the Practical Farmer

A quarterly publication of Practical Farmers of Iowa

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Jeff Hafner (left) farms with his dad Earl Hafner (right).

In this issue

PFI Board of Directors

We love to hear from you! Please feel free to contact your board members or PFI staff.

DISTRICT 1 (NORTHWEST)
David Haden
4458 Starling Ave.
Primghar, IA 51245
712.448.2012
highland33@tcaexpress.net

Dan Wilson, PFI Vice-President
4375 Pierce Ave.
Paullina, IA 51046
712.448.3870
the7wilsons@gmail.com

DISTRICT 2 (NORTH CENTRAL)
Sara Hanson
2505 220th Ave.
Wesley, IA 50483
515.928.7690
dancingcarrot@yahoo.com

Tim Landgraf, PFI President
1465 120th St.
Kanawha, IA 50447
641.495.6367
libland@peconet.net

DISTRICT 3 (NORTHEAST)
Tyler Franzenburg
6915 15th Ave.
Keystone, IA 52249
319.721.2176
tfranzenburg@hotmail.com

Jeff Klinge
16609 Highway 13
Farmersburg, IA 52047
563.536.2314
jefkling@neitel.net

DISTRICT 4 (SOUTHWEST)
Earl Hafner
303 Oak Ridge Dr.
Panora, IA 50216
641.757.0560
hafnerin@netins.net

Sean Skeehan
746 Wyoming
Chariton, IA 50049
641.203.0758
skeebout@bluegatefarmfresh.com

District 5 (Southeast)
Ann Cromwell, PFI Secretary
3303 240th St.
Williamsburg, IA 52361
319.668.8248
anniowa@commspeed.net

Linda Grice
25739 170th St.
South English, IA 52335
319.667.2350
agricol@netins.net

AT-LARGE
Joyce Lock
725 54th St.
Des Moines, IA 50312
515.277.3615
stirjoy@aol.com

Gail Hickenbottom, Treasurer
810 Browns Woods Dr.
West Des Moines, IA 50265
515.256.7876

ADVISORY BOARD
Larry Kallem
12303 NW 158th Ave.
Madrid, IA 50156
515.795.2303

Dick Thompson
2035 190th St.
Boone, IA 50036
515.432.1560

PFI STAFF

For general information and staff connections, call 515.232.5661. Individual extensions are listed in parentheses after each name.

Teresa Opheim (302)
Executive Director
teresa@practicalfarmers.org

Suzi Bernhard (301)
Finance & Benefits Manager
suzi@practicalfarmers.org

Patrick Burke (303)
Office Manager
patrick@practicalfarmers.org

Sarah Carlson (305)
Research & Policy Director
sarah@practicalfarmers.org

Kevin Dietzel (307)
Grazing Coordinator
kevin@practicalfarmers.org

Luke Gran (308)
Next Generation Coordinator
luke@practicalfarmers.org

Tomoko Ogawa (306)
Market Development, Local Foods, PFI Cook
tomoko@practicalfarmers.org

Ann Seuferer (309)
Communications Director
ann@practicalfarmers.org

Sally Worley (304)
Next Generation & Horticulture Director
sally@practicalfarmers.org

Contents

the Practical Farmer

the Practical Farmer keeps farmers and friends of farmers in touch with one another and provides informative articles about the latest on-farm research, demonstration and observation to help all types of farming operations to become profitable, while caring for the land that sustains them. Provided as a member benefit to PFI supporters, ***the Practical Farmer*** also serves to update members on PFI programming.

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Newsletter Editor: Ann Seuferer

(Back issues are available upon request.)

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From the Director

PFI fine tunes Vision, Mission and Values As it looks to the future

by Teresa Opheim

PFI staff say, "Thank you!" to Rich Pirog as he leaves Iowa for Michigan State University.

I've read PFI's new values statements a dozen times now, and they still leave me feeling excited:

We value ingenuity, exploration, experience and sharing of knowledge for solving on-farm challenges.

We value diverse and independent farm operations that are integrated with and enhance the earth's ecosystems.

We value an agriculture that is economically and ecologically sustainable and built on a fair market system.

We value widespread ownership of land and resources.

We value commitment to family, community and the celebration of wholesome food.

We have a dynamite Strategic Directions Committee, which has met a number of times to develop these values and take a fresh look at our mission and vision as well. Serving on that committee: Tim Landgraf, Sean Skeehan and Dan Wilson from the PFI Board, Ellen Walsh-Rosmann and Jerry Peckumn from the general membership, and staffers Sarah Carlson and me. The PFI Board then approved these values, the vision (on the back of our newsletter) and this revised mission for our organization:

Practical Farmers of Iowa is an open, supportive, and diverse organization advancing profitable, ecologically sound and community-enhancing approaches to agriculture through farmer-led investigation and information sharing.

Using these statements as guidance, the Strategic Directions Committee will meet several times before August, to bring a full strategic directions document to the full board for approval.

One of the most interesting questions to come out of our strategic directions work is: "What does PFI own?" By this we mean, what are we absolutely the best at? What attributes make this organization different from any other?

According to many, we own "farmer-to-farmer exchange." No other organization works so hard and so successfully to provide opportunities for farmers to learn from each other. Our goal is to provide 90 of these opportunities for you to network in 2011.

We know this approach is effective in helping you improve your farms. For example, 66 percent of farmers report that participating in PFI has made them better land stewards. See pages 6-10 for more details.

Thank you, Rich Pirog

You know those people you can always count on, people you can talk freely with, people who will celebrate your successes? Rich Pirog has been one of those people for me. I will miss having him as a close colleague, as he leaves Iowa for Michigan State University. Thank you, Rich, for all your vast commitments to sustainable agriculture in Iowa, most recently your tireless effort to develop a food and farm plan for the Iowa Legislature to consider.

Thank you for your support,

Teresa

Farm dog Maya is a Beagle-Corgi mix, age six. Her humans are Ryan and Janice Marquardt of Wild Rose Pastures. "Much to my wife's consternation, Maya is a couch dog," confesses Ryan.

Keeping the farm together: The Frantzens work through legacy planning

by Teresa Opheim

As the snow swirled around the Frantzen Farm this winter, so did Tom and Irene Frantzen's thoughts about how to leave a legacy. Tom and Irene have so many questions to consider: Should the farm pass to their children? What if they don't have lineal descendants in the future? What will happen if one of them gets a major illness next year? Is more life insurance needed? How do they ensure that their farm continues as a conservation farm in perpetuity?

All the questions are "enough to give you a headache for a month," Tom says. "This is the front line of generational transfer. And it is not easy."

Foremost in their minds: Provide for their three children, Jess, Jolene and James, but keep the farm together.

Near New Hampton in Chickasaw County, Frantzen Farm is a showcase stewardship farm, 320 owned acres with 285 tillable acres and three miles of shelter belts. The Frantzens have a 60-head beef-cow herd and a brood-sow herd of 40. They use a diversified seven-year organic crop rotation of corn, soybeans, corn, succotash, hay, pasture and pasture. Tom and Irene also are co-owners of an organic feed business called Frantzen Farm Feeds LLC.

Tom and Irene's daughters, Jess and Jolene, are grown and away from the farm; their youngest child, James, purchased an acreage just north of them two years ago. He works for Organic Valley and also farms with Tom and Irene, right now contracting with them to supply feeder pigs.

Holistic management is guiding their legacy planning process as it has guided all of their major decision making since they first took holistic management training offered through Land Stewardship Project.

"Holistic management is really about making good decisions. And you cannot make good decisions without figuring out what you most want out of life," Tom says. "Then you test your actions against your values. It challenges you to make your decisions compatible with your values. Having a clearly defined set of goals is a critically important step."

Irene adds, "You have to incorporate your whole family into the discussion. The first thing we did was sit down with the kids and include them. James was very young at the time, but he came up with something his sisters wanted too. They all wanted water on the place, and that resulted in a farm pond."

The motto that the Frantzens developed through their holistic management training has remained the same after all these years: We see the bounty of the Lord in the land of the living. "Our motto still reflects how we're operating now. We still want to see a bountiful harvest, a comfortable healthy living on this land, but we also want biological diversity," Tom says.

> ***"We want to prevent a situation where the land would be sold and the proceeds used for our care ..."***
>
> *Tom Frantzen*

To help them work through succession issues, Tom and Irene go to Osage to meet with a farm transition consultant, Myron Friesen of Farm Financial Strategies. "Facilitation is terribly important when you have the discussion about your farm's future direction. Myron has given us the bigger, broader picture," says Tom.

It was because of Myron's advice that Tom and Irene have decided that they should put their tillable acres into an irrevocable trust. "As Irene and I age, we become a potential liability," explains Tom. "We want to prevent a situation where the land would be sold and the proceeds used for our care. It is fine to have the earnings of the land be used for our needs but never the capital asset."

Irrevocable trust protects legacy

Within a year, Tom and Irene "won't own those tillable acres anymore. Land ownership will be owned by an entity," Tom says. Tom and Irene will pay rent to the trust so the taxes and maintenance can be paid by the trust. They will get the usual farm income from crop and livestock activities. If he chooses to, James will rent from the trust as well.

"The rent will be favorable to the tenant, say 50 or 60 percent of market rate. That's designed to avoid pressure to take it to intensive cropping. We're going for long-term sustainability rather than maximum short-term economic return," Tom says.

"And there will be certain stipulations set in place," Irene adds. "We're not going to specify that the farm has to be farmed organically, but it will need to be farmed in a sustainable fashion."

The key role of life insurance

Life insurance policies also play a large part in the Frantzens' plans. Tom has a paid-in-full whole life insurance policy; they are in the process of buying one for Irene.

"We are working out an arrangement that when I die, James gets half the feed business and our two daughters get my life insurance policy proceeds," Tom says. "When Irene dies, James will get the business and our daughters get the life insurance policy proceeds. If we both die at the same time, James gets all of the feed business and the girls get our life insurance proceeds."

Disaster planning

Tom goes on, "We really have to address the fact that our health will be a liability to this place. Look at the disaster potential for this farm. We get killed. James gets killed. He gets married and divorced. One of us has a catastrophic health problem. The list of dangers here is huge. To protect the land, it has to go into an entity. Then if we become a liability against it, we get so much income per year and we cannot touch the principal. That's okay. We end up in the care center, and that's fine. Selling this farm off when we go into the care center: That's not fine. That's a total violation of everything we've done here."

The Frantzens' legacy planning is still in process. "We've got a few things on paper and pretty much an idea of what we are going to do," Tom says. Both Tom and Irene believe farmers "should have this discussion when you're in your 50s. There are more options at this point. As you get older, eventually your options are few. Time is not on your side.

"We have to have a generational transfer plan in place that covers all scenarios. James will have to develop a will this year. We can hardly do anything without his will," Tom says.

> ***"We are not living in denial. If we do nothing, we threaten all we've worked for."***
>
> *Tom Frantzen*

Tom is the youngest of six children, the only one who stayed on the homeplace to farm and the only one of his siblings who had interest in buying and operating his father's farm. "My dad said about the farm succession, 'Dorothy and I make decisions here, and I'm not about to conduct a vote of approval for our actions from our children.' This is a terribly important point. In his will, he said, 'this doesn't mean I love any of my children less but that this will is constructed in this fashion for a purpose: to hold the farm together.'"

