NORTH CENTRAL REGION

Sustainable Agriculture Research & Education





Ohio Farmer Develops Mobile Hops Dryer for Hops Growers

In a state that boasts 300 craft breweries, David Volkman is one of many craft beer enthusiasts in Ohio. But Volkman, with 12 acres of land in Warren County, is not only supporting Ohio's craft brewing industry through consumption; he's also contributing to its production. In 2012, he and his wife, Nina, started transitioning some of their small acreage to grow hops. Today, they grow 1,400 plants on about 1.5 acres and they've named their business Ohio Valley Hops. Hops are in demand in Ohio. U.S. hop acreage has increased by 72% since 2012. In Ohio, less than 2% of the hops used to brew a whopping 1.09 million barrels of craft beer are grown locally (Ohio Craft Brewers Association, 2018).

"There was a large demand in Ohio, but no local supply," said Volkman. "As a fan of craft brewing, I attended a few field days and we decided to give it a go."

Volkman says that with improved quality and increasing quantity, growing hops sustainably as an alternate crop can provide additional income for small farmers in Ohio. However hops production requires equipment, from harvesters to hammer mills, from pelletizers to dryers. The Volkmans own a mobile hop harvester, and travel throughout the region offering custom harvesting for other growers. Now, in addition to growing and harvesting hops, they wondered whether they could add mobile hops drying to the services they were offering to Ohio's hops growers.

"Drying is something that must happen as soon as possible, on farm, to maximize quality," explained Volkman. "Several growers have built fixed drying facilities that allow on-farm drying which have proven to be effective and efficient. However, they can cost several thousand dollars and permanently take up floor space. Practically and financially, not every farm needs to tie up space and money in a dryer. Sharing is viable, since drying takes ~48 hours, and Ohio's harvest starts in the southwest in July and continues through September in the northeast with about a seven to ten day harvest window per variety. It is practical that numerous growers could use one mobile dryer."

Determined to make drying hops more efficient, Volkman applied for a \$7,500 NCR-SARE Farmer Rancher grant to build a mobile hop dryer that could be used by multiple growers. He wanted to find a way to quickly dry hops to the ideal moisture content for processing, while reducing individual farmer investment by creating a shareable resource.

Using an enclosed trailer, Volkman devised a two-step drying process involving high volume air movement for initial drying and then lower volume conditioned air for finishing. He was able to dry up to 1,000 pounds of hops in 48 hours. Smaller loads took as little as 24 hours. Volkman shared the dryer with four Ohio hops growers the first year; growers simply picked up the trailer, pulled it to their site, used it, and returned it (or dropped it off for another grower to use). During the second year of his project, he shared the mobile dryer with five growers, and determined that even more growers could have been included.

"From many discussions over the last several years, processors' biggest gripe is that growers do not dry their hops evenly or thoroughly," explained Volkman. "That was not the case with the mobile dryer. Simply following provided instructions on bin rotation, using heat and air properly, and doing moisture testing led all users to get their hops in the 8-10% moisture range, ideal for further processing and packaging."

Volkman has shared information about the mobile hops dryer at numerous field days and events and has developed a resource that includes design details (see the right sidebar for more information).

For more information, about Volkman's NCR-SARE Farmer Rancher grant project, visit the SARE project reporting website at https:// projects.sare.org/search-projects/ and search for project number FNC17-1103, or contact the NCR-SARE office.

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With support from an NCR-SARE Farmer Rancher grant, hops growers David and Nina Volkman (above) developed a mobile hop dryer that can be shared among area hop growers. Photo courtesy of David Volkman.



A publication including design details and preliminary field results of the Volkman's mobile hops dryer is available online for free at www. northcentralsare.org/Educational-Resources/SARE-Project-Products/ Building-a-Mobile-Hops-Dryer.



NCR-SARE Awards \$5.4 Million in Grants

NCR-SARE is pleased to announce the projects that have been selected for funding for several grant programs. NCR-SARE's competitive grant programs awarded 122 projects about \$4.8 million this past year; the programs offer grants for producers, researchers, students, educators, organizations, and others who are exploring sustainable agriculture in America's Midwest. Another \$.66 million supported NCR-SARE's regional state coordinators who train agriculture professionals in sustainable practices and raise awareness about SARE resources.

