NORTH CENTRAL REGION **Sustainable Agriculture Research & Education**





Producers and Researchers Collaborate to Improve Soil Health in North Dakota

The Newsletter of the NCR-SARE Program

Summer/Fall 2013 Issue 29

Soil-and whole farms-have been renewed through soil-improving practices like cover crops and no till. In the semiarid plains of western North Dakota, a team of producers and researchers are working to boost soil health for improved yield stability, farm income, and natural resource health of farms.

The Southwest North Dakota Soil Health Project is a collaborative effort among the Dakota West Resource, Conservation and Development Council, three Soil Conservation Districts, the Natural Resources Conservation Service (NRCS), Dickinson State University, North Dakota State University's Dickinson Research Extension Center, and several producers. In 2009, the group received a \$175,000 NCR-SARE Research and Education grant to improve the soil health awareness and knowledge of producers and resource people in southwestern North Dakota.

"Currently many producers in western North Dakota are practicing, or switching to, no till cropping systems," said Toby Stroh, a 2008 and 2012 project manager with the Dakota West Resource Conservation and Development Council. "Producers, regardless of their tillage system, continue to struggle with crop rotation diversity...This demonstration exemplified how cropland management is critical to improving soil health."

The project was conducted from 2008-2012 on a demonstration plot of 160 acres divided into eight 20-acre plots that had high visibility along North Dakota Highway 22. The land had been farmed conventionally for many years and exhibited potential for improved organic matter, water infiltration, and productivity.

Cover crops and rotations were established to demonstrate the effects that crop diversity and increased crop residue could have on soil health. Also, an incentive program was offered to producers from the three participating soil conservation districts (SCD) to seed up to two 20-acre tracts of cropland to cover crops.

Twelve individual producers grew cover crops on their farms and reported results to the project coordinator. The project also funded a soil biota analysis on each of the producer plots.

From 2008-2011, soil cover and soil compaction were monitored. According to

Stroh, changes in soil cover and compaction compaction.

Water infiltration rate can be an important indicator of the effect that increased organic matter can have on soil quality. The average water infiltration rate improved from 1.38 to 2.23 inches/hour over the course of the project (as shown in photos above).

Although there wasn't a saline problem evident, testing showed that the treatments that were being applied decreased soil salinity.

An analysis of soil biota indicated a better balance between fungi and bacteria, which project organizers considered a positive trend for improving soil health.

The team said the best results came from the plots that had the most crop diversity in their history. They did much better than the plots that had hay land in a three year rotation.

"This shows that just having a living root in the soil isn't the answer, it is the diversity of living roots which make the difference and show the most benefits," said project participant and NRCS district conservationist, Suzi Tuhy.



A plot in 2008 (left) shows poor cover, structure, and water inflitration after a rain event. The same plot (right) with corn planted in triticale residue shows improved infiltration after a similar rain event in 2012. Photos by Toby Stroh.

Stroh said the project team reached about 599 were dramatic resulting in reduced erosion and local and regional soil health professionals and producers through various events associated with the project. He added that some of the producers continue to train other producers about soil health.

> "We were successful in providing a stimulus for increasing soil health awareness and knowledge in western North Dakota," Stroh concluded.

> Get more information about this NCR-SARE Research and Education project, including the crop rotations, online on the SARE project reporting website. Simply search by the project number, LNC09-312, at http://mysare.sare.org/ or contact the NCR-SARE office at ncrsare@ umn.edu.



Ready to learn more about soil health? Building Soils for Better Crops is a 294-page practical guide to ecological soil management. Find it online for free at www. northcentralsare.org/ BuildingSoils.



Learn About Applying for Grants for Sustainable Agriculture

NCR-SARE has online resources to help you learn more about writing proposals for NCR-SARE grant programs. Read tips, tutorials, and watch videos online at www.northcentralsare.org/Grants/Write-a-Successful-Grant

Grant-Writing Assistance

Did you know that the Michael Fields Agricultural Institute Grant Advisor can help you apply to federal and state grant and cost-share programs that could help you improve your farming business? If you are an woman farmer, beginning farmer, limited resource farmer, or a member of a historically socially disadvantaged group in the Midwest, you are invited to contact Deirdre Birmingham for free grant advising service from the Michael Fields Agricultural Institute. Contact Deirdre at (608)219-4279 or deirdreb4@gmail. com for more information.