Avoiding conflict with a will

Tom says, "We're not as interested in equality here as avoidance of conflict. Now that might sound contradictory. But we don't want to structure something that will fundamentally cause controversy. We want to structure something that will eliminate potential for conflict. This is one reason our advisor suggested we separate the acreage from the farmland. If everyone had to help make a decision about something like whether to re-shingle the barn, that would cause conflict."

Whatever they decide about the details, they are clear that land ownership will end with Tom and Irene. "Land is too valuable an asset to be owned by one individual. It's too much risk," Tom says. "Sure it's great to own a farm. But it's a temporary joy. We have a real factor of intense concentration of wealth going on around here. People who have 3,000 acres of land paid for could buy land for $12,000 an acre. If this continues, we will be in a caste society, with 90 percent of the land owned by two people in the county who live in a palace. The power of concentrated wealth and the threat to our society is absolutely enormous. Politicians aren't dealing with it. We have to deal with the facts."

Despite the sometimes uncomfortable discussions on their mortality and the painful consideration of their children not surviving them, Tom and Irene seem serene, even energized by the legacy planning they are doing. "We are not living in denial," Tom says. "If we do nothing, we threaten all we've worked for."

Tom and Irene would like to see an open dialog among PFI members about how to preserve their farms. If you are working on your legacy and are willing to share your thoughts and considerations, please contact Teresa at teresa@practicalfarmers.org or 515.232.5661.

PFI membership: Diverse enterprises, many opinions

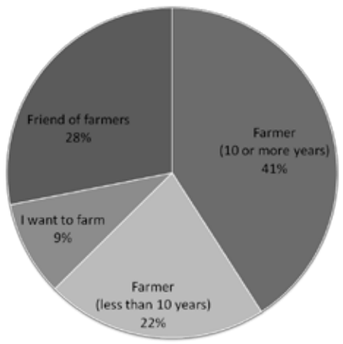
by Patrick Burke

Chances are you or someone in your household or organization took a few minutes recently to complete PFI's annual member survey. Maybe you responded to one of the email requests we sent and completed the survey on line. Or maybe you received a copy in the mail and sent it back to us. Perhaps you were one of the 70 or so folks we called to get their responses, or maybe you were approached by a PFI staff member at the Annual Conference in January. Whoever you are, we thank you for your cooperation and are pleased to present the results of this major effort to learn more about our members.

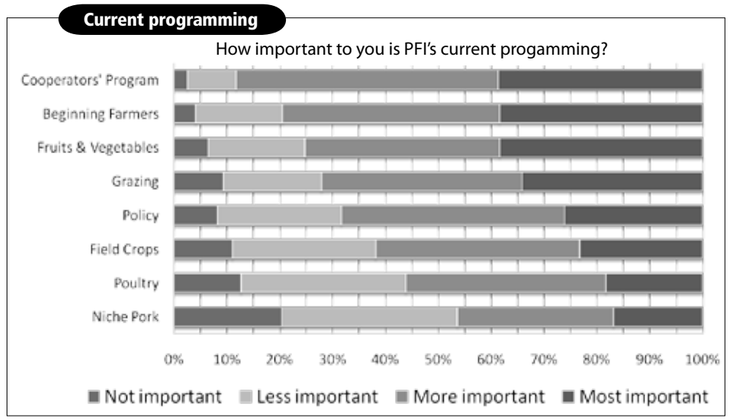
Why conduct a survey?

The member survey initiative was part of PFI's larger strategic planning efforts. One of the tenets of strategic planning is that an organization should know where it stands before it can determine where it wants to go or how to get there. Because PFI prides itself on being member-directed, it was important to find out exactly who our members are and what their priorities are. In a sense, the survey was a chance for each member to vote on the future direction of PFI.

Membership composition



Current programming



To make sure the survey responses represented a true cross-section of PFI's membership, we set an ambitious goal: We wanted to hear from 80% of PFI members. I am happy to report that we have recently achieved that goal, with more responses coming in each day.

Who makes up PFI?

A single PFI membership might represent one person, a family, a group of people involved with a farm, or all the employees of an organization. In order to get a better idea of how many individuals are associated with each membership, we asked you to list everyone associated with your membership, including children. From the responses, we estimate that PFI has more than 1500 individual members. In general, member organizations usually listed only a single contact person, so the true number of individual members might be higher.

We also asked you to identify your primary interest in being a member of PFI. Are you someone who has been farming for 10 or more years? Less than 10 years? Are you someone who wants to farm, or do you consider yourself a non-farming "friend of farmers"? We learned that 72% of our members are farmers or want to farm, and 28% are non-farmers.

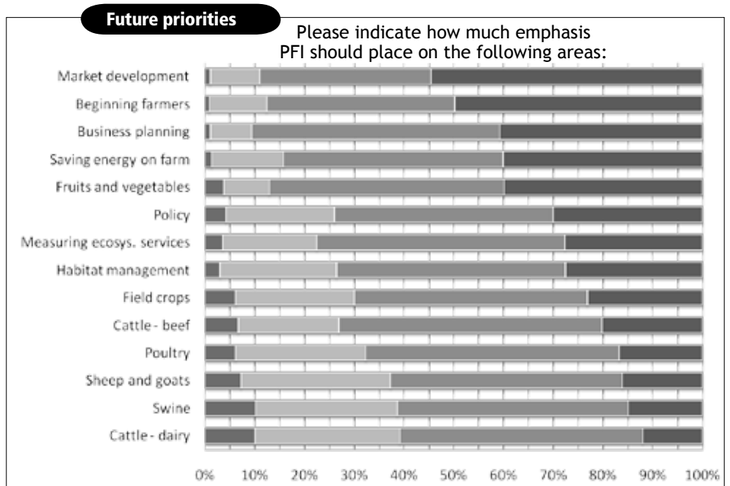
Current programming

We asked your opinion on PFI's current program areas: Beginning Farmers, the Cooperators' Program, Field Crops, Fruits & Vegetables, Grazing, Niche Pork, Policy, and Poultry. Overall, the Cooperators' Program was universally considered to be a very important part of PFI, with over 83% of respondents rating it either "Very Important" or "Most Important." The Beginning Farmers and Fruits & Vegetables programs followed close behind, each receiving a high rating from more than 70% of respondents.

Future priorities

The next section of the survey asked respondents how much emphasis PFI should place on different program areas in the future. Some of the areas we asked about are current PFI program areas, like Poultry and Policy, while many others are not (Market Development, for example). The top future priorities of PFI members were Business Planning, Market Development, and Beginning Farmers, each of which was rated highly by more than 85% of respondents. Those were followed by Saving Energy on Farm and Fruits & Vegetables, both of which were important to more than 80% of respondents.

Future priorities



Friends of farmers

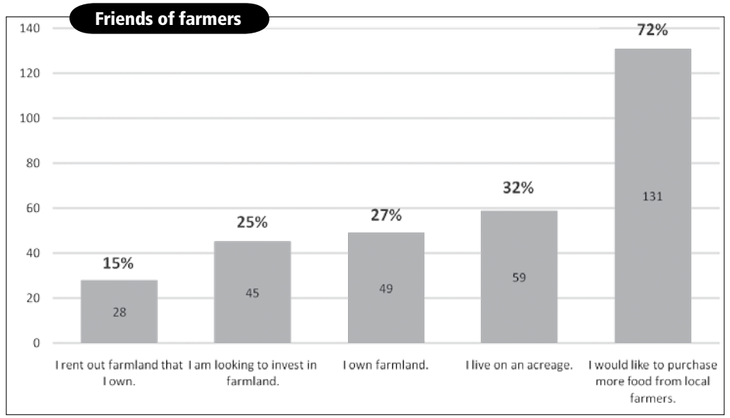
We asked non-farmer members to select all of the following statements that applied to them: I own farmland, I rent out farmland that I own, I live on an acreage, I am looking to invest in farmland, and I would like to purchase more food from local farmers. (See bar graph below.)

Impact

In order to assess how much impact PFI has had and where we can improve, we asked farmer members how their participation in PFI has affected their farm's performance in five key areas: stewardship/conservation, profitability, overall efficiency, (3 pie graphs at the right) ability to cope with volatile weather and ability to cope with volatile markets (2 pie graphs on page 8).

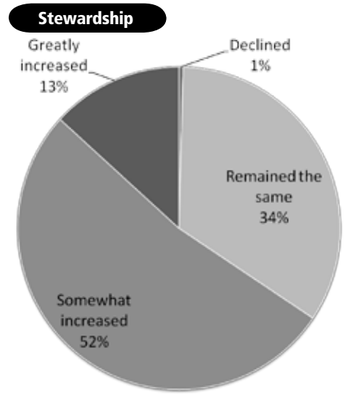
According to the results, PFI has been most effective at helping farmers improve their stewardship and conservation ability, with 65% of respondents claiming their ability has "somewhat increased" or "greatly increased" due to their involvement in PFI. Nearly 64% of respondents reported that PFI

Friends of farmers

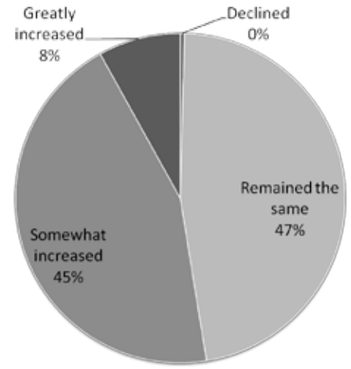


How has your participation in PFI impacted your farm's performance in these 5 areas?

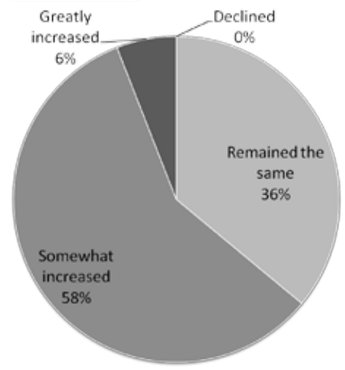
Stewardship



Profitability



Efficiency



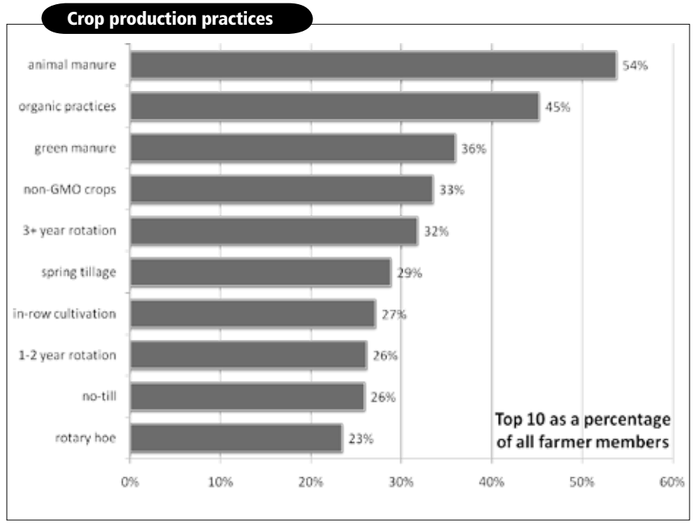
(Continued on page 8.)