The **Farmer Rancher Grant Program** is a competitive grant program for farmers and ranchers who want to explore sustainable solutions to problems through on-farm research, demonstration, and education projects. In 2019, 48 grant projects were selected to receive a total of more than \$663,000 through this grant program.

For the 2019 **Youth Educator Grant Program**, NCR-SARE awarded \$42,000 to 11 projects. The competitive Youth Educator Grant Program supports educators who seek to provide programming on sustainable agriculture for youth.

The **Graduate Student Grant Program** is a competitive grant program to fund graduate student projects that address sustainable agriculture issues. For the 2018 Graduate Student program, NCR-SARE awarded more than \$235,000 to 20 projects ranging from \$10,781 to \$12,000.

For the 2019 **Partnership Grant Program**, NCR-SARE awarded almost \$566,000 to 15 projects. NCR-SARE's Partnership Grant Program is intended to foster cooperation between agriculture professionals and small groups of farmers and ranchers to catalyze on-farm research, demonstration, and education activities.

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 2018 Research and Education program, NCR-SARE awarded \$3.01 million to 16

projects ranging from \$98,561 to \$200,000.

For the 2018 **Professional Development Program**, NCR-SARE awarded more than \$882,000 to 12 projects ranging from \$67,089 to \$75,000. NCR-SARE Professional Development Program competitive grants emphasize training agricultural educators in extension, the Natural Resources Conservation Service, private, and not-forprofit sectors, using farmers as educators and addressing emerging issues.

To learn more, visit the NCR-SARE website for lists of funded projects and descriptions of the projects at www.northcentralsare.org/Grants/ Recent-Grant-Projects. Go to www.northcentralsare.org/Grants for timelines and more information on how to apply, or contact the NCR-SARE office.

To learn about the **SARE grants in your state**, visit the NCR-SARE website here: www.northcentralsare.org/grants/Funded-Grants-in-Your-State, where you can view a portfolio summary and funded grants list for every state and island protectorate. The focus for each of the NCR-SARE grant programs is on research and education. Funding considerations are based on how well the applicant presents the problem being addressed, the project's relevance to sustainable agriculture in the 12-state North Central region, and how well it aligns with NCR-SARE's goals, among other factors specific to each grant program.

NCR-SARE's Administrative Council (AC) members decide which projects will receive SARE funds. 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, federal agencies, and nonprofits. Since 1988, the SARE program has helped advance farming systems that are profitable, environmentally sound, and good for communities through a nationwide research and education grants program. The program, part of USDA's National Institute of Food and Agriculture, funds projects and conducts outreach designed to improve agricultural systems.

Grant-Writing Assistance

Are you interested in writing a proposal for an NCR-SARE grant? Did you know that NCR-SARE can provide grant applications reports from other projects, lists of funded projects, or other sustainable agriculture information? To receive more information about the NCR-SARE grant program's preproposal/proposal processes and timelines, contact the NCR-SARE office, or visit www.northcentralsare.org/Grants/Write-a-Successful-Grant. Before writing a grant proposal, determine a clear project goal and explore previous research. It often helps to contact NCR-SARE, local agriculture groups, the Natural Resources Conservation Service, and/ or Extension educators to share ideas and invite participation.

Grant-Writing Assistance from SARE State Coordinators

SARE has a network of state coordinators working in each state and island protectorate. They hold workshops and field days to share sustainable practices and research results, and serve as agriculture resources in their state. SARE sustainable agriculture coordinators help train agriculture professionals in sustainable practices, share SARE project results, and work with SARE grant applicants. Your SARE state coordinator can provide advice and feedback as you work on your grant proposal. If you have guestions about SARE in your state or have a grant proposal idea, your SARE state coordinator can help. Find your SARE State Coordinator and view documents about funded grants in your state by visiting NCR-SARE online at www.northcentralsare.org/State-Programs.