SARE State Coordintaors

SARE sustainable agriculture coordinators in every state and island protectorate offer training about sustainable practices and share SARE project results. State coordinator responsibilities include professional development—promotion, networking and coordination, especially of SARErelated activities—and communication and evaluation. Learn more about your SARE State Coordinator and view documents about funded grants in your state by visiting NCR-SARE online at www.northcentralsare. org/State-Programs or contact the NCR-SARE office at ncrsare@umn.edu.

Save the Date! SARE's 2014 Cover Crops Conference

In 1992, NCR-SARE started providing grants for cover crops to farmers and researchers. Fast forward to 2012, and an estimated 1.5 million to 2 million acres of cover crops were planted in the United States that year.

To better understand this trend, NCR-SARE funded a national survey of farmers who have grown cover crops, and found that during the 2012 drought, corn and soybean fields that had been cover cropped yielded 9.6-14.3 percent better than fields that had not been cover cropped. Learn more about the survey results at www.northcentralsare.org/ covercropssurvey.

Building on this wave of interest, NCR-SARE is partnering with the Howard G. Buffett Foundation and others to hold a National Conference on Cover Crops and Soil Health, to be held February 18-19, 2014 in Omaha, NE.

While the conference will be limited to invited guests only, conference organizers will be broadcasting the opening plenary session of the conference to 150-200 NRCS and extension offices across the country, streaming a live video broadcast from the opening session led off by Howard Buffett, Secretary Vilsack (invited), and an experienced farmer panel on cover crops and soil health.

Those locations will offer a facilitated discussion for participants to talk about local issues pertaining to cover crops and soil health. Information about the conference and broadcast locations will be available online at https://sites.google. com/a/swcs.org/national-cover-cropsbroadcast/.

Grantee Stories

Learn more about exciting SARE-supported projects! Use the project number listed with these projects to find more information at http://mysare.sare.org/, or follow NCR-SARE on Facebook and Twitter to receive regular updates like these.

With support from a SARE grant, the Midwest Apple Improvement Association, a group of more than 140 apple growers, has released its first apple variety—the EverCrisp. This is SARE project LNC08-292.

Dan Forgey, farm manager at Cronin Farms in South Dakota, has been using no-till management for more than 17 years. With support from a SARE grant, he was able to increase his soil organic matter by 4% using cover crops. This is SARE project FNC06-615.

Big City Farms converts vacant urban lots to vegetable and fruit producing gardens in Indianapolis, Indiana. They are working with several other farms to develop IndyGrown, a collaborative marketing presence. This is SARE project FNC12-868.

Jim Sluyter developed a SARE-supported CSA startup manual, providing the 'nuts and bolts' of CSA management. It's available in both English and Spanish. This is SARE project FNC05-589.

Bertrand Farm, Inc. is developing a SAREsupported, 30-module internship curriculum for small, food-producing farmers. This is SARE project FNC12-896.

SARE grantee, Tom Barnes, is exploring the development of a chevon (goat meat) market in the Black Hills region of South Dakota, and sharing information about meat goats. This is SARE project FNC12-846.

With support from a SARE grant, Michael Rasch, along with Phil Brown and Chuck Dietrich, developed a vacuum conveyor for harvesting fresh produce. This is SARE project FNC08-719.

NCR-SARE's 2014 Farmers Forum Update

The annual NCR-SARE Farmers Forum will be held at a new location this year - the 2014 Ohio Ecological Food and Farm Association Conference! The Farmers Forum is an annual event giving farmers, ranchers, researchers, and educators the chance to share information about sustainable agriculture practices with a national audience.

The event will take place February 15-16, 2014 in Granville, Ohio. For more information visit, http://www.oeffa.org/conference2014.php.

2 FIELD NOTES

Nebraska Nonprofit Teaches Youth and Community About Sustainability

With support from SARE, Community CROPS has been helping people work together to grow healthy food and live sustainably in Lincoln, NE. Photo by Marie Flanagan.



