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





### Exploring Pasture-Based Dairy Opportunities in Wisconsin

The North Central region boasts more dairy farms than any other region in the United States (Hoard's Dairyman, 2012). As producers in the region explore grass-based systems to alleviate energy costs associated with raising feed crops, researchers in the "dairy state" of Wisconsin have been exploring whether the unique features pasture-based milk can help producers capitalize on its strengths in valueadded artisan products.

"The vast majority of dairy cattle in the U.S. never see the outdoors while they're lactating," explained Laura Paine, Grazing and Organic Agriculture Specialist at the Wisconsin Department of Agriculture, Trade, and Consumer Protection (DATCP). "More than 50% of the milk produced in the U.S. comes from 1,750 large farms, primarily in California, Idaho, New Mexico, and Texas. In contrast, about 22% (more than 3,000) of Wisconsin's dairy farms use managed grazing."

Because so many of Wisconsin's dairy farmers use managed grazing, Paine conducted a needs assessment with the grazing community when she first started in her position as the Grazing and Organic Agriculture Specialist in 2006. Across all the focus groups, one issue kept coming up: market development.

According to Paine, preliminary research conducted by Scott Rankin showed that grass-based milk could produce cheddar cheese that had a creamier texture and a golden color that was preferred over cheese from confinement-fed cows in consumer taste testing (Rankin, 2006). To Paine, this was a market opportunity worth exploring. In 2008, Paine and the DATCP applied for an NCR-SARE Research and Education grant and received \$148,133 to explore pasture-based systems as a source of "specialty milk" for value-added dairy processing.

They took a value chain approach, bringing together pasture-based dairy farmers, processors, chefs, and researchers to conduct a comprehensive investigation of the chemical and physical properties of

grass-based milk when made into other products. They also explored the marketing and positioning of pasture-based dairy products, conducting focus group discussions and consumer taste testing to assess consumer interest. They wanted to develop a definitive understanding of the

unique physical, chemical, and flavor qualities of pasture-based milk and an ability to manage seasonal changes in pasture milk flavor and physical properties to improve processing quality.

The 35-page report stemming from the study includes many insights from consumers, focus groups, and chefs about pasture-based dairy products. For instance, according to Paine, focus group participants preferred the term "pasture grazed" over "grass-fed" or even "pasture-fed", with "grass-fed" conjuring up images of confined cattle being fed grass versus "pasture grazed" more clearly creating the image of cows harvesting their own feed.

Although butter was the product that was most prized by the chefs in the study, making grass-based butter comes with logistical challenges. In the report, Paine explains how the original MN-based PastureLand Cooperative went out of business, not because they were having trouble selling their award-winning, pasture-based butter, but because they could not find a market for the organic skim milk that was a by-product of the butter-making process.

Some of the most successful pasture-based dairy products have been cheeses. Paine said that the character of cheese fits with the complexity of flavors in grass-based milk, and that the aging process seems to enhance this The Newsletter of the NCR-SARE Program

Issue 30 Winter/Spring 2014



Keith Adams of Alemar Cheese Company in Minnesota has developed an award-winning, grass-based cheese called Bent River made in the style of a Camembert. Photo by Laura Paine.

> synergy. Cheeses that have worked well are those that have earthy flavors, such as aged cheeses. She hopes this kind of information helps producers as they explore markets.

"It is my hope that the project will inspire dairy processors in the region to consider pasture milk for their value added cheeses and dairy products, and that the unique qualities of the pasture milk will be highly valued, thus returning a premium to pasture-based dairy producers," said Paine.

For more information on Paine's NCR-SARE Research and Education grant project, visit the SARE project reporting website. Simply search by the project number, LNC08-303, at www. mysare.sare.org, or contact the NCR-SARE office. Find PDFs and a YouTube video online at http:// datcp.wi.gov/Farms/Grazing/Grass\_Fed\_Market\_ Development/.



Learn more about grass-fed operations. *How to Direct Market Your Beef* portrays how one couple launched a profitable, grass-based beef operation focused on direct market sales. Read it online for free: http://www.northcentralsare.org/ Educational-Resources/Books/Howto-Direct-Market-Your-Beef

# Newly Funded Grant Projects in the North Central Region

NCR-SARE is pleased to announce the projects that have been selected for funding for several grant programs. More than 80 projects were awarded more than \$2.6 million through these NCR-SARE grant programs, which offer competitive grants for producers, researchers, students, educators, organizations, and others who are exploring sustainable agriculture in America's Midwest.

