

the PRACTICAL FARMER

SUMMER 2019



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Leaving Space for Wildness

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From Land Protection to Land Access

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Sheep rotationally graze in pasture at Joia Food Farm, a diversified crop and livestock farm operated by Wendy Johnson and Johnny Rafkin near Charles City. The couple hosted a PFI grazing group on June 9.



WHAT WE DO

Practical Farmers of Iowa was founded in 1985 as an organization for farmers. We use farmer-led investigation and information sharing to help farmers practice an agriculture that benefits both the land and people.

OUR MISSION

Practical Farmers of Iowa's mission is equipping farmers to build resilient farms and communities.

OUR VISION

An Iowa with healthy soil, healthy food, clean air, clean water, resilient farms and vibrant communities.

OUR VALUES

Welcoming everyone

Farmers leading the exchange of experience and knowledge

Curiosity, creativity, collaboration and community

Resilient farms now and for future generations

Stewardship of land and resources

THE PRACTICAL FARMER

the Practical Farmer is published quarterly as a benefit of membership to help keep farmers and friends of farmers in touch with one another through informative articles on relevant farming topics, current on-farm research, upcoming events and other news of interest.

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The Power of Community

Why do you farm? And to our friends of farmers, what attracts you to farming? This may be a question we don't ask ourselves often enough. Or in challenging times, it may be a question we ask ourselves too often. It is clear, though, that there is something about agriculture that draws us. We may differ in our religious, political or social opinions, but we all share the love of agriculture. Practical Farmers of Iowa has taken this love one step further and facilitated the cultivation of community. PFI is a powerful organization. I don't mean in the lobbying sense, but in the people sense.

We get through challenging times because of the power of community. Farming and ranching are occupations that require copious amounts of perseverance. The work entails so much risk and decision-making mixed with so many uncontrollable variables: weather, market variability, land access, demand and supply, too much government, too little government, changing consumer behavior, rising interest rates, low profit margins – and the list goes on and on. Are we crazy for taking on this life of so much unpredictability? Most of you are probably shaking your heads no. I think you'd agree, farming is meaningful work. We do it for the love of soil, growing food, putting seeds in the ground, witnessing a calf born, seeing a child's delight holding baby chicks. We feel pride in that bumper crop of corn or sugar snap peas, and the smile and thank-you from a customer at the farmers market. The list of why we farm most likely outweighs all the unpredictable variables stacked up against us. Who better to share our joys and heartaches with than our peers and community that make up the membership of Practical Farmers of Iowa?

Some of us are working through the devastating flooding we had this spring – and we all witnessed how destructive perfect storms can be. As we can't always prevent these events from happening, let's ask how can we become more resilient – physically, emotionally and financially? I believe community holds the answer to many of these questions.



Wendy Johnson with her husband, Johnny Rafkin, and their daughter, Vivienne, on their diversified crop and livestock farm near Charles City.

Farm viability is a topic worthy of more discussion during this time when the farm economy is depressed. PFI was created during a time when the outlook of agriculture was bleak. The organization was developed on hope and optimism, and the idea that there was a better way to continue farming while generating a profit. As we return to a phase in the cycle where costs are once again sometimes outweighing profits, we have an important tool in our toolbox: the community we've built through PFI. Through this unique network of people, we can gather outside-the-box ideas and continue researching new and soil-building ways to farm and keep farming. We can move forward together with that same hope and optimism that first united the founding members of PFI.

I recently read "Nourishment" by Fred Provenza. Among many interesting research studies on behavioral ecology, he touches on happiness and longevity as it relates to humans. Much of our well-being not only comes from diet and lifestyle, but from our relationships with others, sharing a sense of community and purpose. Practical Farmers of Iowa uniquely connects agriculturalists who share the purpose of land stewardship, and through our conversations and

interactions, creates a sense of community. Our 2019 annual conference keynote speaker, Michael Phillips, said it too: "The evolution across biological kingdoms points relentlessly to cooperation and support networks as the way to proceed in life." My interpretation is that we are like the fungi and the microbes, sharing, trading and cooperating. In this analogy, Practical Farmers represents soil health, the result of strong community-building.

Thank you for being a member of an organization that meshes our commonalities, empowers farmers, harnesses curiosity and opens us to a broader audience. Practical Farmers brings agriculture in your sense of the word, to the forefront and brings us together as we steadily march forward dedicated to viable and strong farms and resilient communities. You are all the voice of this organization and we love to hear you sing.

Stay curious friends,

Wendy Johnson
President, Board of Directors

A Return to Scouting

For the Zellmer family, scouting fields is an integral facet of management

Integrated pest management emphasizes employing a diverse set of strategies to mitigate risks based on observations from the field. But as chores go, crop scouting is easier said than done. In theory, it's simple to walk your fields, assess what's happening and make adjustments based on what you see. But as farms get bigger, it has become a challenge to keep tabs on what's going on across an entire farm.

When making management decisions, farmers often have no choice but to rely on hired scouts or data provided by the technology that's part of every new piece of farming equipment. In the modern farm economy, walking the fields can almost seem old-fashioned. But for some PFI farmers, scouting is an integral part of a multifaceted approach to monitoring fields. These farmers are also finding that taking a proactive, rather than reactive, approach to pest management can pay big dividends.

Approaches to Pest Management

Factors that influence a farmer's approach to pest management include farm size, location and individual differences in personality or management style. If a farm is very large or spread across several counties, doing spot checks in every field might be daunting or impractical; these farmers often hire a crop consultant to do their scouting for them. Other farmers rely on the farmer network. They listen to the talk at the coffeeshop or wait until they see neighbors out flying a plane and follow suit. Some farmers lean on personal experience. They've had good results and thus go with "the usual," applying the same inputs every year based on the calendar or plant stage.

Other farmers take a more hands-on approach, opting to scout their own fields. These farmers stay attuned to pest activity by closely monitoring insects, weeds and pathogens. Alison Robertson, Iowa State University extension field pathologist, encourages farmers to adopt this more hands-on management style. "I like to say that in those years where you don't need

to spray, you could take your family on a vacation to the Caribbean in the middle of February," Alison says. "Wouldn't that have been nice this past winter?"

PFI member Alan Zellmer raises field crops and cattle on his fifth-generation family farm in southwest Iowa. He says he makes a point to visit every field every seven days, and not just when crops are growing. "Scouting eliminates a lot of surprises, and I think that's very important," Alan says. "I'm on offense, not on defense. Just a year ago, we hired a drill operator and he left me 'rabbit

"Scouting eliminates a lot of surprises, and I think that's very important. I'm on offense, not on defense." - ALAN ZELLMER

runs.' We fought those strips being weedy all summer long. That proved two things: Not only does the rye cover crop cut back on how much herbicide we have to spray in the first place but, it also emphasized just how important it is to get out there and see what's going on. That way you can tackle the problem head-on."



Scouting won't always reduce the number of inputs, but by applying the right tool for the job at the right time, farmers can get more bang for their buck. Erin Hodgson, ISU extension entomologist, recommends getting into every field every seven to 10 days. "Some insect pests, like aphids, can have exponential growth, doubling populations every two or three days," she says. "Waiting a month is going to be too late in many cases." Similarly, a single waterhemp plant can produce up to 250,000 seeds. With potentially hundreds of plants growing in fields, weed pressure left unchecked can spell big problems. Correctly identifying pests in the field is critical for selecting the correct tools to economically manage the issue.

Reducing Pests Through Diversified Rotations

There's no silver bullet that will give you a pest-free farm, but experts and farmers agree that diversifying your rotation is the single most effective cultural practice to reduce pest pressure. "Most of the pathogens we're dealing with are surviving on residue," Alison says. "In a corn-soy rotation, the disease is more likely along the border where a corn-on-soy field meets a soy-on-corn field, and once it's there, it spreads."

Erin adds: "A lot of pests aren't mobile, they're host-specific. If that crop isn't present in the field, it's a death sentence." For Alan, adding cover crops to his corn and soybeans not only reduces disease pressure, it has a direct effect on his bottom line. Alan hires an air seeder to get rye on early into standing corn and then no-tills beans into that cornstalk-rye mix the following spring. "We call them 'rye beans,'" he says. "For the last six or seven years, they've dramatically outproduced our conventional beans. I can't believe it sometimes."

Many farmers like to scout from the road – but Alison says this is a common mistake that can lead to the unnecessary application of inputs. "It's important to walk in from the edge where many pests and diseases – like gray leaf spot or northern corn leaf blight – thrive because there's more light or more grasses," she says. "You might end up treating 160 acres for a problem that's only



Above: (Left): Alan Zellmer regularly scouts his crop fields to stay ahead of surprises and make more informed management decisions. **(Right):** The Zellmer family. Alan is in the front row, second from left, holding a dog in his lap. **Opposite:** In 2018, there was a huge outbreak of frogeye leaf spot across the western half of Iowa and it caused some yield damage. The people who scouted their fields noticed it and sprayed a foliar fungicide. *Photo courtesy of Daren Mueller, assistant professor and extension plant pathologist at Iowa State University*

on the outside edge. Avoiding that requires walking to several different locations within that field. For example, if the field slopes, go to the bottom and compare it to the top. Different things will be going on in the high and low ground."

To get a representative sample of what's going on in your field, Alan suggests walking in a W shape or a zigzag pattern. "I take random routes across the farm and across the field on an ATV," he says. "I use my smartphone to take pictures and if there are any issues, I share them immediately."

Scouting With Technology

Smartphones, social media and other technological advancements make scouting today easier than it's been in the past. Alison notes that state crop pathologists are using social media as a way to crowdsourcing data and rapidly share information. "They're particularly fond of Twitter," she says. "Farmers can tweet pictures of what they're seeing and what county they're in to @corn disease and @soybeandisease, and the date is embedded. When you see that someone in the county next to yours is starting to see leaf spot, you are more likely to head out and scout for it in your own fields."

Alison adds: "Even without a researcher's knowledge of the diseases most likely to

"Most of the pathogens we're dealing with are surviving on residue. In a corn-soy rotation, the disease is more likely along the border where a corn-on-soy field meets a soy-on-corn field, and from there it spreads."

- ALISON ROBERTSON

affect corn in V5 or V6, for example, you can use social media to help you narrow down what you're looking for, which makes it easier to find."

Alan is also exploring the use of drone technology to assess his fields in the present and make projections about the future. "My son has a drone and we're starting to venture into that field," he says. "We're not experts, but we can use what we see to assess weed pressure and also estimate yields and tonnage. If our crop is falling short, at least we know ahead of time and can plan to chop corn."

Using IPM to Learn and Adapt

So how can scouting today lead to a healthier bottom line tomorrow? It's the

cumulative learning process and how that affects your decision-making, Alison says. "Once you get familiar with your field and are aware of the problems, you can make better management decisions not just this year, but in future years," she says. "For example, say you have a gray leaf problem. This year, that might mean spraying a fungicide, but next year that might mean choosing a resistant variety so that you no longer need a fungicide."

While crop scouting helps Alan make farm management decisions, he finds that collaboration is ultimately what drives progress.

"At times, we get overloaded with data. One field may receive a considerable amount of green snap and the field right next to it has no difference," Alan says. "Then it's time to circle the wagons. The combined knowledge of my family, the farmer network, my reps and consultants, and my own experience are how I determine the best path forward. Are there going to be failures? Absolutely. But they won't strike twice." ■

Farmers From Birth

Jeff and Gayle Olson find community and knowledge through PFI

Jeff Olson always knew he wanted to farm. He lived part of his childhood on a Henry County farm parcel that had been in his family in the late 1880s.

“I got addicted to farming playing in the dirt with my farm toys,” Jeff says. “Indoors, the oak flooring in our farmhouse was my rows. I’d go out and pick plantain heads, which look like mini ears of corn, plant them and then go up and down the rows with my toy tractor.” With the future of the family farmland in question, Jeff’s parents moved to the town of Swedesburg when Jeff was nine. Jeff says, “I just hated living in town because I wanted to farm so bad.” Gayle Olson grew up in Castalia in northeast Iowa on an 80-acre farm. “In the hills where I grew up, you had to take care of the soil or you lost it. You couldn’t grow crops on it if you didn’t figure out how to keep the soil on the hill.” This led her dad to grow crops in a long rotation to feed their livestock, while also working as a bulk milk hauler.

Farm Story

After Jeff received a bachelor’s degree in engineering and master’s degree in agriculture from Iowa State University, he returned home and worked multiple off-farm jobs. “I worked for anybody who would hire me. I worked for my farmland landlord driving a truck. I built grain elevators.” After receiving a bachelor’s degree in sociology and a master’s degree in family and consumer science education from ISU, Gayle worked in extension in youth and community development, first in Henry County, then in Louisa County. While building their careers, Jeff and Gayle pieced together farmland to rent and purchase to build their farm enterprise.

Jeff and Gayle currently farm about 1,300 acres and own about 330 of those acres. They rent from Jeff’s family, as well as a family who operates a corporation called Scattered Acres. Both the family land and Scattered Acres, as the name implies, contain multiple detached parcels. “It’s very inefficient,” Jeff says, “but it’s the land available for us to farm.” Jeff and Gayle have

tried to purchase more farmland contiguous to their home place, but other operations in the neighborhood are aggressively trying to expand their land base. Jeff and Gayle farm a combination of organic and conventional crops, and raise some livestock. “We worry about certifying rented ground organic, since we don’t own it,” Jeff says. “If we had more connecting land, we could put fences up and raise all kinds of livestock.”

He adds that hard work has ensured they have always been able to make money farming. “Organic helped us get into specialty products, and we’ve had good success. We’ve had some failures, too.” In addition to premiums for organic, Jeff and Gayle have received a premium for a multitude of niche products, like non-GMO beans and corn, white corn, blue corn, high-

“Being able to talk to other people who are doing wild and crazy things, both the education and the pure support, is crucial to how we’ve shaped our farm.”

