in organic crop and livestock production and processing. www.ams.usda.gov/AMSv1.0/getfile?dDocName=STELP-RDC5104464

**Knowledge Exchange for Food Plant Production: PlantVillage**

Penn State has developed a new platform on the web called PlantVillage at www.plantvillage.com. The goal is to create a place where people can exchange knowledge on growing food plants. PlantVillage allows people to post questions, allowing the “crowd” to come up with very specific answers that draw from our collective knowledge.

**Sales of Organic Products up 13% in the US**

Sales of organic products rose 13% to $11.2bn in the year to July 6 in the US retail market. The highest growth was in shelf-stable meats, poultry and seafood (+61%); baby food (+34%); and shelf-stable beverages (+33%).

**Organic Research Grants**

The Ceres Trust is accepting applications for the Organic Research Initiative (ORI) program through Sept. 25. Grants of up to $60,000 per year for up to three years will be awarded to universities and other nonprofit applicants in the North Central Region. Applicants must be based in the region to be eligible. A copy of the Request for Applications can be found at http://cererust.org/organic-research-at-universities/request-for-applications-universities

**New NOP oversight controls. The report is available at www.usda.gov/oig/webdocs/01601-0002-32.pdf.**

**Monsanto Withdraws EU GMO Request**

In July, Monsanto Co decided to withdraw all pending approval requests to grow new types of genetically modified crops in the European Union due to the lack of commercial prospects for cultivation there. The decision covered five EU approval requests to grow genetically modified corn, one soybean and one sugar beet. The company said it would not withdraw its application to renew the approval for MON810 corn—the only GMO crop currently cultivated commercially in Europe. Read more at www.reuters.com.

**Comment Period for FSMA Extended**

The deadline for comments on the Food Safety Modernization Act regulations was extended from Sept. 16 to Nov. 16, 2013. The National Sustainable Agriculture Coalition has launched a new webpage with information and talking points for writing comments on this regulation that will impact all aspects of food production in the United States. http://sustainableagriculture.net/fsma.

**Publications at Organic Eprints**

A number of reports from the OrganicDataNetwork Project are now available online at the Organic Eprints Archive. http://orients.org/view/projects/eu-OrganicDataNetwork.html

**USDA Organic Milk Audit Report**


**USA Today**

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cially crop industry in the Midwest." (Parker, 2013, pg. 12)

According to the Center for Food Safety, “Penn State ecologist David Mortensen predicts that herbicide use on soy could increase 70% if the new 2,4-D and dicamba tolerant soybeans are adopted. Inevitably new “superweeds” will develop in response..., and the chemical arms race with weeds will continue. This means more pesticidal pollution, environmental damage, higher production costs, and of course, increasing profits for firms like Monsanto that sell both GE seed and pesticides.” (CFS, 2013a)

Breathing Room and Time to Act

The CFS estimates that it may take the USDA until 2015 to complete the EIS. “Our goal is to stop these crops; to prevent them from being introduced—not just to delay but to prevent them,” Freese states. “These EISs give us some breathing room to do that.” (Organic Connections, 2013)

This “new generation” of herbicide resistant GE crops pose a serious cross-roads for American agriculture. Dicamba and 2,4-D resistant crops pose a whole new threat to the “coexistence” of organic and GE crops. “At a time when farmers, citizens, and government have worked hard to limit our use of, and exposure to, hazardous pesticides like dicamba, approving this crop would take us backwards, seriously endangering human health and the environment.” (CFS, 2013)

Take Action!

Please consider taking part in these networks and action alerts. Every voice matters.

Join the Center for Food Safety True Food Network! and respond to their action alerts: www.centerforfoodsafety.org/take-action#

Sign the Center for Food Safety petition to the USDA to reject these risky new GE crops: http://bit.ly/NoDicambaSoy

Sign up for action alerts from the Pesticide Action Network (PAN): www.panna.org/signup

Join the Center for Food Safety True Food Network (PAN):  www.panna.org/get-involved/action-center/be-the-change

Join the Center for Food Safety: http://saveourcrops.org/join/

Urge USDA to consider the harmful impacts of 2,4-D and dicamba drift on specialty crop production, rural community health and farmers' livelihoods. Contact Secretary of Agriculture, Tom Vilsack at (202) 720-3631.

References Cited:


Save Our Crops Coalition (SOCC), Sept. 20, 2012. SOCC Requests EPA Prepare an EIS. Accessed 8/16/13 at: http://saveourcrops.org/

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THURSDAY, SEPTEMBER 19TH, 2013 @ 6:00 PM
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(Auction at the Corner of S Rt 576)
AUCTION CONDUCTED AT THE Center Top Building
04766 Co Rd 112, Bryan, OH 43506

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“Yield doubled.” “Savings overall per season.” “Best alfalfa I’ve had.” “Yield doubled.” “Savings overall per season.”

“Yield doubled.” “Savings overall per season.” “Best alfalfa I’ve had.”


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The NOC chose to stick with the current listing, stating that, since recognized as safe by the FDA, carrageenan should not be restricted from use in infant formula.

