Manage dry period for healthy, productive female ruminants
By Guy Jodarski

With dairy cows, goats and ewes the goals are healthy, productive mothers that deliver vigorous offspring, milk well, do not lose too much condition and breed back on time. These goals can be achieved by properly managing the dry period and transition to lactation. This article will use the dairy cow as a model for organic ruminants, but the principles outlined for dairy cattle also apply to small ruminants like sheep and goats.

The rest or “dry” period between the cessation of milk flow and birthing (start of lactation) is hugely important. Organic livestock farmers must take an active role managing this time. Proper nutrition and management during the dry period will prevent many disease problems and result in increased milk production.

It’s tempting to simply dry cows off and not actively manage them until they calve and return to milking. The “hands off” approach sometimes works in pasture-based systems. However, many times it will result in health problems and poor production of milk. Effort expended on managing the dry period and transition back to production will be well rewarded for the investment.

There are two major challenges for ruminants returning to milk production after being dry and pregnant. The first is the transition from relatively low to high metabolic demand. The second is immunosuppression that occurs following the birth of offspring. Common fresh cow diseases like milk fever, ketosis and displaced abomasum (DA or “twisted stomach”) are associated feed changes of early lactation.

Farm couple takes pollinator conservation to higher level
By Eric Lee-Mäder

“We want to implement pollinator conservation at the field-level scale.” I’m having lunch with my friends Doug and Anna Crabtree at a Portland, Ore. diner where Doug is holding the floor. “Anyone can create a small wildflower strip, but as we scale up, we need conservation areas distributed across the entire operation.”

Doug’s vision is not small, nor are Crabtrees’ initial accomplishments. Farming more than 1,500 acres of dryland organic field crops in northern Montana, Doug and Anna have already integrated huge, expansive wildflower buffers between their production fields. Yet if you ask, they’ll tell you that they’re just getting started.

I first met Doug and Anna at a very snowy organic farming conference in Washington state in early 2012. They had a strong land ethic and were working with their local National Resources Conservation Service (NRCS) office to explore different conservation options. Talking with them about pollinators at the conference however, we began to see a larger model for ecosystem-based farming unfold.

While it’s true that many of the Crabtrees’ more than 15 crops, such as black emmer and einkorn wheat do not require insect pollination, others like flax, sunflower, and sunflower benefit greatly from bee visitation, especially visitation by wild bees.

Transplants offer jumpstart; transplant systems vary
By Chris Blanchard

The long and miserable spring of 2013 highlighted the value of transplants for vegetable production in the Upper Midwest. Many farmers didn’t get into the field until mid-May—and then only for short periods of time. Those who had a weather-independent way to get vegetable crops up and running had a huge advantage; transplants provided a jump on the weather and the weeds that was impossible to get with direct-seeded crops. And, when the weather turned from flood to drought, growers who had transplant systems could germinate seeds without having to irrigate large tracts of land.

To help producers evaluate and select transplant production systems, I recently worked with the Iowa Organic Association and the Leopold Center for Sustainable Agriculture to develop The Transplant Production Decision Tool (www.iowaorganic.org/transplant-decision-tool) or www.leopold.iastate.edu/cool_tools/transplant-production-decision-tool). This online tool provides information about the systems available for market farmers as they scale up to meet the increasing demand for local and organic produce. To gather information for this project, I visited several Upper Midwest growers to evaluate their transplant production systems, and to gather real-world information about what worked and what didn’t.

Transplant production systems involve components and related steps—growing trays, potting soil, seeding methods, germination tools, bench design, irrigation tools and methods, hardening-off methods, and setting the plants out in the field—that have to work together to provide results that work in the larger context of the operation.

For small- and mid-sized growers, the components of the system are often drawn from multiple suppliers and manufacturers, and the parts don’t always fit smoothly together. At Vermont Valley Community Farm in Blue Mounds, Wis., Barb and Dave Perkins use injection-molded Plantel-brand flats for transplant production. While they have several advantages—including longevity, space efficiency, and ease of sanitation—the Plantel flats are an odd size: 9 by 26 inches. Commercially available germination chambers and plate seeders are most commonly designed to fit the more standard 10-inch by 20-inch or 13-inch by 26-inch trays, so Barb and Dave have had to manufacture their own versions of these tools.
The Organic Broadcaster™ is a trademarked bi-monthly newspaper of the Midwest Organic and Sustainable Education Service (MOSES), a nonprofit organization that promotes organic and sustainable agriculture by providing the education, resources, and expertise farmers need to succeed.

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MOSES’ mission is to educate • inspire • empower farmers to thrive in a sustainable, organic system of agriculture.

From the Executive Director’s Desk

Happy New Year’s Greetings!
The “Organic Broadcaster” has been around for 22 years, and continues to provide cutting-edge information to help farmers grow and thrive.

The Broadcaster started in 1992 when it was a quarterly publication of the Wisconsin Organic Crop Improvement Association (OCIA). Lila Marmel was the first editor. In 2001, Paul Bransky took over as editor. In 2005, the Broadcaster moved to the MOSES office, and Jody Padgham became the editor. For nine years, Jody has been at the helm, guiding the publication through redesign, expansion, and adding an online version.

With this issue, we are making changes. Jody, who has done a great job managing the Broadcaster for years, is focusing more now on our growing organization’s financial development. Our very capable Communications Director, Audrey Alwell—who is already doing great work managing MOSES’ face in both print and electronic arenas—now is taking over as the Managing Editor for the Broadcaster. Jody will continue as Associate Editor, and will still be writing for the Broadcaster.

Twenty five years ago, a group of farmers (myself included) got together to start an organic farming conference in Wisconsin—90 people showed up. This small gathering grew to the largest farmer-based organic conference in the nation. Next month (Feb. 27-Mar. 1), we will celebrate our 25th conference—for more than 3,000 people, I hope you can join us in La Crosse! We’ve highlighted those authors in this edition of the Broadcaster who will be presenting at the conference. To see more about workshops and presenters, please visit the conference page on our website (mosesorganic.org/conference).

Organic agriculture is not new, it has been around for 60 years. What is new is the understanding that how food is grown has a very real impact on our health and the environment. Healthy soil = healthy food = healthy people. The MOSES website has a great, new section explaining the benefits of organic. See “Why Organic” (mosesorganic.org/whynorganic) to learn more about the research and why organic farming works.

This edition of the Broadcaster includes a look at the new national collection about the history of the organic farming movement. Retiring MOSES board member Roger Blobaum wrote this piece, and has been involved in gathering documents for the collection. He has also created an information-packed website (rogerblobaum.com) with fascinating stories. Roger was into organic long before organic was cool. We’re so fortunate he’s part of the MOSES family.

Roger’s term on the MOSES Board of Directors ended in November, along with Linda Halley’s term. While we’ll miss their thoughtful guidance, we’re looking forward to working with our two newest board members: Mike Bollinger and Sylvia Burgos Toftness. You can read about the board changes on page 20.

I hope you enjoy reading this edition of the Broadcaster, and find information you can use to improve your farming operation or business. Thanks to all of you for being part of the good food movement. I wish you a bountiful 2014.

Faye Jones
MOSES Executive Director

New year, new you? If your email or address has changed this past year, please let us know!

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Happy New Year!” — Faye Jones
Efficiency or Democracy? NOP changes ‘sunset’ policy without public input

By Harriet Behar

The National Organic Program (NOP) recently modified the way materials on the National List are reviewed at “sunset.” This change makes it harder to remove materials at their five-year sunset than it would be to keep them on the list. This affects a process that has worked since 2007, which was the first time materials were reviewed at sunset.

Prior to this change, a material needed to pass a two-thirds vote of the National Organic Standards Board (NOSB) to stay on the list, which is the same procedure materials go through when first being considered for inclusion. Now materials will remain on the list unless the NOSB comes up with a two-thirds vote to remove them.

This change to the sunset policy was made without input from the nor the greater organic community. This kind of significant policy revision without following normal notice and comment requirements sets a dangerous precedent and diminishes the authority of the NOSB itself. It impacts the ability of the NOSB to carry out its statutory responsibilities regarding the National List. Decisions such as this, that seem to prioritize efficiency and expediency, come at the expense of public input and democracy.

Change is Needed

For years, the NOP has expressed frustration with the long review times made to the National List of approved or not approved materials at sunset. Changes take up valuable NOP staff time and use up the NOP’s quota for printing law revisions in the Federal Register. So I understand why this change appeals to the NOP, and, at first glance, see merit in the change.

I recognize that it has been difficult to get changes to the law through the Office of Management and Budget, since removing or limiting the use of a product already in use on organic farms is perceived as having the potential to cause “market disruption.” It is true that farmers used to having the use of a specific synthetic, or processors with a product formulated using a synthetic found on the National List will experience some disruption and “hardship,” and would need to change their formulation or activities if they no longer had access to these materials. It is also true that time spent changing the current National List takes time away from other needed improvements, such as clarifying the “origin of livestock” or proposing organic mushroom, honey and aquaculture standards.

Not this Change

Let’s step back to look at the original intent of the “sunset” provision of the National List. The Organic Food Production Act (OFPA) prioritizes the use of natural materials and systems that foster “the cycling of resources, promote ecological balance and conserve biodiversity.” The use of synthetics in organic production systems is allowed, but only as an exception. Those synthetics must be thoroughly reviewed and approved for placement on the National List by two thirds of the National Organic Standards Board. Every five years, these allowed synthetics “sunset,” or are removed from the list if the NOSB does not vote to allow them for another five years. In the same way, non-approved natural materials also may be approved for relying for five years at their sunset date. The OFPA mandates public input as an important part of all material review—both at first listing and at sunset.

A provision in the new policy allows an NOSB subcommittee, not the full board, to approve the maintenance of a material’s status quo. This lessens the opportunity for public comment from stakeholders, including consumers, environmentalists, scientists, farmers and processors. Although any member of the NOSB can ask for a full board discussion of the material, unless that request is made, the material will not be reviewed by the full NOSB at sunset.

Those managing certified operations, as well as many consumers, know that organic certification is based on continuous improvement. The removal of synthetics from the National List brings organic management closer to the intent of the Organic Foods Production Act, which identifies synthetics as exceptions. By making it more difficult to remove materials from the National List, we stifle the mechanism for continually improving organic production. Manufacturers, farmers and processors could be less likely to develop natural materials and to systems to replace allowed synthetics if the synthetics can easily remain on the allowed list.

This also applies to materials on the section of the National List (205.606), which allows the use of non-organic agricultural products when an organic version is not commercially available. Again, the development of organic alternatives is stifled when the bar is set higher to remove allowed non-organic materials. Typically, synthetics are less expensive than natural alternatives, making their continued use more economically attractive than trying to develop alternatives that would stimulate removal of a synthetic from the National List.

Respect for Improvement

As someone who attends many of the National Organic Standards Board meetings and has read many of the Technical Reviews of these materials, I can say that many of the items on the National List have issues that should require a close look every five years. Is the material still necessary in organic production? Have any problematic health or environmental effects been found that should stimulate removal, or narrow the use to lessen the material’s negative impacts? These review criteria have been mandated in our organic law—at first listing and again at sunset.