- JEFF OLSON

starch corn, International Organization for Standardization soybeans and low-linoleic soybeans. These premium crops require considerable paperwork, but the Olsons are well-versed with paperwork because of 50-50 crop-share arrangements. “We already ID-preserved stuff,” says Jeff, explaining how some bins are “mom and us,” others are “cousins and us.”

Jeff believes that farming “correctly,” including rotating crops, takes a lot of work. “It takes a lot of farmers, and we don’t have enough farmers to do it right,” Jeff says. “As we’re getting older, I’m worried about physically being able to keep up with everything.” Fortunately, Jeff and Gayle’s son, Ian, works on the farm. So does Jesse, a friend of Ian’s. “Jesse didn’t grow up on a farm,” Gayle says. “But he has a huge work ethic and loves being outdoors and able to spend time with animals. He’s been a really good fit.”

PFI Involvement

Now lifetime members, Jeff and Gayle have been PFI members since 1989. Research and demonstration has taken place on family farmland since the 1880s, when Jeff’s great-great-grandfather, in exchange for product, put in a tile demonstration project on what is now well-traveled U.S. 218. Jeff and Gayle have done their own on-farm research, including a project with the Iowa Natural Heritage Foundation and Super Crost Seeds, along that same visible roadway.

Jeff first met PFI co-founder Dick Thompson in college during an Agricultural Engineering Society meeting in 1976. He met Dick again as a soil and water commissioner in the late 1980s. Dick had heard of Jeff and Gayle’s research through Gayle’s work at ISU Extension. Practical Farmers needed a researcher in southeast Iowa, and Jeff and Gayle were ideal members. They were already conducting on-farm research, and were practicing ridge-till and strip-till. The Olsons participated in early PFI trials like late-spring soil nitrogen tests, strip intercropping, ridge-till with and without herbicides and many more. In 2013, Gayle and Jeff received PFI’s Master Researcher award for conducting at least 20 on-farm trials through Practical Farmers, and holding at least five field days to share knowledge gained. From 1990 to 1997, Jeff served as a Practical Farmers board director. He is proud of recruiting David Lubben and Susan Jutz to the board, both of whom served as board president. Since 2017, Gayle has served as a board director as well.

Jeff says some of his favorite early farming memories were of crews working together. “The corn-shelling crew, hay-baling crew or barn-raising crew,” he says. “Camaraderie and working toward a common goal, especially helping someone out, makes you feel good. That doesn’t happen much in local communities anymore. Our PFI network helps bring back this camaraderie.” Through their involvement with PFI, Jeff and Gayle have helped foster that sense of community the organization creates.



Jeff and Gayle Olson pose on their farm with their Australian shepherd dog, Gusto, and the Scottish Highland cattle they keep at their home pasture.

"Being able to talk to other people who are doing wild and crazy things, both the education and the pure support, is crucial to how we've shaped our farm," Jeff says. Gayle adds: "You can say things to other PFI members that you'd get made fun of if you said out loud to your neighbors. The access to knowledge that comes from old-timers and their depth of experience, and new-timers and their on-farm research, is invaluable. Information sourced through PFI is especially critical as public funding has decreased, and more land-grant university research is funded by agribusiness. There's such a strong railroad train going in the direction of industrial ag. There's still a lot of people who don't want to farm that way – who don't think it's best for the land, for their families or for their planet."

Looking to the Future

Practical Farmers now has over 3,500 members – and Gayle believes this growth will increase PFI's visibility and reach, including PFI's ethos of inclusivity. But she also notes that a bigger and more diverse membership will require members to stay focused on shared values. "With more members, it's more likely we will be respected and more people will take note

"Information sourced through PFI is especially critical as public funding has decreased, and more land-grant university research is funded by agribusiness."

– GAYLE OLSON

of the effectiveness of our collaborative learning model," Gayle says. "The diversity within PFI is a very good thing. It's important to share the concept that there are many ways to farm. As we get more diverse, we need to keep in mind the shared values that make us all part of the same organization. If we lose sight of those, we'll be in trouble."

Jeff sees on-farm research continuing to play a vital role in PFI's future: "There are a lot of snake oils to research and prove or disprove through PFI on-farm research. We have to acknowledge that what really works is Mother Nature's prairie definition. Diversity and keeping land covered. We need to work better to emulate the prairie."

Gayle echoes Jeff's sentiment. "We need roots in the ground all year round," she says. "Our future generations deserve the

opportunity to farm. There are people who want to farm in ways that are more in harmony with the planet. The emphasis needs to be more on that than only making money."

Gayle would like PFI to connect more with youth. Their daughter, Torey, took part in PFI summer camp, a past PFI initiative, as both attendee and counselor. "Camp was a way for Torey to be actively involved in PFI, to take a leadership role and feel a sense of identity," Gayle says. She and her fellow board members have helped bring youth programs back to PFI's priority areas. We will explore how to better connect with our young population over this next year.

These days, one of Jeff's favorite activities is doing chores with his granddaughter, Riley. "She loves to go out and ride on our UTV with me to check the cows." All three of Jeff and Gayle's children – Torey, Kinsey and Ian – are really interested in the future of the farm. Jeff and Gayle, like many Iowa farmers, don't yet know what that future looks like. Hopefully, with the help of their PFI friends, they will be able to set a course for the future of their farm that honors their values. ■

A Versatile Feed Source

Small grains offer a range of benefits to livestock, farmers and the landscape

Farmers have to remain productive and competitive in the marketplace while sustaining their natural resources. This requires them to adapt – and one way farmers have adapted is by using cover crops in their corn and soybean rotations.

Over crops help to control erosion, bind up free nutrients and suppress weeds. Small grains are commonly planted as a cover crop – but when grown to full maturity for grain, they can unlock additional environmental and economic benefits. When grown as a third crop in rotation with corn and soybeans, for instance, small grains help to build organic matter, break up compaction and produce biological nitrogen. They can be grown as feed grain, silage, or straw – options that provide economic and risk management benefits.

Nutrient Composition of Small Grains

Nutritionally, small grains are similar to corn, with a few differences. Small grains are higher in crude protein than corn and have a higher lysine content – a limiting amino acid essential in swine diets. Because of this, replacing corn with small grains in rations can lower feed costs because farmers can feed less of other ingredients like soybean meal, lysine and phosphorous. It's important to note that ruminants and monogastrics digest grain and forages differently due to their intestinal tract makeup. So how do various small-grains species compare to corn?

- Of all the small grains, **oats** have the highest fat content. Oats also have almost double the amount of lysine found in corn.
- **Wheat** contains more protein and lysine than corn, but the balance of amino acids in wheat is rather poor and wheat has a lower energy content.
- **Rye** is nutritionally more similar to wheat compared with all the other cereal grains. Compared to oats, rye has less fiber, which allows it to meet nutrient requirements across all stages of production without adding too much fiber.



Oats, on the left, and rye, on the right, are two types of small grains that can be used in place of corn in livestock feed rations. As with all cereal grains, however, it's important to know the nutritional profile.s.

- **Triticale**, a durum wheat and rye cross, is higher in protein and essential amino acids than corn. It expresses more of its wheat parent than its rye parent, resulting in good palatability and increased nutrient availability.

- **Barley** has a similar nutrient profile to corn, making it a versatile feed grain. Compared to other small grains, barley has a lower energy value than rye and corn. Like oats, however, barley has a higher fiber content than other small grains because its kernels are encased in a hull. Barley also has a high heat increment, which refers to the energy needed to digest it. Grains with a higher heat increment will make animals feel warmer due to the heat produced during digestion.

Ron Rosmann, of Harlan, feeds barley, oats, wheat and triticale, in combination with field peas – a mix called succotash – mainly to his pigs. “Field peas have 22-23% protein and barley is [nutritionally] equivalent to corn,” Ron says, “so there is no need to add any soybean meal to succotash.”

Feeding Ruminants Versus Monogastrics

Ruminant animals like cattle, sheep and goats digest grains and other concentrates in their rumen through microbial fermentation. The digestibility of grain can be improved by mechanical processing such

as rolling or coarsely grinding to break the seed coat. Small grains also tend to be low in some minerals, especially calcium, and tend to have low vitamin A activity. Thus, it's important to supplement vitamins and minerals to ensure a balanced ration. “There is no magic secret,” says Dr. Pete Lammers, an animal nutritionist at the University of Wisconsin-Platteville. “We can feed oats, barley, wheat and triticale to beef cattle and they will perform just as we would expect them to perform on corn grain – as long as we balance the ration.”

Compared to cattle, monogastric animals like pigs and poultry digest fiber inefficiently – but pigs digest fiber better than poultry. When adjusting feed rations for swine, the main concern is the lysine content because lysine is the first limiting amino acid in pig grain-based diets. In a report on feeding small grains to swine, Iowa State University Extension and Outreach noted that small grains contain 30-50% more lysine than corn, which also reduces the need for soybeans in the diet as well. Feeding oats to pigs can also be a natural way of controlling parasites, according to Jeff Mattocks, feed nutritionist with The Fertrell Company. Speaking at PFI's 2017 annual conference, he said: “Due to the sharp fiber, the hull of the oat passes through the digestive tract

causing a natural irritation to the parasites that build up in the digestive tract.”

When dealing with poultry diets, it’s important to remember that poultry can’t handle the same level of small grains in their diets as pigs. Small grains also reduce the availability of energy and other nutrients. To increase small-grain inclusion rates, nutritionists recommend supplementing poultry small-grain diets with enzymes like xylanase and beta-glucanase.

Is the Price Right?

Farmers may wonder whether it’s worth feeding small grains to livestock in Iowa, where corn and soybeans are readily available. PFI members have noted a range of other benefits to growing small grains. For instance, when grown in a rotation with corn and soybeans, small grains can

increase yields of the other crops. Small grains can also reduce input costs, improve distribution of labor and equipment use, provide better cash flow and mitigate weather extremes.

Terry Coffey, chief of science and technology for Smithfield Food Inc. in North Carolina, says the company is committed to using wheat as an alternative feed grain – especially when corn is in short supply. “If you can grow your feed economically, wheat planted right after corn gives you a positive feed value by rotating crops on the land,” he says. “Once the math of crop production works, then the feeding part is easy.”

Grain Testing and Selection

Proper grain testing and nutrient analysis are key to getting the most benefit out of adding small grains to livestock feed. Growing and harvesting conditions can

influence the nutritional composition of small grains even within the same variety – which means it’s important to get feed tested every year. While it’s impossible to prevent all problems, certain measures will greatly reduce the chance of serious effects. Consider testing grains for mycotoxins when weather conditions are right for the fungus to develop, or when many of your animals are showing signs of performance and health issues. If feeding ruminants, sample total mixed ration ingredients; if feeding monogastrics, sample grain mixtures. Samples can be sent to Dairyland Laboratories in Wisconsin.



Rye has a mixed reputation due to its susceptibility to ergot, a mycotoxin that affects livestock health and performance. To combat ergot, new varieties like hybrid rye have been developed with traits that make it less susceptible to ergot toxins. ■

Replacing Corn with Small Grains in Balanced Rations (max non-forage replacement %)

		Oats	Barley	Wheat*	Rye**	Triticale*
	Finishing	90%	100%	100%	20%	100%
	Lactation	100%	100%	100%	25%	66%

† Replacement has demonstrated to support equivalent fat corrected milk production ‡ Replacement has demonstrated to support equivalent growth rate, feed consumption and feed efficiency
§ Rations should include appropriate levels of forage and will be nutritionally balanced

Inclusion Rates for Small Grains in Balanced Rations (max % of the diet)

		Oats		Barley	Wheat*	Rye**	Triticale*
		Hulled	Dehulled				
	Grow-Finish	40%	40%	95%	95%	35%	40%
	Gestating	90%	40%	90%	90%	25%	30%
	Lactating	15%	25%	85%	40%	10%	40%
	Broilers	40%	45%	30%	20%	10%	60%
	Layers	50%	60%	50%	25%	35%	30%

¶ Enzyme supplementation recommended for higher inclusion levels, nutrient utilization and to avoid wet litter * Variety not stated due to minimal nutrient variability ** Limited research

This infographic illustrates the degree to which you can replace corn with small grains in balanced rations for dairy and beef cattle, and pigs and poultry, while maintaining performance. For cattle, the percentages refer to how much of the non-forage component of their diets you can substitute with small grains. For pigs and poultry, the percentages represent the maximum percentage of their diet that can be composed of small grains.

With additional research and experience in feeding small grains to livestock, the percentages shown here are subject to change. As more grain varieties and secondary markets are developed, we will see more acres of small grains covering the Midwestern landscape.

Diversifying With Ornamentals

For two Boone-area growers, ornamentals have helped sustain their businesses

Separated by only 10 miles, Mike Salama of Salama Greenhouse, and Nicole and Steve Jonas of Red Granite Farm, have each created businesses that integrate fruit and vegetable production with ornamental plant production – a practice that has diversified their operations and expanded their customer base. Though they share this approach, their operations are totally unique.

Using What You Have

Joe and Vivian Salama, Mike's parents, began growing greenhouse cut roses in 1973. Roses today, however, ship cheaply from Central and South America, and the Salamas gave up roses in 2004, instead focusing on Easter lilies, poinsettias, spring bedding plants and baskets, and floral arrangements. When Mike returned from California in 2013 to take over the business, he recognized the value of the existing enterprises, but knew there was more to do.