For the 2014 Research and Education program, NCR-SARE awarded more than \$1.6 million to nine projects ranging from \$103,675 to \$199,866. The Research and Education Program is a competitive grant program for researchers and educators involved in projects that explore and promote environmentally sound, profitable, and socially responsible food and/or fiber systems.

For the 2014 Graduate Student program, NCR-SARE awarded more than \$150,000 to 16 projects ranging from \$6,382 to \$10,000. The Graduate Student Program is a competitive grant program to fund graduate student projects that address sustainable agriculture issues.

For the 2014 Farmer Rancher Grant Program, NCR-SARE awarded more than \$486,000 to more than 40 projects ranging from \$1,370 to \$22,500. The Farmer Rancher Grant Program is a competitive grants program for farmers and ranchers who want to explore sustainable solutions to problems through on-farm research, demonstration, and education projects.

For the 2014 Youth Educator Grant Program, NCR-SARE awarded more than \$25,000 to 13 projects ranging from \$1,900 to \$2,000. The Youth Educator Grant Program supports educators who seek to provide programming on sustainable agriculture for youth.

For the 2013 Professional Development Program, NCR-SARE awarded almost \$350,000 to five projects ranging from \$61,054 to \$74,658. Professional Development Program competitive grants emphasize training agricultural educators in extension, Natural Resources Conservation Service, private, and not-forprofit sectors, using farmers as educators and addressing emerging issues in the farm community.

To learn more about the projects that were selected for funding, visit the NCR-SARE website for lists of funded projects and descriptions of the projects at www. northcentralsare.org/Grants/Recent-Grant-Projects

To learn about the NCR-SARE grants funded in your state, visit the NCR-SARE website here: www.northcentralsare.org/ Educational-Resources/Funded-Grantsin-Your-State, where you can view a portfolio summary and funded grants list for every state and island protectorate.

NCR-SARE administers several competitive grant programs. New this year, applicants can now submit their grant proposals online. Each grant program has specific priorities, audiences, and timelines. The focus for the NCR-SARE grant programs is on research, education, and outreach. Funding considerations are made based on the relevance and potential of the project to increase the sustainability of agriculture in the region, as well as how well the applicant articulates the research and education components of their sustainable agriculture grant proposals.

NCR-SARE's Administrative Council (AC) members decide which projects will receive SARE funds. A collection of farm and non-farm citizens, the AC includes a diverse mix of agricultural stakeholders in the region. Council members hail from regional farms and ranches, the Cooperative Extension Service, universities, and nonprofit organizations. In addition, regional representatives of the U.S. Geological Survey, the U.S. Department of Agriculture, the Environmental Protection Agency, the Natural Resources Conservation Service, and NCR agribusinesses, state agencies, and foundations sit at the table to distribute grant money.

#### Learn More About Applying for NCR-SARE Grants

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

#### Assistance from 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.

#### Michael Fields Grant-Writing Assistance

Did you know that the Michael Fields Agricultural Institute Grant Advisor can help you apply to federal and state grant and costshare 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.

# Controlling Squash Bugs with Trap Crops and Chickens in Missouri



Squash bugs (*Anasa tristis*) can be serious problem pests for pumpkin, squash , and cucurbit growers Photo by Scott Bauer.

Squash bugs are major pests among cucurbit, squash, and pumpkin growers. For organic or all-natural vegetable producers like Gary Wenig in Rayville, MO, controlling the squash bugs on his farm without the use of commercially available pesticides has been a challenge.

Rocky Creek Valley Farm is a 40-acre farm owned and operated by Elizabeth and Gary Wenig. They produce and sell a large variety of heirloom vegetables, free range eggs, and herbs. They needed to get a handle on the squash bug problem on their farm, but they didn't want to rely on synthetic chemicals to achieve their goal.

Across the country, producers like the Wenigs are altering their pest management practices to move toward whole-farm strategies based on ecological principles. Clearly embracing what early advocates of integrated pest management (IPM) believed, farmers are acknowledging the benefits of system-wide strategies to control pests.

The Wenigs learned that trap crops could be grown as a control measure to lure pests away from a cash crop. Since the pests are concentrated in high levels in trap crops, they can be treated in a localized area instead of treating the entire field.

"Trap crops have been proven to lure pests away from cash crops, but then the issue is how to kill the insects once they are on the trap crop plants," said Gary Wenig. "More traditional IPM methods use chemicals to kill pests once they are on the trap crops. That strategy reduces the use of chemicals and associated costs, but does not eliminate the use of chemicals."