PFI membership: Diverse enterprises, many opinions *(Continued)* *by Patrick Burke*

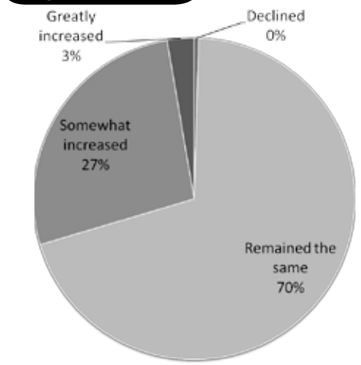
has helped them improve the overall efficiency of their farm, while nearly 53% say their profitability has increased.

Of the five areas we asked about, PFI has been less effective at helping farmers improve their ability to cope with volatile weather and volatile markets, with about 30% of respondents claiming improvement in either of those areas. This is one example of the survey results highlighting an area where PFI has room for improvement.

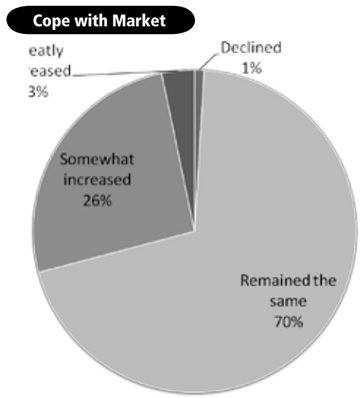
Crop production practices



Cope with Weather



Cope with Market



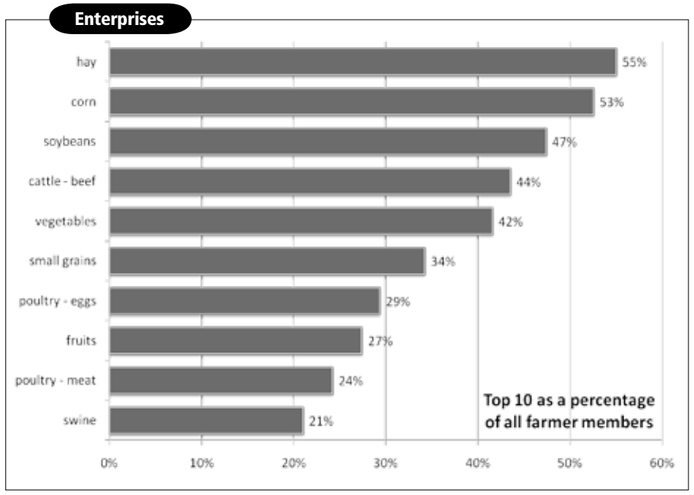
On-farm research & Demonstration

We also asked farmers if they would like to conduct on-farm research and demonstration. Just under half — 135 or 46% of respondents — answered "Yes." Some of these farmers may be future PFI Cooperators.

Acreage

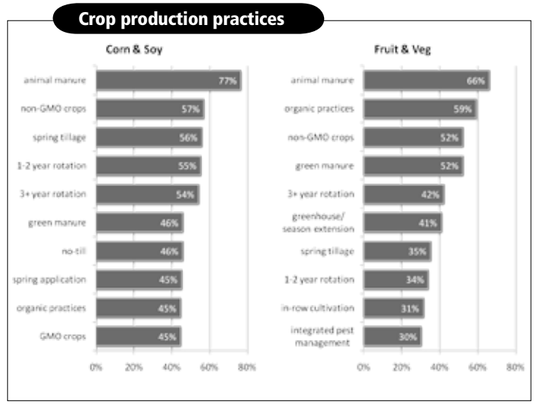
Farmer members were asked to report how much land they own and how much they rent. 87% of respondents indicated they own or rent less than 700 acres. 55% own or rent less than 200 acres.

Enterprises

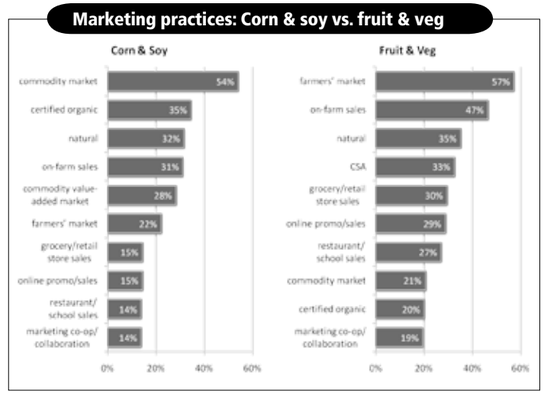


About Our Members

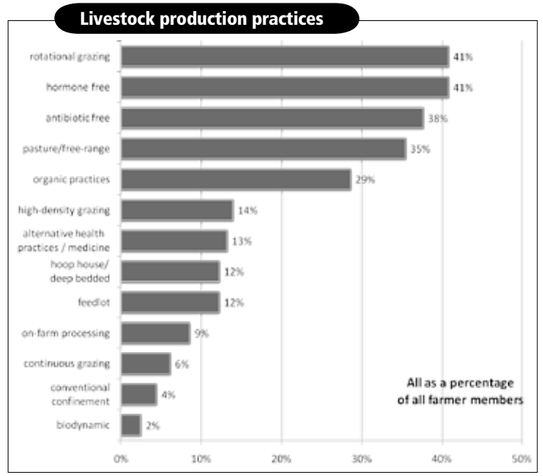
Crop production practices



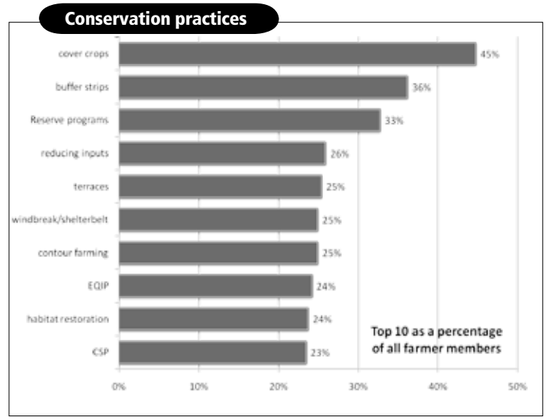
Marketing practices: Corn & soy vs. fruit & veg



Livestock production practices



Conservation practices



Enterprises

One of the most valuable things we learned from the survey was exactly what PFI farmers produce. We asked farmer members to select from a list all the enterprises that apply to their farms. Overall, hay, corn, soybeans, beef cattle, and vegetables were the most common enterprises.

Practices

We also wanted to know which practices PFI farmers use on their farms. We asked farmer members to select all the practices that apply to their farms in fourcategories: crop production practices, livestock production practices, markets/ marketing practices and conservation practices.

Conclusion

Since December, we have received and analyzed more than 550 completed member surveys, giving us an unprecedented overview of our members, their farms and their priorities. We plan to maintain this database of member information by asking each new PFI member to complete the survey and updating the survey questions each year to reflect the changing environment of Iowa agriculture. By knowing who our members are and what they want from PFI, we can ensure that this organization remains farmer-led and member-directed.

My sanctuary

by Ron Rosmann

Part of the defining character of many farms is the farm woodlot or grove. When I was young, most of the farmers around us referred to it as the grove. We called ours the orchard, which was a misnomer of sorts because even though there were a number of fruit trees in part of our grove, they made up only a small part of the whole thing.

A grove framed our farmstead and most others in Iowa or much of the whole country for that matter. Having trees surround our most cherished possessions made us all feel safer and less vulnerable to the forces of nature. This took on even more importance here on the prairie where there were not many trees.

When I was growing up in the 1950s on our farm, the grove consisted mostly of deciduous trees. There were few evergreens except for the native red cedars. We had soft or silver maples, black walnut, American elm, green and white ash, black locust and a number of Kentucky coffee bean trees. The maples and ash and elm were easy to start and there were plenty of "volunteers" to choose from. Generally, one could try to create some kind of straight line that would give the grove some sense of orderliness.

The Rosmann Farm near Harlan, IA, is sheltered and beautified by a generous farm grove.

My two older brothers and I chose the soft maples to construct our crude tree houses in. They had a lot of spreading branches and were easy to pound nails into for hanging our board ladders and tree house floors. The American elms and ash trees were mostly on the north side of our grove. The maples were on the west and the black walnuts were on the east side. The red cedars were on the southwest side along the corn crib and cattle shed. That is how my dad planned it, of sorts. Some of the trees were there when he and my mother moved there in 1941. As a kid, the grove was a place full of wonder and adventure. It was the sort of "wild" place on the farm, and you didn't have to go far to get to it. It was just beyond the barns and the chicken house and the farm home and the machine sheds but it could just as well have been as far away as the mountains in Kentucky or Colorado as far as I was concerned. It was in the grove that we were first allowed to explore beyond the house yard when we were very young. It became the place of wars, cowboy and Indian battles, hide and seek and many other kid games that were dreamed up. An old shed in the grove became the hiding place for the candy suckers that we would sometimes get from the Coop gas man when he came to deliver.

The grove was the home of many wild creatures that I came to know when I was growing up. There were the cottontail rabbits in the many wood piles of branches that we made every year to be burned at some later date. The rabbits were in the fence post and woven wire piles and under the different sheds around the grove. The red fox squirrels made their homes high up in the branches of the trees as well as in the holes of the silver maples. The rabbits and squirrels became the first targets of the 4-10 shotgun that I was allowed to start using when I was 10 years old. Hunting small game was a rite of passage for most farm kids in those days and some of that tradition is still in existence today.

The grove was the resting place and cemetery for many different pieces of farm equipment that were retired to the orchard. The McCormick-Deering threshing machine was parked between two large soft maples around 1960, and it hasn't moved since. A lot of other small farm implements and tools found their way to the grove where they remained until we might use it or some small part of it again someday. You never throw anything away on a farm. You might need it someday.

More than 50 years have passed since the days of my youth, growing up on our farm. A new generation of farm kids and trees have both sprung up and matured. Now we have ponderosa pine, Douglas fir and blue spruce. We also have red oak and sycamore trees on the east side. We still have black walnut and soft maple and the Kentucky coffee bean trees. We still add pieces of equipment to the grove that we no longer use, like the John Deere Van Brunt grain drill or the front-mount cultivator. The grove is still a wild place of sorts and has become even more of a haven for wildlife, especially pheasants. We have counted more than 80 pheasants at one time roosting in our pine trees this January.

The grove has become a haven for the soul as well, a sort of solemn place of refuge for when I need to pray or sort things out in my mind. I invariably end up leaning on the oats binder that is still setting between two maples. I first learned how to drive the John Deere B in the late 50s cutting and tying the bundles of oats to be picked up later by our team of horses pulling the bundle rack. I'll lean against the steel seat on the binder and think about my dad and maybe say a prayer to him. It can be a place of such sweet sorrow that always wells up the images of growing up on a farm in Iowa, going to church and school in our small community, where there were lots of farms and lots of neighbors and life seemed so insulated and protected from the rest of the world.

Maybe we all need a place where we can safely go back in time for a little while and look at the world again in the way we perceived it as a child. The farm grove is that place of sanctuary.