In his parents' day, everyone went to the greenhouse to buy plants and flowers. Now, customers expect to buy them at the grocery store and elsewhere – not just the retail

greenhouse. So Mike has adapted his business, working with larger wholesale accounts, but also flower shops and grocery stores that buy by the dozens of plants for holidays like Easter and Memorial Day. As a full-service flower shop, the Salamas are also always ready for weddings, funerals, and school dances, and Mike does custom vegetable seedlings for local vegetable farms.

Watching trends and listening to buyers, Mike is making more finished planters, baskets and living décor – like succulent picture frames – and selling them in their retail greenhouse and to their wholesale customers. He's tripled the volume of finished planters from when he started, and could do more, though says he still sells plenty of annual plugs for customers to create their own planter mixes. In the Salama retail greenhouse, most customers are still women over 30, but not as uniformly as in the past. "I see more men coming in to buy landscaping plants and flowers for their own use – not just the occasional bouquet," Mike says. "Younger customers, who require a bit more hand-holding as first-time buyers, tend toward interesting foliage, like coleus and grasses, as well as succulents for their ease of maintenance and curious forms."

The biggest change, however, was born in the oldest infrastructure. Mike put the old

rose troughs to work growing hydroponic tomatoes and cherry tomatoes in the spring and summer, which he sells through grocery stores as Tomato Joe's and Lil' Joe's. He also uses them for hydroponic greens, which are harvested from September through the deep winter. When the spring bedding plants are finished in June, the polycarbonate panels serving as greenhouse tables come off the rose troughs, and the troughs are planted to hydroponic greens. "Before this, the greenhouses were empty from July through March," Mike says. "Now they are full – and earning income – year-round."

But not all of Mike's decisions have been right, or easy. Some wrong decisions end up as jokes, like the box of macramé basket hangers he threw out (who really thought macramé would come back into style?). Other challenges are persistent, like maintenance issues and seasonal staffing. "When something breaks and you have to stop everything to fix it, there's no way to plan for that or staff for it," Mike says. With seasonal staffing, Mike is encouraged that the move to more year-round production has let them keep some quality staff all year, but the budget is tight. "It's difficult to have high enough sales during the winter to pay for employees with higher wages," Mike says. "So I either just break even and keep staff that is trained,



or I lay them off and hire inexperienced staff the next season, and spend time retraining everyone. I'm still not sure which way is better."

Building What You Need

While Mike created new enterprises using an existing structure, Steve and Nicole Jonas have built their business from scratch, merging their independent passions for ornamental plants and vegetable production to start a family business. Both have degrees in horticulture from Iowa State University – Steve in vegetable production and Nicole in ornamental plants and landscaping design. They moved to their property in 2007, which had a house and a barn (which now functions as the garden center), and have added a high tunnel, chicken house and, most recently, a packing shed.

Their first year on the farm, Steve and Nicole began selling vegetables at farmers market and continue to do so, growing 3 acres of produce. In 2011, Nicole started the perennial plant enterprise, and 800 laying hens now round out the three pillars of their farm business. She focuses on landscaping perennials – cultivars of native species and ornamentals – and has found that more people are interested in establishing flowering plants to benefit pollinators. "We sell a lot of cultivars of native plants, which are good for people who want the look of a native prairie, but want to better control the spread of it or are growing in pots," Nicole says. "This isn't just to make your house pretty; it's to support pollinators."

For regular plant sales, Nicole finds she markets best to gardeners and people who already know their plants. Instead of marketing in a 20-mile radius, she advertises to people who live 50-100 miles away, positioning the farm – and her classes and workshops – as a destination. For true novices (and committed gardeners in search of fresh ideas), Nicole also does landscape design consulting. For this, her own green thumb is particularly useful. "I try to pick things I have tried myself and have in our landscape on the farm," she says. "Then when a customer – particularly for a landscape plan – comes to the garden store, I can show them how the plants will look grown-out in the landscape, not just in the pot."

In addition to their farm businesses, Steve and Nicole both have other jobs. Steve works full-time running the compost facility at ISU, which provides the couple and their three children with health insurance and benefits.



Above: Mike Salama in one of his greenhouses, with Easter lilies in the foreground. **Opposite: (Left)** Nicole Jonas produces ornamental plants from seedlings, bare root, division or propagation, depending on the plant. **(Right)** A sampling of plants for sale at Red Granite Farm.

Nicole works part-time during the winter at Story City Locker, in addition to handling the bulk of the farm work and consulting. "In some ways, we've picked a certain lifestyle and now we have to support it," she says.

"The spring sales are boosted by the garden center. I don't know where we'd be without this part of the business . . . It has been a huge part of our income." – NICOLE JONAS

The most challenging aspect of the Jonases' farm life, as it is for many, is balance – keeping everything running to a high standard of quality while "staying sane" and making time for family, and balancing the expectation that farm kids need to do chores while also creating incentives so they want to help with more unsavory tasks, like scooping out the chicken house or spending a Saturday at the farmers market. "For some jobs, we pay them," Nicole says. "They put that in their savings account and when they need basketball shoes, or someday a car, they have their own money." She also notes that because Steve works full-time during the growing season, she has to be mindful about not "bombarding him with farm stuff

the minute he gets home." Additional labor has helped tremendously. "Once we were big enough to support some employees, it made us more efficient, and at the end of the day made this business so much more enjoyable," Nicole says. She does strongly recommend, however, that anyone starting a retail space start small and grow slowly, as building a customer base was the hardest part of the business.

Now that they've had a few years to reflect and refine their systems, Nicole and Steve feel the farm's three enterprises are complementary. "We don't do spring vegetables," she says. "We plant our fields, of course, but we don't start going to farmers market until June. The spring sales are boosted by the garden center. I don't know where we'd be without this part of the business. It does have a lot of input – this stuff isn't cheap to buy, but it has been a huge part of our farm income. Perennials don't sell themselves like vegetables do – it really takes a salesperson, but that's what I like to do." ■

Buoyed By Benevolence

Practical Farmers' budget continues to grow thanks to our many supporters!

Practical Farmers' budget continues to grow, thanks to our many supporters, the hard work of our members and additional grants we've secured to help fund our expanded programming. Membership and donations are at all-time highs as support for Practical Farmers of Iowa grows.

In fiscal year 2018 (Oct. 1, 2017 – Sept. 30, 2018), PFI received \$2.12 million in revenue. Of this, **\$90,452 came from donations above membership from 313 individual donors.** These individual donations are vital to our ability to respond directly to our members' needs. **We also received funding from 50 grants** operating in fiscal year 2018.

Thank you, supporters, for your generosity that allows us to work hard to equip farmers to build resilient farms and communities!

More information on Practical Farmers' finances can be found in our 2018 annual report. This report also highlights accomplishments made possible because of our generous supporters. Below, two donors share why they use workplace giving programs to support PFI.



Linda Barnes and Mark Runquist hiking in New England.

INDIVIDUALS DONATE THROUGH WORKPLACE GIVING PROGRAMS

Some employers incentivize donating to non-profits. Some match donations, turning a \$50 employee donation into a \$100 donation. Others, as described below, make donating a process of payroll, or provide a donation to match an employee's volunteer hours.

Mark Runquist and Linda Barnes

Mark Runquist and Linda Barnes have been members of Practical Farmers since 1994. From 2005 to 2016, Mark and Linda operated High Hopes Gardens near Melbourne, raising vegetables, fruits, flowers and livestock for their local community. They published a blog of the experience, with the tagline: "Can a creative, hard-working family make a living working with

nature? Join us on the journey from idea to practice as we revive an Iowa farmstead."

Like most small-scale farmers, Mark and Linda had off-farm jobs. Mark worked at Wells Fargo in Des Moines as a technology analyst. Linda worked at Marshalltown Community College, where she taught biology and sustainable agriculture. Linda received her Master of Divinity in 2015. In 2016, Linda and Mark moved to New England, where Linda is a Unitarian Universalist minister in Plymouth, New Hampshire.

Through the move, Mark was able to maintain his job at Wells Fargo. Mark has taken advantage of Wells Fargo's employee donations programs, to Practical Farmers' benefit, for years. While Mark was still living

in Iowa, he participated in Wells Fargo's Volunteer Leave Program. Through this program, Mark was able to volunteer a full month at PFI, with Wells Fargo providing Mark full pay and benefits. Before moving to New Hampshire, Mark also started donating to PFI through Wells Fargo's workplace giving program, where employees can specify that a certain dollar amount be withheld from their paychecks for any non-profit organization. Wells Fargo forwards those donations quarterly to the organization. Mark and Linda continue to donate to Practical Farmers through this program.

Mark and Linda say, "We continue to support PFI because we believe the inclusive and respectful attitude of its members is important to facilitate learning and movement towards long-

"We continue to support PFI because we believe the inclusive and respectful attitude of its members is important."

– MARK RUNQUIST & LINDA BARNES

term sustainable, productive and collaborative care of the land and the people."

Because Mark and Linda wish to be mindful of their charitable donations, they plan their yearly donations at the beginning of the year. The payroll deduction program lets them make their decision to donate once a year knowing their donations will make it to PFI throughout the year without any further thought or action. ■

Donors in Fiscal Year 2018

The following list represents donors above membership.

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Selma Duvick
James Dyreby
Erik Eastman
Jeremy Emmi
Rob and Tammy Faux
Peter and Eileen Fisher
Anne Fitzgerald and Chuck Fuson

(Continued on page 16 →)



Erik Eastman

Erik Eastman lives in Urbandale with his wife and daughter, and works as a data wrangler for John Deere Financial. Erik has volunteered at Practical Farmers' conference for the past six years, helping sponsors set up and helping get potluck food to the event center. His regular volunteerism at our conference is an asset, because he understands his responsibilities and carries them out with care and competence.

Erik's mom, Kathy Eastman, has helped coordinate PFI's annual conference for 18 years. "My mom's connection and encouragement made choosing PFI to volunteer for an easy choice," Erik says. "I like the fact that it is a day-long opportunity on a Friday. It makes it easy to take the day off."

"My mom's connection and encouragement made choosing PFI to volunteer for an easy choice."

- ERIK EASTMAN

John Deere Financial helps make the volunteer day convenient as well through its Power for Good program. As an employee, Erik gets a paid day off to volunteer. In addition to the volunteer help we get from Erik, John Deere Financial makes a donation to that non-profit at a rate of \$20 an hour for each hour of volunteerism. Some of Erik's colleagues have volunteered at Practical Farmers through this program as well.

"I enjoy it," Erik says. "I get to see the same people each year, which makes it a fun experience."

John Deere employees find donation and volunteer opportunities through Benevity Goodness. To learn more, visit benevity.com. ■

(← Continued from pg. 15)

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Grantors in Fiscal Year 2018

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National Fish & Wildlife Federation
Renewing the Countryside
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Read our complete 2018 annual report – including stories of more PFI leaders – at practicalfarmers.org.

Seeking Strategies for Corn After Rye

PFI farmers are using on-farm research to test novel management practices

In 2017, PFI began a research partnership with Alison Robertson and her lab team at Iowa State University. Alison is a professor of plant pathology at ISU studying the effects of cover crops on corn seedling disease. The team had recently published a study, led by Jyotsna Acharya, that showed corn yields decreased as the gap between cover crop termination and corn planting narrowed.

The team used cereal rye as the cover crop in their study. When they terminated the cover crop at least 10 days before planting corn, they saw no difference in yield compared to the no-cover check. But when they terminated the cover crop closer to the time of planting corn, the number of corn plants at harvest time was significantly reduced, which in turn reduced grain yields. The culprit turned out to be corn seedling disease: When the researchers killed the cereal rye closer to when they were ready to plant corn, the frequency of seedling diseases went up. "Cover crops may act as a 'green bridge,'" Jyotsna writes in the study. That's because cereal rye can harbor soil pathogens that also affect corn seedlings. By contrast, widening the time interval between terminating the cover crop and planting corn significantly reduced disease pressure on corn seedlings in the study.

"We think these findings reinforce the recommended practice of terminating a cereal rye cover crop at least 10-14 days before planting corn," Alison says. After Alison presented her team's findings at the 2017 Cooperators' Meeting, exploring the subject further on farms became a priority of both the ISU team and Practical Farmers members. Cooperators tested cover crop management practices that could better ensure success on their own farms and serve as examples of strategies for other farmers to consider.

Cover Crop Skip Zones

One on-farm research project involved seeding a cereal rye cover crop such that no cover crop would be growing in the eventual corn row. Some farmers created

these no-cover-crop skip zones by using planters they'd normally use to plant corn or soybeans to seed cover crops in 15- or 30-inch row-widths. Other farmers plugged openers on their seed drills resulting in cover crops seeded in twin rows that left a 20-inch gap where the corn would eventually be planted. Some also refer to these techniques as precision-seeded cover crops. In all cases, the farmers planted corn into the skip zones in an effort to avoid any possible negative effects of the cover crop.

Michael Vittetoe, who farms near Washington in southeast Iowa, was one of the participants in the project and talked about it at his field day in June 2018. "We wanted to learn what adjustments to our management practices are needed to successfully plant corn into a green cereal rye cover crop," he said during the field day. Farmers have had mixed results with planting corn into a green, living cereal rye cover crop. Some report no problems with this practice. Past PFI research by Dick Sloan and Tim Sieren, however, echoes the results of the study by Alison's team: They

found that planting corn too soon after terminating a cereal rye cover crop can reduce yields by 5 to 21 bushels per acre compared to waiting at least 14 days to plant corn after terminating the cover crop.

Michael, like many other farmers, knows that the soil and water benefits of cover crops are directly tied to how much cover crop growth you can achieve. He also appreciates a cover crop's ability to suppress weeds. "Weed suppression is excellent when the rye is alive, but begins to fade rather quickly once the rye is terminated," Michael says. If you terminate a cover crop 10-14 days before planting corn, that cover crop is likely only 6-8 inches tall. That's why he seeded a cereal rye cover crop in twin rows in fall 2017 and planted corn into the resulting skip zones the following spring. He compared two cover crop termination dates: four days before planting corn and eight days after planting corn.