Rather than using synthetic chemicals, the Wenigs wanted to use chickens to eliminate the pests in their trap crop. In 2013, the Wenigs applied to the NCR-SARE Farmer Rancher Grant Program and were awarded \$6,462 to explore an insect pest control management strategy using a combination of trap crops, beneficial insect crops, and chickens in moveable pens. They hoped that the chickens would kill the squash bugs in the trap crop, thus reducing the number of squash bugs in their cash crop without using chemicals. They also wanted to integrate cover crops as a soil management strategy for pest management.

For their experiment, the Wenigs set up four trap crop plantings around a 2.5-acre vegetable garden. Based on research presented by Jaime C. Piñero, Assistant Professor and State IPM Specialist at Lincoln University, the Wenigs selected a trap crop mix of blue hubbard and red kuri squash.

They constructed two 8x12 ft. mobile pens (sometimes referred to as chicken tractors), which were designed to roll over the trap crop plants. The pens were placed so that the pens enclosed the trap crop plots, and then they placed between two and four chickens in each mobile pen. By confining the chickens in pens with the trap crop plants, they kept the chickens away from the cash crop and avoided damage and contamination issues. To make their pest management program even more effective, the Wenigs incorporated several cover crops to provide other soil and pest management related benefits.

They observed that the blue hubbard was a more effective trap crop than the red kuri squash, and were thrilled when they observed the chickens devouring the squash bugs in the blue hubbard trap crop.

"Bottom line - it was a great success," said Wenig. "After a number of issues including the weather and a steep learning curve, we saw that chickens, in combination with a blue hubbard trap crop, can be used to control squash bugs in a vegetable produce business."

For more information on the Wenigs' trap crop, cover crop, and mobile chicken pen pest management strategy, visit the Rocky Creek's website at www.RockyCreekValley.com, or the SARE project reporting website. Simply search by the project number, FNC13-9', , at www.mysare.sare. org, or contact the NCR-SARE office.



Wening's mobile chicken pen design accommodates 2 to 4 chickens and a trap crop bed. It is 8 feet wide, 12 feet long, and 24 inches tall. Photo by Gary Wening.

### SARE's National Conference and Forum on Cover Crops and Soil Health

Jeff Rasawehr shows runoff of cover cropped land (right) versus non-cover cropped land (left). Rasawehr grows corn, soybeans, and wheat on 2,000 acres, and employs cover crops and no-till. Photo by Sean McGovern.

Cover crop adoption has increased rapidly in the last 5 years, with an estimated 1.5 to 2.0 million acres of cover crops planted in the U.S. in 2012.

During the winter of 2012-13, the NCR-SARE program contracted with the Conservation Technology Information Center (CTIC) to carry out a survey of farmers who had grown cover crops. The short survey instrument of a dozen questions was developed with help from steering committee members of the Midwest Cover Crops Council. It was distributed at several farmer conferences in the Midwest over the winter, and was also sent out in an online format to individuals across the U.S.

Among other findings in the survey, farmers estimated 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, SARE partnered with the Howard G. Buffett Foundation and others to hold a National Conference on Cover Crops and Soil Health. The National Conference on Cover Crops and Soil Health, held Feb. 17-19, 2014 in Omaha, Neb., brought together 300 agricultural leaders and innovators to explore how we can make American agriculture more sustainable through improved soil health. Attendees represented agricultural industry, the farm community, academia, government, commodity, and conservation organizations.

As part of this landmark event, Cover Crops and Soil Health Forums took place on Feb. 18 at more than 200 Natural Resources Conservation Service (NRCS) and Extension offices nationwide. These forums gave farmers and other agricultural professionals the opportunity to share their thoughts with the national conference and engage in local conversations on cover crops and soil health. Conference organizers broadcasted the opening plenary session of the conference to these forums, streaming a live video broadcast from the opening session led off by Howard G. Buffett, USDA Natural Resources Conservation Service (NRCS) Chief Jason Weller, American Soybean Association president and farmer Ray Gaesser, and an experienced farmer panel on cover crops and soil health including Dave Brandt (Ohio), Gabe Brown (North Dakota), Dan DeSutter (Indiana), and Clay Mitchell (Iowa). The forums were attended by an estimated 6,000 people.