2011 Farminars provide information that Is usable, Google®able and FREE

by Luke Gran

We've just wrapped up another successful season of FREE Farminars, or online seminars, featuring PFI member farmers as the experts. Here is the report from the "Farminar Virtual Headquarters."

Looking at the statistics for our last 10 Farminars, we see that 488 viewers watched live Farminars and 957 individuals viewed online recordings. The number one way viewers found our Farminars was through Google searches.

Date	Topic	Live Viewers	Archive Views
Jan 11	High Tunnel Production	103	321
Jan 25	Tomatoes: Inside & Out	87	162
Feb 8	Pastured Poultry	45	96
Feb 22	Organic Cucurbit Production	61	53
March 1	Managing Farm Labor	29	53
March 8	Building Wholesale Relationships	30	42
March 15	CSA Members as Partners	34	4
March 22	Profitable Grass-based Livestock	51	0
March 29	Marketing Tips	24	31
April 5	Keeping Farm Records	24	20
Total		**488**	**957**

On March 1, we had our first report of a Farminar viewer who found out about the seminar through Twitter (www.twitter.com). Our live viewers are coming from around the country, many from the Midwest, Ohio to Kansas and north to Michigan.

March 1, 2011 — Farminar Chatbox

Melville: *Both presenters were awesome. Lots of great information. Thanks!*
Jake: *Thanks for the webinar! :)*
Kate: *So glad I found out about this on Twitter*

We increasingly hear from farmers (and graziers) who want to watch Farminars on a variety of great topics, and we expect PFI Farminars to continue to grow in popularity.

In response, PFI plans to continue to deliver this high-value, convenient programming for our members to "extend the season" on learning from farmers. Join us this summer for a Farminar on branding your farm business. Look for details on line soon!

PFI members select questions to answer and topics to explore with research and demonstration projects in the year ahead

Practical Farmers of Iowa members, 119 total, gathered in February to determine the focus for on-farm research and demonstration projects for the year ahead!

Winter feeding regimes, cover crop seeding, improving vegetable subscription service member retention, pig grazing forages and the optimum mix of grasses and legumes for best poultry rations are among the research priorities identified by members at their recent "Cooperators' Meeting" held in Ames. View complete list of top project ideas on page 17. Now these farmers are poised to follow through with projects designed to provide answers to their research questions.

PFI holds a Cooperators' Meeting annually to ensure that the group's on-farm research and demonstration efforts are focused on farmers' wants and needs. There were 119 individuals who registered and attended this annual planning event.

"It was a good learning experience," says Mark Peterson, a PFI farmer from Stanton, IA. "I wished I'd brought more of my friends and family with me. I left with ideas and opportunities for research that I can run on my farm to help me reduce the amount of fertilizer and chemicals I use."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1. Jill Beebout and Lori Etchen talk vegetables. 2. Dick Thompson and Ray Bratsch-Prince share some coffee. 3. John Gilbert, Teresa Opheim, Suzi Bernhard and Lori Etchen choose lunch. 4. Mark Peterson (left) discusses upcoming research projects with Kelly Tobin over lunch. 5. Nathan Anderson (seated) shares highlights of his last year's grazing research project with (from left to right) Lorna Wilson, Chris Goedhart and Torray Wilson.


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Top Project Ideas for 2011

Field Crops Project Ideas

1. Can cover crop seed planted using a modified highboy have better establishment than an airplane?
2. How can we improve use of spring cover crops?
3. What other species of cover crops work in Iowa?
4. What are the yields of improved organic and non-GMO corn hybrids?
5. What are the yields and aphid counts of aphid-resistant soybeans?

Grazing Project Ideas

1. What winter feeding regimes work best in a no-grain system?
2. What alternatives to antibiotics for pink eye exist and work?
3. What monitoring tools are available for grazing systems?
4. How does forage quality and production respond to raw milk application?
5. What is the best method to transition crop-ground to grass?

Horticulture Project Ideas

1. What are the best methods to improve CSA (Community Supported Agriculture) member retention?
2. What methods improve potassium deficiency in a high tunnel?
3. Is a soil test or a tissue test a better method for determining a fertility deficiency?
4. How can vegetable producers best add cover crops to their farms?
5. Will sweet potato lifting versus no-lifting have an impact on yield?
6. Are there effective physical barriers to control flea beetle damage on eggplants?

Pig Production Project Ideas

1. Which forages work best in pig grazing systems?
2. What is the best strategy for grazing pigs?
3. Which alternative proteins can be fed to pigs?
4. How do alternative diets affect meat quality?
5. What alternative pig health care options exist?

Poultry Production Project Ideas

1. What is the optimum mix of grasses and legumes to get the most feed value in a poultry ration?
2. What chicken processing alternatives could poultry producers create?
3. Which pen design is the best for pastured poultry systems?

6. Keynote Presenter Laura Krause.

7. Eric Madsen with his mentor Earl Hafner.

8. Mike Walsh, Craig Griffieon and Chris Goedhart.

9. ISU agronomy professor Matt Liebman talks with field crop producers.


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Cooperators' Program

Got questions? Practical Farmers of Iowa Cooperators Get Answers!

Practical Farmers of Iowa's Cooperators' program helps farmers across Iowa and beyond conduct high quality on-farm research and demonstration projects to develop and promote profitable, ecologically sound and community-enhancing approaches to agriculture.

The Cooperators' program, a core part of PFI since its beginnings, helps farmers become leaders in researching and answering questions about their farms and then sharing that knowledge with others.

New Tools

Cover crop business directory

This handy new tool is available on line at http://practicalfarmers.org/assets/files/field_crops/additional/CoverCropDirectory.pdf

It provides a list of seed houses, custom sprayers, aerial applicators and cover crop guidelines, and highlights some of the many benefits of cover crops.

Cover Crop Effect on Crop Yield

Cover crops are an important tool farmers may use to decrease soil erosion, improve nutrient cycling and increase soil organic matter. However, many farmers are concerned about the negative effects of this cultural practice on their cash grain yields. After year two of this 5-year study, a winter cover crop positively affected soybeans, had no effect on corn silage and negatively affected corn yield in 2010 and at one location in 2009 but did not affect corn yield in 2009 on three locations.

Aphid Resistant (AR) vs. Susceptible (SC) Soybeans

Soybean aphid, *Aphis Glycines* Matsumura (Hemiptera: Aphididae), is a pest to soybeans in Iowa. In certain years, it can be economically devastating to a farming operation. Conventional farmers can use insecticides to control soybean aphid populations but those insecticides can also harm natural enemies that feed on soybean aphids. In addition, organic farmers do not have good pest deterrent alternatives to insecticides to control aphids.

Data from five farmers in Iowa who tested aphid resistant (AR) and susceptible (SC) soybean varieties suggest that even in a year with low aphid populations, like 2010, AR soybeans can yield similarly or within 6 bu/A to commercially available SC varieties.

Tillage Radish to Control Weeds in Horticulture Crops

Scattergood Farm near West Branch tested tillage radish for weed control in one of their vegetable fields. They also collected data on seed germination for the cash crop after tillage radishes to observe if the tillage radish had an adverse effect on seed germination. Mean weed counts (34.25/ft^2 in the control and 31.75/ft^2 in the tillage radish plots) combined with statistical analysis indicated no difference in weed control between the tillage radish and control. Statistical analyses of cash crop germination also illustrated no difference in cash crop seed germination between tillage radish and control plots.

Water Infiltration Rates Among Different Farming Systems

During Iowa's spring 2008 floods, PFI members who had grass-based livestock systems and long crop rotations reported that their soils held the rainwater. This experiment tested those claims. The main objective of the study was to quantify the ecological resiliency of different farming systems by measuring the rate of water infiltration and soil quality indicators (reported separately) on neighboring farms with different farming systems. Data from this experiment suggest that systems with a longer crop rotation and rotational grazing increase the steady state infiltration rate. However, additional data collection and analysis is needed to confirm this trend at additional sites in Iowa.

Effectiveness of White Mustard on Spring Weeds

Jason Jones of The Homestead near Pleasant Hill planted white mustard fall 2009 to test its impact on weed germination in spring 2010. White mustard germinated uniformly and winter killed in late November 2009. Weed counts were not statistically different between mustard plots and the bare ground control.

Carrot germination was slightly less in the mustard plots than in the bare ground control, but not enough to create a statistical difference.

Farmers are Providers

Cooperators' program poster

Farmers provide food and fiber, as we all know. **Stewardship farmers** provide far more than that: They provide an astonishing array of ecosystem services that clean our water, preserve our biodiversity and more. Documenting these ecosystem services is a top priority of those participating in PFI's Cooperators' Program. In 2010, results from more than 72 PFI Cooperators who conducted on-farm research and demonstration projects are showing how.

This poster includes summaries of research completed in our 2010 projects. As results become available, more details will be available on the PFI website.

Ecosystem Services

Flea Beetle Control in Eggplant

Flea beetles are frequent eggplant pests that adversely affect yields and fruit quality. This trial tested two non-toxic physical controls, kaolin clay (Surround WP) and row covers, applied from transplant to flowering, for their effectiveness in controlling flea beetle populations and subsequent damage. This first year's results show potential for both treatments, but more research needs to be done to say with more confidence that either measure is a viable flea beetle control option.

Season Extension in a High Tunnel

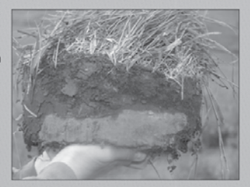
Jill Beebout and Sean Skeehan of Blue Gate Farm produce crops in the field as well as in two high tunnels. This report summarizes their production and sales data from their two high tunnels in spring and summer 2010. Jill and Sean have recorded multi year data to create strong documentation for their high tunnel production and profit potential. Blue Gate Farm generated significant profit from their high tunnels, and the structures were integral for their CSA and farmer's market sales again in 2010 when their outdoor crops performed poorly due to adverse weather conditions. This multi year project has reiterated for Jill and Sean how beneficial accurate and easily accessible recordkeeping is for their farm.

Comparison of Stocker Gains from Grazing Different Forages

Thirty-nine stocker cattle were weighed before and after three different grazing periods from July 18, 2009, to October 17, 2009, to compare the rate of gain on the different forages being grazed. Three different forages were compared: 1. green-leaf corn; 2. red clover and grass mix, sorghum sudangrass and soybeans; and 3. alfalfa-grass mix. There were significant differences between the animals' average daily gains between treatments, in the following order: corn (2.6 lbs./day) > alfalfa-grass (2.2 lbs./day) > mixed forages (0.83 lbs./day).

Comparison of Soil Quality Indicators Among Farming Systems

Soil samples were collected in summer 2009 at 11 different farm "pods" in different areas of Iowa, each pod containing fields and pastures with different management practices. Perennial vegetation resulted in significantly higher total soil carbon and stable aggregate content. Continuously grazed pastures had significantly higher carbon content in the surface six inches and significantly higher stable aggregate content than rotationally grazed pastures.



Documenting Local and Distance Food Purchases

Seven cooperators are documenting their local and distance food purchases since May 1, 2010, for one year. For this study, we define local food as food produced within Iowa. After nine months of data collection, our preliminary findings show that: a) the cost increase for purchasing local foods is not linear with respect to the percentage of local foods purchased, b) purchasing local foods through a Community Supported Agriculture (CSA) appears to be more economical for the consumer compared to the same percentage of local foods purchased at a Farmers' Market and c) the total expenditure on food can be significantly reduced for individuals with a restricted diet if food is purchased locally.