Michael Fields Grant-Writing Assistance

Did you know that the Michael Fields Agricultural Institute's (MFAI) Grant Advisory & Resources can help you apply to grants and cost-share programs of state or federal sources that can help you achieve your farming or ag-related business goals? They have resources for designing sound projects, finding funding sources, and writing successful grants, along with other valuable information. For more information and to sign up for grants advising email list for program announcements, please visit the website at http://michaelfields.org/ grant-advising-resources/, or contact MFAI Grants Advisor, Martin Bailkey at (608) 698-9478 or martinbailkey@gmail.com.

2 FIELD NOTES

Immigrant and Minority Farmers Inspire Soil Health Collaboration

Vivian Wauters (right) is part of a team in Minnesota that created soil health workshops to train educators that support immigrant and minority growers. Here, she's speaking with organic grower, Chairesia Chatham (left) about no-till and cover crops. Photo by Julie Grossman.



When Julie Grossman was an undergraduate, she had no idea that a single economic development course was going to change the trajectory of her life's work. In that course, and during her international PhD research in Latin American, she learned how biology, and specifically agroecology, could be used to help grow food in regions of the world challenged by food production and access. While she still works internationally, much of Grossman's current work is based in the Department of Horticultural Science at the University of Minnesota (U of MN) where she explores plant-soil-microbe relationships in organic systems in order to enhance soil fertility, with the ultimate goal of developing sustainable food production systems. Grossman works with immigrant and minority farmers, who she says represent a growing population of food producers in Minnesota and elsewhere in the upper Midwest. A number of these farmers had indicated a need for more information about soil health and nutrient management, including Rodrigo Cala, of Cala Farm. Cala grew up on a farm near Mexico City and moved to Minnesota in 2004. In 2008, he and his brother purchased their farm in Turtle Lake, Wisconsin. He has worked with several farmer and entrepreneurship organizations, developing his business skills and inspiring other farmers with his innovative and sustainable farming practices.

"I have been an organic vegetable farmer for 13 years, and have worked with the Grossman lab on various research projects," said Cala."Organic agriculture is an integrated and complete system; the soil is a critical and fundamental part of that system."

Grossman knew that extending advanced soil science concepts would allow both beginning and seasoned farmers to enhance soil quality as well as productivity of their organic systems.

"Many immigrant and minority populations in our region are farming in urban or peri urban settings, which often means contending with poor soils that are compacted, low in nutrients, or lacking sufficient organic matter," said Grossman. "We had heard from farmers that accessing farming information in general, and specifically that related to soil health improvement practices, was challenging."

While Grossman had a good amount of soil health information to share with producers, partnering with organizations that served immigrant and minority farmers seemed like the best way to get the information to the producers who needed it. Enter The Good Acre, a farmer-led, non-profit food hub with robust grower support services. The Good Acre had established relationships with the First Nations Development Institute, the Hmong American Farmers Association (HAFA), the Shared Ground Food Co-op, the Minnesota Food Association's Farmer Education Program, and other farmers. In 2015, they put their heads together and applied for a \$74,760 NCR-SARE Professional Development Program grant to develop hands-on courses and online resources to teach soil and nutrient management to diverse audiences. They put together a series of workshops that reached more than 70 producers and 30 NRCS, Extension, and non-profit researchers and educators. They also developed a 30-page soil health and cover cropping handbook (see image below) to be used as a train-the-trainer resource for educators, mentors, and community leaders working with immigrant and minority growers, along with a companion slide set.

"For me, the guide helped me understand which soil improving approaches might be best for my system," reported Cala. "Cover crops are an excellent way to return organic matter to the soil and the guide provided different management approaches and options, as well as other resources to learn more."

Grossman said the partnerships led to increased collaboration between the U of MN, The Good Acre, immigrant farming organizations, and indigenous farming groups with follow-up grants and collaborative projects, including a new 2019 NCR-SARE Research and Education grant that will support her collaboration with some of the farmers to provide data on summer cover crop management systems.

"What really stood out to me was how important relationships are between individuals at the University and the farmers," said Grossman. "It is much less the information that is transferred from one to the other, but the way in which it is transferred and from whom. This project allowed us to deepen our relationships with the farmers and establish trust. The carry-over of this project has been extremely positive as we continue to work with these farmers to strengthen their farms and access to markets."