A nonprofit organization that has made a difference for beginning, immigrant, and refugee farmers in Lincoln, Nebraska is now reaching out to youth.

Community CROPS (Combining Resources, Opportunities, and People for Sustainability) has a simple, but lofty mission - help people work together to grow healthy food and live sustainably.

What started as a single community garden in 2003 has grown to more than 13 community garden sites, a training farm, a successful Community Supported Agriculture program, a regular stand at the Old Cheney Road Farmers' Market, and more. Prior to 2010, Community CROPS received two NCR-SARE grants — one to develop an urban gardening project, and another to develop an immigrant farming project.

In 2010, Community CROPS had funding in place to construct a hoop house, raised beds, and a mini student-run farmers market at local Mickle Middle School. They wanted to create a Young Farmers Program to expand their efforts to help young people grow their own food, and looked to NCR-SARE's Youth Educator Grant Program for assistance. They were awarded \$2,000 to strengthen and build upon their initial funds and expand to create new youth growing projects.

"In 2010, CROPS and the original project coordinator had just started youth agriculture projects with Mickle Middle School, but the activities were quite limited in comparison to what they are now, two years later," said Ingrid Kirst, Executive Director of Community CROPS.

Working with youth participants at Lincoln's community centers, they arranged field trips

to the CROPS training farm to learn about growing first-hand. The purpose of their field trips was to expose youth to the dynamics of sustainable agriculture and show them the connection among food, nature, and health. They provided educational materials, conducted field tours, held cooking demonstrations, taught youth about natural resource conservation, and provided general activities like sack races.

Community CROPS worked with a number of different organizations to recruit youth tour groups, including local schools, Girl Scouts, a summer youth program, and various after school programs. The farm tours reached about 400 youth of various ages, from kindergartners to teenagers.

"We chose the field trip to the farm as a means to exposure and education because we felt it was the best way for the youth to truly understand and make the connections that we describe in the classroom," explained Kirst. "We showed them first hand food growing in the field, bugs and pollinators contributing to production, and how human's choices impact the systems involved."

The farm staff assisted in setting up the activities at the events, helped provide tours of the farm, and helped run the activities. Farm staff also brought the expertise and knowledge of the farm, the crops planted, and the daily labor involved in maintaining the farm.

Teachers, parents, and youth staff brought the students and youth out to the farm and served as leaders to the groups. They participated in the activities with the youth, helping them along the way, and Kirst says they learned from the tour themselves. Kirst said that the youth who attended the tours were generally unaware of this type of agriculture prior to the farm tour. Their enthusiasm for learning during the field trip inspired the program organizers.

"We expected that the youth would have little exposure to sustainable agriculture... In that aspect, we were correct, and it reinforced the need to continue conducting the tours in the future," said Kirst.

Kirst and her staff are excited to reach even more students and community members in their area, building a path for the community toward learning about sustainable agriculture.

In fact, in 2011 they received a fourth NCR-SARE grant for a Growing Farmers Training Program, which will provide training and technical assistance to limited resource farmers in Southeast Nebraska to grow and sell sustainable agricultural products.

Read more about this NCR-SARE Youth Educator project online on the SARE project reporting website. Simply search by the project number, YENC10-035, at http://mysare.sare.org/ or contact the NCR-SARE office for more information at ncrsare@umn.edu.



Youth Renewing the Countryside profiles 50 inspiring young people who are revitalizing rural America with new enterprises. Find it online for free at www. northcentralsare.org/ YouthRenewing.



Ohio MarketReady Team Connects Producers to Markets

The MarketReady advisory group met on the phone, and in person, throughout the project. Photo by Julie Fox.

MarketReady is now a core resource offered by educators throughout the state, according to Fox. Resources for educators continue to be shared through BuckeyeBox and resources for producers are continually being developed by professionals and added to the website, http://southcenters.osu.edu/marketing.

Read more about this NCR-SARE Farmer Rancher Grant project online on the SARE project reporting website. Simply search by the project number, ENC10-115, at http://mysare.sare. org/ or contact the NCR-SARE office for more information at ncrsare@umn.