Components of good on-farm research

To be successful when conducting on-farm research, here are some questions you should think about before starting a project:

1. What question do you want to answer at the end of the project?
2. What needs to be measured to help answer that question?
3. Will this research be applicable beyond my farm?
4. What is my control and what is my treatment to test?
5. Do I have enough space to include 4 to 6 replications?
6. What is the size of my equipment?
7. Who in the farming operation needs to be aware of this project?
8. What can you easily measure with tools from the farm (scale, 1ft^2 quadrate, etc.)
9. What measurements need to be taken by PFI staff or others?
10. Do I have time to do this project successfully?

After answering these questions, then it's time to start being creative and practical. Work with PFI staff to help you conduct a good project.

Tips from Berry Patch Farm for bountiful berries And flavorful fruit year round

by Sally Worley

Berry Patch Farm owners Dean and Judy Henry grow great berries and fresh fruit year round, and they recently shared their secrets with PFI staffer Sally Worley. Dean and Judy have been growing strawberries on their farm near Nevada since 1970. They planted the strawberries and apple trees on their new farm before they ever lived there.

From left: Mike, Judy and Dean Henry, and Lee Matteson stand by newly transplanted tomatoes in their greenhouse.

"Our sons were one of the main reasons we decided to start farming. We wanted them to experience the work and satisfaction that farm life can bring," says Judy.

Soon after, they built a house and moved with their three sons to the farm.

"From the time we opened for business, people voiced their wishes for raspberries and cherries, so we put those in early on," she adds. Currently, Berry Patch Farm grows eight acres each of strawberries, raspberries, apples and blueberries. They also have cumulatively eight acres of associated cane fruits, such as currants, gooseberries and blackberries, as well as, some tart cherry trees, pumpkins and gourds. The Berry Patch also grows year-round food in their greenhouses and high tunnels.

Mike Henry, Dean and Judy's son, and Lee Matteson farm with the family full time. Everything they grow is sold pick-your-own, except for their greenhouse crops. This makes it possible for the Berry Patch to grow and sell more than if they were harvesting everything themselves.

In addition, the Berry Patch sells product through a farm stand, at local farmer's markets and through two online cooperatives. They also provide fruit shares for three local community supported agriculture (CSA) programs.

Strawberry advice

"Strawberries were our first crop and what we're best known for," Dean says.

Bed prep — Before planting matted row strawberries, the Berry Patch plows and soil tests in the fall to see if additional nutrients are needed. According to Dean, strawberries like slightly acidic soils with high organic matter. "Our soil has the right pH for strawberries. It was 6.8 when we began and remains exactly that."

Establishment — The Henrys typically plant strawberries in a matted row system, one row per bed 16 inches apart with 38 inches between rows. "Space between rows will vary from farm to farm, depending on the size of your machinery," said Dean. In a matted row system, strawberries are planted in the spring, deblossomed the first year, and the first crop is harvested the subsequent spring. The Berry Patch aims for three years of commercial harvest from each planting. "The plants are in the field four years, then are rotated to something else for a minimum of three years before strawberries can be planted again. That's a seven-year commitment for three years of crop," said Judy.

To circumvent these time constraints the Henry's have recently started experimenting with plasticulture. "At this moment, we don't yet know how plasticulture will work for us," said Dean

Plasticulture — is gaining popularity due to higher yield, better berry quality and faster return. In a plasticulture system, you typically harvest berries nine months after planting, versus 14 months in a matted-row system. "With plasticulture, plant spacing is built into the system," explains Dean. Over the years, matted row strawberries start to crowd each other out, resulting in a higher quantity of small berries. Plasticulture puts energy into the growth of one strawberry crown rather than into runners to create more crowns.

The Berry Patch spaces their plants every 12 inches, two rows per bed in their plasticulture strawberries. They plant these in early fall, harvest the next spring, then pull them out of the ground. "Plasticulture strawberries are treated like an annual," says Dean.

Dean overhead irrigates his strawberries as needed. "A prerequisite for commercial strawberries is reliable water. Not a surface pond or river," says Dean. "We use well water."

Cultivars — The Berry Patch grows multiple strawberry cultivars in order to extend the harvest season. Current cultivars they grow include Honeoye, Jewel, Sparkle, Ovation and Cabot. "For those who know berries," Dean says, "Sparkle is their favorite. It's soft and small, so you'll never find it in the store. But it has the best flavor."

The Berry Patch also grows some day-neutral strawberries that grow regardless of day length. These provide a fall season of strawberries. They currently grow mainly Albion day neutrals, a California cultivar that has been widely released.

Harvest dates — The Berry Patch aims for a five-week main harvest season for strawberries beginning in early June.

Pests — "Strawberries primarily suffer from botrytis in Iowa," Dean says. "We typically get away with spraying just one fungicide, such as Captan, at bloom." The Berry Patch typically applies a wide-spectrum insecticide the fall prior to strawberry harvest to help control the 20 pests that like strawberries. The top two being crown borers and tarnish plant bugs.

The Berry Patch avoids soil diseases with crop rotation. "We used to apply methyl bromide. It was very effective, but we didn't like applying it to our land," says Dean. "Instead we are incorporating cover crops to biofumigate the ground."

The Berry Patch is trialing mustard in between strawberry crops to see if allelopathic properties of mustard roots will naturally biofumigate the soil, allowing them to rotate back to strawberries sooner than three years. "Last year we planted strawberries where mustard had been planted for one year between strawberry crops, so this spring we will see if it worked," says Lee Matteson. In addition to mustard, Dean and Judy have used marigolds and tillage radish to biofumigate. This year they are going to try arugula: "According to research, nematodes starve to death on arugula. We're excited to try it out," says Dean.

"Strawberries are a great crop to grow because they are extremely popular and bring a good return," he adds. "However, strawberries are hard work, are labor intensive and entail nights up controlling frost with overhead irrigation."

Best blueberry practices

Ground preparation — The Berry Patch starts preparing land two years before planting blueberries. First they plow down a lot of organic matter, then incorporate wood chips, then treat with sulfur. "Give yourself time to get the soil right," says Dean. "Text book pH recommends less than 5; 4.5 or 4 is better."

Establishment — The Berry Patch spaces their blueberry plants four feet apart with 10 feet between rows. They deblossom the blueberries the first two years and harvest their first blueberry crop three years after planting.

The Friday hoe, above, allows operators to steer with their feet while hand weeding strawberries.

The blueberries are set up on a drip system. Their shallow roots require regular watering, even after they are established. Dean recommends using vinegar in irrigation water for a temporary fix if your pH is too high, and iron chelate to amend the pH after the blueberries are planted.

Cultivars — The Berry Patch has all high bush blueberries. They grow several blueberry cultivars to extend harvest season. Some favorites include Duke, Blue Crop, and Patriot.

Pruning — The Berry Patch prunes blueberries to retain vigor, thin and control size. "Blueberries bear best on one to three year old wood," said Dean. He expects his blueberries to produce for approximately 25 years.

Pests — Since blueberries aren't widely produced in Iowa, Dean feels that he's living on a blueberry pest honeymoon and hasn't had serious issues. Mummy berry, blueberry maggot and shoe string virus are major pests for commercial blueberry production, but none of these are a big problem at the Berry Patch. Japanese beetles can cause damage, and the Henrys control them with an organic Pyganic spray.

As far as they know, Dean and Judy operate the only pick-your-own blueberry operation in Iowa. They feel there is room in the market for more Iowa blueberry production, but know that the five-year wait for revenue off plants inhibits some farmers. "If you are willing to plant the berries in peat moss, you don't have to wait two years while preparing the soil, but the peat moss will set you back financially," says Dean.

Worry-free raspberries

Ground preparation — The Berry Patch simply discs up the ground and plants. As with the rest of their farm, they soil test and amend if needed, but raspberries aren't heavy feeders. "Fall raspberries (primocane) need more nitrogen and don't last as long. Summer bearing (floricane), you can't get rid

(Continued on page 18.)

Tips from Berry Patch Farm for bountiful berries And flavorful fruit year round (Continued from page 17.)

by Sally Worley

of those. If thinned properly and kept healthy, they will grow indefinitely," says Dean. Raspberries like well-drained soil.

Establishment — In row raspberry spacing is less important than for other fruits. You can plant the canes anywhere from one to three feet apart, depending on how quickly you want them to fill in. "If you want them to fill in fast and compete with weeds, plant them closer and thin them out later," says Lee. Space between rows should be eight to 10 feet. Irrigation is not necessary. Judy recommends, "Keep a raspberry patch from becoming overgrown. Thin plants to eight to 10 inches between canes and mow into hedges."

Cultivars — Raspberries are categorized as primocane, which set flowers and berries on new and one-year-old growth, and floricane, which flower on one-year-old growth. Dean recommends beginning farmers start with primocane raspberries because they can generate cash flow the same year as planting.

Primocane raspberries are less labor intensive, because you typically mow them in the spring. In floricane raspberries, you prune out the old growth by hand. Their harvest season is earlier than floricaine raspberries.

The Berry Patch grows both primocane and floricane raspberries to extend their season. "Floricane allows us to have raspberries to harvest alongside early blueberries, and primocane provides a fall harvest when it is more pleasant to pick," said Judy.

Customers like to see black and red raspberries, but most of the Berry Patch's plants are red raspberries. Some of their favorites include Heritage, Boyne, Polana, Royalty, Autumn Britten and Autumn Bliss.

Pests — Japanese beetles favor raspberries and navigate to them during bloom and fruit set. Pyganic works marginally and wears off quickly. Anthracnose is prevalent in commercial raspberry production and can be avoided with clean plants, sun and air circulation, and fungicides. The Berry Patch has increased its use of fungicide lime sulfur in the spring to help control anthracnose and scale. "It is one of the simplest ways to control inoculums for disease but is disagreeable to work with as a spray, and it ruins your equipment," says Dean.

Machinery makes it possible for the Berry Patch to produce more than 40 acres of fruit. With the four row transplanter above, eight people can plant 5,000 plants per hour.

Wild blackberries can spread diseases to raspberries so keep them a minimum of 250 feet from raspberries.

Growing in a greenhouse

The Berry Patch's primary winter greenhouse is heated by a wood heater and contains raised beds that are insulated beneath the topsoil with hot water tubing running above the insulation to warm the soil. In early March, crops include lettuce, kale, arugula, spinach, cabbage, tomatoes, strawberries, raspberries, beets, radishes, broccoli raab and tomatoes.

Their biggest winter crop is a salad mix. Six rows are planted per bed, and Lee estimates he harvests 12 pounds per row per cutting. He takes three cuttings per planting for a total approximate harvest of 180 pounds of lettuce mix per 96-foot bed. Their salad mix contains a Johnny's Seeds lettuce mix of red kale, white kale and arugula.

The first round of tomatoes is planted at the end of February. Prior to adding tomatoes, the greenhouse is heated to 45 degrees, then raised to 55 degrees once the tomatoes are transplanted. Low covers over the raised beds retain the heat generated in the soil.