For more information on Grossman's NCR-SARE Professional Development grant project, visit the SARE project reporting website at https://projects.sare.org/search-projects/ and search for project number ENC15-145, or contact the NCR-SARE office.



With support from SARE, a team from Minnesota developed a train-the-trainer resource for educators, mentors, and community leaders working with immigrant and minority growers on issues around soil health. Find it online for free at www.northcentralsare.org/ Educational-Resources/SARE-Project-Products/Soil-Healthand-Nutrient-Management-for-Minority-Farmers

FIELD NOTES 3

Traditional Fertilizer, Modern Applications for Iroquois White Corn

Farmers have long relied on liquid fish fertilizers because they are a source burnfree nitrogen, phosphorus, and potassium. Traditional Native American growers were well aware of the benefits that decaying fish could bring to their soil; they buried fish under mounded soil and planted the 3 Sisters (corn, beans, and squash) directly on top of the mound. This traditional technique is well-known to Oneida Nation member and indigenous grower, Laura Manthe. Manthe, Coordinator for the Oneida White Corn Growers Group in Wisconsin, works with a group of growers who plant, harvest, and breed an heirloom variety of Iroquois White Corn. These Oneida community members, called Ohe.laku (OH-hay-lah-goo, [Among the Cornstalks]), were curious about modernizing their approach to traditional fish fertilizer by using fish emulsion to fertilize their white corn crop.

"We grow white corn because it is culturally appropriate for us to grow this variety of corn as we are Haudenosaunee, or the Original People, and this corn is part of us," said Manthe. "We selected fish emulsion because we wanted the benefits of fish fertilizer without the physical task of burying thousands of fish on three acres of land."

With support from a \$17,637 NCR-SARE Farmer Rancher grant project, the White Corn Growers Group and several backyard growers set out to build their cultural knowledge about white corn, and to learn how to use fish emulsion to fertilize it. During one of their monthly project meetings, they met with Val Dantoin, an organic agriculture instructor at Northeast Wisconsin Technical College, who shared information about soil health and helped them take preliminary soil tests to determine deficiencies in their soil. They determined

that some of their soil deficiencies could be addressed with fish emulsion. Making fish emulsion involves cooking the by-products of cleaned fish at temperatures in excess of 180°F, filtering it, and stabilizing it with an acid (a rather "stinky" process according to Manthe); the group chose to purchase their fish emulsion instead. Then they went about fabricating spraying equipment, and pooling enough white corn seed to plant 3.5 acres. Planting day commenced with a traditional tobacco ceremony. As they planted the corn, children picked rocks, planted squash seeds around the edges of the field, pulled weeds, and sang along to a planting songs CD that Manthe had acquired from the Oneida Cultural Heritage Department.

"We played the songs on a boom box and sang along as the seeds were being planted," recalled Manthe. "The songs are as old as the seeds, and are a part of our culture."

Tough weather and a group of persistent raccoons took a toll on the crop over the course of the project, but Manthe said the white corn growers were convinced that the fish emulsion was a determining factor in the health of the stalks and the size of the cobs. One grower, Becky Webster, was amazed at the difference between the sprayed and unsprayed corn.

"They had side-by-side corn stalks that were sprayed and not sprayed," explained Manthe. "The corn stalks that were sprayed were tall, dark green, and had huge corn cobs on them. The corn stalks that were not sprayed were spindly, light green, and had small skinny corn cobs that did not yield any corn."

When the moisture content of the corn reached 35%, it was time to harvest. As part of their harvest in 2017, they hosted an event called "Braiding the Sacred." The corn was hand harvested and shucked down to three husks. The cobs were hand braided using 65 cobs to make each braid. The group made 250 braids (20.30 lbs each) of white corn which were hung to dry. Native Americans from around the Great Lakes gathered for this event to learn about harvesting white corn and to better understand their spiritual connection to the crop (see images below). Once the harvested corn reached 11% moisture, the braids were divided among the growers for them to hand shell at home. They set aside some of their crop for next year's seed, and donated some to the community to prepare for funeral meals.