Waiting to terminate the cover crop until eight days after planting corn resulted in 1,900 pounds of aboveground growth per acre – nearly twice as much growth



Above: A cereal rye cover crop is seeded in "twin rows" at Michael Vittetoe's farm on April 30, 2018.

Opposite: Michael Vittetoe and his father, Denny, at the PFI field day they hosted on June 26, 2018.



“We now feel comfortable enough with the early-season weed suppression by the cover crop that we are dialing back our pre-emerge residual herbicide program in 2019.” - MICHAEL VITTETOE

as the cover crop terminated 12 days earlier (four days before planting the corn). When Alison’s lab team assessed corn seedlings at Michael’s farm in late May, they did not observe any differences in the incidence of disease between the two termination date treatments. From a statistical standpoint, however, the cover crop terminated later, reduced corn yield by 8 bushels per acre. While keeping the cover crop from growing in the corn row may have alleviated the higher risk of corn seedling disease associated with a later cover crop termination date, Michael thinks competition from the larger cover crop led to reduced yields – as corn seedlings were emerging from the soil, they may have been shaded by the tall cover crop.

“The corn in the late termination strips was a touch on the spindly side, which probably indicates it was looking for more sunlight,” Michael says. Tom Kaspar, a retired USDA Agricultural Research Service scientist who researched cover crops in Iowa for more than 20 years, thinks nutrient stress could be another factor. “My observations are that corn plants are nutrient-stressed early on when following a cereal rye cover crop, which could be one of the causes for yield drag in corn,” Tom says. In Michael’s trial, the cover crop killed a week after planting didn’t have a chance to return nutrients to the soil that it had taken up as the corn seedlings were

emerging – which may have led to nutrient deficiency in the young corn seedlings.

“Weed control was a big factor in why we wanted to do this trial,” Michael adds. When seeding the cover crop in twin rows with a skip zone, Michael says he feels more confident narrowing the time interval between terminating the cover crop and planting corn. “We now feel comfortable enough with the early-season weed suppression by the cover crop that we are dialing back our pre-emerge residual herbicide program in 2019,” he says. “We hope to continue to cut back on herbicide use in the future.”

Cover Crops and Strip-Till

In a similar research, project, Tim Sieren and Jack Boyer used strip-till to remove a cover crop from the eventual corn row. Strip-till disturbs the soil only in a 6-inch- to-8-inch-wide band, where the distance between the center of each strip is 30 inches. Tim farms near Keota in southeast Iowa and Jack farms near Reinbeck in central Iowa. Both seeded a cereal rye cover crop in fall 2017 and made a strip-till pass in spring 2018 before planting corn. They compared the costs and benefits of this approach with no-till-planted corn. In the strip-till treatment, Tim’s corn yields were statistically higher by 15 bushels per acre. That yield improvement more than paid for the cost of the strip-till pass.

Jack, however, saw no yield difference between strip-till and no-till. When Alison’s lab team sampled the farms in late May, about half of the corn seedlings from either tillage treatment showed signs of disease. Just as her team had found in Michael Vittetoe’s experiment, removing the cover crop from the eventual corn row had no effect on the incidence of corn seedling disease. “The different findings between the on-farm trials and our trials on the research station serve as a learning opportunity,” Alison says. “It shows why research needs to be done over several years and locations in order to draw accurate conclusions.”

For Tim, the trial was an affirmation of his use of strip-till. “This trial confirmed the yield increases I’d been suspecting from my strip-till practices,” Tim says. “I credit the better yields from strip-till to drier, warmer soil in the row zone, which accelerates corn seedling emergence.” Tim notes that because strip-till removes the cover crop from the corn row – and thus, eliminates some of the competition the young corn would face – he feels more comfortable terminating a cover crop within one week of planting corn. Tim says: “That allows me to let the cereal rye grow taller and gain more biomass before I terminate it and plant corn compared to when I terminate the cover crop two weeks before planting corn in a no-till situation.”

Encouraging More Adoption of Cover Crops

When Alison spoke at the PFI field day Michael and his father, Denny, hosted in June 2018, she put Iowa’s cover crop need in perspective. “We need cover crops on 12 million acres in Iowa,” she said. “That’s roughly every other field in the state.” These are the number of cover crop acres needed to meet state water quality goals outlined in the Iowa Nutrient Reduction Strategy, first released in 2013. Among all of the practices listed in the strategy, cover crops are one of the most effective at reducing the amount of nitrogen and phosphorous moving from farmland soils to rivers and streams. According to recent estimates, nearly 1 million acres of farmland in Iowa have cover crops. By testing management practices and demonstrating success, PFI cooperators hope to encourage further adoption of cover crops across the state’s agricultural landscape. ■

MAKING SPACE

FOR

Wildness

A passion for conservation and preserving natural communities inspires PFI members to take unique approaches to creating habitat on their land.

BY JORGEN ROSE

Habitat in an agricultural landscape can look and function very differently depending on the production system and the goals of the landowner or operator. We know the members of Practical Farmers are interested in on-farm habitat and ecological restoration, but the specifics of those interests are as diverse as the membership itself. This article highlights the various ways that three PFI members are working to steward habitat and wildlife on their land.

The Rancher

Mike DeCook raises bison and custom-grazes cattle in Monroe County with help from family and friends. He and his family also actively work to restore a network of native prairies, oak savannas, woodlands and wetlands on his family's land, focusing on local plant genotypes wherever possible. Proper grazing and fire are the primary tools Mike uses to manage and restore native habitat.

"I'm a big believer in the intrinsic value of nature and wildlife," Mike says. "Wild nature has value for its own

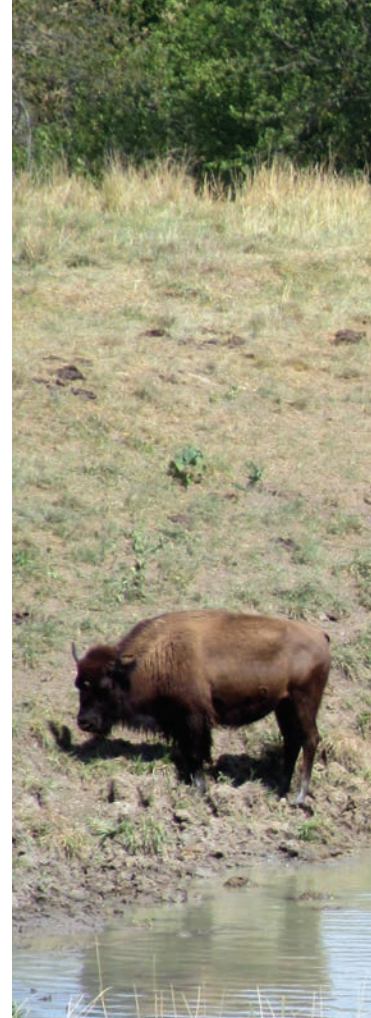
sake regardless of its economic worth or benefit to people. One thing that is really important to me is the aesthetics of the land – the wildness and the natural open spaces."

This belief in the intrinsic value of native habitat fuels Mike's restoration efforts – but he stresses that restoring native ecosystems also benefits him economically. "Our ranch is a perennial natural system that is economically profitable without destroying or harming nature and wildness," Mike says. "We've found that by protecting wildness and protecting nature, it really helps our bottom line – everything our ranch needs comes from nature for free. We can protect nature and wildness and also make a living off the land. They're not mutually exclusive."

Mike says that because the family farms *with* nature rather than against it, they need few inputs and have little need or desire for buildings and other

[\(Continued on page 22 →\)](#)

Top: Bison cool off in a pond at the DeCook ranch. The family uses very little infrastructure to manage their bison and cattle herds. **Bottom:** Mike DeCook (left) speaks to field day attendees about his family's prairie restoration efforts.





“I’m a big believer in the intrinsic value of nature and wildlife. Wild nature has value for its own sake regardless of its economic worth or benefit to people. One thing that is really important to me is the aesthetics of the land - the wildness and the natural open spaces.” – *Mike DeCook*



“Rick and I both have a love of wildlife, an appreciation for nature and a conviction that what we have we’re responsible for. We’re always asking what’s the next best step for where we’re at, and that’s what led us to the prairie restoration.” – Beth McGeough



Above: Rick and Beth McGeough stand by their “prairie-in-waiting,” their most recent habitat restoration endeavor. **Opposite:** Clark Porter stands by Black Hawk Creek in Waterloo. The creek borders part of his farmland on one side, and 8 acres of floodplain woodland on the other. He uses a variety of in-field farming practices to improve the water flowing off his farmland into the creek.

infrastructure, which ultimately makes their operations more profitable and more resilient.

For Mike and his family, the desire to see native habitat persist on the landscape is a driving force in their decision-making. “Habitat and wildness are one of our top priorities,” Mike says. “Other than making a living, our number-one priority is to have our land protected forever with a conservation easement.” He argues that the effects of development, while not often discussed in Iowa, pose a risk to both the ecological and economic viability of the land. As more land is lost to development, he says, people lose not just the ability to see and experience wild nature, but also the ability to make a living off the land.

“I look at things more in the long-term and the forever-ness of it,” Mike says. “Fortunately, our land is protected forever from development through a conservation easement with Iowa Natural Heritage Foundation.” For him, this offers reassurance that his family’s vision for a wild landscape capable of providing for people and wildlife will continue even after he and his family are gone.

The Berry Farmers

For Beth and Rick McGeough, developing habitat on their farm has been a natural progression. The couple owns and farms about 65 acres in Warren County, where Beth also operates a U-pick berry farm called Edge of the Woods Farm. The McGeoughs have recently begun the process of restoring some native prairie on the property.

“Rick and I both have a love of wildlife, an appreciation for nature and a conviction that what we have we’re responsible for,” Beth says. “We’re always asking what’s the best next step for where we’re at, and that’s what led us to the prairie restoration.”

The prairie restoration is not the McGeoughs’ first foray into habitat management. They have planted a variety of trees and shrubs on their land, ranging from fruit trees to chestnuts. They also actively manage their forested lands, removing problem trees like honey locust that offer little wildlife value. Such targeted tree removal opens up the canopy for hardwoods, allowing mast-producing trees like oaks and hickories to flourish. All of these efforts are intended to benefit wildlife, Rick says, and stem from his and Beth’s mutual appreciation for nature.

“I think I was born with it,” Rick explains. “I remember having great memories of living on an acreage and falling asleep to covey calls from bobwhite quail. One day, I was fishing on a little creek for crappies and I heard this bird singing. I looked up and was just dumbfounded by the beauty of it and the brilliance of the colors. I couldn’t believe it was a native bird, but a few weeks later I was at the library leafing through Audubon prints and identified it as a rose-breasted grosbeak. I discovered then that I could see a bird and then go and identify it and learn about it. Eventually, I turned it into a career working with the DNR [Department of Natural Resources].”

For Beth, it was her experiences growing up in Colorado that instilled her passion for conservation. “One of my earliest memories is looking down from a mountainside and the only thing I could see

was clouds, and I couldn't help but think how unbelievably blessed I was to be there," Beth says. "It's all a learning process. Every experience prepares us for what's coming next."

The prairie restoration project is the next step in the McGeoughs' habitat management efforts. Beyond the benefits to wildlife and the landscape, Rick and Beth feel that adding prairie back to their farm also benefits people – it fits with their view of their land as a place where visitors can learn about and connect with local food and nature. "One thing I love about the berry farm is that we are able to provide healthy, local food products that people love," Beth says. "People can see where their food really comes from, and experience nature and habitat as well."

She adds: "Of all the people we've talked to, no matter what stage they're at in the process, no one says they regret starting down that [conservation] road despite the challenges. Everyone makes a few mistakes, but it just takes patience and persistence to see it through, and the benefits are definitely worth it."

The Landowner

Clark Porter also believes the habitat on his land has great aesthetic value. "There is so very little natural, untouched land in Iowa," Clark says. He views the state's remaining habitat as "pearls on a string," and is honored to be responsible for some of those "pearls."

Clark manages his family farm, which comprises around 570 acres in Grundy and Tama counties. His farm is entirely no-till or minimum-till, and he's been using cover crops since 2012. Much of Clark's conservation focus has been on adopting in-field practices that can improve water quality and create healthy, productive soils capable of supporting a variety of organisms. But in the process, he says he somewhat forgot about the edges of his fields.