Raspberries are planted at the end of December. The Berry Patch should have raspberries and tomatoes for sale mid May.

"We operate the greenhouse all winter," says Lee, "and are on our third rotation of greens." Since Berry Patch Farm is one of the few that provides produce for sale year round in Central Iowa, it can't supply enough to meet demand. "We have an additional greenhouse that is heated with propane," says Dean. "We also have three high tunnels over black raspberries to improve overwintering. We have a high tunnel full of spinach and plans for a raspberry high tunnel." Dean likes how these structures extend the season and provide additional income during the main season: "In the last two years, it's been great growing indoors while field conditions have been lousy."

New website helps farmers find land and Landowners find farmers

by Luke Gran

PFI has launched a NEW "Find-A-Farmer, Find-A-Farm" website to assist beginning farmers and landowners to network online and start conversations about land to rent or purchase.

Within the PFI membership, there are more than 100 friends of farmers, many of whom are landowners. More than 40 have called our office during the past two years looking for beginning farmers to farm their land. Within the PFI membership, we also have more than 350 Iowa beginning farmers.

> ***"My farm will be perfect for someone else someday … I want to know that eventually it will go to someone who will actually farm it and who will do so sustainably."***
>
> *Linda Long*

Land is one of the top five needs of these beginners, according to PFI's 2008 beginning farmer survey. Most of these beginners farm some ground now but need more or different land, while others are looking to start planting their first acre.

"The site is good looking and easy to use, with intuitive functionality," says PFI member and land seeker Frank Stevenson. "This is exactly the right tool, at exactly the right time, for exactly the right souls seeking to connect eager starting farmers with equally eager landowners."

The goal of this site is to help these two highly valued groups within the Practical Farmers of Iowa network make a connection and start a conversation with one another.

This service is entirely FREE; however, participants must have an email address and register on the site to view details about each other. This NEW website employs a secure message system that keeps users' identities private until they choose to share it.

Each land owner or land seeker completes a basic profile that identifies the location, amount of land, land type, building improvements and utilities wanted or being offered. Next, the registrant chooses the enterprise and production practices, and finally, the timeline and transaction preferences preferred.

PFI is steadfast in its determination to help the next generation of Iowa farmers and plans to analyze the effectiveness of this site in helping beginners access land. At the same time, we recognize that land is only one of the challenges faced by beginning farmers. That's why PFI also offers the Savings Incentive Program, Farminars, Annual Conference, Field Days, Workshops and more, to help beginners overcome other challenges.

Landowner Linda Long, Cresco, IA, tested the site in March. "The Find-A-Farmer website is terrific and extremely easy to use," says Linda. "I don't have a big farm, just a few acres, but it's a unique place and I want to protect it. I want to know that eventually, it will go to someone who will actually farm it and who will do so sustainably. Find-A-Farmer can help me plan for that.

"My farm will be perfect for someone else someday, just as it is perfect for me now," she continues. "The Find-A-Farmer site puts me in touch with a lot of people who have the same values I do, more people than I would ever be able to reach otherwise. It is a great resource. Thanks, PFI!"

Start your search today! Register for FREE online at www.practicalfarmers.org/findafarmer

This image shows the home page, including a map of beginning farmers and landowners.

How do different farming systems affect soil quality?

This was the question PFI members set out to answer after the spring floods of 2008. During the floods, PFI members who had grass-based livestock systems and long crop rotations reported their soils held the rainwater better and eroded less than surrounding fields.

PFI members decided to test those claims with an on-farm research project, the highlights of which are summarized here. The main objective of the experiment was to quantify the ecological resiliency of different farming systems by measuring water infiltration rates and soil quality indicators, including total soil carbon, bulk density and stable aggregate content (SAC) in various farming systems.

In designing this experiment, participants reviewed related research. Initial data from research conducted at the Neal Smith Wildlife Refuge suggested that agricultural landscapes need to be redesigned to include at least 10 to 20 percent continuous living cover. This amount of cover was reported to avoid a 7 T/A loss of soil during the spring 2008 floods as compared to systems with no cover (Personal Communication, Matthew Helmers, 2009).

Quantitative measurement of soil loss from farm fields or pastures is difficult and expensive so PFI researchers chose to measure select indicators of soil health. ***Stable Aggregate Content (SAC)*** is an indicator of a healthy soil structure that will be more productive, allow better water infiltration and is less likely to erode. Soil erodibility increases as aggregate stability decreases. Soils with stable aggregates are better able to withstand the destructive forces of rain and are less susceptible to runoff.

Total soil carbon (of which soil organic matter is a portion) can be an indicator of a soil's ability to hold water, store and supply nutrients for plants, provide

food for soil biological organisms and maintain good soil structure. ***Bulk density*** can be an indicator of soil compaction, infiltrability and a healthy soil structure.

Previous studies have shown that SAC and carbon levels tend to decrease under annual cropping systems but can be maintained or increased with the addition of perennials or even small grains to the crop rotation (Sparling et al., 1992, Haynes et al., 1991, Haynes and Swift, 1990, Studdert et al., 1997). Both SAC and soil carbon tend to be higher in pastures and other grasslands than in cropland.

Hypothesis

PFI researchers hypothesized that soil carbon, stable aggregate content and total soil nitrogen would be higher with longer crop rotations, with the addition of perennials and with rotational grazing, and that bulk density would be lower in those same systems. We hypothesized that animal impact (presence or absence of grazing) would have little if any impact on soil health indicators.

Materials and Methods

Soil samples were collected in summer 2009 at 11 different farm "pods" in different areas of Iowa, each pod containing fields and pastures under different management practices. Data was collected on farms of PFI members and on farms of one or two of their neighbors who used different farming practices. These groupings are considered "pods." (See Appendix A.) The farmers in each pod selected sampling locations using their County Soil Series book. The sampling locations are the same soil type and position on the landscape but using different farming practices for at least the last five years.

Results

Total Soil Carbon — Measured at three depths, treatments with perennial vegetation had significantly higher soil carbon levels than treatments with annual vegetation. Soil carbon levels in treatments with perennials as part of a crop rotation were not significantly different from either annual or perennial vegetation.

When individual depths were analyzed separately, soil with animals had a significantly higher level of carbon (2.37% total carbon) than soil without animals (1.75%) at the 0-6 inch depth.

Carbon Content — Continuously grazed pastures had on average 28.9 tons of carbon per acre in the top six inches of soil, which was significantly

Table 1

		Total C (0-36 in.)	Total C (0-6 in.)	Carbon Content (0-6 in.)	Total N (0-36 in.)	SAC (0-6 in.)
		%	%	tons/A	%	%
Vegetation type	Perennial	1.17a	2.35	21.9	0.130	67.4 a
	Multi-year	0.98 ab	1.82	17.4	0.118	46.9 ab
	Annual	0.96 b	2.02	18.8	0.130	35.8 b
Presence of grazing animals	Grazing	1.27	2.37a	23.1 a	0.125	71.2
	No grazing	1.20	1.75 b	17.8 b	0.131	39.1
Grazing management	Continuous grazing	1.52	3.27	28.9 a	0.171	83.9 a
	Rotational grazing	1.07	1.86	18.9 b	0.105	66.7 b
Crop rotation length	Long rotation	1.14	1.90	17.1	0.107a	36.7
	Short rotation	1.26	2.08	19.7	0.087 b	31.4

Summary of statistically significant data. Values with different letters within the same column and category are statistically significant ($p<0.05$).

greater than the average carbon content of rotationally grazed pastures. Carbon content in treatments with grazing (23.1 T/A) was significantly greater than the carbon content in treatments without grazing (17.8 T/A).

Bulk Density — Soil bulk density was not significantly different among the different treatments.

Total Soil Nitrogen — Within the row crop systems, rotation length had a significant effect. Fields with a long rotation had significantly higher total nitrogen levels than fields with a short rotation.

Stable Aggregate Content — Within all farming systems, vegetation type was the only significant effect. Treatments with perennial vegetation had an average of 67.4% stable aggregates, which was significantly higher than the treatments with annual vegetation, which had an average of 35.8% stable aggregates. The treatments with perennials as part of a crop rotation had an average of 46.9% stable aggregates, which was not significantly different from either of the other two vegetation types. Continuously grazed pastures had an average of 83.9% stable aggregates, which was significantly higher than the stable aggregate percentage in rotationally grazed pastures of 66.7%.

Perennial vegetation resulted in significantly higher total soil carbon and stable aggregate content. Continuously grazed pastures had significantly higher carbon content in the surface six inches and significantly higher stable aggregate content than rotationally grazed pastures.

Conclusions

Growing perennials instead of annuals appears to be the most important factor in improving soil health, as treatments with perennial vegetation had both higher total soil carbon and stable aggregate content than treatments with annual vegetation. Including perennials in a crop rotation appears to encourage an intermediate level of soil health. This is consistent with the results of other studies as well.

Pasture management had a different effect than was hypothesized, as the continuously grazed pastures had both higher carbon content and higher stable aggregate content than the rotationally grazed pastures. One possible explanation for this is that some of the sites under rotational grazing management were more recently converted to pasture after being degraded for many years by cropping in areas that possibly should not have been cropped due to their topography.

In conclusion, the data support the hypothesis that soil carbon and SAC will be higher under perennial vegetation but do not support the hypothesis that soil carbon and SAC will be higher with rotational grazing than continuous grazing. The hypothesis that soil nitrogen would be higher with longer crop rotations was also supported by the data.

For a complete list of references and more detailed information, please check out the research report, "Soil Quality Indicators Among Different Farming Systems (2010)" at http://practicalfarmers.org/programs/Field-Crops.html.