Proactive marketing strategies have proven to be a key to success for many agricultural enterprises, and a team of researchers and educators in Ohio are working to connect willing markets to quality sources of food.

MarketReady is a comprehensive educational program that prepares food producers to sell directly to consumers and wholesale buyers, and the Ohio MarketReady Team provides professional education to improve marketing planning and marketing relationships.

The story doesn't start there, however. A few years ago, the Ohio Direct Marketing Team received USDA FSMIP funding to conduct survey research to better understand producers' marketing practices, plans, and challenges. Some of the findings included the challenge of acquiring new customers and intentions to enter new markets. They shared resources with many state partners in the MarketMaker network, including a team from Kentucky.

Dr. Tim Woods, from the University of Kentucky had previously led a project to develop a curriculum he called Retail Ready. Working with the University of Kentucky, the Ohio Direct Marketing Team piloted the program with producers in 2010, conducted an initial train-the-trainer program, and developed an Ohio version of the curriculum. After the first round of workshops, the team changed the program name from Retail Ready to MarketReady. Their program has now expanded to 16 states and they continue to work with the team from Kentucky on program development and evaluation.

In 2010, the Ohio Direct Marketing Team looked to NCR-SARE's Professional Development Program for funding, and received \$67,337 to expand program content and delivery throughout the state. With their grant funds, they formed an advisory group, developed multimedia curriculum resources, trained 84 professionals, and evaluated their work. "For years, many educators were preparing and presenting seminars and workshops on marketing various products through various marketing channels, but there was limited consistency and efficiency," explained Julie Fox, Program Director for Direct Marketing & Tourism at The Ohio State University. "To help educators, and ultimately to help producers with marketing decisions that supported sustainability, we integrated the MarketReady framework into our education to provide a more consistent, systematic and in-depth approach to direct marketing."

The MarketReady materials they developed include a comprehensive curriculum with an educator notebook, interactive participants materials, evaluation forms, multimedia online support resources, and program communication materials.

"The NCR-SARE grant funding was essential to building the education network, the program, and an instructional framework to guide producers as they explored and developed new markets," said Fox. "While the project reports communicate a snapshot of what occurred during the scope of the project, the investment continues to benefit educators and producers."

Fox is especially enthusiastic about the long-term outcomes from this project. She explained that producers who learn from these educators not only develop marketing plans, but that they have a lasting framework to help them make decisions during shifts in the market and changes during various stages of growth in their business operation. She says the network of educators in Ohio continue to build on the MarketReady curriculum by developing new versions for specific products, such as aquaculture, and specific markets, such as school food service.



Ready to learn more about marketing? "Marketing Strategies for Farmers and Ranchers" offers snapshots of the many alternatives to marketing commodities through conventional channels. Find it online for free at www.sare.org/Marketing.

4 FIELD NOTES

Michigan State Graduate Student Explores the Benefits of Adding Cover Crops to Vegetable Production

Cover crops can help slow erosion, improve soil, smother weeds, enhance nutrient and moisture availability, help control many pests, and bring a host of other benefits to farms across the country.

Cereal-legume cover crop mixtures are of particular interest to growers because they can effectively suppress weeds, control erosion, and scavenge leachable nitrate while also fixing atmospheric nitrogen.

Michigan State University graduate student, Zachary Hayden, knows that few legumes match hairy vetch for spring residue production or nitrogen contribution. He also recognizes that the hardiest of cereals, rye, can be seeded later in fall than other cover crops and still provide considerable dry matter, an extensive soilholding root system, significant reduction of nitrate leaching, and exceptional weed suppression.

Hayden wanted to optimize seeding rates for mixtures of cereal rye (Secale cereale L.) and hairy vetch (Vicia villosa Roth) based on growers' principal goals and crop management practices. Hayden applied for an NCR-SARE Graduate Student Grant in 2009 and received \$9,983 to explore how species proportions (based on seeding rates) of a mixture of cereal rye and hairy vetch could influence cover crop performance in a vegetable production system with respect to crop grown and plastic mulch use.