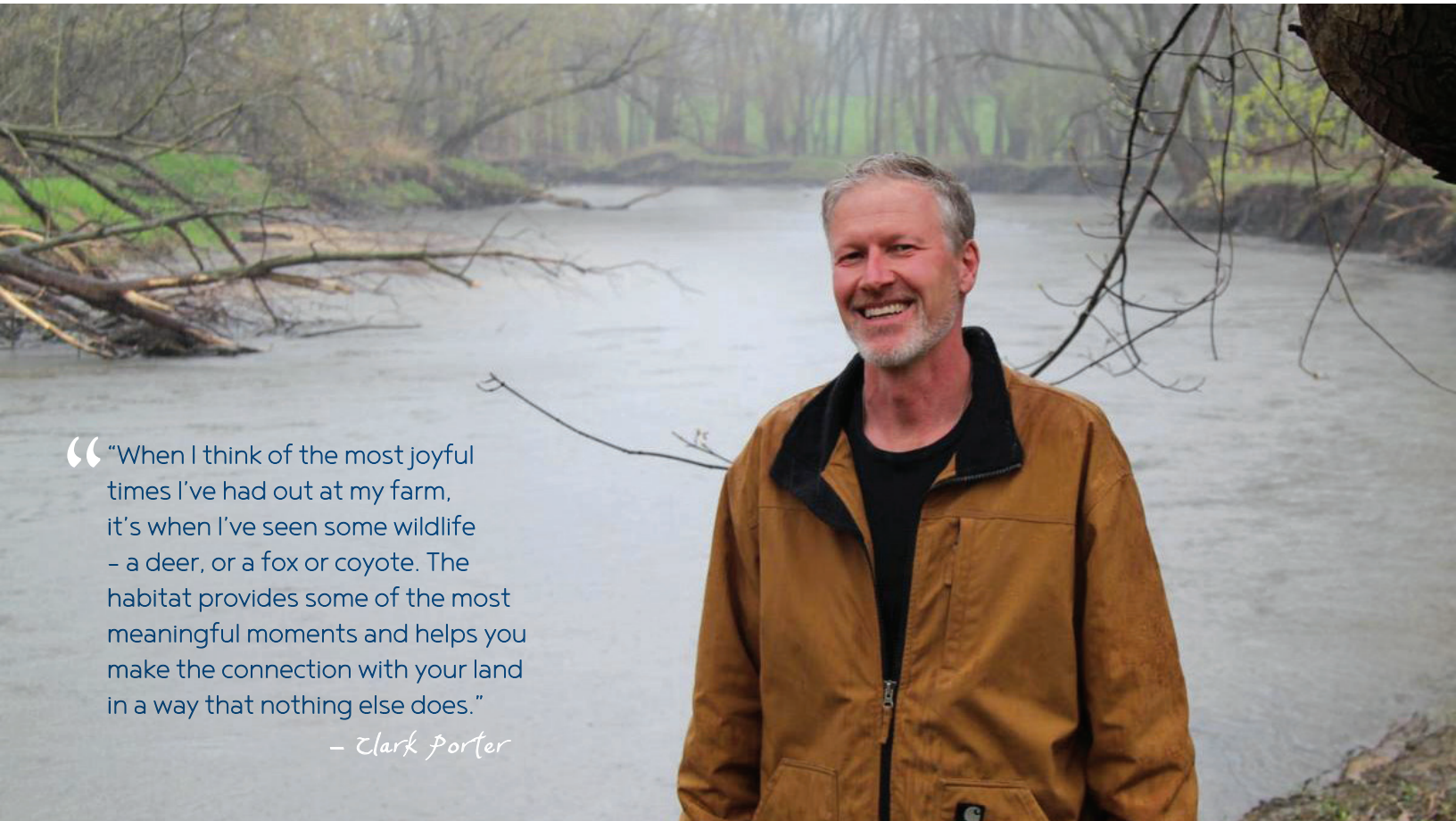
"We haven't consciously created much habitat on our ground," Clark explains. "We've had some CRP [Conservation Reserve Program] acres in the ground for over 12 years, and we just put in a filter strip that's about 5 acres along a creek that has 8 acres of floodplain timber on the other side." Clark recognizes that there's probably a lot more he could be doing – and he hopes to explore those options in the future. His land presents barriers, however, that limit how much active management he can do.

For instance, Clark's floodplain timber is difficult to access. Unless he can secure access from a neighbor, Clark says the only way to reach the property is by wading Black Hawk Creek or by snowshoeing in during the winter months. Another challenge is that the timber has been left untended for some time, largely due to how difficult it is to access. "There's a lot of scrub timber and a lot of unmanaged property," Clark says. "I suspect that a competent forester could give some advice about what to do to maximize the potential of that timber as habitat, but it's really overgrown with smaller trees – buckthorn, that type of thing."

This need for additional expertise is something Clark says he wishes he had recognized earlier. "I've come to realize there are people who can help you with [habitat management] for your land," Clark says. "I wish I had taken advantage of the resources available."

While Clark is just starting to think about ways to more actively manage his land for habitat, he still finds the existing habitat on his farm to be extremely rewarding. "When I think about the most joyful times I've had out at my farm, it's when I've seen some wildlife – a deer, or a fox or coyote," Clark says. "The habitat provides some of the most meaningful moments and helps you make the connection with your land in a way that nothing else does." ■

Photo by Jeff Reintz, reprinted with permission by The Waterloo-Cedar Falls Courier



“When I think of the most joyful times I've had out at my farm, it's when I've seen some wildlife – a deer, or a fox or coyote. The habitat provides some of the most meaningful moments and helps you make the connection with your land in a way that nothing else does.”

– Clark Porter

from LAND PROTECTION to LAND ACCESS:

Hidden Falls, LLC and Humble Hands Harvest

BY GREG PADGET

In 1982, when Steve McCargar and his wife, Heidi Swets, moved to Decorah, they didn't really know anybody. But they knew it was a beautiful area and there was a food cooperative (Oneota Community Food Cooperative), so they purchased a 35-acre plot of land on what is Hidden Falls Road and built an off-the-grid house. Nearly 40 years later, Steve knows just about everybody. His strong connection to the community has allowed him to bring together people with a common vision to help create an opportunity for young farmers to build a farm that puts community at the center of life.

When Steve learned in early 2014 that 22 acres of land next to his home was slated for auction, he was concerned. A few years before, a similar property up the road went up for auction and the top buyer was a farmer who intended to build a large hog operation on the site. When the landowner realized it, he stopped the bidding and decided to retain the land. While the hog operation didn't end up happening, the prospect of a possibly drastic land conversion taking place next door was disconcerting. "That it was going to be an auction raised all kinds of alarm bells for me," Steve says. "There's just no way we could let that happen." He and the other neighbors were concerned for air and water quality. The local ecosystem is sensitive due to the steep slopes; clean, cold water with diverse fish species; and karst topography susceptible to groundwater contamination. He immediately began thinking of ways to purchase and protect the land.

Shortly after he learned of the auction, Steve attended the annual meeting for the Northeast Iowa Peace and Justice Center, in January 2014. As co-manager of the Oneota Community Food Cooperative for many years, he had led a major fundraising effort to expand the store. As a result, he knew some people at the annual meeting, and that they had financial resources and would likely be interested in protecting the land. After the meeting, Steve gathered a group together and described the situation. There was an immediate outpouring of

support: The community members there pledged \$45,000 towards purchasing the property. Steve called more friends, built more support and within a month, he had cobbled together the \$121,000 in commitments necessary to buy the property.

“ We knew Hannah wanted to own her own land, and this was a way to help her access land. ”

– Perry-O Sliwa

But who would actually own the land? He decided to call on his friend and Decorah lawyer, Karl Knudson, for help organizing the ownership structure. "We want to do something unique, and we want you to be the legal horse that we ride to get it done," Steve recalls telling Karl.

Karl told the group they had a few options: They could form a partnership, a corporation or a limited liability corporation, but that an LLC made the most sense. "LLCs can have a lot more informality," Karl says. "You don't have shares of stock that you have to be keeping track of." Also, when and if parties with ownership interest in the LLC wish to sell, they can do so without having to do a title search or ensuring the deed is recorded.

Importantly for this group, it was easy for the founders to make stipulations through an operating agreement – similar to bylaws – that was put in place at the time the LLC was created. Those stipulations could also be amended at any time by its members. Steve says the group imposed several restrictions related to how the land would be used – like prohibiting certain chemicals and by-products from being applied to the land.

In February 2014, Hidden Falls, LLC was formed by 16 households and shortly thereafter purchased the land. The farm is at the end of Hidden Falls Road, which Steve also had a hand in naming. As county supervisor in the early 1990s, when a 911 street address system was being implemented to improve emergency response, he helped property owners name roads if they petitioned the county. Since Hidden Falls Road contains several hidden waterfalls, Steve and his neighbors rallied and submitted the name.

David and Perry-O Sliwa also live nearby, and were among the original shareholders of the newly formed LLC. Perry-O says no one in the group was eager to take on additional expenses after having purchased the land, so shareholders looked for ways to generate income off the property. The land had been in continuous corn production, but the group found a local farmer to rent the land for making hay. "Hay seemed like a kinder use of the land," Perry-O says. "It does haul off lots of nutrients, but at least it



Rotationally grazed Katahdin sheep enjoy lush pasture at Humble Hands Harvest.

wasn't going to be putting more chemicals on the land." Still, the group needed a long-term plan – not everyone wanted to keep the land, and some of the shareholders initially also wanted to enroll the land into the Conservation Reserve Program (CRP).

Humble Hands

Hannah Breckbill had a solution that would make everyone happy. Hannah grew up in Lincoln, Nebraska, but has been farming or working on farms from Texas to Minnesota since 2009. She has carefully planned for the future of her farm business, taking part in the Land Stewardship Project's Farm Beginnings and Journeyman programs, and in PFI's Savings Incentive Program. She first moved to Decorah in 2010 to work with Chris Blanchard at Rock Spring Farm, and later worked briefly at Seed Savers Exchange.

While Steve was rounding up interest in purchasing the land near his home, Hannah was operating Humble Hands Harvest across the border in Minnesota, the farm she started in 2013. Despite being out of state, she had maintained her connections to the Decorah community. The same week Hidden Falls, LLC was forming, Hannah just happened to be riding in a car with Steve's daughter (also named Hannah), who mentioned the newly forming group and the story of the land. A few weeks later, Hannah wrote a check to become one of the shareholders.

"I was just lucky enough to get in on it early," Hannah says. "I happened to talk to the right person during the right week." Because she was an original shareholder, she was able to have input into the decision-making that would guide the land's future. "If it had

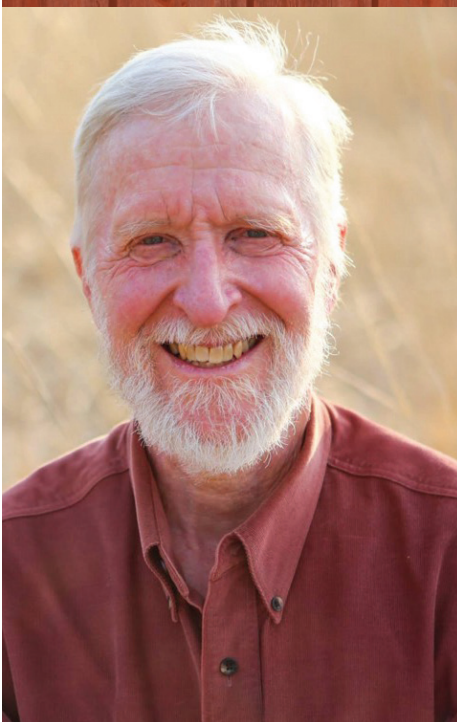
gone to CRP, I wouldn't have been able to farm the ground."

After two years farming in Minnesota, Hannah moved her farm to Iowa. In both cases, however, she was farming on rented land. To make the infrastructure investments needed for the farm's long-term stability, she knew she needed to own the land. As a partial owner of the land in Hidden Falls, LLC, she had always hoped to relocate her farm there someday. At least some of the LLC shareholders were strong supporters, chief among them Perry-O Sliwa. "We knew Hannah wanted her own land, and this was a way to help her access land," Perry-O says.

In 2016, after a rough year in which many of the vegetable fields flooded on the land she was renting near Decorah, Hannah started working to purchase 8 acres of the

(Continued on page 26 →)

Steve McCargar



David and Perry-O Sliwa



Hannah Breckbill





“Working with the LLC wasn't always easy, because I was proposing something pretty different than what many shareholders had anticipated. But since everyone's ideals were in alignment, I felt supported – and we have always come to a solution that works for everybody.”

– Hannah Breckbill

farmland through the LLC. She used her own savings, as well as savings-match funds she had earned through Land Stewardship Project's Journeyman's Program and money borrowed from family to buy some of the shares. For the rest of the funds, she relied on the generosity of the community.

The shares she purchased were sold to her at a discount. Perry-O and David Sliwa, who had known Hannah for several years, gifted her their shares. “Working with the LLC wasn't always easy, because I was proposing something pretty different than what many shareholders had anticipated,” Hannah says. “But since everyone's ideals were in alignment, I felt supported – and we have always come around to a solution that works for everybody.”

The Sliwas, who operated Sliwa Meadow Farm for years near Decorah, were eager to support Hannah's vision. “We're pretty excited to see someone who's young, intelligent, energetic and going beyond what we think of as a good caretaker of the soil, a good caretaker of the neighborhood,” Perry-O says. “I have such respect for Hannah and the ideas she puts out, the way she puts them out and how she invites others into her vision.”

A Cooperative Vision

Hannah views farming as a community effort, and soon invited her second cousin, Emily Fagan, to cooperatively operate Humble Hands Harvest. After completing a season of training at Patchwork Green Farm in 2017 through PFI's Labor4Learning program, Emily was looking for a place to start her own farm. Together, she and Hannah started to build infrastructure and grow vegetables on the land Hannah purchased from Hidden Falls, LLC. To help fund their infrastructure

plans, Hannah and Emily held a “farm-raising” party and launched a GoFundMe campaign. The local community rallied once more: Those efforts, along with in-person donations, raised \$20,000 – enough for a deer fence, well, greenhouse, cooler and delivery van.

In keeping with Hannah's belief in communal involvement in the farm, she and Emily made plans to establish cooperative ownership of the farm. In 2017, they restructured Humble Hands Harvest from a sole proprietorship to an LLC, to allow joint ownership and decision-making.

Financially, they structured the donations and gifts to stay with the cooperative, rather than go to them directly. In their internal accounting system, Hannah and Emily each maintain their own capital accounts to keep track of what they have invested. The cooperative also has its own capital account that Hannah and Emily call “the commons,” where the equity is held for assets that have been gifted or donated to the operation. “If we were to disband Humble Hands Harvest,” Hannah says, “there would be the question of what to do with that money. We just put in our bylaws that we would re-gift it to some mission-based farm.”