Conference organizers are currently developing a formal list of recommended actions to increase cover crop adoption based on discussions at the conference and local forums. To watch a video of opening sessions of the conference, browse presentations from breakout sessions, and watch short videos of 10 innovative farmers describing their experiences with cover crops, visit http:// www.northcentralsare.org/Events/National-Conference-on-Cover-Crops-and-Soil-Health





#### Learn more about the National Conference and Forum on Cover Crops and Soil Health

Watch a video of opening sessions of the conference, browse presentations from breakout sessions, and watch short videos of 10 innovative farmers describing their experiences with cover crops at http://www. northcentralsare.org/Events/National-Conferenceon-Cover-Crops-and-Soil-Health



# And the 2013 Cover Crops Survey Says...

Farmers who completed the NCR-SARE cover crops survey reported that they used cover crops on about 218,000 acres in 2012, and expected to increase that to more than 300,000 acres in 2013.

Following the 2012 growing season, the NCR-SARE program contracted with the Conservation Technology Information Center (CTIC) to carry out a survey of farmers who have grown cover crops. A total of 759 farmers completed the survey. Based on the interesting results from that first year survey, NCR-SARE decided to repeat and expand the survey following the 2013 growing season. This winter, more 1,500 cover crop users responded to the survey and more than 500 farmers who are not yet using cover crops provided input. The full results of the survey will be released by NCR-SARE and CTIC in late summer. Some of the interesting results are that farmers continued to find a yield benefit to using cover crops for both corn and soybeans, just as reported in the 2012 growing season. Acreage of cover crops continued to expand, with a 31% annual growth rate in cover crop acreage among surveyed farmers over the last 3 years.

A somewhat surprising result from the survey was the response to a question about whether farmers had received government payments as an incentive to plant cover crop. Some have presumed that is a major reason cover crops are being used, but among the farmers surveyed, 63% who use cover crops said they have never received cover crop incentive payments, showing that other benefits are driving farmers to adopt cover crops.

For more information about the cover crops survey and results, contact Dr. Rob Myers, Director of Professional Development Programs for NCR-SARE at myersrob@ missouri.edu.

# Ron Macher and Dale Mutch: NCR-SARE Heroes

In 2012, the NCR-SARE Administrative Council created the NCR-SARE Hero Recognition to bring awareness of, recognize, and pay tribute to those who have made significant contributions to NCR-SARE. Coordinated by the NCR-SARE Alumni Organization, this recognition acknowledges the leadership, vision, contributions, and impact that these heroes have made in the field of sustainable agriculture in the region. In 2014, Ron Macher and Dale Mutch were named as NCR-SARE Heroes for their service, leadership, and lasting impact in sustainable agriculture

Ron Macher is known to many within the sustainable agriculture community as the publisher and editor of Small Farm Today magazine. For thirty years his publication has been dedicated to the preservation and promotion of small farming, rural living, sustainability, community, and agripreneurship. He is the author of Making Your Small Farm Profitable and is the founder of the National Small Farm Trade Show and Conference which has been held for twenty-two years in Columbia, Missouri. The conference serves as an educational venue showcasing advancements in small farming practices.

Ron served on the NCR-SARE Administrative Council from 1997-2000. The NCR-SARE Farmers Forum was founded by and first established by Ron at the Small Farm Trade Show and Conference in 2005. From 2005-2012, more than 175 Farmer Rancher and Youth/Youth Educator grant recipients presented their SARE projects and findings to their peers and colleagues at the trade show. He also published their SARE grant project results in Small Farm Today magazine, helping to get the word out about the SARE program and SARE project results.

Dr. Dale Mutch is a retired Michigan State University Extension (MSUE) Senior Extension Educator and Adjunct Professor in the Plant, Soil and Microbial Sciences Department—applying practical, researchbased information to meet the needs of Michigan residents. He spent more than three decades as an IPM vegetable scout, agricultural agent, district and state field crop integrated pest management coordinator, senior district Extension educator specialist, and coordinator, consultant, and professor for the Department of Crop and Soil Sciences. As a founding member of the Midwest Cover Crops Council, Dale championed the promotion and demonstration of cover crops to improve soil health and create more sustainable agricultural practices throughout the region and nationally.

Dale has been an avid and enthusiastic leader in the NCR-SARE organization since 1997 when he received his first Research and Education grant. He served on the Administrative Council from 2000-2004, and as the Michigan SARE state coordinator from 2007– 2013. During his tenure as the Michigan State Coordinator, Michigan was awarded 75 SARE grants, and he distributed more than 130 travel/mini grants to advance educator training in sustainable farming practices. He provided leadership for a number of important regional SARE initiatives.