Many of the controversial materials typically have been put on the list or removed by a very narrow margin, sometimes by just one vote. This was the case for the use of oxytetracycline for control of fireblight on organic apple trees. Organic consumers and some growers convinced the board that continued use of this antibiotic in organic production was problematic from a health and environmental standpoint, as well as not being necessary in organic production. This material is not allowed in European organic production, and large-scale organic fruit growers who export do not use it. While I personally felt this change was a little premature due to lack of alternatives, I completely understand the need to remove this problematic tool from the organic fruit grower’s toolbox and work towards improvement of our organic systems.

Many times at the first listing vote, NOSB members have stated they are voting to allow a material since it could be removed at sunset when an acceptable alternative or system is developed. With this change to National List sunset procedures, NOSB members may not add materials to the list, knowing that once there, removal will be difficult. Short-term allow ance of materials to encourage the growth of an organic sector, such as aquaculture or apiiculture, will be stifled. This short-term allowance, once the status quo, has been changed to promotion of materials to remain on the list, almost forever. A material must now be shown to be problematic enough to convince 10 of 15 NOSB members to vote to remove, rather than to retain it.

Preserving Organic Law

Our organic law is unique within the U.S. legal system, since it has continuous review and improvement built into it. Organic consumers, the driving force behind our growing and vibrant organic marketplace, expect organic operations to seek to lessen synthetic materials and rely instead on natural tools and systems. In a nod to efficiency, these procedural changes make it more difficult to remove synthetics and effectively discourage the development of better organic systems and tools.

While democracy can be slow and messy, the NOP missed an important opportunity to improve the implementation of our law. Members of the National Organic Coalition, including me, recommend that the NOP put this change on hold in order to bring in the knowledge of the greater community to develop a better solution to the bureaucratic problems of the National List sunset process.

Harriet Behar is a MOSES Organic Specialist. She represents MOSES in the National Organic Coalition and the National Sustainable Agriculture Coalition.

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3
Although its collection focus is on Wisconsin and the Midwest, its national mass communications, labor movement, and social action movement collections are highly regarded by historians. Its U.S. agriculture history collections include a vast number of archived items documenting the history of Cyrus McCormick and the International Harvester Company.

A collection donated in the 1940s by the widow of F.H. King documents some early organic farming history. King, former chief of USDA’s Division of Soil Management, traveled to China, Korea, and Japan in the early 1900s to find out how people could farm the same fields for 4,000 years without destroying soil fertility. Farmers of Forty Centuries, King’s classic book describing how this was accomplished, is based on papers and photos archived at the Society.

### Contacting Pioneers of Organic

The concept for this collection started more than two years ago when the Society’s state-wide collection survey and analysis showed there was a gap about organic and sustainable agriculture in its overall collection. The initial attempt to launch the collection by sending letters to several Wisconsin-based organizations and institutions did not go well. Most of the letters were not answered and follow-up attempts were largely unsuccessful.

During this period, I approached the Historical Society with an offer to donate my collection of personal papers, documents, photos, and other historic materials saved over more than 40 years of involvement in the movement. I was surprised and pleased to find out that the Society was establishing an organic and sustainable agriculture collecting effort. In addition to donating my own collection, I offered to help identify and collect historic materials from others.

I have since provided the Society with a list that includes profiles and other contact information for more than 100 leaders and pioneers in the organic and sustainable agriculture movement. I also have provided profiles and other information on more than 60 organic and sustainable agriculture organizations, including quite a few that were important in the 1970s and 1980s but have since disappeared.

Since then I have been working closely with Jonathan, contacting potential donors and following up by mail, email, phone, and in-person meetings. The Society’s staff includes donor discussion meetings at the Historical Society and joint meetings with potential donors at the MOSES Organic Farming Conference.

The key collecting areas the Society is attempting to document include leaders and pioneers in the organic and sustainable agriculture movement, pioneering national organic agriculture organizations and development of the organic agriculture infrastructure, organizations that promote and assist organic farming, organic certification organizations and the standards development process, and companies that develop, sell, and distribute seeds, organic fertilizer, and other production inputs.

Organizing my own collection and forwarding boxes of papers and other materials to the Historical Society is a continuing effort. Donations so far include papers covering 14 years of active involvement in MOSES, six years on the board of the Organic Farming Research Foundation, five years as a founder and associate director of the World Sustainable Agriculture Association, and five years as a member of the Codex working group that developed international organic guidelines.

The MOSES organization materials I have donated will be expanded by adding programs, recordings, photos, and other materials that help tell the 25-year story of the Organic Farming Conference. MOSES’ Executive Director Faye Jones and I are working together to complete the collection of MOSES and MOSES Conference materials in the History Society collection.

### Website Chronicles Story of Organic

A large number of items from my collection have been posted on my organic history website (rogerblobaum.com), an initiative designed and edited by organic farming pioneer and author Atina Diffley. The website is linked to the Historical Society’s site (rogerblobaum.com), an initiative designed and edited by organic farming pioneer and author Atina Diffley. This provides immediate access to selected materials that will be received and archived in the Society collection later.

Roger Blobaum has been compiling papers and news stories to document the history of the organic agriculture movement.

Historic materials on the website include photos and stories from the early 1970s when I interviewed, tape recorded, and photographed Midwest organic farmers for articles published in Organic Gardening and Farming magazine and other publications. Farmers in these articles describe soil and livestock health and other benefits of organic farming, early efforts to market directly to consumers, and strong interest in organic research and extension.

For more information about the Wisconsin Historical Society’s national organic and sustainable agriculture collection, email rjblobaum@gmail.com or Jonathan R. Nelson at wisconsinhistory.org.

Roger Blobaum served on the MOSES Board of Directors from 2005 to 2013. He coordinated Ceres Trust organic research programs for the last five years. He recently received the University of Wisconsin’s 2013 Honorary Recognition Award for “significant contributions and unselfish service” to organic farming. He will present the workshop entitled “Organic Pioneers & the Organic Movement” at the 2014 Moses Conference.
New books provide insights into humane butchering

By Audrey Alwell

The timing couldn't be more perfect for Adam Danforth's two new books: *Butchering Poultry, Rabbit, Lamb, Goat, and Pork* and *Butchering Beef*, both subtitled *The Comprehensive Photographic Guide to Humane Slaughtering and Butchering*. It could just be the people I hang around with (I work at MOSES after all), but it seems that many more of the people I know are doing their own livestock processing. Adam's new books are sure to provide new insights for all of us about butchering and its impact on the quality of meat.

My husband and I raise and process our own chickens. We each have specific duties. My smaller hands fit better inside a bird's body cavity. So I get the task of cleaning out the birds while the task of killing them falls to my husband—it's the most logical division of labor, really. Okay, I can be squeamish about blood. So when I saw the subtitle “Photographic Guide” on Adam’s books, I was a little hesitant to flip them open. When I did, though, I found beautiful photographs of animals on the farm, Adam working through various stages of the butchering process, and cuts of meat on incredibly clean butcher block—barely any blood at all. In fact, the photographs seem more like those you'd find in a gourmet cookbook.

Both books treat the subject of butchering with such care, and provide such detailed reasons for doing things in one way versus another, that they are fascinating to read.

Temple Grandin, well-known author and authority on humane livestock handling, has written the foreword for the beef book. Joel Salatin, farmer, author, and a frequent voice of the sustainable food movement, has written the foreword for the poultry, rabbit, lamb, etc., book. Joel calls the book "a recipe for self-reliance," and "another indication that the burgeoning local food tsunami continues to gain strength."

Adam's books do make you feel like you can raise and process your own livestock, and do it thoughtfully and skillfully. "Everything you need to know in order to successfully—and respectfully—slaughter the most common species found on a farm is contained in these pages," Adam writes in the introduction to each book. He's not exaggerating. He covers everything step by step to getting the animals ready for slaughter to packaging the meat so that it keeps well in the freezer. Throughout, he includes insights about the best tools for each step and explains the whys and hows of food safety.

He also delves into the science behind his recommendations, explaining the physical and chemical changes that happen to meat during processing, and how those factors influence the texture and flavor of the final product. He uses textbook-like diagrams of muscles to illustrate his points. His explanation of *rigor mortis*, *cold shortening* and *thaw shortening* definitely will change the way we process chickens at home. In fact, the timing is perfect—we'll be culling two roosters over the weekend.

The publishing date for these books coincides with the MOSES Organic Farming Conference where Adam will present a workshop titled "Deliciousness: The Science of Meat Flavor." He'll explain the factors that affect meat, including processing, handling and cooking.

*Butchering Poultry, Rabbit, Lamb, Goat, and Pork* will be available in the MOSES Bookstore at the conference and through our website store after the conference. The books will be available elsewhere after March 1.
Converting Conservation Reserve Program (CRP) land to organic production looks attractive: the land is already certified—usually no prohibited inputs have been applied for years, in some cases, for 20 years or more. On the other hand, it’s not usually the best, most fertile land—not the flattest, blackest, richest ground. Much of the land in our part of the country wouldn’t be productive back when it was put into CRP.

Converting land from CRP into pasture or crop production can be a good way to increase your usable acres—just don’t assume that the land into CRP. Much of the land in our part of the country isn’t particularly high in legumes. Nitrogen cycling, especially if the CRP land is providing mineral inputs, growing cover crops and getting plant diversity and soil health back in the land. Because of the time commitment, labor, and inputs required to transition CRP land, we prefer to transition land from good conventional farms. The decline in productivity often seen on CRP land is sometimes attributed to something called “Fallow Syndrome.” This is an observed loss in productivity of land after it has been left fallow for one or more years. One of the problems that can occur after land is left fallow for a period of time is a loss of mycorrhizal fungi. These organisms work symbiotically with plants, bringing them water and minerals, particularly phosphorus, in exchange for the plant providing carbohydrates from photosynthesis. When mycorrhizal populations are low, there will be low colonization rates of plants, which can lead to nutrient deficiencies and poor plant health.

Another downside to leaving land in CRP is that nutrients become tied up in woody plant materials and organic matter and are not cycling as quickly. Often there’s not as much nitrogen cycling, especially if the CRP land is not particularly high in legumes. There are a lot of things to consider when returning land to production after being in CRP. As long as you go into it with open eyes and a good understanding of what steps need to be taken to move that land into production, it can be a profitable venture.

First, take a soil test. Soil fertility may be low on CRP land. Siting idle does not induce the soil to release plant-available minerals. A lot of the nutrients on that land are tied up with complex carbons in the woody, brown, or mature plant materials growing there. You need to take a soil test so that you have a good understanding of what minerals may be deficient so you can address those deficiencies.

Second, work the land and begin the process of residue breakdown well before planting. Start working CRP land in the fall. Shred the residues, disk, rotovate, then wait a few weeks and shallowly work the soil and plant a green manure crop. All that brown carbon is complex in structure and slow to digest. Think of it like feeding straw to livestock—straw works better as bedding than feed; and, the CRP land already has enough ‘bedding.’ So apply rich manure, such as poultry, hog or livestock yard manure. Work the land, put manure on it and grow a green, highly digestible cover crop. Fall rye is a good choice for CRP land, especially when planted in the fall.

On the flip side, all that complex carbon from above-ground and below-ground plant materials is good for building organic matter. You don’t want to burn off all your carbon by overtilling. Work the land just enough to break up the soil. Then use your cover crop as a way to start improving soil structure and cycling nutrients.

Third, address any mineral deficiencies. We always start fixing a soil using calcium and phosphorous correction and applying a good, balanced, organic crop fertilizer. It will take some time to get soluble nutrients moving again on CRP land, and rock phosphate and lime are also low in solubility.