In addition to deciding where the shared equity would go, Hannah and Emily had to decide what would happen to their personal equity if one of the partners left the cooperative. They decided that the person who left would receive her personal capital investments, which would be paid out over a determined period of time. “Basically, we would continue to get paid back our monthly salary until it hit what we contributed,” Emily says. If that payback method ends up being unfeasible, invested capital will be paid back in other ways.

To govern all of these processes, Emily and Hannah established an operating agreement, modeled on a sample agreement for a worker-owned cooperative created by the Sustainable Economies Law Center, a non-profit based in Oakland,

California, that helps with legal issues related to community resilience and grassroots economic development. Hannah finds the operating agreement helpful to know what to do if there's a conflict or when issues arise. “It's a super important part of having a functional, working relationship,” she says. “I would recommend it even for people who are married.”

Planning for Growth – And Beyond

Emily officially bought into the cooperative in 2018, with the purchase of 3 acres of shares from Hidden Falls, LLC. She was gifted another acre, and Hannah purchased 1 more acre as well, increasing the farm's size to 13 acres. With this expansion, Hannah and Emily are ready to add another partner to the farm. They recognize that finding the right business partner requires patience. Once they find someone, they plan to test the three-way partnership over a trial period – they foresee it being a year, or more if needed – so everyone has a chance to see if the match will fit. “We would ask a new cooperative member to contribute some capital,” Hannah says. “We decided on \$5,500 as that amount, because that's the cost of an acre.”

Hannah and Emily have discovered that the worker-cooperative model works for them because they have similar expectations and values. They want their farm to be something bigger than themselves – something that will live on beyond their own time in the cooperative. Hannah says, “We have a transition plan for our farm built into the founding document, which feels really valuable, because I see so many farms that don't have that plan. Our transition plan favors beginning farmers and people who are willing to do what we have done.”

Seeing how the formation of Hidden Falls, LLC has benefited Hannah and Emily in their quest to farm, Hannah is now working on a project to bring together others who share interests similar to those of the original stakeholders. She envisions a sort of investment group or cooperative that can help acquire land and lessen the barriers for beginning farmers to start farming. She realizes there are many details to figure out, but is excited to lend her support to others looking to value the land and provide good food to others. ■

Top: A group walks around Humble Hands Harvest. **Middle:** Emily Fagan stands by open CSA boxes she and Hannah are preparing to pack. **Bottom:** Vegetable fields at Humble Hands Harvest.

Feeding Apple Cider Vinegar to Dairy Cattle

Farmers put this age-old supplement to the test

Apple cider vinegar has long been used as a folk remedy for humans and livestock alike. When fed to livestock, farmers claim it aids in fiber digestion, increases milk production and acts as a dewormer, among other benefits.

Over the past two years, several dairy farmers participated in an on-farm research trial to measure the effects of the supplement on their milk cows.

Farmers involved in the study wanted to compare the milk quantity and quality of cows fed apple cider vinegar to those who didn't consume it. In an ideal research setup, half of the herd would receive the vinegar and the other half would not, and the milk would be analyzed separately. A big lesson learned from this trial is that it's very difficult to conduct milk analyses in on-farm research settings. Because dairy farmers milk all their cows into the same bulk tank, there's not a good way to keep milk separate in order to measure the impact of a certain treatment on milk characteristics.

Because splitting the herd and keeping milk separate was not possible, the farmers tried a different method: They fed the apple cider vinegar to their herd for three-month increments, followed by three months of not feeding it. In the second year of the trial, they switched the time of year they

were feeding the vinegar to try to account for seasonal variability in milk production. Because of the limitations imposed by the realities of a working dairy, results of this trial are not statistically significant, but the farmers learned from their experiences nonetheless.

Administering Apple Cider Vinegar

Apple cider vinegar can either be mixed in with livestock feed or added to the animals' water source. In this trial, farmers added the supplement at a rate of 4 ounces per cow per day. When it's added to the feed, it is commonly dumped into a grinder-mixer while the feed is being mixed. John C. Gilbert, who farms near Iowa Falls, adds apple cider vinegar to his mix of corn, soybean meal and minerals. He lets the mix sit for 24 hours before feeding it to his dairy cattle, which allows the acetic acid to start breaking down the grains. "Apple cider vinegar makes starch more available," says John, who started feeding his cows apple cider vinegar four years ago. The Gilberts also add a heavy dose of vinegar to the cows' water around calving time because they believe it helps keep cows healthy during birth and the onset of lactation.

Francis Blake, of Waukon, and Scott Wedemeier, of Maynard, both Organic Valley dairy farmers, also mix it in with feed. Francis pours apple cider vinegar on barley as it's being ground, before he adds minerals, salt, kelp and diatomaceous earth to the feed mix. He recalls the first time he

fed apple cider vinegar: "The vinegar smell was strong, but the cows licked it right up. They really go after it when vinegar is in there."

Scott dumps the vinegar on finely ground corn and adds water to make a cakey mixture. This mixture is then blended with soybean meal and minerals to evenly distribute the vinegar. At one point, Scott tried spraying apple cider vinegar on the feed with a tank and electric pump, but found out this method would not work in the winter. The trial called for the participants to feed apple cider vinegar during the winter, in order to keep on the three-month feeding schedule. That added an extra obstacle – keeping the vinegar from freezing. Ideally, it's stored in a heated shop. But if that's not an option – as it wasn't for Scott – one workaround is to keep a 1,500-watt stock tank heater in the tote with the apple cider vinegar. This worked for Scott, but he still had trouble keeping the plastic valve from freezing on sub-zero days.

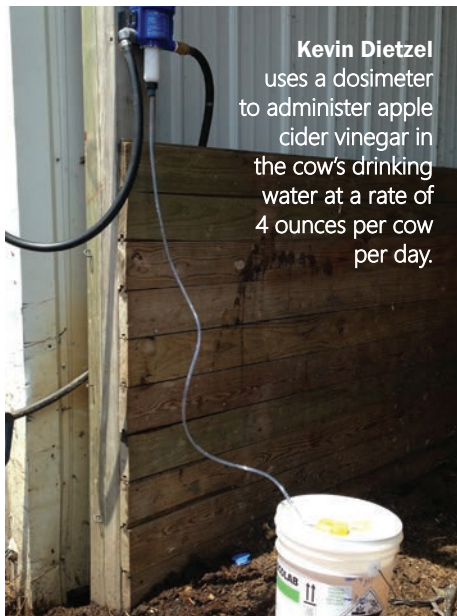
Apple cider vinegar can also be poured directly on hay or silage: some farmers use it on hay as a preservative to prevent mold. For Kevin Dietzel, a 100% grass-fed dairy farmer and cheesemaker in Jewell, adding the vinegar to his cows' water was the best option, since he doesn't feed any grain. Kevin used a dosimeter – a device that injects apple cider vinegar into his water

"I don't spend money unless there's a good reason to, and so far, the benefits seem marginal."

– Kevin Dietzel

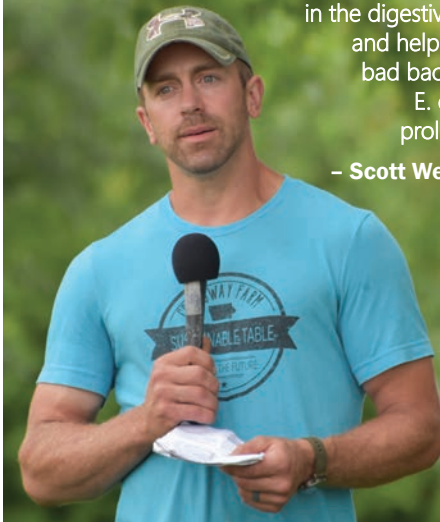


Kevin Dietzel uses a dosimeter to administer apple cider vinegar in the cow's drinking water at a rate of 4 ounces per cow per day.



"I think the apple cider vinegar promotes the right bacteria in the digestive system and helps to keep bad bacteria, like E. coli, from proliferating."

– Scott Wedemeier





“Everything is so seasonal, it’s hard to pinpoint when a product is helping or not.” – Francis Blake

Francis Blake, left and Eric Bryden stroll through pasture at Blake Family Farm outside of Waukon.

line at the desired concentration – from a 5-gallon bucket filled with vinegar.

“When I first started adding it to water at the beginning of each three-month period, the cows sniffed the water and acted funny,” Kevin says. “They were suspicious because it smelled different, but then they drank like normal after the first day.” He noticed a layer of solids at the bottom of the water tank during time periods when he fed apple cider vinegar that hadn’t been there otherwise, and thinks the acetic acid in the vinegar causes iron to settle out of his well water.

Milk Quality & Quantity Results

Scott Wedemeier and his family milk around 165 cows near Maynard in northeast Iowa. Milk yield data from June 2017 to December 2018 shows that, on average, when the herd was administered apple cider vinegar, the cows produced 87 pounds of milk per cow per day versus 78 pounds when vinegar was not offered. The cause of the 9-pound difference is difficult to parse out, since the Wedemeiers operate a grazing dairy. In these systems, milk production

is influenced heavily by season, weather and forage variability. The Gilberts also observed differences in milk production. “When we first started feeding apple cider vinegar, if we would run out, we would see an immediate drop in milk production by a couple pounds per cow per day,” John says. Yield results from this study are encouraging.

In addition to total yield, butterfat and protein are important components of milk, and dairy farmers are paid more for milk with higher butterfat and protein content. Generally, milk contains 3% to 4% butterfat and 3.5% protein. For each of the farmers in the study, apple cider vinegar had a negligible effect on the amount of butterfat and protein in the milk. And though it didn’t notably boost butterfat and protein, it didn’t adversely affect those milk components either. For the Wedemeiers, the vinegar also resulted in some cost-savings. “When we were feeding vinegar, we removed an expensive yeast product that promotes the digestion of fiber from the ration,” Scott says. “We were expecting butterfat

depression from that, but didn’t see as much irregularity as we expected. We saved money doing that.”

Farmer Observations

Although the results of this trial did not show statistical differences between groups, farmers made several anecdotal observations. Proponents of apple cider vinegar, for example, suggest that acetic acid shifts rumen pH in a way that helps fiber digestion – thus helping cows to digest forage. Scott noticed when his cows were supplemented with vinegar, they had smoother manure, indicating well-digested feed. “The digestion of the feed products was really good,” he says. “I saw more fiber and chunks when they were not on apple cider vinegar.” He also never dealt with cows “going off feed” – stopping eating – during vinegar feeding periods. “I think the apple cider vinegar promotes the right bacteria in the digestive system and helps to keep bad bacteria, like E. coli, from proliferating.” This trial has also got Scott wondering if apple cider vinegar would help with cows’ transition from their dry period – just before calving – to lactation.

Francis saw no real differences in animal appearance or milk production. “Everything is so seasonal,” he says. “It’s hard to pinpoint when a product is helping or isn’t.” But he still thinks it’s a good idea to keep feeding his cows apple cider vinegar, even though the benefits are hard to measure. Kevin, however, does not plan to continue feeding it to his cows based on his experiences during the trial. “I don’t spend money unless there is a very good reason to, and so far, the benefits seem marginal,” he says. Kevin wonders if increasing the rate from 4 ounces a day – or adding it to feed instead of water – would have reaped a greater benefit. Another problem with apple cider vinegar on Kevin’s farm is time: filling a 5-gallon bucket with vinegar every day adds yet another step to his daily chores.

The participating farmers are pleased they saw no negative effects from feeding vinegar, but still have to decide if administering it is worth the cost. The raw, food-grade vinegar for the study was ordered from The Vinegar Guys, which sells organic vinegar for \$5.50 per gallon and regular vinegar for \$3 per gallon. ■

Learn More

➔ [Read more about this project at practicalfarmers.org/research.](http://practicalfarmers.org/research)

Butterfat and protein percentage in milk of cows when fed apple cider vinegar in comparison to no vinegar supplementation*				
DAIRY FARMS	BUTTERFAT		PROTEIN	
	ACV	NO ACV	ACV	NO ACV
Francis Blake	4.7%	4.4%	3.5%	3.4%
Kevin Dietzel	4.6%	4.2%	3.8%	3.6%
Scott Wedemeier	4.1%	4.1%	3.2%	3.2%

*Because of the trial design, no statistical analysis was able to be conducted on comparisons between the groups.

Farming With a Plan

A business plan crafted while in the Savings Incentive Program continues to help Caleb and Jacqueline Shinn navigate their farm through change.

Growing up involved in agriculture is partly what drove Caleb and Jacqueline Shinn to think about farming with their family. Upon returning home from his deployment with the military, Caleb found a job in Osceola, Iowa. Once in their small apartment, they started looking for a farm on which to raise their growing family.

Jacqueline had grown up on a farm and Caleb spent summers doing a variety of farming-related jobs. Knowing they wanted to return to farming, the Shinns kept their eyes open for potential farmland. In 2012, three months after moving into their apartment, Caleb noticed a “for sale by owner” sign on a nearby farm. A few days later, with the help of a realtor, Caleb and Jacqueline placed an offer on a 12-acre farm, which would become L4 Farms.

Initially, the Shinns had intended to plant soybeans their first spring on the farm. But they quickly realized the plot was too small to effectively rent or custom-hire the work. Since the land had been a former horse pasture, they decided to graze cattle instead – something Jacqueline had always wanted on the farm. The couple purchased a cow and a heifer expecting that both were already bred – and intending to start the

process of building a herd. But it turned out only the cow was pregnant. The rookie mistake was the first of many hiccups the family would encounter as they embarked on the farming path – one that started as a hobby, but grew into a business. Because Caleb wanted a little bit of everything on the farm, as their family grew, so did the farm’s enterprises. Today, the Shinns raise beef, pork and eggs for market, and fruits, nuts, vegetables, bees and rabbits for family use.