Questions? *Contact Sarah Carlson, 515.232.5661, sarah@practicalfarmers.org.*

Appendix A

	Location	Treatment	Vegetation type	Rotation length	Presence of grazing	Pasture Rotation Intensity
	Holstein	Continuous graze	perennial	n/a	yes	continuous
	Holstein	Prairie	perennial	n/a	no	n/a
Pod 1	Holstein	Rotational graze	perennial	n/a	yes	rotational
	Paullina	Continuous graze	perennial	n/a	yes	continuous
	Paullina	Conventional crop	annual	short	no	n/a
	Paullina	Conventional crop*	annual	short	no	n/a
	Paullina	Corn longer rotation	annual	long	no	n/a
Pod 2	Paullina	Rotational graze	perennial	n/a	yes	rotational
	Sutherland	Conventional crop	annual	short	no	n/a
	Sutherland	Corn longer rotation	annual	long	no	n/a
Pod 3	Sutherland	Hayground	multi-year	n/a	no	n/a
	Giard	Continuous graze	perennial	n/a	yes	continuous
	Giard	Corn longer rotation	annual	long	no	n/a
Pod 4	Giard	Rotational graze (2)	perennial	n/a	yes	rotational
	McGregor	Conventional crop	annual	short	no	n/a
	McGregor	Rotational graze (1 yr)	perennial	n/a	yes	rotational
Pod 5	McGregor	Rotational graze (10 yrs)	perennial	n/a	yes	rotational
	New Albin	4-paddock graze	perennial	n/a	yes	continuous
	New Albin	Continuous graze	perennial	n/a	yes	continuous
	New Albin	Rotational graze (2)	perennial	n/a	yes	rotational
Pod 6	New Albin	Small grain	annual	long	no	n/a
	New Hampton	Conventional crop (3)	annual	short	no	n/a
	New Hampton	Corn longer rotation	annual	long	no	n/a
	New Hampton	Hayground	multi-year	n/a	no	n/a
Pod 7	New Hampton	Trees	perennial	n/a	no	n/a
	Maxwell	Conventional crop	annual	short	yes	n/a
	Maxwell	Hayground	perennial	n/a	no	n/a
Pod 8	Maxwell	Rotational graze	perennial	n/a	yes	rotational
	Fairfield	Continuous graze	perennial	n/a	yes	continuous
	Fairfield	Conventional crop	annual	short	no	n/a
Pod 9	Fairfield	Rotational graze	perennial	n/a	yes	rotational
	South English	Conventional crop (2)*	annual	short	no	n/a
Pod 10	South English	Hayground	perennial	n/a	no	n/a
	Harlan	Conventional crop	annual	short	no	n/a
	Harlan	Corn longer rotation (2)	annual	long	no	n/a
	Harlan	Hayground	multi-year	n/a	no	n/a
Pod 11	Harlan	Rotational graze	perennial	n/a	yes	rotational

SHARE milking: One beginning farmer's solution to Growing his own herd

by Luke Gran

Beginning farmer Joel Winnes, 29, of Waukon, IA, has worked for experienced farmer Merlin Gesing since 2008 and will begin buying into the dairy herd in 2012. This is an arrangement with benefits for both. Merlin gets the help he needs on the farm, and Joel gets a good start on owning his own herd one day. This is their story.

Beginning farmer Joel Winnes, 29, Waukon, IA, (right) works for experienced farmer Merlin Gesing (left) for a SHARE in his dairy herd — an arrangement they call "Share Milking."

When Joel was 16, he and his family moved from the Twin Cities to start an organic dairy farm in northeast Iowa. Merlin Gesing is an experienced, well-respected local farmer, who sold good quality hay at a fair price to the Winnes family when they were just starting out. Over the years, he saw Joel at pasture walks and sustainable farming meetings. Merlin watched Joel grow up and knew that he was eager to have a dairy herd of his own.

In January of 2008, Merlin knocked on the door of the Winnes family farmhouse one evening with an offer. Joel was welcome to come work on his farm, gain experience, earn a paycheck and receive a bonus — a portion of the heifers born each spring. Saving money earned and accumulating heifer bonuses would make it possible for Joel to buy into the herd in about four years.

Joel considered the offer and decided without reservation to proceed. "I didn't have to think about it," remembers Joel. "The way Merlin farmed was the way I wanted to farm."

During the past three and a half decades of working on the farm, Merlin has raised hogs, egg layers, beef cattle and dairy cattle. He has also put up hay and grown corn and soybeans. His production system was more conventional in the beginning and has shifted steadily to organic production since the late 90s. "I had always thought a seasonal, grass-based organic dairy was the thing to do," Merlin says. "It has been a good way to stay on the farm and make the money needed."

He adds, "Its has been a really good situation — Joel knew all he needed to know, especially about pasture management."

Merlin's Musings on "Share Milking"

- **Work with top quality people.**
- **Be considerate of each other.**
- **Be open and talk about what you are going to do.**
- **Pay a solid wage for your area.**
- **Bring in a third-party advisor when you are uncertain what to do.**

In the spring of 2012, Joel will begin buying into the herd. "Merlin is committed to making something happen for the next generation," says Joel. As an employee of a different farm previously, Joel was rarely given management decision-making responsibility and had very little opportunity to incorporate low-input, low-stress grazing methods into the conventional dairy. As Joel puts it, "That farmer was not interested in getting the beginner running." The opposite is what he finds true with Merlin.

"He is proactive, always thinking ahead," says Joel. "He has given me confidence that I have a future here and that the future is good for him too." Thinking ahead led Merlin to a win-win solution for him and Joel.

As any dairy farmer knows, milking cows every day is physically demanding. The work is not easy for anyone, especially those in their upper sixties and beyond.

The loss in number of farmers is a concern of Merlin's and, therefore, top of mind. "In the 1970s, there were half a dozen friends farming around me. Now just one besides me farms, and he is only part-time."

Merlin can make a difference by giving beginner Joel Winnes a chance. "I'm about the only person I know who is doing this, working a non-family member into an existing operation."

Merlin has noticed that adding the right person to the farm has helped improve the quality of farm life. "If you have good help, things get done on time, you keep positive and you feel good."

With Joel in the operation, Merlin has had time to add laying hens to the farm. "I'm able to do some different farm duties and some fun things too because I know Joel will be there." During our phone interview, with calving season just beginning and Joel in charge at the farm, Merlin was on the road, returning from a long weekend visit with one of his daughters who is away at college.

The transfer of assets like land, machinery or buildings is not part of their arrangement. Joel knows that Merlin may not be able to sell the land, as it will be passed down to his children. Leasing from his heirs may be a possibility for Joel down the road although it is uncertain. For now, Joel rents a little home a mile away and comes to the milking parlor next to the farmhouse where Merlin lives with his family. "As long as I am doing my favorite thing in this world, I'm happy," says Joel.

Joel is keeping his eyes open for a farm in the area where he could move his herd in time should the opportunity arise. But until then, there are things to do like saving money, learning from mentors and business planning.

In December 2010, Joel was chosen as one of Practical Farmers of Iowa's first 10 Savings Incentive Program (SIP) recipients. SIP recipients commit to two years of regular savings deposits for their farm, meet with a mentor, complete a business plan and attend at least four PFI events per year. Upon successful completion of the requirements, PFI will match their savings dollar for dollar up to $2,400 so that at the end of two years, the beginner will have up to $4,800 to use toward the purchase of a farm asset (like land, machinery or livestock).

"I'm looking forward to the mentoring aspect of SIP the most," says Joel. The Beards of northeast Iowa, also PFI members, will mentor Joel. "You can never get too much good advice on how to spend your money," says Joel. With the money he personally saves and is matched by Practical Farmers of Iowa, Joel intends to purchase several cows from Merlin.

Gesing—Winnes "Share Milking" Arrangement

Joel receives a full-time salary for work performed on the farm. In addition, each spring, Merlin provides a "bonus" payment of a percentage (which increases each year) of heifer calves born.

Year	Compensation	Bonus
2008	Salary	none
2009	Salary	Every fourth heifer calf
2010	Salary	Two of every seven heifers calves
2011	Salary	Every third heifer calf
2012	Milk check from 30-40 cows and begin paying expenses for those animals	Option to buy into the herd (10 cows)

The thought of owning a herd of cows and not the land or parlor they require does not worry Joel. "I want to be established in the sense of owning an income generating unit — the dairy cowherd — before I even consider buying land."

People often ask Joel how he found Merlin and this wonderful opportunity. "The short answer is I think that God wanted to put me here because it fits so well with my passion for farming." Being around the community, working hard and doing a good job was the long answer. "Merlin saw what a great job our family did fixing up an abandoned farm, improving the pastures. I think that really impressed him."

Like other beginning farmers, Joel used to think daily about how he was going to get into farming. Where would he be able to start? What small herd could he buy, or what old parlor he could get in working order? But in the end, his faith and his patience paid off. "I believed that if God wanted me to have a farm, it would work out and I am so fortunate that I didn't strike out on my own because it would have been so much more stressful and difficult that way."

For other established farmers considering bringing in a beginner with a share milking arrangement, Merlin cautions to crunch the numbers first as some markets can be highly volatile and profit margins can disappear quickly. Of the additional expense of bringing in a beginner, Merlin has this to say:

"There are great young people out there, but sometimes as we get older, we want to hold onto our possessions, and we don't think long-term enough." For Merlin and Joel, this arrangement has worked out very well. "Joel is a long-term benefit to me and I to him for many years to come."

PFI member refuses to be held hostage by oil prices

by Patrick Burke

Practical Farmers of Iowa farmer member Francis Thicke is reducing his dependence on oil with a variety of on-farm energy alternatives. Could some of his energy-saving methods work for your farm?

"We are held hostage by oil," says PFI farmer Francis Thicke. "Without cheap oil, we could not farm the way we do today. The problem is that we're at the end of the cheap oil era."

Thicke and his wife, Susan, own Radiance Dairy, a 450-acre, 80-cow dairy near Fairfield. They are working to reduce their fossil fuel dependence by implementing a variety of on-farm energy solutions. In collaboration with PFI, Thicke is tracking his energy usage, cost, and CO_2 emissions and using that data to improve the farm's energy efficiency.

While some of the energy-saving systems in place at Radiance Dairy required a significant initial cash investment, others were simple and inexpensive. For example, Thicke considers grazing his cows to be an important part of energy self-sufficiency. As opposed to conventional confinement operations, where feed might be purchased and hauled to the farm, and manure is hauled from the confinement to the pasture, Thicke's cows harvest their own feed and fertilize their own paddocks. "And they enjoy their work," he says. In turn, the farm is less dependent on oil and feed prices.

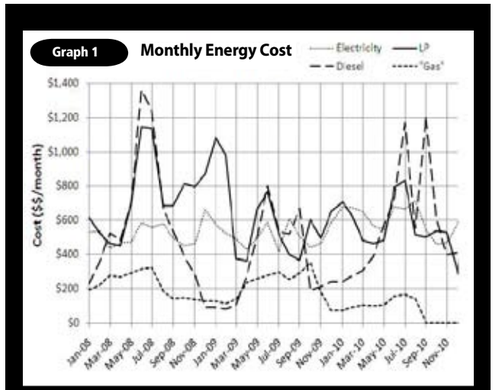
To provide water to the cows, Thicke employs a solar-photovoltaic-powered pump that transfers water from a pond into a 4,000-gallon storage tank. From the storage tank, water is gravity-fed underground to the drinking barrels in each of the farm's 60 paddocks. As long as there is water in the storage tank, the barrels automatically replenish themselves.

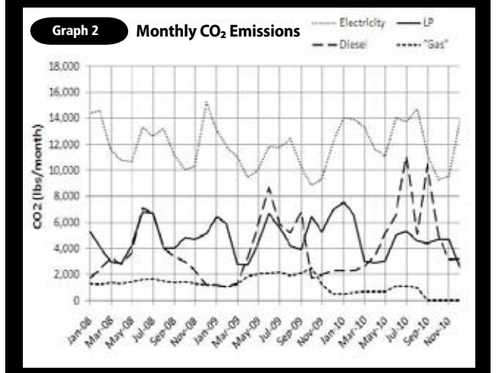
Thicke puts solar power to work in other areas of his farm as well. Four solar-thermal panels are used to preheat water before it enters a traditional hot water heater, where it is then heated up to 170 degrees F. In July, this system can preheat the water up to 130 degrees F so the water heater needs to use very little liquefied petroleum gas (LPG) to finish heating the water. The solar-thermal system, installed in the summer of 2010, should result in a measurable reduction in Radiance Dairy's LPG use.

To save on heating and cooling costs, Thicke has installed a geothermal heat pump, which works by cycling water from a nearby pond to the house and back. In the summer, the cool pond water soaks up heat from the house. In winter, the pond water is relatively warm compared to the outside air temperature so the furnace has to use less energy to heat the house to a comfortable temperature.