By Gary F. Zimmer

Evaluate CRP land with ‘open eyes’ before converting to organic

CRP land can have an excess of woody plant growth. 

Photo by Gary Zimmer

years, as in a CRP situation, would mean that land will have great soil structure and be very productive. That could be true, but, in most cases, it takes a lot of work to return the land to a productive state.
Can I plant non-organic strawberry plants, and then sell the strawberries as organic?

By Harriet Behar

Yes, you can plant non-organic strawberry plants and sell the fruit as organic with a waiting period, provided you have documented a search and could not find commercially available organic strawberry plants.

I encourage you to ask meat processors near you to consider adding organic certification to their services. The rapid growth in consumer demand represents real opportunity to expand the organic market.

I’ve compiled a list of certified organic meat processing plants in Wisconsin, Minnesota and Iowa. Many of these are included in our Organic Resource Directory (mosesorganic.org/publications/organic-resource-directory). Farmers in other states can find a certified organic processor by searching the USDA website (apps.ams.usda.gov/nop/, select “handling” and your state for a list).

Questions about organic farming?

MOSES Organic Specialists are experienced professionals who can answer your questions about organic production and organic certification.

CALL: Organic Answer Line 888-551-4769 or 715-778-5775

SUBMIT: Send us your questions—just click the “Ask a Specialist” button at mosesorganic.org.

READ: Browse answers to previously asked questions at mosesorganic.org/farming/ask.

**Friends or foes: Farmers talk about their relationships with weeds**

By Patrick Lillard

Whether or not we like it, we all have relationships with these plants we call “weeds.” Farmers can use some colorful language to describe these persistent companions. I had the chance this past summer to hear what organic farmers think about weeds as I toured a group of organic farms in different parts of the country for a project I have been working on for Purdue and Ohio State universities.

At each farm, I asked the farmers how they’d describe their relationship with weeds. I got a few strange looks, quite a few laughs, and a word I had to look up after the interview. (Now I know what “peripatetic” means.) Still, almost everyone noted something we all can learn from weeds.

“Actually, we do learn a lot from weeds,” said Dave Campbell of Lily Lake Organic Farm in Illinois. “It’s hard to believe just a matter of 40 acres away in another field, I’ll have different weed pressures than I will in another part of the farm. So I look at weeds and try to observe what kind of weeds I have, what the issue is, and why I’m having these weeds and try to address that issue.”

Peter Bane and Keith Johnson of Renaissance Farm also talked about the importance of observing weeds, but they talked about observing them in order to better understand their beneficial role in a farm’s ecosystem.

“Weeds’ function in the world is to cover bare ground and to restore the health of that ground by covering it, by diving deep into it and bringing nutrients up to the surface where other things can make use of them,” Keith explained. “Their job is part of the regeneration of damaged landscapes.”

Bob Cannard, an organic farmer in California, went beyond seeing weeds as beneficial, considering them essential on his farm.

“They’re my number one crop!” Bob said. “They’re the food that is going to allow the next crop to grow.”

Noah Engel of Earthbound Farms in California described his approach to managing weeds with one word: “cultivation.” He starts by pre-irrigating the beds a couple of times and cultivating shortly afterward to eliminate the first few flushes of weeds right after they germinate. Then, after the crop is planted and established, he’s got a precision cultivation, leaving less than two inches either side of the plant uncultivated. A general weeding crew will go through and, while thinning the plants, they’ll hoe any weeds in the row. This is then followed by another cultivation and one last hoeing. Bob is strict about not letting weeds go to seed in the field, and will actually have the weeding crew pack the weeds out of the field if they are going to seed. This labor can be expensive, ranging from $100 an acre for a fairly clean field all the way up to $1,000. At Drifless Organics, farmer Noah Engel said the most important practice for managing weeds is field preparation. In fields with spring cover crops, he said, “This is where they’ll have the fallestow period of a few weeks to allow a few flushes of weeds to germinate and then be cultivated. This approach doesn’t work in fields with spring-planted crops, where planting can’t wait until after the weeds germinate. In these fields, Noah includes a summer fallow in his rotation.

“Ideally we would have almost 50% of our land not in production every year,” Noah said. “That would be for soil building and weed control, doing the summer fallow, removing weeds with the field cultivator.” He explained, “We really try to do that—we’ve got a little tight on land.”

Summarizing Dave Campbell’s strategy for managing weeds would take several hours. Fortunately, he’ll have time to explain his process at the 2014 MOSES Organic Farming Conference, where he’ll present the workshop “Weed Management for Organic Field Crops.”

Dave starts thinking about how to manage weeds a year in advance when deciding his rotation, which type of crop to plant (food vs. feed grade), which varieties to use, which implements he’ll need ready, and how he can best manage his limited labor within those timeframes. Whether or not we like it, we all have relationships with these plants we call “weeds.” Farmers can use some colorful language to describe these persistent companions. I had the chance this past summer to hear what organic farmers think about weeds as I toured a group of organic farms in different parts of the country. At each farm, I asked the farmers how they’d describe their relationship with weeds. I got a few strange looks, quite a few laughs, and a word I had to look up after the interview. (Now I know what “peripatetic” means.) Still, almost everyone noted something we all can learn from weeds.

“Actually, we do learn a lot from weeds,” said Dave Campbell of Lily Lake Organic Farm in Illinois. “It’s hard to believe just a matter of 40 acres away in another field, I’ll have different weed pressures than I will in another part of the farm. So I look at weeds and try to observe what kind of weeds I have, what the issue is, and why I’m having these weeds and try to address that issue.”

Peter Bane and Keith Johnson of Renaissance Farm also talked about the importance of observing weeds, but they talked about observing them in order to better understand their beneficial role in a farm’s ecosystem.

“Weeds’ function in the world is to cover bare ground and to restore the health of that ground by covering it, by diving deep into it and bringing nutrients up to the surface where other things can make use of them,” Keith explained. “Their job is part of the regeneration of damaged landscapes.”

Bob Cannard, an organic farmer in California, went beyond seeing weeds as beneficial, considering them essential on his farm.

“They’re my number one crop!” Bob said. “They’re the food that is going to allow the next crop to grow.”

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是否我们喜欢它，我们都和这些植物“杂草”有关。农民可以使用一些生动的语言来描述这些坚持陪伴我们的同伴。我有这个机会在过去的夏天听到有机农民如何看待杂草，因为我参观了一群有机农场在不同地方的项目。在每个农场，我问农民他们如何描述他们的关系与杂草。我得到一些奇怪的表情，一些笑，一个我必须要查阅的词。现在我知道“peripatetic”的意思了。仍然，几乎每个人都注意了一些我们都可以从杂草中学习的事情。

“实际上，我们确实从杂草中学习到了很多东西。”戴夫·坎布尔说，他是伊利诺伊州的莉莉湖有机农场的农场主。他说：“很难相信就在一块40英亩地的另一块地，我会看到不同的杂草压力。所以我看杂草并且尝试观察它们以更好地了解它们在农场生态系统中的有益角色。”

彼得·班恩和基思·约翰逊在文艺复兴农场也谈到了观察杂草的重要性，但他们谈到观察它们是为了更好地了解它们在农场生态系统中的有益角色。

“杂草在世界上的作用是覆盖裸露的地面并且通过覆盖它，通过深深地进入它并带回营养到地表上，其他东西可以利用它们，”基思解释说。“它们的工作是部分地再生受损的景观。”

鲍勃·坎纳德，一位加利福尼亚州的有机农场主，超越了将杂草视为有益的思考，将它们视为他农场上必不可少的。

“它们是我的头号作物！”鲍勃说。“它们是足以让我下一个作物的食品。”

诺亚·恩格尔在地球边农场在加州，描述了他管理杂草的方法。他通过预灌田和精细耕作在几天后消除第一波杂草的萌发来做到这一点。然后，在作物被种植和建立之后，他有精确的耕作，让杂草在那片土地上生长。诺亚说，他包括一个夏季休耕在他的轮作中。

“理想情况下，我们的土地有50%不是生产，”诺亚说。“这将用于土壤建设并且杂草管理，对于休耕，除去杂草与田间培植机的使用。”他解释说。“我们真的试图做这个——我们有点儿有限的耕地空间。”

总结戴夫·坎布尔的管理杂草的战略需要几小时。幸运地是，他将有时间解释他的过程，他将在2014年MOSES有机农耕会议，他在那儿将展示研讨会“杂草管理为有机田间作物”。

戴夫开始思考如何管理杂草一年在决定他的轮作，哪种作物适合种植（食品还是饲料级），哪种品种使用，他将需要的工具，以及他如何最好地管理他有限的劳动力在这些时间框架内。

Bob Cannard’s weed management is a balancing act of letting the crop get established and then allowing weeds to assert themselves. He lets weeds complete their life cycle and then mows them with a flail mower before planting the crops. Once the crop is planted, he maintains a critical weed-free period by cultivating shallowly with a roto-tiller and wheel hoe, and occasionally mowing. Once the crop is established, he allows the weeds to grow, which provides several benefits.

As he explained, the challenge to this strategy is that very delicate balance between the weeds and the crop.

“You have to pay attention,” Bob said. “You have to be intimately concerned and part of your farm’s operation. If you slack off, why the weeds are gonna take over and you’re gonna have plenty of soil food but not enough people food.”

Weeds are a constant challenge on farms, and no strategy will ever completely eradicate them from any farm, conventional or organic. Our challenge is to learn to understand these companions and find our own approach to controlling them on our farm.

Patrick Lillard is an Educational Program Specialist for Youth Development & Agricultural Education at Purdue University in Indiana. He is working on an organic weed management project, which includes a series of 10-minute videos profiling how six organic farmers manage weeds. The videos are linked at mosesorganic.org/farming/farming-topics/field-crops. The project also will include a webinar series on weed management that will be available later this year.
Flame weeding has received renewed interest for its potential in not only organic, but also conventional cropping systems, especially in those fields where there is an increase in herbicide-resistant weeds.

Flame weeding controls weeds by heating plant tissue rather than burning it. Propane burners can generate combustion temperatures of over 2000 degrees F, which rapidly raises the temperature of exposed plant tissues. The resulting thermal shock to the plant tissues boils water molecules inside the cell and breaks up proteins, especially in the cell wall. The expanding water generates pressure that ultimately ruptures the cell wall, thereby dehydrating the plants through cell leakage. Eventually the plants die or their competitive ability is drastically reduced.

Flaming provides multiple advantages, including the fact that it: (1) leaves no chemical residues in plants, soil, air or water; (2) does not produce chemical drift hazards or herbicide carry-over to the next season; (3) can control herbicide-tolerant or resistant weeds; (4) reduces the need for repeated cultivation that promotes the risk of new weed flushes or soil erosion; (5) is less costly than hand weeding, thus providing direct economic savings.

At the University of Nebraska, we have conducted a series of over 40 studies from 2008 to 2012 that resulted in many journal and proceeding articles about crop tolerance to heat and weed control with flame weeding in field corn, popcorn, sweet corn, and sorghum, which are the grassy type crops such as field crops to propane flaming. The most tolerant crops are the grassy type crops such as field corn, popcorn, sweet corn, and sorghum, which can be safely flamed from VE (emergence) to V10 (10-leaf) growth stages, with a maximum of two post-emergence flaming operations per season. Soybean is tolerant to flaming only at the VE–VC stages (emergence-unfolded cotyledon) and after the V4 (4 trifoliate) growth stages. Sunflower is tolerant to flaming only at the VE–VC stage (emergence-cotyledon) and after the V8 (8 leaf) growth stage. Flaming in wheat is recommended only before crop emergence.