Read more about the NCR-SARE Heroes and the NCR-SARE Hero Program online at http:// www.northcentralsare.org/About-Us/Regional-Initiatives/NCR-SARE-Hero-Recognition-Program

#### North Dakota Soil Health Workshops Reach 500+

Chris Augustin, an North Dakota soil health specialist, explains saline soils during a field day in Forman, ND. Photo by Abbey Wick.

Savvy producers in North Dakota have demonstrated an increased awareness and curiosity about soil health and biology, and their influence on yield and economic return. Consequently, educators in North Dakota have noticed a need to provide support to guide producers in effective soil and land management strategies.

In response, a diverse group of soil scientists and practitioners from North Dakota State University (NDSU) Extension Service and Agricultural Experiment Station, USDA-ARS at Mandan, USDA-NRCS, and North Dakota state conservation districts joined forces to improve the general understanding of soil management practices across the state. The group applied for and received a \$73,923 NCR-SARE Professional Development Program grant to conduct workshops that would help improve overall understanding of soil biology.

"Given North Dakota's dedication to soil health, we thought this was a perfect time to initiate training opportunities in this area," said project coordinator Abbey Wick, Assistant Professor of Soil Health with NDSU Extension.



Held over the course of six months (October 2012 – March 2013), the workshops focused on soil health, ranging in topics from pure 'train the trainer' opportunities on how to demonstrate soil health to producers, to understanding soil health concepts in different regions of the state. In total, the group reached more than 500 people through seven field tour/workshop opportunities.

Funds were used to develop web-based resources - primarily videos - to reach a broader audience with much needed information pertaining to soil health.

"We were really impressed with the turnout of producers and educators to the trainings," said Wick. "This solidified the commitment of the state and also our newly hired county agents to improving soil health."

Read more about this NCR-SARE Professional Development Program grant project online at www.NDSUsoilhealth.com, or on the SARE project reporting website. Simply search by the project number, ENC08-105 at www.mysare.sare. org, or contact the NCR-SARE office for more information.

#### NCR-SARE Elects Ryan Stockwell to Administrative Council

Ryan Stockewll was recently elected as a new Administrative Council member for NCR-SARE.

Stockwell provides outreach, education, and policy analysis on the agriculture team of National Wildlife Federation. Before joining National Wildlife Federation, he was Director of Energy and Agriculture at the Minnesota Project where he directed outreach and education efforts for farmers and local communities to improve their farming and energy sustainability. He holds a Ph.D. in history from the University of Missouri and a Masters degree in History from Miami University. Stockwell farms using no-till and cover crops, is a member of the Wisconsin NRCS State Technical Committee, and is President of the Central Wisconsin Agribusiness Innovation Center.

NCR-SARE would like to extend gratitude to Mike Anderson, whose term on the Administrative Council has come to an end.

### More Projects in the Field

Learn more about exciting SAREsupported projects! Use the project number listed with these projects to find more information at www.MySARE. sare.org, or follow NCR-SARE on Facebook or Twitter to receive regular updates like these.

With help from a SARE grant, Cedar Valley Sustainable Farm CSA made a new life and new business for themselves raising and selling first vegetables and then antibioticfree and additive-free beef, chicken, pork, and eggs. This is SARE project FNC06-611.

In 2010, University of Illinois crop scientist, Darin Eastburn, received a SARE grant to study the use of cover crops in the prevention of soil erosion and suppression of weed growth in soybeans. So far, cereal rye and rapeseed have been the most promising. This is SARE project LNC10-321.

To assess the current and potential health care food markets for producers, the Institute for Agriculture and Trade Policy compiled and analyzed purchasing data from three participating health system collaborators for food and beverage purchases, including those that meet sustainability criteria in the Green Guide for Health Care. This is SARE project LNC11-334.

With SARE support, researchers at the University of Minnesota are evaluating the agronomics and marketability of dry beans for use in local food systems. This is SARE project LNC11-336.

University of Wisconsin researcher, Scott Sanford, is working on a SARE grant for the design and management of on-farm cold storage facilities in the upper Midwest (and beyond). This is SARE project LNC11-329.

Michigan farmer Mike Wixtrom received an NCR-SARE Farmer Rancher Grant to compare potato varieties in a replicated trial. This is SARE project FNC13-941.

In 2006, the REAP Food Group received an NCR-SARE grant to start the "Buy Fresh Buy Local" program in Wisconsin with 12 partners. Recently, four more Madison area restaurants have joined REAP's Buy Fresh Buy Local program. This is SARE Project LNC06-269.