Connecting With Farmers

The Shinns’ farming plans didn’t always include business aspirations. Initially, they just saw the farm as a lifestyle choice they wanted for themselves and their family. So as they got started raising cattle, their decisions were based on what made the most sense for them as a family. Caleb discovered the work of Joel Salatin, a well-known grass-based farmer and author from Virginia. Wanting to be good stewards of the land – and inspired by Joel – he and Jacqueline decided to use rotational grazing practices to help improve the farm’s soil. The pivot to seeing farming as a potential business came after Caleb and Jacqueline successfully marketed their son’s first steer in 2014. “We found that farming had the potential to not only feed our family, but also provide additional income,” Caleb says. In early 2015, the shift to farming for profit accelerated: The Shinns added eggs as an

enterprise, and they experimented with raising broiler chickens as well.

In the fall of 2015, Caleb and Jacqueline learned about Practical Farmers’ Savings Incentive Program. Knowing a sound business needs a solid plan, they applied to the program in hopes of getting help creating their farm business plan. After being accepted into the two-year program – the Shinns officially started in January 2016 and graduated with the SIP Class of 2017 – they were connected with a mentor and started attending various PFI events, where they had a chance to network with and learn from other farmers. These connections, they say, led to tangible improvements in their farm business. “Hearing from other farmers and professionals helped us improve and increase efficiency on our farm,” Caleb says. Through SIP, the Shinns learned about marketing methods to help them sell halves and wholes of the livestock they raised. They even found an insurance agent that meet their needs through an exhibitor while attending the PFI annual conference.

Creating a Plan – and Planning for Change

Another part of completing the Savings Incentive Program was creating a business plan. When the Shinns applied for the program, they had a simple business plan that outlined what they wanted to

Savings Incentive Program Applications

Opening Soon!

APPLY TO THE SAVINGS INCENTIVE PROGRAM!

Applications will open on Aug. 21 for the next Savings Incentive Program class! The two-year program helps beginning and aspiring farmers find success with their farm start-ups by providing

- **Guidance on how to draft a business plan**
- **A financial match of up to \$2,400 in savings**
- **Opportunities to learn from experienced farm mentors**

→ *and more!*

Take advantage of the program that allowed Caleb and Jacqueline to launch their farming business and armed them with skills to adapt when faced with challenges. Applications will be accepted from Aug. 21 until Oct. 13, 2019. Those enrolled will start in January 2020 as part of the SIP Class of 2021.

Questions?

Contact Greg Padget at (515) 232-5661
or greg@practicalfarmers.org.



The Shinn family poses for a portrait on their farm near Osceola.

accomplish within the following seven years. But they found this plan lacked the details needed to specify how they would reach those objectives – and they weren't sure how to craft a plan that provided enough of a roadmap without being too cumbersome.

This is where the Savings Incentive Program really helped. Caleb and Jacqueline weren't looking to create the kind of exhaustive business plan one could take to the bank to seek a loan. Rather, they wanted a plan that would help them become more effective and efficient. "Going through the business plan portion [of SIP] showed us many options to tweak and guide our plans," Jacqueline says. "The largest advantage we got from SIP was learning the sequential layout of how to build the business plan." In fall 2016, nearly a year into the Savings Incentive Program, the couple experienced firsthand the importance of having a robust and adaptable plan: Caleb was deployed overseas again, and he and Jacqueline discovered their fifth child was on the way. These developments prompted some necessary changes to keep the farm going.

Rather than putting the program on hold, Caleb and Jacqueline decided to stay in the program so they could keep building their knowledge – and the farm – during

"The largest advantage we got from SIP was learning the sequential layout of how to build the business plan." - JACQUELINE SHINN

this challenging phase. Caleb kept learning while overseas, watching farminars live in the early-morning hours. Meanwhile, Jacqueline examined what farming activities could still happen while at home raising the family solo. Labor and time had become a deciding factor in what was feasible. Together, she and Caleb looked at their business plan and made adjustments based on the more limited time and labor they now had available to devote to the farm.

In late spring 2017, Caleb returned from deployment to reunite with his now larger family. He appreciates that his family is growing up on the farm. "The farm is the best playground the kids could have, on top of learning some good skills," he says. He and Jacqueline are currently working to create better and more efficient fencing for their grazing system. They are also working to improve the genetics of their livestock – and they continue to learn and seek advice from others. Tending to their

business plan and adjusting it as needed remains a regular part of their business practice. Having seen the benefits of creating a strong business plan, Jacqueline now stresses the importance of this process to other beginning farmers. "Don't put in just enough," she advises. "This will be your business. Dig in to the business planning like your life depends on it."

Planning for the Future

Connecting with PFI's network of farmers and other resources while in the Savings Incentive Program also continues to be helpful. "I find myself looking at the PFI listserves, and love reading what others are asking," Caleb says. "It is a great tool that I want to use more in the future."

As the Shinn family looks to the future, they see L4 Farms scaling up and moving closer to Van Buren County. Jacqueline's family still lives in the area, and she would like to move closer to assist aging family when the time comes. She and Caleb are now using their business plan to help plot this move and secure funding to purchase around 100 acres. The move could be five to 10 years down the road – but as Caleb and Jacqueline have learned, careful planning can help them prepare for the reality ahead. ■

Review of: “Nourishment: What Animals Can Teach Us About Rediscovering Our Nutritional Wisdom”

Reading Fred Provenza’s book “Nourishment” took me back to his three-day PFI-sponsored workshop in Winterset during the Indian summer of November 2016. New to farming, and to rotational grazing practices that represented the history of my farm, I wanted to attend the workshop as soon as I read the description of the event.

When Fred began the first of his many Powerpoint presentations on day one, I knew I was in for a ride! Readers of “Nourishment” should likewise be prepared for a trek through thought-provoking information as well.

The book is a synthesis of Fred’s life work. He draws on experiences from growing up fishing in mountain streams of Colorado, to working on a Rocky Mountain livestock ranch, to researching goats and sheep in the shrub-grassland rangelands of Utah as a graduate student and professor at Utah State University.

The heart of the book is about food choice and feeding behavior of ruminant animals. The book is not a “how-to,” however. Rather, Fred combines his observation and study of animals to describe why animals select food the way they do given the opportunity. He does so with stories from his research findings and those of others to develop a big-picture view of food preference by animals involving everything from microbes in the ruminant gut to plants and plant communities in the natural landscape.

Early in his research career, Fred studied the feeding habits of goats on the shrub blackbrush. Why did the goats prefer the older, seemingly less palatable stems of the shrub rather than the new shoots that are more nutritious and higher in energy and protein? To find out, Fred conducted feeding trials to test the goats’ feeding preferences. He extracted secondary plant chemical compounds from the new shoots and combined them with flavoring into food pellets, which he fed to the goats. To his surprise, the goats ate the flavored pellets of every chemical compound, including pellets containing tannins. But when he fed the goats tannin pellets a second time, he found the goats would not eat them – they had learned after the first feeding that the tannins were undesirable and unpalatable. But how? Fred concluded that the tannins communicate with the cells and organ systems in the goats’ bodies to provide feedback that causes a dislike for the flavor associated with tannins.

While researching sheep in winter, Fred observed that the animals ate 10 species of shrubs and a grass species. In the morning, the sheep ate sagebrush. In the afternoon, they ate grass and other shrubs, and in the evening, the sheep ate four-wing saltbrush. The pattern revealed that the sheep routinely ate meals in courses. From this



study – and other research on sheep and cattle feeding habits by colleagues – Fred concluded that the animals eat plants in a particular sequence and combine plants that contain different amounts of energy, protein and secondary compounds to meet their nutritional needs and detoxify harmful compounds.

These are some of the gems of insight in Fred’s book. There are many more awaiting the reader. In other parts of the book, Fred discusses ideas on evolutionary biology and the extension of nourishment to human health and the well-being of current and future generations. These parts may seem more peripheral to some readers.



The book is written at a scholarly level with pages of footnotes and references. Some sections may be difficult to understand on first reading, but the book and ideas are worth following through to learn concepts that may be applied to or make sense of observations from one’s own farm. Readers may want to revisit some sections later to glean another layer of understanding.

Fred does not give suggestions for how to offer native plants in the diets of livestock in the more humid climate of the former prairie and savanna ecosystems of Iowa and the Upper Midwest, nor does he give examples of preferred native plants from these regions. Maybe that is a task for those of us living in this region to learn and figure out. Information from the book provides initial guidelines on how to start. ■

Mary Damm is a plant ecologist, most recently researching plants and soils of native and reconstructed tallgrass prairies in Iowa for her doctorate in biology from Indiana University Bloomington. She is also a farmland owner of Prairie Quest Farm, a 120-acre grass-based livestock farm near McGregor, Iowa.

Meet Our Green Iowa AmeriCorps Service Members

Four service members will expand our work capacity for the summer

This summer, Practical Farmers is pleased to host four Green Iowa AmeriCorps service members:

- **Hannah Grosspietsch** – who graduated Iowa State University in 2019 with a bachelor's degree in animal science and a minor in environmental studies.



Hannah will help us with field days and other program-related tasks.

- **Jace Hadish** – who graduated ISU in 2019 with bachelor's degrees in animal ecology and global resources. Jace formerly worked as PFI's media assistant, and will continue to support our communications efforts during his service term.



- **Taylor Hintch** – who graduated ISU in 2019 with a bachelor's degree in global resources and a minor in horticulture and sustainability. Taylor will support PFI's Cooperators' Program and on-farm research efforts.



- **Grace Yi** – who is currently seeking dual master's degrees at ISU in sustainable agriculture and community and regional planning. She earned her bachelor's degree in environmental science from Creighton University in 2015, minoring in biology, and will support PFI's strategic initiatives team.



through University of Northern Iowa's Center for Energy & Environmental Education. It's a part of the national AmeriCorps program, which is a division of the Corporation for National and Community Service, a federal agency created by former President William J. Clinton in 1993 that includes a network of national service programs designed to meet critical needs in education, public safety, health and the environment.

University of Northern Iowa created the Green Iowa AmeriCorps program in 2009 to address conservation and sustainable use of energy resources in several Iowa communities after the devastating floods of 2008. Since then, the program has expanded and now includes three tracks – including the Land and Water Stewards track, through which all four service members are volunteering at PFI. ■

Green Iowa AmeriCorps is a statewide community service program operated

Save the Date! ↘

NEXT GENERATION SUMMIT

Sunday, AUGUST 4

1:30 – 5:30 p.m.

Veterans Reception Center

910 Main St.

Van Meter, IA 50261

To register:

Contact Debra Boekholder, debra@practicalfarmers.org or (515) 232-5661, or sign up online at practicalfarmers.org/field-days, by Wednesday, July 31.

Event questions:

Greg Padget: (515) 232-5661
greg@practicalfarmers.org

About the Summit

Through workshops and networking, this **FREE** event brings together beginning farmers, experienced farmers and landowners working toward farm succession in a meaningful way to address the challenge of farmland access.

The summit includes two workshops aimed at helping farmland owners and beginning and aspiring farmers develop a plan to fulfill their farm visions. Farmland owners will work on setting goals that can help them move toward a farmland legacy reflecting their values. They will also learn how to take the next steps to start the transition process when the time is right. Beginning and aspiring farmers will walk through the process of determining their farming purpose and planning the next steps.

Subscribe to New E-Newsletters Focused on Cover Crops and Farm Transfer

There are many ways to stay connected with Practical Farmers – including through our family of email newsletters. In keeping with our effort to provide content that addresses our members' priorities and interests, we recently added two new publications to our suite of e-newsletter offerings: one dedicated to cover crops and another to farmland transfer. Interest in both topics has grown considerably among PFI members, and the broader public, and the newsletters are a way to share targeted information, resources and events.

The Practical Cover Cropper features timely information and updates on cover crop management, questions, research, events and more. In each issue – which comes out once or twice a month, depending on what's timely and relevant – you'll receive cover crop content straight from farmers' observations and on-farm research trials, plus peer-reviewed scientific articles to help you answer your most pressing cover crop questions. We will also



share events and updates about cover crop happenings in Iowa and beyond.

Our new quarterly **Farm Transfer Newsletter** debuted in mid-June, and is dedicated to sharing events, resources and information related specifically to farmland transfer.

With these additions, we now offer six email newsletters. The others include:

- **Practical News** – our main weekly email newsletter sharing news, events, resources and more related to PFI's work.
- **Beginning Farmer Updates** – a monthly dispatch featuring events, resources, land access opportunities and more targeting beginning and aspiring farmers.
- **Farminar Updates** – a publication that goes out seasonally when our free online webinar series, called farminars, are taking place with descriptions and reminders about upcoming presentations.
- **Small Grains News** – a monthly e-newsletter filled with helpful tips, resources, events and more dedicated to helping farmers successfully grow small-grains crops.

Members and supporters are welcome to join any of these email newsletters. To sign up, visit practicalfarmers.org/email-newsletters, or contact Jason Tetrick at (515) 232-5661 or jason@practicalfarmers.org. ■

Meet Josie, Our New Summer Office Support



Josie Dubiel started working with PFI in May as our summer office support staff. She is a senior at Iowa State University majoring in mathematics and Spanish. Josie was born in Evanston, Illinois, and moved to Ames right before high school when her mother took over part of the family farm in Maxwell, where her family now grows corn and soybeans. In her free time Josie loves to cook, bake, read, write, spend time outside and travel, which she discovered through a study abroad trip to Spain last fall. ■

Save the Date: Small Grains Conference 2019



Join PFI for our third small grains conference – this year, in the beautiful Wisconsin Dells. The conference will be held Aug. 15-16 at the Wintergreen Resort and Conference Center. The cost is free for PFI members, \$40 for non-members. Registration is required by Monday, Aug. 12. Visit practicalfarmers.org/events, or call (515) 232-5661 to sign up. Families are welcome! Hotel rooms come with passes to Noah's Ark, America's largest water park. A block of rooms is being held for PFI until July 20. ■

Purchase a Unique Ring and Support PFI!