From an economic standpoint, the cost of a single flame weeding operation applied broadcast below crop canopy could be $12-15 per acre, without taking into account the costs of the equipment and labor [current price of propane ($1.20/gallon) x 10 or 12 GPA]. Banded application (6 inches on either side of crop row) of flaming can cost $5-8 per acre due to lower propane use rates (4-6 gallons) per acre. Flaming can be utilized also as part of an integrated pest management program not only for weeds, but also for insect control in agronomic crops.

We have compiled results from this research into a training manual that describes the proper use of propane-fueled flaming as a weed control tool in major agronomic crops. The flame weeding manual contains 32 pages of text and color pictures. The pictures provide visuals of crop growth stages when flaming can be conducted safely without having side-effects on crop yield. Pictures of weeds provide visuals of appropriate growth stages when weeds need to be flamed to achieve good weed control. The manual is available as a free PDF download at www.agpropane.com/propane-safety-on-the-farm/service-manuals-and-training-guides.

For additional information on flame weeding, contact Dr. Steven Knezevic (402-584-3808), sknezevic2@unl.edu.
The most significant of these was a dominant native plant to grow without competition. And, our plant community and create a clean slate for what we were doing—is heavily dependent on conventional methods where we used deep moldboard plowing to invert the entire soil layer and create a totally barren, grass-free surface. The moldboard treatment worried me a lot, especially with the high potential for wind erosion that a weed might otherwise occupy.

While the Crabtrees’ wildflower buffers are clearly paying dividends today, early in the design and establishment phase we faced a number of pragmatic feasibility questions. Specifically, could we establish high quality native wildflower habitat using only organic methods? Also, what was the optimal seed mix for the buffer areas—one that would resist weeds and persist over time? And, when was the ideal planting time for a non-irrigated landscape averaging less than 12-inches of precipitation annually?

In tackling the first of these questions, we were confronted by the fact that most successful prairie restoration—which is in essence what we were doing—is heavily dependent on conventional herbicides to remove the baseline weedy plant community and create a clean slate for native plants to grow without competition. And, the Crabtrees’ field edges certainly had weeds. The most significant of these was a dominant cover of non-native crested wheatgrass—a rangeland plant initially introduced from Siberia for its wildly successful ability to completely take over cold, low-precipitation landscapes. I knew from experience that simply drill seeding native wildflowers into the crested wheatgrass would be a waste of time and money. We had to create a new plan, one without precedent for me as a restoration practitioner.

After a lot of head scratching with my Xerces colleague Jennifer Hopwood, we worked with the Crabtrees to design a series of replicated tillage trials to understand which cultivation strategies would be most successful at suppressing future re-growth by the crested wheatgrass and provide a clean seedbed for our natives. The trials included wide chisel plowed swaths to open up bare ground strips that we could re-seed into, as well as another set of treatments where we used deep moldboard plowing to invert the entire soil layer and create a totally barren, grass-free surface. The moldboard treatment worried me a lot, especially with the high potential for wind erosion on the northern plains. Yet, by summer 2013 it was clear that the moldboard treatment was an overwhelming success. There was little to no re-growth by the crested wheatgrass, and without competition, the native plants grew fast and prolifically enough to protect the soil.

With some hindsight, I think a key part of our success was a thoughtful approach to answering another of our initial questions: “What is the optimal native seed mix for this piece of land?” Of course our goal was a wildflower-rich plant community, but wildflower-only seed mixes are prone to weed encroachment since native grasses help occupy the space and the root zone between wildflowers to form a tight living mat that resists weed invasion. With this in mind, we included several species of low-stature native grasses at almost 15% of the seed mix—including both warm season and cool season species to fill any ecological void that a weed might otherwise occupy.

For the flowers in the seed mix, we looked to the most drought-adapted Western native species for which we could find seed sources. Lewis flax, blanketflower, Maximilian sunflower, yarrow, scarlet globe-mallow, and others formed the foundation of the seed mix, which we wanted to be resilient in the face of the toughest climate change conditions that the Crabtrees might ever face. The inclusion of some annual wildflowers like plains coreopsis and wild sunflower helped provide immediate beneficial insect value and rapidly covered the predators like soft-winged flower beetles. Complementing these wildflower buffers, the Crabtrees are using extensive multi-species flowering cover crop rotations that build soil organic matter, disrupt pest and disease cycles, and help create seamless corridors for beneficial species to move throughout the farm. The net effect is a carefully orchestrated ecosystem that provides its own pollinators, its own pest control, and its own nutrient cycling.

While we’ve made amazing progress so far, there’s a lot more to do, as Doug and Anna will readily point out. In addition to wanting to expand their operation with more land (and hence more habitat), Doug and Anna are committed to mentoring new farmers through an apprentice program. They see this type of conservation expertise as one of the core skills they want their apprentices to gain. Ultimately when those apprentices go on to establish their own farms, Doug and Anna hope that they will bring these ideas along, and a new generation of ecosystem-based farmers will take root all across the northern plains.

Eric Lee-Mäder is an agroecologist and author of the books Attracting Native Pollinators, and Farming with Beneficial Insects through Storey Publishing. He is the Assistant Pollinator Program Director at the Xerces Society, and an Assistant Professor of Extension at the University of Minnesota’s Department of Entomology. He blogs at argeologistsnews.com.

Eric will present two workshops at the 2014 MOSES Organic Farming Conference: “Farm Planning for Pollinators, Beneficials, & Biodiversity” and “Get Started in Native Seed Production,” and will be available to talk about pollinators in the Ask an Expert room on Friday morning. To see the complete schedule of experts, go to mosesc.org/conference/networking.
Keyline Design 101: Farmers learn water management in field from Mark Shepard

By Paul Durrenberger

On a hillside of stubble from recently harvested oats, 40 people crowded around a 1960s Oliver diesel tractor in the heat of the August sun on Grant Schultz’s VersaLand Farm near Iowa City, Iowa. The tractor with tandem moldboard plows was supposed to carve a swale to show us how to put in practice lessons we’d learned that morning from Mark Shepard, author of the book Restoration Agriculture. Mark was here at Grant’s invitation to teach a workshop on the methods he has developed for restoring vitality to played-out farms and income to the people who work them. But, the tandem moldboard plows couldn’t get deep enough into the dry, clay-like soil.

After 150 years of commercial farming, the last half of which have been devoted to “conventional” corn/soybean farming with heavy inputs of fertilizers, fuel, and agricultural chemicals, Iowa’s farmland has come to resemble a weed-strewn parking lot when it is hot and dry, and muddy floodwaters when it rains. Grant had brought Mark to the heart of conventional agriculture to explain revolutionary methods of farming.

“First take care of the blue. Then the green. Then the black,” is one of Mark’s slogans. He means first manage the water, then the plants, and the inevitable consequence will be the black soil and black ink in the account books, he explained. We were all there to learn about this concept of the “key point.” That is the point in the landscape where the slope changes from convex to concave. If you spread your index and middle fingers to make a “V,” you see the little web of flesh between them at their base. If you now hold the fingers parallel to the ground, you can see the “key point.” Such features in the landscape become the crux of keyline management. The next step is to find the contour line the key point is on. That is what Yeomans called the “Key Line.” It was “Key” because that line became the reference point for the rest of the system to slow down the sheeting water and direct it to small ponds where it could soak into the earth.

I had read Mark’s book on permaculture design with great interest when it came out just before the 2013 MOSES Organic Farming Conference. At the MOSES Conference, I found Mark between workshops and showed him a contour map of Draco Hill. I asked where the key point was. I had been unable to identify this increasingly mysterious point.

“It depends,” he answered enigmatically. Another one of Mark’s memorable slogans is: “It’s not a one-answer planet.” Answers to any question depend on many factors. For instance, land ownership boundaries may not follow keyline principles, so a key point may be on someone else’s land. And, that neighbor may be part of the industrial food complex and not want you digging on his or her fields. In that case, you have to locate another reference point for your system. Or, the key point may be very low in the landscape, as it was at Grant’s VersaLand Farm. You could make a pond there, but, since it’s at the lower elevation of the landscape, the water isn’t useful as it cannot flow anywhere. So a more useful point of reference is higher in the landscape.

The 40 of us who had signed up for Mark’s workshop had heard these explanations in an air-conditioned meeting room and now we were standing on a hillside on Grant’s farm watching the plow move along a curving row of flags that marked a gutter line or swale with a grade of 1%—dropping from its high point at a rate of one foot of elevation per hundred feet of length, the same as a gutter around a roof. The problem was that the soil was too hard for the plow to penetrate well. It would take multiple runs to carve out the 18-inch deep swale and heap up the berm downhill. So Grant brought up a trachhoe and the operator he’d hired for the afternoon. The operator began to take multiple runs to carve out the 18-inch deep swale and heap up the berm downhill. So Grant brought up a trachhoe and the operator he’d hired for the afternoon. The operator began to play the soil downhill to create a berm to guide water in Grant Schultz’s field.

Key to this water-saving system is Yeomans’s concept of the “key point.” That is the point in the landscape where fast-moving water slows down and begins to drop its load of sediment. This is usually where the slope changes from convex to concave. If you spread your index and middle fingers to make a “V,” you see the little web of flesh between them at their base. If you now hold your fingers parallel to the ground, you can see the “key point.” Such features in the landscape become the crux of keyline management. The next step is to find the contour line the key point is on. That is what Yeomans called the “Key Line.” It was “Key” because that line became the reference point for the rest of the system to slow down the sheeting water and direct it to small ponds where it could soak into the earth.

The crowd watches as the trackhoe excavates a swale and deposits soil downhill to create a berm to guide water in Grant Schultz’s field. Photo by Paul Durrenberger

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What's new? Options for organic seed continue to grow

By Jody Padgham

As the soil rests under a cover of snow, farmers' minds drift to planning for next season's production. Top on the list of "to-dos" is the purchase of seed for upcoming crops. Whether for producing diversified vegetables, organic hay or a row crop rotation, organic seed options continue to develop.

The requirement in the Organic Rule for the use of organic seed (when available) has fueled development of new varieties of organic seeds each year. Breeders have been working to provide seeds that thrive specifically within organic systems.

Ten organic seed companies will exhibit at the 2014 MOSES Organic Farming Conference. We asked all of them to give us a sneak preview of new or exciting developments in their product lines, and received the following updates.

Albert Lea Seed

"One of the most exciting developments in organic seed in the past few years have been Aphid Tolerant Soybeans," said Matt Leavitt of Albert Lea Seeds. These soybeans are bred with Rag (Resistance Aphis Glycines) genetics to confer some amount of field resistance to soybean aphid; a very economically damaging pest to organically-raised soybeans. There are soybeans with Rag1, Rag2 and stacked resistance with Rag1 & Rag2. Albert Lea currently offers two soybeans with Rag1 resistant genes.