Thicke's biggest energy project to date will involve the installation of a wind turbine later this year. The turbine was purchased in part with funds from a USDA REAP (Rural Energy for America) grant, and should produce most of the electricity the farm uses. Because electricity from the grid is generated by burning fossil fuels, the clean energy generated by the wind turbine should greatly reduce Radiance Dairy's CO_2 emissions as well as its electricity bill.

While not all of these ideas are appropriate or feasible for everyone, they are good examples of what is possible for motivated farmers. With a little ingenuity, no farmer needs to be "held hostage by oil."





Francis' Energy Use graph (not shown) mirrors closely graph 1 above, Monthly Energy Cost. Notice the cost spike in the summer of 2008—experts say we will be seeing more spikes like this one.

In graph 2, Monthly CO_2 Emissions, notice how electricity provides a substantial portion of Francis' carbon dioxide emissions. Adding a properly designed wind turbine, which Francis will do this summer, could potentially reduce his energy bill and CO_2 emissions by 28% and 54% respectively.

The data provided here will serve as a baseline as PFI continues to analyze Francis' energy use, specifically the reduction of LP as a result of the solar-thermal water heating system that Francis has recently added, and PFI will continue to quantify the combined effect of the solar-thermal water heating system and the coming wind turbine.

If you would like your farm's energy use analyzed, please contact Rich Schuler at rich@practicalfarmers.org

PFI farmers climb Capitol Hill to defend water quality

PFI farmers Nathan Anderson, Earl Hafner, Jack Knight and Sean Skeehan traveled to Washington D.C. during the first week in March to attend Clean Water Week.

Organized by the Clean Water Network, the event provided an opportunity for farmers to voice their concerns and opinions about how current agriculture policies affect their land, the environment and their ability to farm.

Nathan Anderson gave a presentation during a Capitol Hill briefing. His presentation covered beginning farmers returning to the land, changing farming practices and the reality of current ag policies and how they affect his farming system.

During the briefing, a number of farmers from around the country explained how their farming systems affect water quality and how some current incentives actually decrease water quality.

Jack Knight, Sean Skeehan and Earl Hafner provided input during working group sessions about farming in the Mississippi River Basin and visited with senators and representatives from their districts.

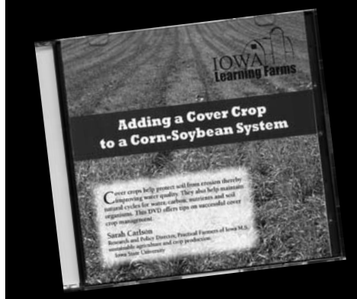
"This was a unique opportunity to influence decision makers who are determining legislative policy that directly affects me," says Nathan. "I had the privilege of defending those programs that benefit me, the environment and consumers.

Left to right: Sean Skeehan, Senator Tom Harkin, Jack Knight, Nathan Anderson and Earl Hafner.

"I felt people were excited to hear from us about the impact of policies on the ground in rural America," Nathan continues. "I was encouraged as I spoke with Senator Harkin and his staffers and with Grassley's staffers about their level of agricultural knowledge … Democrat, republican, it didn't seem to matter. We found a common ground in agriculture."

Nathan, Jack, Sean and Earl encouraged policy makers to continue the Conservation Reserve Program (CRP) and Conservation Stewardship Program (CSP). They also talked about returning family farmers to rural America to improve water quality and adjusting conservation programs to address the complexity of farming systems. "There is no single answer to conservation," says Nathan. "It doesn't do much good to install riparian buffers along a creek and yet continue to use excessive tillage in the rest of the field," explains Anderson. "It's important to use a multitude of practices in combination to improve the overall conservation quality of a farm."

Being a beginning farmer, Nathan also pushed for support of beginning farmer programs. Land ownership is one key to improved soil and water health, according to Nathan. "Ownership helps to strike a balance between environmental concerns and economic concerns, which are sometimes at odds with one another," he says. "Bringing young people back to the land will help to improve the situation for the long-term."

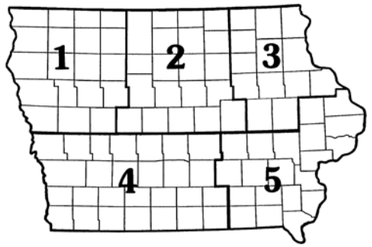


New DVD Provides Tips for Successful Cover Crop Management

Cover crops help protect soil and water from the negative effects of erosion. They also help to maintain natural cycles for water, carbon, nutrients and beneficial organisms.

Iowa Learning Farms has completed work on a new DVD, providing tips for successfully incorporating cover crops into farming systems. "Adding a Cover Crop to a Corn-Soybean System," is the title of the new DVD released in cooperation with Practical Farmers of Iowa. You'll find this and many other useful resources on soil, water and crops at: http://www.extension.iastate.edu/ilf/videos.

To get your FREE copy and more information, contact: Carol Brown, 515.294.8912, cbrown1@iastate.edu.



Welcome, New PFI Members!

District 2 — North Central
Richard Mabe, Webster City
William Secor Jr., Fort Dodge
Jennifer Vazquez, Ames

District 3 — Northeast
Marsha Lehs, Independence
Alayna Schutte, Saint Olaf
Neal Wepking, Cedar Falls

District 4 — Southwest
Greg Glendy, Des Moines
Joy Pierce, Chariton
George and Linda Pollak, Guthrie Center
Rachel Sherman, Knoxville
Sean Sullivan, Cumming
Jake and Amber Wheeler, Monroe

District 5 — Southeast
Dave and Cindy Heilmann, Goose Lake
Elizabeth Maas, Iowa City
Margaret Marie, Washington

District 6 — Outside of Iowa
Ann Daugherty, Mount Carroll, IL
Rachel Endicott, Mora, MN
Paul Ewing, Boyd, TX
John Stevenson, Mechanicsburg, PA

FIELD DAY PREVIEW

JUNE | JULY

JUNE 18 | Improving a Perennial Pasture: Year 2
Cherokee, IA
Nathan Anderson, Randy Anderson and Sarah Joachim talk about rotational grazing and other improvements Nathan made to his perennial pasture last year. See how he's doing and learn from his experiences as he grows his cattle operation.

JUNE 26 | Starting Your Own Horticulture Farm
Wesley, IA
Held at Sara Hanson's Prairie Sky Farm, this field day features Meghann Jarchow, Iowa State University. Participants will tour a beginning horticulture farm and discuss hoop house construction, EQIP and more.

JULY 8 | Raising Multiple Species On One Pasture
Bloomfield, IA
Robert and Luella Yoder and family will discuss the management techniques needed to raise multiple species on the same pasture. You will also learn about their pastured-poultry system and more.

JULY 9 | Hands-On Fantastic Fencing for Great Grazing
Audubon, IA
Professional fence builder Jason Schmidt will lead us in putting up a brand new high-tensile fence on hosts Vic and Cindy Madsen's farm. NCRS Grasslands Specialist Rick Sprague will lead a discussion on rotational grazing systems.

JULY 10 | Food-Handling Practices: The Key to Great Flavor and Nutrition
Kanawha, IA
Delivering great flavor and nutrition starts in the field and continues all the way to the customer's fridge. Tim Landgraf and Jan Libbey will take you step-by-step through their open-air packing and processing system for their 140-member vegetable CSA, covering post-harvest handling and food safety.

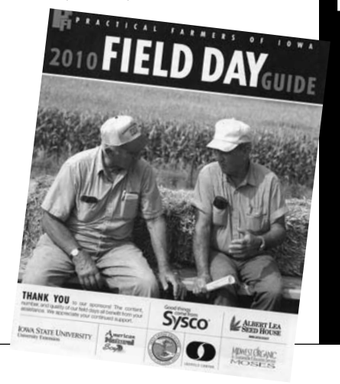
JULY 16 | Fencing and Watering for Organic Beef, Sheep and Dairy
Decorah, IA
Join the Beard family on a tour of their organic beef operation and check out their new fencing and watering system, as well as, their organic sheep and dairy operation.

JULY 18 | Using High Tunnels to Capture Rainwater for Irrigation
Boone, IA
Randy and Linda Naeve of Nature Road Farm host this field day focused on collecting and reusing rainwater from a newly constructed high tunnel. The water is stored in tanks and pumped through a drip-irrigation system to the rest of the one-and-a-quarter-acre farm.

JULY 25 | Party with PFI at RAGBRAI!
Templeton, IA
Join PFI for refreshments and networking on a beautiful July day as RAGBRAI rolls through Iowa. Art Behrens, Jon Judson and PFI staff will be hosting this PFI social at the Templeton Veterinary Clinic just a quarter of a mile north of the bike route.

Watch for your PFI Field Day Guide
Coming soon to your mailbox!

It's packed with information about these and many other PFI Field Days headed your way this summer and fall.



Grow your farm with PFI. Join today!

This annual membership is a:
- ☐ new membership
- ☐ renewal

I am joining at the level of:
- ☐ Student—$15
- ☐ Individual—$35
- ☐ Farm or Household—$45
- ☐ Organization (including businesses, agencies, not-for-profit groups)—$75

My interest in joining PFI is primarily as a:
- ☐ farmer/grower
- ☐ non-farmer (You will have the opportunity to expand upon this when you receive your membership information form.)

• • • • • • • • • • • • Each membership includes one subscription to ***the Practical Farmer.*** • • • • • • • • • • • •

Sustain PFI

For the long-term health and vitality of PFI, we ask you to consider making a donation above and beyond your membership fee. I would like to make a tax-deductible donation to PFI in the amount of:

☐ $1,000 ☐ $500 ☐ $250 ☐ $100 ☐ $50 ☐ $_____

JOIN OUR GIFT OF THE MONTH CLUB

The Gift of the Month Club is an easy way to support Practical Farmers of Iowa! Send in your pledge with your credit card information, and we will automatically deduct your donation the first of each month.

YES! I would like to give _____ per month to PFI, to be automatically charged to my credit card the first of the month. ($10 per month minimum)

Practical Farmers of Iowa is a 501(c) 3 organization. Your gift is tax deductible to the extent allowed by law.

Thank you!

Individual, Farm or Organization Name*: _____
Mailing Address: _____
Street: _____
City, State, ZIP: _____
Primary Phone (with area code): _____
Alternate Phone (with area code): _____
Email: _____

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

Payment:

Total: $_____ = $_____ membership + $_____ donation

☐ Check or money order enclosed. (Please make payable to "Practical Farmers of Iowa.")

TO PAY WITH A CREDIT CARD, PLEASE GO TO: http://practicalfarmers.org/join-pfi.html

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Farms that are prized
for their diversity
of crops and livestock
their wildlife, healthy soils,
innovations, beauty and productivity
their connection to a rich past
and a fulfilling present
where individuals and families are
earning a good living

Wholesome food that is celebrated
for its connections
to local farmers
to seasons,
to hard work
and good stewardship
Communities alive with
diverse connections between
farmers and friends of farmers

Places where commerce,
cooperation, creativity
and spirituality are thriving
Places where the working landscape,
the fresh air and the clean water
remind us of all that is good about Iowa.