An anonymous Practical Farmers of Iowa member generously donated a unique and valuable ring as a way to help us raise money to support our work. The ring is a size 7 and features a Michigan stone, three diamonds and 14-karat yellow gold. The ring has an appraised value of \$1,400, but is being sold for \$700. Proceeds from the sale of this ring will support Practical Farmers of Iowa. To purchase this ring, visit facebook.com/marketplace/item/347547902625578. ■

Welcome, New Members!

DISTRICT 1 - NORTHWEST

- Cody Glasnapp – Lytton
- Jesse Peterson – Laurens

DISTRICT 2 - NORTH CENTRAL

- Abram and Jessica Frank – West Bend
- Tanner Hibbs – Marshalltown
- Don Hofstrand – Mason City
- Kenneth Johnson – Northwood
- Leland Meitner – Saint Ansgar
- *Bonita Neff and Rita Dostal-Neff – Toledo**
- Melissa Stukenholtz – Jamaica

DISTRICT 3 - NORTHEAST

- Dalton Brown – Decorah
- Leland Freie – Cedar Rapids
- Mark Nechanicky – Buckingham
- Bernard Schroeder – Dyersville
- Nicholas Smith – Epworth
- Terry Ward – LaPorte City

DISTRICT 4 - SOUTHWEST

- Camden Watson – Prairie City
- Jill Duncan – Des Moines

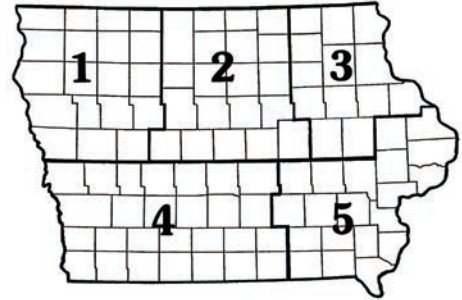
- John Fleming – Des Moines
- Karen Gerlich – Panora
- Dennis Kaltenheuser – Elkhart
- Jorgen Rose – Newton
- Jerry Schultes – Audubon

DISTRICT 5 - SOUTHEAST

- Joel D. Kurtenbach – Wyoming
- Don Mathews – Danville
- Ruth and Roald Nelson – Coralville
- Laura Norian – Polk City
- Cubwa Rajabu – Des Moines
- Corbin Scholz – Solon
- Tim Harned – Oskaloosa
- Iowa Organic Association – Des Moines

DISTRICT 6 - OUT OF STATE

- Cody Beacom – Mount Vernon, OH
- *Sarah Bull Delati, Tony Bull and Kathy Bull – Morrison, IL**
- Diane DeWitte – Montgomery, MN
- Keith Gorham – Illinois City, IL
- Bryan Guenther – Columbus, WI
- Trent Hollerich – Good Thunder, MN



- Kevin Connolly – LeCenter, MN
- Michael Hromanik – Murdock, NE
- Amy Kinman – Cuba, MO
- Ted Krauskopf – Highland, IL
- Nate Miller – Zionsville, IN
- Jim Moseley – Clarks Hill, IN
- Rick Neuvirth – Elkton, MN
- Trent Sanderson – Clare, IL
- Trent Stoller – Haviland, OH
- Paul Thompson – Madison, WI
- Shannon Twait – Harmony, MN

* Indicates lifetime member of Practical Farmers of Iowa



Guests walk through a cereal rye field at Brian Corkill's (right) farm during the June 6 field day he hosted near Kewanee, Illinois.

Practical Farmers Events

Note: Full details about all events are available at practicalfarmers.org/field-days.

JULY

JULY 10: Farmland Owner Legacy Award + On-Farm Conservation Event

Hosts: Lee Tesdell | 5-8 p.m. | Slater, IA | RSVP for the meal by July 5

JULY 11: Making an Orchard Work in Iowa

Hosts: Paul Rasch and Sara Goering | 2-5p.m. | Solon, IA

JULY 16: Growing Vegetables for Your Rural Community

Hosts: Pete Kerns and Natasha Hegmann | 4-6 p.m. | Elkport, IA | RSVP for the potluck by July 12

JULY 17: Soil Health and Water Quality Workshop

9 a.m. - 1:30 p.m. | Grundy Center, IA | In partnership with Grundy County Soil and Water Conservation District

JULY 17: Prairie and Beneficial Insect Habitat on an Organic Crop Farm

Hosts: Paul and Karen Muggé | 10 a.m. - Noon | Sutherland, IA | RSVP for the meal by July 12 | In partnership with Xerces Society

JULY 17: Organic Row Crop Production and Mechanical Weed Control

Hosts: Paul and Karen Muggé | 1-3 p.m. | Sutherland, IA | RSVP for the meal by July 12 | In partnership with University of Northern Iowa

JULY 19: Commercial Hair Sheep Production on Pasture

Host: Bart VerEllen | 10 a.m. - 1 p.m. | Blakesburg, IA | RSVP for the meal by July 16

JULY 23: RAGBRAI at Howell's Greenhouse and Pumpkin Patch

Host: Fred Howell | 6-10 a.m. | Cumming, IA

AUGUST

AUG. 3: One Family's Vision for Agroforestry in Iowa

Host: Bruce Carney | 10 a.m. - 2 p.m. | Maxwell, IA | RSVP for the meal by July 31

AUG. 4: Next Generation Summit

1:30-5:30 p.m. | Van Meter, IA | Register by July 31

AUG. 6: Soil Health Smorgasbord for Farmers + Family Learning Event

Host: Adam Nechanicky | 2-7 p.m. | Buckingham, IA | In partnership with Iowa Seed Corn Cover Crops Initiative and Benton/Tama Nutrient Demonstration Project

AUG. 7: Growing, Grading, Selling and Storing Chestnuts

Hosts: Roger and Kay Smith | 1-3 p.m. | Columbus Junction, IA

AUG. 14: Transition to Organic With Diversity to Improve Soil Balance

Host: Robert Alexander | 10 a.m. - 2 p.m. | Remsen, IA | RSVP for the meal by Aug. 9 | In partnership with University of Northern Iowa

AUG. 15-16: Rotationally Raised: Making Small Grains Work Conference

Wisconsin Dells, WI | Free for PFI members; \$40 for non-members | Register by Aug. 12

AUG. 16: Cultivating Farm Resilience for a Changing Climate

Hosts: Rosmann Family | 1-4:30 p.m. | Harlan, IA

AUG. 18: U-Pick Cut Flowers: Production and Management

Host: Cathy Lafrenz | 2-4 p.m. | Donahue, IA

AUG. 22: Grazing Cover Crops and Building Community 101

Host: Greg Rebman | 1-4 p.m. | Frederick, IL

AUG. 24: Managing an Organic Apple Orchard

Hosts: Maury and Mary Wills | 10 a.m. - Noon | Adel, IA

SEPTEMBER

SEPT. 17: Establishing Pollinator Habitat at Scattergood Friends School

Host: Mark Quee | 4-7 p.m. | West Branch, IA | RSVP for the meal by Sept. 13 | In partnership with Xerces Society

SEPT. 21: Rotationally Raising Poultry on Pasture

Host: Susan Young | 2-4 p.m. | Iowa City, IA | RSVP for the social by Sept. 18

SEPT. 22: Beekeeping in Iowa: Challenges and Sweet Rewards

Host: Carol Fassbinder-Orth | 4-7 p.m. | Glenwood, IA | RSVP for the meal by Sept. 18

SEPT. 28: Using Goats for Restoration and Market Diversification

Host: Adam Ledvina | 1-5 p.m. | Chelsea, IA | A potluck meal will follow; please bring a side dish to share

Other Events

Note: Find more events online at practicalfarmers.org/calendar.

JULY

JULY 9: Multiple Benefits of Going Organic and Policies Needed to Transition

Hosts: Patti and George Naylor | 4-7 p.m. | Churdan, IA | Learn more at iowaorganic.org

JULY 13: Grain Place Foundation Field Day

8:30 a.m. - 4 p.m. | Marquette, NE | Learn more at grainplacefoundation.org/fieldday

JULY 14: NIFF at Luna Valley Farm

Hosts: Tom and Maren Beard | 4:30-7:30 p.m. | Decorah, IA | Learn more at iowafreshfood.com/site/niff-calendar

JULY 21: North Iowa Local Food Connection - July Field Day

Hosts: J&J Drydock Shrimp; Red Shed Gardens | 3-5:30 p.m. | Forest City, IA | Learn more at healthyharvestni.com

JULY 25: Expanding Your Vegetable Farm and Knowing When It's Time to Expand

Hosts: Mike Bollinger and Katie Prochaska | 4-7 p.m. | Decorah, IA | Learn more at iowaorganic.org

JULY 27: Go Hog Wild for Farming at Erstwhile Farms

1-2 p.m. | Columbus, NE | Learn more at erstwhilefarm.com

JULY 31: Nuts for Water Quality Field Tour

8:30 a.m. - 8 p.m. | Multiple stops - tour departs from Iowa City | Learn more at treesforever.org

AUGUST

AUG. 5: ISU Fruit and Vegetable Field Day

2-6:30 p.m. | Ames, IA | To learn more, visit extension.iastate.edu/vegetablelab

AUG. 7: Tour the American Natural Processors Facility

1-3 p.m. | Cherokee, IA | Learn more at iowaorganic.org

AUG. 14: Organic Dairy Production at Prairie Star Farm

4-7 p.m. | Waukon, IA | Learn more at iowaorganic.org

AUG. 17-18: NIFF Farmer Retreat at Turkey River Farm

4:30 p.m. (Aug. 17) - 2 p.m. (Aug. 18) | Elkport, IA | Learn more at iowafreshfood.com/site/niff-calendar


AUG. 25: AgArts Field Day

Hosts: Dean and Denise Biechler | Noon - 4 p.m. | Ames, IA | Learn more at agarts.org

AUG. 28: SILT Showcase Day

Hosts: Richard, Robert and Jane Blazek | 1-4 p.m. | Lawler, IA | Learn more at silt.org

ON-FARM RESEARCH



Stefan Gailans (left), PFI's research and field crops director, and Jack Boyer inspect one of Jack's on-farm research trial fields on June 12 as they walk through a field of soybeans planted into standing cereal rye, Jack farms near Reinbeck and is testing whether a soil microbial inoculant will help boost soybean yields.

GROW YOUR FARM WITH PRACTICAL FARMERS. JOIN OR RENEW TODAY!

Want to join or renew online? Visit practicalfarmers.org/join-or-renew.

MEMBER INFORMATION

Contact Name(s)*: _____

Farm or Organization Name: _____

Address: _____

City: _____ State: _____ ZIP: _____ County: _____

Phone 1: _____ Phone 2: _____

Email 1: _____ Email 2: _____

* For Farm or Household membership, please list names of all persons included. For Organization membership, please list one or two contact persons.

JOIN OR RENEW

1. THIS ANNUAL MEMBERSHIP IS A:

- New Membership
- Renewal

2. I AM JOINING AT THE LEVEL OF:

- Student – \$20
 - Individual – \$50
 - Farm or Household – \$60
 - Organization – \$110
 - Lifetime Member* – \$1,000
- * See details at <http://bit.ly/PFI-lifetime>

3. I AM JOINING OR RENEWING AS:

- An Aspiring Farmer
- A Farmer or Grower
- Non-Farmer

4. HOW DID YOU HEAR ABOUT PFI?

EMAIL DISCUSSION GROUP SIGN-UP

When you join our email discussion groups, you can network, build community and exchange ideas from anywhere, at any time. Sign up for as many groups as you'd like (and be sure to include your email address above)!

- Cover Crops
- Field Crops
- General
- Horticulture
- Livestock
- Policy

SUSTAIN PRACTICAL FARMERS WITH AN ADDITIONAL DONATION

For the sake of the long-term health and vitality of Practical Farmers of Iowa, we ask you to consider making a donation above and beyond your membership fee. Practical Farmers of Iowa is a 501(c)3 organization. Your gift is tax deductible to the extent allowed by law.

I would like to make a one-time, tax-deductible donation to PFI in the amount of:

- \$1,000
- \$500
- \$250
- \$100
- \$50
- \$ _____

Or, make a recurring monthly or quarterly donation. This will be automatically charged to your credit card on the first day of each month or quarter.

- Yes, I would like to give \$ _____
- per month
- OR
- per quarter

PAYMENT

Membership Level\$ _____ per year for _____ year(s) = \$ _____

Additional Donation = \$ _____

TOTAL AMOUNT = \$ _____

- Check or money order is enclosed (Please make payable to "Practical Farmers of Iowa.")
- Credit card (Visa, MasterCard or Discover only)

Name on card _____ Number _____

Exp. Date _____ CVC# (3 digits) _____ Please automatically charge this credit card annually for membership

Office Use Only: Check # _____ Check date _____ Total amount _____ Notes _____



ABOVE: Victor Kimberling (left), of Mechanicsville and Gene Efringer, of Independence, chat in a field of cereal rye on June 4 during the field day Terry Ward hosted near La Porte City exploring ryelage as a feed for cattle, diverse crop rotations and more.

BACK COVER: Guests look at a hazelnut bush during the field day hosted by Terra (far right) and Matthew Hall on June 4. The hazelnuts are part of a 1.5-acre food forest the Halls have been planting and expanding on their farm near Missouri Valley.



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