Albert Lea continues research and development of numerous organic seeds:

- Organic soybean varieties with genetics to maximize yields, compete with weeds and succeed under organic management
- Organic corn hybrids
- New forage varieties of small grains including organic winter triticale and organic forage oats, plus organic winter barley with new germplasm to make this a viable crop in the upper Midwest
- Elite organic alfalfa varieties for maximum forage yields, along with the current leafhopper-resistant organic alfalfa
- Organic cover crop seed offerings including Organic Tillage Radish

Foundation Organic Seeds, LLC

"We’re excited about a new product at Foundation Organic Seeds available for 2014, a silage corn mix called COW CANDY," exclaimed Steve Mohr. A predetermined mix of Waxy Seed Corn, High Oil Seed Corn, Nutri-Dense TM Seed Corn, High Digestible Silage Corn (HDS), and Open Pollinated Seed Corn, this product has higher amounts of available nutrients than normal corn silage. Silage tests from the University of Wisconsin Forage Lab for 2013 determined COW CANDY’s silage delivered 3,300 lbs of milk per ton. “This product will help farmers get more usable nutrients from the field to the animal," Steve says. For 2014, COW CANDY is available as a NON-GMO/non-treated seed form, but not yet available as organic.

Foundation Organic Seeds also is offering four new high-yielding organic grain hybrids in 2014. These include OR5513—a 100-day organic hybrid that topped the University of Wisconsin organic yield trials in 2012, and ORG Multi-886—a high-yielding multi-leaf organic alfalfa (grown in the U.S.) that yields like a normal trifoliate alfalfa with the advantage of more leaves, increasing the relative feed value over standard alfalfas.

High Mowing Organic Seeds

"At High Mowing Organic Seeds, we have expanded our selection and availability of organic seeds by increasing the varieties grown on our seed production farm, contracting with organic seed farmers across the country to produce seed for us, and by establishing partnerships with wholesale seed companies that have made commitments to develop and produce organic seed," said Brigitte Derel.

Some organic "firsts" from High Mowing:

- Organic Curly Roja Kale, ruffled red kale
- Organic Allure F1 Hybrid Sweet Corn, the first organic synergistic sweet corn, combining sweetness with excellent seedling vigor
- Organic Tiana F1 Hybrid Butternut Squash
- Organic Estamino F1 Tomato Rootstock
- Organic Iron Lady F1 Hybrid Tomato, first in a new generation of triple-resistant varieties from a collaboration with Cornell University and North Carolina State University, exhibiting its resistance to early blight, late blight and septoria leaf spot, as well as tolerance to verticillium and fusarium wilt

Johnny’s Selected Seeds

“We’re particularly proud to add Artisan Tomato™ to our lineup for 2014. We will be the only provider of the complete collection, with two exclusive varieties to complete the seven-variety group,” said Christine Berube of Johnny’s Selected Seeds. A unique, new kind of tomato, all the Artisans are small in size and striped. Some are an elongated cherry tomato shape, dubbed the julienne tomato. These have Tiger in the name (except Blush). The others are a traditional cherry tomato shape with stripes, known as the Bumble Bees. Over a decade in the making, independent breeders at Artisan Seeds used traditional breeding techniques to develop these tomatoes. Christine said they are some of the most attractive Johnny’s has ever seen—and, they taste as good as they look.

Exclusive to Johnny’s Selected Seeds are:

- Lucky Tiger—a green julienne cherry tomato with green striping and red interior marbleing
- Sunrise Bumblebee—a yellow, round cherry tomato with red striping
- Other Artisan Tomato™ varieties include round-shaped, Pink Bumblebee and Purple Bumblebee along with julienne-shaped

For professional growers of organic vegetables and herbs, Vitalis Organic Seeds is the premier choice! All Vitalis varieties are thoroughly screened and trialed for taste, appearance, nutritional value, performance and sustainability. Organic field, high tunnel or greenhouse growers can trust this exacting process to provide them with the purest and most viable organic seeds available in the marketplace.

The Vitalis Difference: 100% ORGANIC FROM END-TO-END

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To request a free catalog visit www.highmowingseeds.com or call 802-472-6174

To: Seeds next page
Blush, Pink Tiger, and Green Tiger. Most varieties are available as organic.

Other new varieties from Johnny's Selected Seeds Include:
• New Sweet Specialty Peppers—Aura (tapered, golden yellow fruits) Glow (bright orange fruit)
• Muir Lettuce—Extremely heat-tolerant variety which forms dense heads that can be harvested as a mini or left to bulk up into large, heavy, full-size heads
dolly—a high-yielding Genovese basil for field production

You can learn more about all of these new varieties at the MOSES Conference, or at the 7th Organic Seed Growers Conference Jan. 30 through Feb. 1, 2014 in Corvallis, Ore. To learn more about the seed conference, contact the Organic Seed Alliance at 360-385-7192 or go to www.organicseedalliance.org.

Jody Padgham is the Financial Director for MOSES, and Associate Editor of the Organic Broadcaster.
More frequent droughts and changing climate patterns are creating interest in permaculture concepts, especially water management systems such as keyline design. Keyline design has been around for quite some time in Australia, where the more arid and hot climate requires water conservation efforts. But, just how well do these systems work in the much more humid and wet Midwest? To find out, I asked three farmers who have designed and installed keyline systems on their own farms.

Chris Blanchard, Rock Spring Farm, Iowa

Chris installed his keyline system in 2003 after visiting Mark Shepard’s permaculture farm in Wisconsin. Following the contour lines in the field, Chris used a two-bottom plow to turn a furrow downhill every 30 feet to create the swales/furrows necessary to hold and slow the water as it moved downhill. Chris’ farm is in the Driftless area of Iowa. His goal was to use the keyline system on his more steeply sloping hills above his bottom fields, which are used to grow vegetables.

Chris planted chestnuts trees on the downside of his furrow/swales and asparagus in the fields between swales. He also bought a Yeomans plow to cut the subsoil furrows to move water out to the ridge. The resulting system did hold water and move it out to the ridge, but the soil in the lower vegetable field would often become too wet to work. This was a particular problem in 2007 and 2008 when flooding soaked the fields and left water standing on the surface.

Chris also found that the furrow/swales were problematic for equipment. The combination of a swale/furrow and wet soil resulted in dropped wheels and stuck equipment. Chris remarked that “with more research, I would do it again, if I knew I could do it without affecting my lower fields. Keyline design must be considered on a whole-farm basis.”

Jeremy Peake, Peake Organic Dairy, Iowa

Jeremy Peake and his wife, Jodi, own an organic grass-based dairy and 1,000-tree apple orchard. Jeremy had read about keyline design and permaculture concepts after being introduced to it through Abe Collins and his articles on holistic management. “It made sense to catch as much water, and to keep the water that falls on the farm,” Jeremy said. “Grazing and permaculture concepts fit well together.”

Jeremy ordered five shanks for subsoil and had his own Yeomans plow built in 2012. He planned and installed his first keyline system on 10 acres of grazing/hay ground. Jeremy found it was too difficult to pull all five plow shanks through his heavier clay soils, which were compacted in some areas. So he reduced them to three. He used an A-frame level and flags to lay out his contours and installed two swales using a one-bottom plow. He didn’t install any pocket ponds. “We have a lot of sinkholes on my farm, which make design more difficult,” he explained. “But, I would like to add ponds in the future.”

The wet spring of 2013 also proved a challenge, filling the swales with water. “I could not cut silage when I wanted, so I grazed it two to three weeks later, and the soil was still wet,” he said. He plans to loosen the area again with the Yeomans plow. He wants to continue to install small sections of keyline systems on more of his farm when he can.

Grant Schultz, Versaland Farm, Iowa

Grant hosted the keyline design workshop described in the article on page 11. I checked in with him to learn more about his experiences.

Grant put in his first system in April of this year. It covers about seven acres that had been in sod. He used a sight level and flags and a tree transplanter to cut the soils. He found that using a sight level and flagging was very
time consuming. He planted berries and a few chestnuts on the downside of the swales and planted a clover mix in between for grazing.

For his second installation, Grant switched to using a laser level and flags to establish his contours, but found this also very laborious. This hillside, about five acres, was set up using a mini-excavator, which he felt was too slow, especially with his farm’s rock-hard soils.

Armed with his previous experiences, and with a grant to help with expenses, Grant plans to use GPS technology in 2014 to complete a 100-acre installation. GPS will help to reduce the time and labor of finding the keyline and laying out the contours and swales, and will make the overall design much more accurate. He has surveyed his fields and planned the design on his computer using exact information on slope and farm topography so it can be uploaded to a tractor with a GPS system. He plans to use a custom swale plow rather than a bulldozer or excavator, which will leave fewer soil clods for a better seed bed. He’ll have 40 acres of this new installation in silvopasture with fruit and nut trees in the swales, and the balance in hay ground. Grant is confident that GPS-aided design and installation will greatly simplify the process.

Grant is a fan of putting in swales first and then subsoiling, believing that swales handle pulses of rain better than subsoiling alone. This prevents water from building up speed. “It is better to have a pond that stands for a few days than gulley erosion,” he explained. Rather than viewing swales as reducing productive land, Grant feels that the increase in productivity due to better water retention offsets any loss of acreage.

Grant recommends:
- Visit a farm with a keyline system or attend a workshop before you install your own.
- Install a single swale. Live with it for a while, and then evaluate.
- GPS can simplify the process, be much more accurate, reduce installation costs and speed up the installation.

Grant will host a field day on his farm in March to show his new GPS-designed keyline system. For details, see www.versaland.com/workshops/gps-keyline-design.

Mark Shepard will teach a pre-conference Organic University course, “Restoration Agriculture: Intro to Farm-Scale Permaculture,” and a workshop, “Farm-Scale Permaculture: Know Your Biome” at the 2014 MOSES Conference.

Websites for information on keyline design:
- www.treeyopermaculture.com
- www.yeomansplow.com.au
- www.permaculturenews.org
- www.permaculture.co.uk
- www.newforestfarm.net

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This project is supported by the Beginning Farmer and Rancher Development Program of the National Institute of Food and Agriculture, USDA.
Ruminants... from page 1

Retained placenta (RP), mastitis and other infections like pneumonia are often consequences of poor immune function in fresh cows. There is a large surge of the stress hormone cortisol at the time of birth, which weakens the immune response and makes the fresh cow more likely to have problems with infections.

Demand for increased energy, protein and other nutrients starts during the late stages of pregnancy. The fetus grows most in the last few weeks of gestation, which requires more energy intake for the mother as she nears the time of giving birth. This is especially important for sheep and goats that are either carrying multiple offspring or are lambing or kidding for the first time. Increase the energy content of the diet for small ruminants in late pregnancy to avoid pregnancy toxaemia or small, weak lambs and kids.

After delivering, the mother’s nutritional needs escalate rapidly as she starts producing milk. It’s important to adjust the diet throughout these times — either by directly changing the ration over time or, alternatively, by providing pregnant ruminant mothers with opportunities to select different feeds and supplements. Ideally, we should follow a balanced approach by changing feeding practices at different stages of lactation while also providing a selection of feed and supplements for the animal to choose from.

Manage dry period in stages

Dry-period management should be divided into stages to make sure the cows’ needs are properly met. It’s important to assess body condition sometime around mid-lactation — thin cows can encounter problems during the dry period. When you need to start making the adjustment to adjusting the diet to allow the rumen microflora to adjust to feeds the cow will be eating after she freshens. Managing “close-up” cows for the transition to lactation is important. Some larger dairy farms have a special group for these cows. It’s important to start increasing energy and protein in the diet gradually before calving to meet the increased needs of the cow in late gestation.

Be careful not to move cows to new groups during the last week to 10 days before calving. Cows will be stressed by moves to new groups, and may not eat well if there is limited feeding space or they are timid.