### New Agroforestry Resources for Producers and Educators

Practices such as terracing, conservation tillage, and riparian buffers protect the soil from erosion and improve stream water quality on this farm in Woodbury County, Iowa. Photo courtesy of the U.S. Department of Agriculture.

Used in conjunction with the training manual, the *Handbook for Agroforestry Planning and Design* can help users identify which agroforestry products can grow on their land, which of these products can sell profitably, and how to develop basic business and marketing strategies for them. Gold hopes users of both resources will learn how to develop new, profitable enterprises.

"Agroforestry land use practices, as part of our overall landscape matrix, will contribute new avenues to benefit the economic bottom line of landowners who use them, and for society at large, will also contribute to the health of our environment (habitat, water, and air quality)," said Gold.

You can find these new agroforestry resources online at http://www. northcentralsare.org/AgroforestryUMCA. Read more about Gold's NCR-SARE Professional Development Program grant project online on the SARE project reporting website. Simply search by the project number, ENC12-129 at www. mysare.sare.org, or contact the NCR-SARE office for more information.



Handbook

for Agroforestry Planning & Design

he Center for Agroforestry University of Missouri The Training Manual for Applied Agroforestry Practices is designed for natural resources professionals and landowners, and includes worksheets and exercises for use as an educational tool. The manual features descriptions of establishing and managing the five agroforestry practices (riparian and upland forest buffers, windbreaks, alley cropping, silvopasture, and forest farming), plus success stories of Midwestern landowners utilizing spring agroforestry on agricultural and forested lands.

Used in conjucnction with the training manual, the Handbook for Agroforestry Planning and Design can help users identify which agroforestry products can grow on their land, which of these products can sell profitably, and how to develop basic business and marketing strategies for them.

You can find both of these new agroforestry resources online for FREE at http://www.northcentralsare.org/AgroforestryUMCA.

Agroforestry practices can help producers diversify products, markets, and farm income, and improve soil and water quality. They can also help reduce erosion, non-point source pollution, and flood damage. Across the region, producers are exploring agroforestry practices such as riparian and upland forest buffers, windbreaks, alley cropping, silvopasture, and forest farming to find ways to improve biodiversity while sustaining their land resources.

Michael Gold, Research Professor for the Department of Forestry at the University of Missouri, has been working in agroforestry since he was in graduate school more than 30 years ago. He is involved in agroforestry education, training, research, and outreach through the Center for Agroforestry at the University of Missouri (UMCA). Gold and the UMCA created their first training manual in 2000, and have continued to develop user-friendly agroforestry references for producers and training tools for educators.

With support from a 2012 \$74,842 NCR-SARE Professional Development Grant, Gold and the UMCA developed the *Training Manual for Applied Agroforestry Practices* and the *Handbook for Agroforestry Planning and Design*. These companion pieces provide easy-to-use information about agroforestry.

"In order to advance agroforestry adoption, we know from our research that a major barrier is lack of familiarity with the concepts and the details," said Gold. "Since resources and time are limited, we know that the best 'bang for the buck' is the train the trainer approach. Having worked with SARE previously, and knowing that agroforestry is a form of sustainable land use, we knew that SARE was the perfect venue to seek support for this idea, and we were right."

Printed in 2013 to coincide with the inaugural Agroforestry Academy, the *Training Manual for Applied Agroforestry Practices* is designed for natural resources professionals and landowners, and includes worksheets and exercises for use as an educational tool. The manual features descriptions of establishing and managing the five agroforestry practices, and includes success stories about Midwestern landowners utilizing agroforestry on agricultural and forested lands.



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#### ADDRESS SERVICE REQUESTED



Did you know NCR-SARE is on Facebook, Twitter, and YouTube? Keep track of our grant opportunities, projects, events, and more. Search for North Central Region SARE and follow us!

#### ABOUT NCR-SARE

NCR-SARE has awarded more than \$50 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 North Central region states.

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

Are you interested in becoming a project coordinator for an NCR-SARE grant? Before you write a grant proposal, determine a clear project goal, and engage in sustainable agriculture research on your topic. Need help determining 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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#### NCR-SARE GRANT TIMELINES\*

Farmer Rancher\* Early 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

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

Professional Development Program\* The next deadline for PDP grant applications will not be until 2015.

Youth Educator\* Early August: Call for Proposals Released Mid November: Proposals Due March: Funding Decisions Spring: Funds Available to Recipients

Partnership\* Early August: Call for Proposals Released Late October: Proposals Due March: Funding Decisions Spring: Funds Available to Recipients

\*Timelines are subject to change.

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Photo by Darin Eastburn.