Hayden used an experimental design where treatments consisted of a bare ground control and a gradient of seven rye:vetch mixture proportions, from 100% rye to 100% vetch. Following cover crop kill and incorporation, each mixture plot was planted with both cucumber and bell pepper, and each crop was grown with and without black plastic mulch.

According to Hayden, changing the proportion of rye and vetch in the mixture produced tradeoffs in services such as fixed nitrogen accumulation and winter annual weed suppression. In both years of the project, all cover crop treatments significantly suppressed winter annual weed populations; however, suppression increased with increased rye in the mixtures. Rye monocultures generally provided the greatest level of suppression, reducing weed biomass by over 95% compared to the control in 2010 and 2011.

Hayden said plastic mulch could go a long way toward preserving N fertility benefits from legume and grass-legume cover crop residues, particularly in the face of leaching precipitation during wet springs. He noted that higher N levels and higher vegetable yields were associated with using cover crop mixtures that contained higher proportions of vetch and using plastic mulch.

Through the project, Hayden reached about 150 farmers and community members directly through extension presentations and field tours.

"Farmers recognize first-hand the complexity involved with cover crop management, and many have expressed appreciation for the systems-approach we took in this study," said Hayden. "Understanding how management interacts with weather and environment to impact nutrient dynamics, weeds, and soil biology, in addition to vegetable yields, helps them make more informed decisions on the farm."

Hayden hopes that this systems-level information can support more informed decision-making in the future regarding cover crop selection, mixture seeding rates, and plastic mulch use—resulting in input savings and crop production benefits. In addition, the approach used for evaluating rye-vetch mixture proportions could be applied to better understand and optimize the management of other cover crop mixtures as well.

Read more about this NCR-SARE Graduate Student project online on the SARE project reporting website. Simply search by the project number GNC09-108, at http://mysare.sare. org/ or contact the NCR-SARE office for more information at ncrsare@umn.



Cereal-legume cover crop mixtures like this cereal rye and vetch mixture are of particular interest to growers because they can suppress weeds, control erosion, and scavenge leachable nitrate while also fixing atmospheric nitrogen. Photo by Zachary Hayden.

Managing Cover Crops Profitably



Curious about cover crops? *Managing Cover Crops Profitably* explores how and why cover crops work, and provides all the information needed to build cover crops into any farming operation. Read it online for free at www.northcentralsare.org/ManagingCover-Crops



Originally introduced by European settlers who liked the fast growth and thick hedges it produced, buckthorn is an exotic invasive species that forms an impenetrable understory that can cause long-term decline of woodland and wetland areas by competing with native tree seedlings and plants. As a result, both common and glossy buckthorn have been declared noxious weeds by the Minnesota Department of Agriculture .

Buckthorn re-sprouts from the buds at the base of stems if it's not cut close enough to the ground. Effective treatment requires either uprooting the plant, or cutting it and then treating the stumps with chemicals like glyphosate.

Minnesota producer, Nancy Lunzer, found herself struggling as she compared treatment options for the buckthorn on her 72.5-acre ranch. She has 34 acres of hardwood forest, 26 acres of pastureland, and 12.5 acres of cropland. She wanted to get rid of the buckthorn without destroying her natural windbreak and without leaching chemicals and silt into area wetlands.

"Costs for controlling buckthorn in our area typically run \$170 to \$250/acre for the initial mechanical removal of a moderate buckthorn understory with an additional estimated cost of \$150/acre herbicide treatment (if landowner applies it) and \$300 if contracted," Lunzer explained. "Plus, it would need to be treated annually for at least 4 years until the seed bank was depleted."

Lunzer said the traditional methods of controlling buckthorn were not conducive to her land, which is home to seven species of reptiles and amphibians, 10 species of mammals, and 47 species of birds. The entire area of buckthorn on her property drains into wetlands, so chemical treatments were unappealing. Clear-cutting the area was undesirable to her because the mature trees provide a valuable windbreak.

Lunzer tried grazing goats on the buckthorn, but found they were not able to adequately control the buckthorn when they grazed it.