Cows normally eat less a day or two before calving, but if they decrease dry matter intake during the last two weeks of gestation the results are often fresh cow problems like ketosis and RP. Feeding free choice kelp throughout the dry period is strongly recommended. Kelp provides a wide variety of trace minerals and iodine in readily absorbable form. Feed between 2 and 4 ounces per cow daily if you can’t feed kelp free choice.

Keep dry cows comfortable

Make sure dry cows are clean and comfortable at all times. Dry cows are susceptible to new mastitis infections shortly after dry-off and again when they are close to calving. If a farm experiences mastitis or high SCC problems in fresh cows, it often traces back to a sanitation problem during the dry period. Provide plenty of clean, dry bedding during the non-grazing season.

Dry cows must be provided with some kind of cooling during hot weather. Shade, wetting cows, fans or a combination of these should be used to maintain cow comfort during times of heat stress. Cows can lose a pregnancy if heat stress is too severe.

To Ruminants on page 18
Transplants... from page 1

Every system has its weak link. Investments can strengthen the weak link in a chain, but as soon as that link is strengthened, another one becomes the weakest—sometimes the new weak link appears as a direct result of the action taken to strengthen the previous weak link. At Rock Spring Farm, we used soil blocks to produce over 100,000 transplants every year. These lightly compressed blocks of potting soil supported fantastic transplants, but making the blocks required a lot of skill and labor. When management transitions made this high-skill labor into our weakest link, we changed over to a cell-tray production system, whereupon we discovered that our new weakest link was the relatively small amount of soil in each cell, which required more careful nutrient and water management.

As a vegetable operation grows in size, the pressure of growth often drives investment in more efficient tools and equipment. There aren’t any hard-and-fast rules about the number of transplants you should be growing before investing in a given piece of equipment. I’ve seen 80-acre vegetable farms relying on flimsy, vacuum-formed flats and water wheel transplanters, and 30-acre farms that have invested in top-of-the-line injection-molded trays and carousel transplanters.

Labor-efficiency investments on a farm don’t necessarily provide a simple return on investment. In an environment where weather can be unpredictable, even a very small operation can realize outsized benefits from the ability to get a large number of plants in the field in a short period of time. In a year like 2013, that can make the difference between having and not having a crop.

Opportunity costs also add up, and investments in tools like a more efficient transplanter can free up machinery and personnel to tend to other important tasks—like growing tomatoes or getting exactly three onion seeds in a cell—to an experienced operator or somebody who has the equipment to do it quickly and efficiently.

This article grew out of a project funded by the Leopold Center for Sustainable Agriculture as part of a grant to the Iowa Organic Association. Established by the 1987 Groundwater Protection Act, the Leopold Center supports the development of profitable farming systems that conserve natural resources.

Chris Blanchard provides consulting and education for farming, food, and business through Flying Rutabaga Works. As the owner and operator of Rock Spring Farm in Iowa for over 13 years, Chris raised 20 acres of vegetables, herbs, and greenhouse crops, marketed through a 200-member year-round CSA, food stores, and farmers markets.

Dave bought a one-row unit, which they offsets to one side of the tool bar. Dave would drive each bed in one direction while Barb fed plants into the machine, then they would turn around and come back on the same bed. In this way they planted two rows on each bed much more efficiently than they could have with any other tool. As the farm grew and added additional employees, they added additional row units to the same tool bar.

When thinking about opportunity costs and investments, it may pay to buy some of your transplants. The first transplants of the year, when you heat your whole greenhouse to produce a fraction of its capacity, are the most expensive plants to grow. It might pay, too, to outsource some of the more high-skilled or precision-oriented tasks—like growing tomatoes or getting exactly three onion seeds in a cell—to an experienced operator or somebody who has the equipment to do it quickly and efficiently.

At the 2014 MOSES Organic Farming Conference, Chris will present the workshop “12 Simple Steps to Food Safety.” He also will teach a pre-conference Organic University course: “Making Your Market Farm Work for You.”
Pay attention to water quality and intake throughout the dry period—remember, water is the number-one nutrient for keeping animals healthy.

Also, watch out for possible stress from electromagnetic fields (EMF), which is commonly called “stray voltage”), especially when animals are confined during the non-grazing season. Keep “hot” wires away from buildings, feeding areas and waterers. Turn off electric fences and cow trainers as much as possible.

After dry-off it’s very important to check udders around a week after going dry. Look for swelling or uneven quarters. Palpate (feel) any quarter that appears swollen or different than the others. If a quarter feels firm or warm, open the teat and strip out the milk. If there’s mastitis or abnormal milk, treat the cow like an organic milking cow with mastitis: strip at least daily (more often is better) and use the mastitis treatments you would use to treat milking cows. Do not leave an infected quarter unmilked or untreated. Some farmers like to milk out the residual milk from all cows one week after dry-off, others let the milk reabsorb on its own. Use the method that works for you, but always check the udders about one week after the cows go dry.

In summary, take good care of your livestock during late pregnancy and dry periods. Carefully monitor feeding and nutrition during this time. Make sure pregnant animals get plenty of exercise. Keep expectant ruminant mothers clean, dry and comfortable. Your efforts will be rewarded with healthy, productive animals and offspring.

Guy Jodarski, DVM, has a 26-year-old livestock practice in Neillsville, Wis., with an emphasis on organic and sustainable dairy cattle herd health. He is a staff veterinarian for Organic Valley CROPP Cooperative. He focuses on ways to keep food animals healthy without the use of antibiotics, synthetic hormones and chemicals.

At the 2014 MOSES Organic Farming Conference, Guy will present the workshop “Healthy Organic Dairy Calves and Heifers.” He also will teach a pre-conference Organic University course, “Good Start: Organic Dairy Calves and Replacements.”
Researcher looks at reasons women enter farming

By Clare Hintz

As a beginning woman farmer, I am keenly aware of how many women there are in sustainable agriculture, and the many great role models I have. When I went back for my Ph.D., I decided to focus on the stories of some of these amazing women.

Women comprise over 30% of farmers practicing agriculture in the United States and are more likely to make conservation-minded choices than their male counterparts, according to a number of research studies. For sustainable agriculture practices to increase, though, we need to understand how women farmers learn the values and skills that shape their work. In the fall of 2012, I interviewed five women who are permaculture designers and farmers practicing ecological agriculture in Wisconsin and Michigan, then wanted to better understand their relationship to their lands, their perspectives on their work, and how both dynamics manifest on their farms. The women in the study saw their work with their lands as a creative response to the socio-ecological crises of our times. Some additional patterns also showed up:

- All expressed an ethic of land care that came from a childhood experience in nature.
- All of the women mentioned feeling compelled to farm or garden; their work was a strong component of who they were, not just a job.
- The women all described a sense of paying attention to the land as an entity in its own right.
- All five women described some way in which working with the land had changed them or led them to question the way things were.

For all of the participants, a sense of ecological consciousness, patience, and humility had developed through their work. When asked what they hoped for, all of the women expressed their longing on societal terms rather than personal ones. For the women in my pilot, their work was about active hope for the world. This winter I am beginning my dissertation research by widening the project to collect more stories from experienced women farmers. I want to know what transformational experiences—of land, community, and work—lead and sustain women farmers. My hope is that this research will lead to an increased awareness of stories of successful women farmers, and the growth of sustainable agriculture.

If you are a woman farmer in Minnesota, Michigan, or Wisconsin who has been farming organically or sustainably for at least 10 years, and would be interested in participating in this project, please contact me. All the work will happen this winter, with one small project and a farm visit in the summer. You can reach me at elsewherefarmherbster@gmail.com.

Second, consider what to plant. A soil full of brown carbon won’t grow the best grasses since they need soluble nutrients. If this option doesn’t exist, then what? We have planted oats and peas in the spring, worked them back in shallowly, then planted a fall seeding crop with clover under-seeded. This is after we made shallowly, then planted a fall seeding crop with clover under-seeded. This is after we made mineral corrections. We are essentially converting CRP land to grazing often makes low-quality pasture. Even if you’re not planning on returning your CRP land to crop production, it is important to take a soil test and apply missing minerals. I don’t want to make it sound like you should be looking at this ‘gift horse’ of already certifiable land in a negative light. I just want you to be aware of the challenges that you may face.

One method I hear farmers say they like is plowing up CRP land and planting soybeans. Soybeans, being legumes and a biological crop, don’t need as many soluble nutrients. If you take this route, make sure that you inoculate the seed with Rhizobium—you do need nitrogen from somewhere. Usually CRP fields are almost weed-free. Many beginning organic farmers say this makes weed control easy on converted CRP land. However, there are always some weeds, which means there are fresh weed seeds. And with all the tillage, you will destroy soil structure if you keep working the ground, making it more prone to weeds. I hope this article has helped you think about what’s required to transition CRP land into productive cropland. Start this process with a realistic view of what you’re getting into. Organic farming is taking care of the land; it’s “clean” farming—clean air, clean water, and clean, nutritious, mineral-rich crops. That’s why people support organic production and are willing to pay a premium price for what we grow.

Gary Zimmer heads Midwestern Bio-Ag Products & Services, a manufacturing and consulting company that provides products and services for sustainable agriculture. He is also an on-farm consultant and manages the company’s learning center and Otter Creek Organic Farm.

Leilani Zimmer-Durand, Director of Research at Midwestern Bio-Ag, contributed to this article.
New members join MOSES’ board

Sylvia Burgos Toftness and Mike Bollinger have been elected to the Board of Directors for MOSES. They fill seats vacated by Roger Blobaum and Linda Halley, whose terms ended in November.

Sylvia and her husband, David, raise 100% grass-fed beef on their 72-acre farm, Bull Brook Keep, in western Wisconsin. A public relations consultant in the nonprofit, business and government sectors for more than 35 years, Sylvia strives to spotlight the connections between what we eat and how it’s grown through beef sales, farm visits, producing and hosting her weekly Deep Roots Radio show (www.wcparradio.org), and through From the Farm to the Barn, a blog about her journey from city life to farming.

Mike and his wife, Katie, own and operate River Root Farm, a certified organic diversified produce and seed farm located nearDecorah, Iowa. Their operation includes unheated high tunnels. They partner with Seed Savers Exchange and A.P. Whaley Seed Company to provide quality transplants, seed stock and new trial varieties. Mike has extensive experience providing training and technical assistance in all aspects of organic farming. He also co-founded Four Season Tools.

Sylvia and Mike were elected at the annual meeting of the MOSES Board of Directors in November. The board provides governance to the organization. A majority of the board members are certified organic farmers.

Other current board members are: David Abazs, Dave Campbell, Darlene Coehoorn, Carmen Fernholz, Melinda Hemmelgarn, Nick Olson, Margaret Smith, and Carla Wright. Information about these members is on the MOSES website under the “About” tab.

Roger Blobaum served on the MOSES board from February 2005 to November 2013. He served as Treasurer from 2009 to 2011. As someone who has been involved in the organic and sustainable farming movement since its early days, Roger has made numerous contributions to MOSES, including helping to establish the Organic University, which provides in-depth courses the day prior to the annual MOSES Organic Farming Conference.

Roger recently received the 2013 Honorary Recognition Award from the University of Wisconsin’s College of Agricultural and Life Sciences for making significant contributions to organic farming.