The organic regulation mandates its own review of organic product ingredients. The NOSB can use FDA information in its decision-making, but does not rely exclusively on FDA’s approved ingredient list. There are many colorings, preservatives, flavorings and more that the FDA allows in non-organic food and considers safe, that do not meet the rigorous review of organic food ingredients the NOSB has in place.

Continual Improvement of Organic

When we can clearly differentiate organic as the best production system, now and into the future, we gain loyalty from current customers and increase our customer base. Consumers already expect organic to be the gold standard of production across all types of agriculture. Without the recognition that organics are continually changing for the better, we run the risk of watering down the organic label until it has a nebulous definition like “natural” does.

Continual improvement is an important part of our organic law. While it is understood that some synthetics, such as synthetic vitamin C (ascorbic acid), or baking powder, may be important and necessary ingredients in organic foods, hopefully the list of approved synthetics will grow shorter, rather than longer over time. The use of natural and organically grown alternatives are preferred to non-organic or synthetic alternatives. Otherwise, we run the risk of having a stagnant regulation that does not keep up with either producer or consumer expectations.

The integrity and value of the organic label relies heavily on consumer confidence that organic products go through a stricter review for health and safety than other food products. If the organic community cannot trust that the process overseeing organic materials and standards is consistently followed, we run the great risk of losing confidence that the organic label stands for the highest quality food, produced in an ecological manner and reviewed to protect the health of those who grow it and consume it. Stricter regulations do not need to result in more paperwork. Organic agriculture is a system, and production methods verify compliance to the law. As the organic regulation is rewritten over time to reflect improvements to organic production systems, the wording can be crafted to lessen—not increase—documentation. We do not want to stifle improvements, or cultivation of more organic farmers and consumers. The USDA must view economic impacts on organic regulations in a more holistic way than they review other regulatory changes. Otherwise, we run the risk of having a stagnant regulation that does not keep up with either producer or consumer expectations.

Harriet Behar (harriet@mosesorganic.org) is a MOSES Organic Specialist.

National Organic Grain and Feedstuffs Report

<table>
<thead>
<tr>
<th></th>
<th>Low</th>
<th>High</th>
<th>2 Weeks Ago</th>
<th>Year Ago</th>
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<tr>
<td>Organic Corn</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feed Yellow</td>
<td>16.05</td>
<td>16.75</td>
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<tr>
<td>Organic Soybeans</td>
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<tr>
<td>Feed Grade</td>
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<td>16.00</td>
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Compared to two weeks ago national organic grain and feedstuff prices were mostly steady. Market activity continued to be very slow as producers remained reluctant to commit until the current crop progresses further. Farmers, feed manufacturers were only buying on an as needed basis as most of their needs have been met. Corn supplies remain modest to heavy, while soybeans in inventories are light. Majority of the corn and soybeans producing states received timely rains last two weeks. A severe thunderstorm hit the Northern Plains last week and tempered the wheat harvest causing decreased yields from field damage.

MOSES, 715-778-5775 to request a hard copy of this report by mail.

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Organic Commodity Pricing Resources

Organic Grain Prices
National Organic Grain and Feedstuffs Report (see current report on this page)
CROPP Cooperative Grower Pool/organic-Trader Newsletter
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Rodale Organic Price Report
www.rodaleinstitute.org/Organic-Price-Report

Organic Milk Prices
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FAX: 866-534-9483
www.nodpa.com/payprice.shtml

Organic Livestock Prices
CROPP Cooperative Organic Trader Newsletter
www.farmers.coop/feed-program/organic-trader/
1-888-809-9297

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<table>
<thead>
<tr>
<th>Event</th>
<th>Location</th>
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<tbody>
<tr>
<td>Cover Crops Research Field Day</td>
<td>East Troy, Wis.</td>
<td>Sept. 4</td>
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<tr>
<td>Farm Preservation in Estate Planning</td>
<td>East Troy, Wis.</td>
<td>Sept. 27</td>
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<td>Urban Agriculture Bus Tour</td>
<td>Minneapolis, Minn.</td>
<td>Sept. 27</td>
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<tr>
<td>Potato Digging and Evaluation Workshop</td>
<td>Hensler, ND.</td>
<td>Oct. 4-5</td>
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<tr>
<td>Farm Skills 101</td>
<td>near Alexandria, Minn.</td>
<td>Oct. 11-12 &amp; 18-19</td>
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<td>Harlan, Iowa.</td>
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<td>Oct. 16</td>
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<td>Plate to Politics - Women's Leadership</td>
<td>PriarieErth Farm, Atlanta, Il.</td>
<td>Oct. 5-6</td>
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<td>Vegetable Diversification Field Day</td>
<td>Clarks Grove, Minn.</td>
<td>Oct. 14 &amp; 15</td>
</tr>
<tr>
<td>Cover Crops Research Field Day</td>
<td>East Troy, Wis.</td>
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<tr>
<td>Harlan, Iowa.</td>
<td></td>
<td>Sept. 6</td>
</tr>
<tr>
<td>Organic Farming Conference</td>
<td>La Crosse, Wis.</td>
<td>Dec. 6-7</td>
</tr>
<tr>
<td>Organic Farming Conference</td>
<td>East Troy, Wis.</td>
<td>Feb. 27</td>
</tr>
</tbody>
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