Then, in 2010, Lunzer applied for an NCR-SARE Farmer Rancher grant and was awarded \$5,979 to determine whether Berkshire hogs could clear a small area of buckthorn. Working with Tony Miller, a forester with the MN Department of Natural Resources, Lunzer devised a plan using Berkshire hogs the first year, and then Duroc/Berkshire pigs the second and third years. Six hogs were moved into a series of small enclosed areas, and partitioned with temporary electric fence. In addition to forage, the hogs were supplemented with corn and soybean meal and food waste.

"The hogs worked day and night rooting up vegetation in search of grubs, earthworms, roots, mushrooms, acorns, and butternuts," said Lunzer. "They turned the top 6-8 inches of soil, digging out stumps, rocks, and roots; gleaning anything edible from the forest floor. They trampled the vegetation breaking it up under foot and driving it into the soil."

According to Lunzer, the pigs cleared 2.25 acres of buckthorn in 2011. They worked the ground around the large trees and boulders without disturbing deep-rooted tree species and without compacting the soil. Once the buckthorn was sufficiently removed, she removed the pigs, and the area was planted to shade tolerant grasses. Once the grasses were established, Lunzer followed the pigs with sheep during subsequent years.

Minnesota Producer Experiments with Hogs to Control Buckthorn

With SARE support, Nancy Lunzer used hogs to help control the buckthorn on her Minnesota ranch. The results can be seen above, before (left) and after (right). Photos by Jean Andreasen.

"The most impressive result for this project was the ability to eradicate buckthorn from many of the most highly infested areas in the forest," said Lunzer. "Those worthless areas were revived into pastures for grazing sheep. The buckthorn was removed and doesn't seem to be making a comeback."

Tony Miller, was pleased to see that the seed bank was depleted in the soil as evidenced by little or no buckthorn regeneration following the treatment.

"Since there doesn't seem to be much hope on the horizon for a biological control, and considering the expense and effort required for chemical/mechanical control or the use of prescribed fire, the use of livestock definitely provides a promising alternative in some cases," said Miller.

Read more about this NCR-SARE Farmer Rancher Grant project online on the SARE project reporting website. Simply search by the project number FNC10-838, at http://mysare.sare.org/ or contact the NCR-SARE office for more information at ncrsare@umn.edu.



According to Nancy Lunzer, hogs turned the top 6-8 inches of soil on her ranch, helping to eradicate buckthorn from infested areas. Photo by Nancy Lunzer.

6 FIELD NOTES

Fellows Program Gives Extension Agents Insight into Sustaining Iowa's Agriculture

by Abby Massey and Marie Flanagan

The 2011 and 2012 SARE Fellows who toured Iowa included Brad Burbaugh, John Porter, Maud Powell, Nathan Winter, Lara Worden, Thomas Maloney, Marlin Bates, and Aaron Esser (left to right). Photo by Marie Flanagan.



This fall, eight Cooperative Extension agents from around the United States were given a unique training opportunity in Iowa that enhanced their understanding of sustainable agriculture and gave them in-depth exposure to agricultural innovation.

The Sustainable Agriculture Fellows program provides Extension Agents from diverse backgrounds with hands-on experience in sustainable agriculture while offering meaningful networking opportunities and exposure to the diversity of U.S. agriculture. Each year, National Association of County Agricultural Agents (NACAA) and SARE select four NACAA members to be Fellows and travel to each of the four SARE regions over the course of two years.

The fall 2013 tour took the Fellows across lowa's gently rolling plains and along the banks of the Racoon River. They saw the deep, dark soils and the agricultural technologies that make lowa the first in the nation in corn and soybean production. But the Fellows also learned that there is more to lowa's agriculture than those two commodities.

Led by Iowa State Coordinator Andy Larson, the Fellows met researchers seeking ways to reduce harmful runoff from corn fields; they met corn and soy producers who are modifying their practices to conserve natural resources; they talked with organic vegetable farmers involved in community supported agriculture; they met non-profit and community co-op organizers; they walked the fields with owners of a familyrun dairy and creamery; and they sat down with chefs who make it their mission to source food locally.