Roger currently is working with the Wisconsin Historical Society on a national organic and sustainable agriculture history collection. He writes about this project and his new organic history website in this issue of the Organic Broadcaster. See page 4.

Linda Halley served on the MOSES board from 2005 to 2013. She was Board President from April 2010 to November 2012. Linda, too, has helped shape MOSES both through her work on the board and as a member of the Advisory Council for this publication.

Linda manages Gardens of Eagan in Minnesota, where she has helped develop the Organic Field School for training farmers and creating educated food citizens. In 2003, Linda was the first farmer to receive the MOSES Organic Farmer of the Year award. Details about her award are on the MOSES website under “Projects” and “Organic Farmer of the Year.”

Whole Foods Market is proud to support local farmers and food artisans. As a company Whole Foods Market is committing up to $25 million in low-interest loans to help small producers who need a hand, not a handout, to help make their dreams a reality.

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Whole Foods Market

Sylvia Burgos Toftness and Mike Bollinger (above) are the newest additions to the MOSES Board of Directors.

Sylvia Burgos Toftness

Mike Bollinger

Sustainable food advocate and author

Renegade farmer and author of Restoration Agriculture

Journalist and author of the syndicated ag column “The Farm and Food File”
Enhancing Agricultural Coexistence

MOSES was one of 10 organizations that signed a letter to USDA Secretary Thomas Vilsack last month requesting a 60-day extension of the Jan. 3, 2014 deadline for public comment on Enhancing Agricultural Coexistence (Docket ID Number: APHIS—2013–0047). The organizations involved believe that enhancing coexistence is one of the most critical topics in agriculture right now, so it is essential that the USDA gathers as much information as they possibly can. The extended deadline was requested in order to give people more time to comment after the busy holiday season and during the winter conference season. The letter also requested that farmers be given the opportunity to comment anonymously, yet still on the public record, since some topics such as economic loss can be highly sensitive. The deadline remained at Jan. 3 when the Broadcaster went to press. Watch for an update in MOSES’ Organic Link e-newsletter later in January.

Conservation Stewardship Program

The USDA’s Natural Resources Conservation Service (NRCS) has opened the Conservation Stewardship Program (CSP) for new enrollments. This program rewards farmers and ranchers for current conservation practices and for putting in place additional new conservation practices and enhancements over a 5-year contract period. It provides funding for the environmentally beneficial activities typical of organic farms to improve soil, water and wildlife habitat. Deadline to apply is Jan 17, 2014.

GMO Labeling Law in Connecticut

Connecticut made food history last month when Gov. Dannel Malloy (D) signed the first state law in the nation mandating the labeling of foods that contain genetically modified ingredients. Connecticut is the first state to enact such legislation, but the rules will take effect only after at least four other states enact similar laws. The bill also requires that any combination of four organic farms, local produce sales and community-supported agriculture programs in the state be required to label products. The law will be implemented over a 3-year period.

Whole Farm Technical Assistance

Pembroke Family Farming will offer a free Whole Farm Technical Assistance program to help small-scale, socially-disadvantaged farmers move from hobby to market farming. This 18-session program will cover marketing, production, and finances. It takes place Jan. 24 to Sept. 13, 2014 in Pembroke Township, Ill. See www.pembrokefarmingfamily.org/programs/enroll.

Research on Organic Milk

A team led by Washington State University’s Charles Benbrook has found that organic milk contains significantly higher concentrations of heart-healthy fatty acids compared to milk from cows on conventionally managed dairy farms. The study is the first large-scale, nationwide comparison of organic and conventional milk, testing nearly 400 samples over an 18-month period. Conventional milk had an average omega-6 to omega-3 fatty acid ratio of 5.8, more than twice that of organic milk’s ratio of 2.3. The researchers say the far healthier ratio of fatty acids in organic milk is brought about by a greater reliance on pasture and forage-based feeds on organic dairy farms. Read more at bit.ly/1XZgQM.

Farm Transitions Toolkit

The new online Farm Transitions Toolkit helps owners of farmland plan to leave their farms to the next generation. This comprehensive resource was created by the Land Stewardship Project (LSP) and the Minnesota Institute for Sustainable Agriculture (MISA). The Toolkit contains resources, links to services and practical calculation tables to help landowners establish a commonsense plan. It also features user-friendly resources on the economic, legal, governmental, agronomic, ecological and even social issues that must be considered. See http://landstewardshipproject.org/morefarmers/farmtransitionstoollkit.

Farmers who are considering how to maintain the organic integrity of their land may also be interested in the MOSES fact sheet: Estate Planning and the Sustainable or Organic Farm. See mosesorganic.org/publications/organic-fact-sheets.

Food Safety Modernization Act

After receiving over 25,000 comments and concerns about two of its proposed rules to implement the Food Safety Modernization Act, the Food and Drug Administration announced Dec. 19 that it will make significant changes to the rules. The FDA plans to publish the changes in the Federal Register for public comment by early summer. These include changes to sections covering water quality standards and testing, standards for using raw manure and compost, certain provisions affecting mixed-use facilities (such as a farm that has a food-processing operation), and procedures used to withdraw the qualified exemption to these requirements for certain farms. Other changes may be included, once FDA staff have had time to review all concerns.

To read the National Sustainable Agriculture Coalition’s blog reacting to the news, see sustainableagriculture.net/blog/food-safety-rule-revision-plan. See a summary of MOSES’ comments on FSMA at mosesorganic.org/policywork/take-action.

Legal Guide for Direct Farm Marketing

The Drake University Agricultural Law Center recently created an online version of the Legal Guide for Direct Farm Marketing, a 1999 publication by Professor Neil Hamilton. The guide has an extensive checklist, video interviews with farmers and other direct marketing experts, an interactive “Ask Drake” feature, and a state-by-state listing of organizations and agencies that can provide more information. The guide covers legal topics including business entity selection, taxes, contracts, labeling, land use and property law, labor and employment, and food safety and licensing.

USDA Web Resource Center

The USDA has created a centralized web resource center at USDA.gov for all the programs, services, and data we have that support organic agriculture. The site explains organic agriculture to those unfamiliar with it, and offers resources for experienced organic farmers. These resources include information about conservation programs, insurance, loans, market pricing, and more. It also includes links to local USDA offices. See bit.ly/organic-usda.

2014 CSA Directory

Community Supported Agriculture (CSA) farmers in Minnesota or western Wisconsin may submit a description of their farm operation for inclusion in the Land Stewardship Project’s 2014 CSA Directory. Submissions are due Monday, Jan. 14, 2014. The directory, which is in its 18th year, will be available to farmers and eaters in February. It is distributed for free upon request or is available at www.landstewardshipproject.org.

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FDA & Antibiotic Resistance

The FDA has issued a guidance document on their new regulations to fight antibiotic resistance by phasing out antibiotic use with farm animals. These voluntary measures for drug manufacturers and livestock producers plan to reduce the use of specific antibiotics in livestock production, like drugs used for growth enhancement. Therapeutic use of certain antibiotics would also be removed from over-the-counter availability, and would instead require a veterinary prescription in order to administer them to animals. The livestock and drug industries have indicated that they will go along with the FDA’s new guidance, but the plan has also drawn mixed reactions. Some people see it as an important first step, while others view the voluntary measures as not enough and easily evaded.

Value-Added Producer Grants

The USDA competitive grants program is designed to help organic and socially disadvantaged farmers to enter into value-added activities. Grants are available to help agricultural producers create new products, expand marketing opportunities, support further processing of existing products or goods, or to develop specialty and niche products. The maximum working capital grant is $200,000; the maximum planning grant is $75,000. Funding priority is given to socially disadvantaged and beginning farmers or ranchers, and to small- to medium-sized family farms, or farmer/rancher cooperatives.

Organic producers should receive a letter with the survey in February, and will have until March 15 to complete it.

Organic Market News

Looking for the regional and national prices of organic milk, chicken, or carrots? The USDA Agricultural Marketing Service (AMS) collects and publishes data on prices, volume, quality, condition, and more at bit.ly/ams-market-news.

The USDA Agricultural Marketing Service (AMS) and the National Agricultural Statistics Service (NASS) will survey self-identified organic producers to learn how organic producers obtain market information, how they price and market their products, and their familiarity with current market information, how they price and market their products, and their familiarity with current information made publicly available by the AMS. The goal is to build better tools to serve the information needs of the organic sector.

Organic producers should receive a letter with the survey in February, and will have until March 15 to complete it.

AMS Market News will make the results public, and use the data to enhance organic market coverage for the benefit of organic producers, handlers and consumers nationwide. For additional information or questions about the survey, contact Terry Long, Director of Fruit and Vegetable Market News at 202 720-2175 or terry.long@ams.usda.gov.

Organic Commodity Pricing Resources

**Organic Milk Prices**

NODPA
30 Keets Rd, Deerfield, MA 01342
PHONE: 413 772 0444
www.nodpa.com/payprice.shtml

**Organic Livestock Prices**

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

CROPP Cooperative Grower Pool
Organic Trader Newsletter
farmers.coop/feed-program/organic-trader/1-888-809-9297

**Rodale Organic Price Report**

www.rdaleinstitute.org/Organic-Price-Report

**Where to Buy and Sell Your Organic Products**

MOSES Organic Resource Directory
Online: mosesorganic.org/publications/
organic-resource-directory
Print: Request at 715-778-5775

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**National Organic Grain and Feedstuffs - Bi-Weekly**

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**Contacts/Other Items:**

- Alfalfa Premium Large Square: 100.00 ID
- Feed Corn - NC Contract: 12.00 Mar Del

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**Organic BrOa dcaster   |   January • February 2014**

**Cover Crop Insurance Webinar**

The National Sustainable Agriculture Coalition and The National Center for Appropriate Technology will present a webinar on crop insurance and cover crop termination guidelines to prevent people from losing their cover crop insurance. The webinar will be at 1 p.m. Jan. 29, 2014. To register, go to www2.gotomeeting.com/register/789127970.

**National Sustainable Agriculture Standard**

Leonardo Academy has announced a public comment period closing on March 6, 2014 for the National Sustainable Agriculture Standard (LEO-4000). The standard recognizes producers working at all levels towards sustainability and will provide them with more guidance and opportunities for recognition. The draft standard is online at leonardoacademy.org/services/standards/agsstandard.html.

**School for Organic Processing Entrepreneurs**

The Organic Processing Institute (OPI) will offer a School for Organic Processing Entrepreneurs for the first time on Jan. 14, 2014. These 15 weekly sessions will be held in Madison, Wis., or remotely through a streaming video. The OPI is a nonprofit that works to increase the organic business sector in the upper Midwest states, but these sessions will be available to anyone curious about organic. Class size will be limited in order to create better discussion. To register or access materials, go to organicschool.org/spee.

**Fund-a-Farmer**

Food Animal Concerns Trust’s (FACT) “Fund-a-Farmer” Project gives grants to projects that help family farmers and ranchers to pasture-based systems, create better conditions for their animals, or improve their marketing. The grants will continue in 2014, with the maximum award increased to $2,500. An application form will be posted in January at www.foodanimalconcerns.org. Applications will be due in June, and the grants will be awarded in August.

**Japan Trade Agreement**

Beginning Jan. 1, 2014, organic products certified in Japan or in the U.S. may be sold as organic in either country. For the first time, certified organic farmers and businesses in the U.S. don’t have to prove that they didn’t use a specific substance or production method to gain access to the Japanese organic market. USDA organic plants, fungi, and plant-based processed products (such as grape juice or corn meal) can be sold as organic in Japan. Products must have an export certificate (TM-11), completed by a USDA-authorized certifier. Organic products not regulated by this agreement, such as meat, dairy products, and alcoholic beverages, do not require an export certificate and may be labeled with the USDA organic seal. Learn more at www.ams.usda.gov/NOPTradesJapan.
For Sale: Red Dragon row crop flamer. Set for 12 row 30” spacing with cart and 500 gallon tank. 2-inland heavy duty tarps for covering hay bales, PVC reinforced edges with draw string rope, 35’ x 48’. Adam 715-570-8214.

For Sale: Compost tea brewer. Growing Solutions Model #100. Used very little, in great working condition. Asking price $2,000. Ray, 630-365-5700 or rfox@ballhort.com.

For Sale: Natural young cows and springing heifers due in early spring. All are on a no-grain ration. Cedar Summit Farm New Prague, MN, 952-212-9506.


FORAGES


For Sale: 100 5 X 6 certified organic round bales, first cutting, alfalfa and grass mix. Brian, Terre Haute, 317-431-6302, brianandave@yahoo.com

For Sale: Certified organic hay, 3 x 3 x 8 medium square bales, 1st and 2nd cutting, grown in NW Minnesota. Tests are available, 218-866-2946.

GRAINS


For Sale: Certified organic corn. Greenfield 114, one of most productive OP dents. Also Hutcheson soybeans, other field corns, tomato varieties. Genesis One Seeds, 417-885-7787.

OPPORTUNITIES

Opportunity: Looking for 2-3 full-time apprentices to work on a certified organic vegetable farm in Central IL for 2014. Housing, food, a generous stipend and a memorable, educational and fun experience provided. Experience all aspects of growing vegetables for market, CSA and wholesale. Opportunities for more experienced farmhands too. Get more information on our website: www.prairiertharm.com/ Prairie_Earth_Farm/Appren-tice_on_the_Farm.html or call Hans 309-824-0484.

Opportunity: Family farm and greenhouse looking for person or couple interested in becoming more than just a hired hand. Send detailed Resume to: Bashaw Valley Farm, W7402 Fox Trail Road, Shell Lake, WI 54871. Check out bashawvalley.com for more information.

Opportunity: Camp Hill Village Minnesota is an intentional community of approximately 60 people, including adults with developmental disabilities, located on a 500-acre biodynamic farm just north of Sauk Centre in Central Minnesota. People live together family-style in seven different homes. Everyone shares in the responsibilities of life in the community. We are actively seeking seasoned gardeners who are interested in making a longer-term commitment, to carry the garden for a number of years. For more information contact Kristin Wilson, 320-732-6365 or camphill.mn@hotmail.com
Webinar: Hosting On-Farm Events
Jan. 17 | Columbia, Mo.
Randy Anderson will discuss the goal of his research program to develop a continuous no-till cropping system for organic producers. Cost to attend is $55 at the door; evntr.com or e-mail or 412-309-0944

No-Till Organic Crop Rotation Workshop
Jan. 17 | Columbus, Ohio
From zoning compliance to guest injuries and serving prepared food, work through a checklist of things a farm should address before hosting an event. www.farmcommons.org/webinars

Webinar: Late Blight of Tomato and Potato: Recent Occurrences and Management Experiences
Jan. 14 | 4 p.m.
Understand changes in the pathogen and share information among researchers and growers about managing late blight, the USA Blight monitoring program and the Decision Support System. www.extension.org

School for Organic Processing Entrepreneurs
Jan. 14-16 | Frederic, Wis.
Get help building an organic food company with info on business and operational issues, organic requirements and networking. www.organicprocessinginstitute.org

Practical Tools and Solutions for Sustaining Family Farms Conference
Jan. 15-18 | Auburndale, Wis.
The Southern SAWG conference offers informative pre-conference courses and field workshops, practical conference sessions, networking, trade show. Taste of Alumni event and more! www.sawg.org

Webinar: NRCs EQUIP Organic Initiative and Organic Dairy Farms
Jan. 15 | Free
Through USDA’s Organic Initiative, the USDA-NRCS provides technical assistance to producers for transitioning to organic, exempt from certification producers, and financial assistance for organic producers to address natural resource concerns related to organic production. Learn more at http://www.ext.org

22nd Annual Wisconsin Grazing Conference
Jan. 16-18 | Wausau, Wis.
3-day conference includes information on managing grazing and soil health and learning opportunities for every grazer-beginning to advanced: grassworks.org

22nd Annual Ecofarm Conference – Gather & Grow
The EFA will present the 34th Annual Ecofarm Conference as the oldest and largest ecological agricultural gathering in the West. More than 65 educational workshops. www.ecofarm.org

Webinar: New USAID Crop Cover Termination Policy
Jan. 18 | 4 p.m.
This webinar will feature short presentations by experts in cover crops and crop insurance policy explaining the new cover crop termination guidelines and then answer any questions. www.agromonitoring.com/ register/789127970

15th Annual Midwest Value-Added Agriculture Conference
Jan. 23-24 | Milwaukee, Wis.
Valuable education for small-scale farmers, regional educators and farm professionals. Keynote speaker Mark Kastel. mrkastelcountyrd.org/salud.html

Practical Farmers of Iowa Annual Conference
Jan. 30-31 | Ames, Iowa
Examine permaculture and grazing systems, discuss profitable vegetable systems, biodiversity on farms, and nonfarmers building partnerships with farmers. practicalfarmers.org/events/annual-conference/html

15th Annual Winter Conference, Northern Plains Sustainable Agriculture
Jan. 23 | Abderdeen, S.D.
“Housing Our Roots: Celebrating 35 Years” featuring Melinda Hemmerl- gars and Bill Winter at keynote. npus.org/simpson/eventbooking

Webinar: Workers and Employers
Jan. 29 | 6 p.m.
This webinar will explore the options and guide farmers through legal considerations. www.farmcommons.org/webinars

Conservation Cropping Seminar
Jan. 29 | Mendota, Ill.
One-day session offers information and education for farmers interested in learning more about soil health improvements, cover crop success, and wise nutrient management. www.cnfsd.com

7th Annual Organic Seed Growers Conference
Jan. 30-Feb. 1 | Cornelius, Ore.
Two days of presentations, panel discussions, and networking events. Farm visits and short courses prior to the two-day conference. seedalliance.org/events/organic_seed_growers_conference

8th Annual Wisconsin Local Food Summit
Jan. 31-Feb. 1 | Wauwatosa, Wis.
Numerous breakout sessions and regional discussions focused on CSAs, value-added foods and regenerative agriculture. www.wife-foodsummit.com/summit/summit-2014

Immigrant and Minority Farmers Conference
Feb. 2 | St. Paul, Minn.
Minnesota Food Association, Association for the Advancement of Hmong Women of Minnesota, USA – Farm Service Agency and Natural Resource Conservation Service host. www.thedatabank.com

Missouri Organic Annual Conference
Feb 4 & 5 | Springfield, Mo.
Speakers include Dr. Hubert Karreman, Gary Zimmer and Dr. Francis Thieke. Over 50 educational sessions and hands-on organic workshops. www.missouriorganic.org

Sustainable Farming Association of Minnesota Annual Conference
Feb. 5 & 6 | St. Joseph, Minn.
20 sessions led by experts, focusing on the wisdom and needs of the Min- nesota sustainable farming community. www.sfa-mn.org/conference


Moses Organic Farming Conference
Feb. 27-29 | Mt. Vernon, Ill.
The country’s foremost educational event for the organic community with 60 workshops, 170 exhibitors, activities from dawn to after dark. Keynotes are Anna Lappé, Mark Shepard, Alan Gurbet. mosesorganic.org/conference

Conservation Cropping Seminar
Feb. 27 | 6 p.m.
Learn about the biology and management of spotted wing Drosophila and the unique challenges and approaches that are relevant for organic producers. www.extension.org

15th Annual MOSES Organic Farming Conference
Feb. 27-29 | La Center, Wash.
The country’s foremost educational event for organic growers with 60 workshops, 170 exhibitors, activities from dawn to after dark. Keynotes are Anna Lappé, Mark Shepard, Alan Gurbet. mosesorganic.org/conference

Webinar: Selling Products to Larger Buyers
Feb. 10 | 4 p.m.
Farmers: learn how to work with operations such as hospitals, food service operations, and grocery stores who buy local food. www.farmcommons.org/webinars

Webinar: Biologically Based Organic Management Strategies for Spotted Wing Drosophila
Feb. 11 | 7 p.m.
Learn about the biology and management of spotted wing Drosophila and the unique challenges and approaches that are relevant for organic producers. www.extension.org

Local Food Fair
Feb. 13 | Stevens Point, Wis.
Local food – free mini workshops. www.farmfood.org

2014 Healthy Farms Conference
Feb. 14-15 | Keene, N.H.
Workshops ranging from cover crops, rotational grazing, backyard chickens, holistic management, fermentation and more. healthy.farmconferences2014.eventbrite

35th Annual OFSFA Conference — Affirming Our Roots, Breaking New Ground
Feb. 14-16 | Granville, Ohio
Keynote speakers Kathleen Meginnis and Anna Dieff. 100 workshops on sustainable farming, gardening, homesteading, cooking, and livestock production. www.ofsfa.org/conference/2014.php

Conservation Tillage Conference
Feb. 18-19 | St. Cloud, Minn.
Practical information on nearly every aspect of conservation tillage. sites.google.com/a/larn.edu/conversion-tillage-center/home

Midwest Soil Health Summit
Feb. 19-20 | Alexandria, Minn.
Two days of networking, panel discussions and breakout sessions geared at improving the health of your soil. www.sfa-mn.org/midwest-soil-health-summit

Webinar: Starting a Farm
Feb. 20 | 7 p.m.
Learn about the fundamental issues. www.farmcommons.org/webinars

12th Annual MOSES Organic Farming Conference
Feb. 20-22 | La Center, Wash.
Focus on issues relevant to beginning farmers and those just getting started in the world of CSA’s. www.csaconf.org

Webinar: Adding Value to Farm Products
Mar. 1 | 7 p.m.
Learn about how employment laws, liability potential, state/federal regulations, and tax factors all change when a farm begins to process product. Farms relying on cottage food laws should make sure to attend. www.farmcommons.org/webinars

Conservation Cropping Seminar
Mar. 7 | 6 p.m.
Information and education for farmers interested in learning more about soil health improvements, cover crop success, and wise nutrient manage- ment. www.cnfsd.com

Webinar: Using Contants (Coniethium minitians) for White Mold Management on Organic Farms
Mar. 1-7 | St. Louis, Mo.
www.extension.org

Michigan Farmers Market Conference
Mar. 6-7 | East Lansing, Mich.
Three tracks led by experts in farmers market management and agricul- ture: market manager boot camp, advanced track, and farmers market track. www.miifma.org

CSA Expert Exchange
Mar. 8 | 7 p.m.
Focus on issues relevant to beginning farmers and those just getting started in the world of CSA’s. www.csaconf.org

Webinar: Good Food Festival & Conference
Mar. 10-12 | Chicago, Ill.
Good Food Trading, Innovation Conference on Thursday, Good Food Trade Show, Food Policy Conference and School Food Conference on Friday, and the Good Food Fair and Workshops on Saturday. goodfoodfestival.com

See more details on the Community Calendar at moseorganic.org