Fellow and Horticulture Specialist for the University of Missouri Extension, Marlin Bates, found inspiration in the family-owned and operated enterprises that they visited in lowa. At Hansen's Farm Fresh Dairy, business has been thriving, in part, because of familial commitment—when three sons decided to return home to the family dairy business, they put in a farmstead creamery that added value to their milk, and helped expand the business.

"At Hansen's, the sons in the family collectively said they wanted to come back, and that made a big difference" said Bates.

The Fellows met with organizations like the Iowa Valley Food Co-op and Matthew 25 Ministry Hub, who work to foster the personal connection between consumers and local agriculture.

"The market is there [for local food], and the demand is there," observed Fellow and Senior Extension Associate at Cornell University, Tom Maloney. "Consumers want to know the person who produced their food, and that's incredibly powerful."

As they spoke with experts conducting research in Iowa, the Fellows saw sustainable agriculture practices in the field. For instance, at the Neal Smith National Wildlife Refuge, they saw how strategic integration of perennial prairie cover within agricultural landscapes could benefit agroecosystem functions.

"My attitude has changed in the fact that I understand that it can be done incrementally – sustainable agriculture is a continuum," said Fellow Brad Burbaugh, a former Agricultural Extension Agent in Jacksonville, Florida and current Agricultural and Extension Education PhD student at Virginia Tech. "There are different approaches people can take towards becoming more sustainable." But seeing a diversity of operations and interacting with farmers and ranchers wasn't the only source of education for the Fellows—they learned an immense amount from the discussions they had with one another on the road.

"I've learned from other Fellows about farming in their region," said Bates. "I've gained perspectives from other Fellows [I wouldn't have had,] had it not been for the program."

As they left Iowa, the Fellows took with them a greater understanding for the dominant role that agriculture plays in the state, and why enhancing the sustainability of that agricultural system is so important. The innovative producers, researchers, and experts they met along the way illustrated the potential for the adoption of sustainable practices. Consequently, the Fellows became increasingly excited to bring some of the innovations back home to producers.

"We are a trusted source for information, and now I can say, 'I've seen this work in the field.' And that gives me increased credibility," said Burbaugh.

Looking forward, the 2013 Sustainable Agriculture Fellows will be learning about sustainable agriculture in New Mexico later this year.

Find more inforamtion about the Sustainable Agriculture Fellows program, including biographies of current Fellows, online at www.sare.org/Fellows.

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ABOUT NCR-SARE

NCR-SARE has awarded more than \$40 million worth of competitive grants to farmers and ranchers, researchers, students, educators, public and private institutions, nonprofit groups, and others exploring sustainable agriculture in 12 states.

NCR-SARE funds cutting-edge projects every year through grant programs.

Are you interested in submitting a proposal for a NCR-SARE grant? Before you write the grant proposal, determine a clear project goal, and engage in sustainable agriculture research on your topic. Need help determing which program is best suited for your project? Go to www.northcentralsare.org/Grants for more information, or contact the NCR-SARE office.

For more information about any of the NCR-SARE grant programs, go to www. northcentralsare.org/Grants or contact the NCR-SARE office at 612-626-3113 or ncrsare@umn.edu.

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GRANT PROGRAM TIMELINES*

Research and Education*

August - Call for Preproposals released Late October- Preproposals Due Late January - Full Proposals Invited April - Full Proposals Due Late July - Funding Decisions Fall - Funds Available to Recipient

Farmer Rancher*

Late August - Call for Proposals released Mid November - Proposals Due March - Funding Decisions Spring - Funds Available to Recipients

Graduate Student*

March - Call for Proposals released Early May - Proposals Due Late July - Funding Decisions September - Funds Available to Recipients

Professional Development Program*

Mid March - Call for Preproposals released Mid May - Preproposals Due Late June - Full Proposals Invited Early September - Full Proposals Due Early December- Funding Decisions January - Funds Available to Recipient

Youth Educator*

Late August: Call for Proposals released Early November: Proposals Due March: Funding Decisions Spring: Funds Available to Recipients

*Timelines are subject to change.

NORTH CENTRAL REGION SUSTAINABLE AGRICULTURE RESEARCH AND EDUCATION PROGRAM CONTACT INFORMATION

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