"We felt that was the best way to share our harvest and fulfill our responsibility to each other," explained Manthe.

In order to develop community understanding of white corn, each original member was allowed to invite one person into the group, under their wing. These "wingers" had the opportunity to receive a portion of the harvested crop, and could become a full member. Manthe also created two Facebook pages, one for the corn growers and another to share the story of the white corn project with community members. Building community was a cornerstone of the project.

"I got to spend more time with my family and we did community building," reported Eliza Skenandore one of the participating growers. "I did this for my son who is three years old. He knows where the field is. He wanted to visit it every time we drove close to it. I got to share cultural knowledge with the group and see it come alive."

For more information, visit the SARE project reporting website at https://projects.sare.org/ search-projects/and search for project number FNC16-1046, or contact the NCR-SARE office.

During an event called "Braiding the Sacred," a group of community members gathered to talk about the importance of Iriquois White Corn in indigenous cultures and help a small group of Oneida Nation of Wisconsin farmers braid their white corn crop. Photos courtesy of Laura Manthe.





NCR-SARE Heroes: Barbara Norman and Jim Stordahl

In 2012, the NCR-SARE Administrative Council created the NCR-SARE Hero Recognition to highlight, recognize, and pay tribute to those who have made significant contributions to NCR-SARE and/or National SARE. NCR-SARE is pleased to announce that Barbara Norman and Jim Stordahl have been named the 2019 NCR-SARE Heroes.

Barbara James Norman



2019 NCR-SARE Hero, Barbara James Norman. Photo by Kelly Weber.

Barbara Norman is a legacy Michigan blueberry farmer who embodies SARE's efforts to advance sustainable innovation to all of American agriculture. Early in her life, Norman, the owner and operator of Barbara's Blueberry Patch in Covert, Michigan,

developed an interest in the family's 53 acre multigenerational high bush blueberry farm.

For many years Norman has used and promoted sustainable practices such as cover crops, composting, no till, natural/organic, and innovative marketing strategies. In addition to her commitment to sustainable growing practices, Norman has also dedicated her career to improving the quality of life for farmers and ranchers, particularly historically underserved producers.

While running her blueberry operation, she has coordinated and/or participated in five NCR-SARE grant projects, including a \$100,000 NCR-SARE diversity initiative grant she was awarded in 2008 to mentor farmers of color in three states. Through that project, Norman collaborated with several service providers including Michigan Integrated Food and Farming Systems (MIFFS), Iyabo Farms, and the Kansas Black Farmers Association to reach underserved communities. Her grassroots message about the importance of sustainable farming brought her in contact with Kansas State University, Michigan State University, the University of Illinois, urban farmers in Detroit, Michigan, and smallscale Illinois African American farmers in

Kankakee, Hopkins Park Village, and Pembroke Township, and the historic community of African American farmers in Nicodemus, Kansas. She was a member and two-year cochair of the National SARE Outreach Steering Committee from 2007-2015 and has served as a spokesperson on behalf of SARE at numerous local, state, and national events.

Throughout her career, her ability to engage with farmers about their potential has garnered her a seat at the table of several organizations including SARE, MIFFS, the Farm Research Cooperative, the USDA National Beginning Farmer and Rancher Advisory Committee, USDA Natural Resources Conservation Service, Michigan State Technical Committee, Michigan State Outreach Committee, Annual USDA Partners Meetings, and Covert School Board. She was named National Small Farmer of the Year by the USDA-NCRS in 2002. For the past 16 years, Norman has personally sponsored and hosted the highly acclaimed Friends and Family Farms Field Day on her farm. This event has touched thousands of students, families, and farmers; a testament for and an exclamation point to her farm advocacy on behalf of legacy land ownership and its value for future generations.

James (Jim) Stordahl (Presented Posthumously)



2019 NCR-SARE Hero, Jim Stordahl, with his 2011 NPSAS Award. Photo courtesry of NPSAS.

nutrition, and earned undergraduate and master's degrees in the subjects. In 1996, he was busy running his family's dairy operation when he had an opportunity to fill in for an Extension educator who was on maternity

As a dairy farmer, sheep farmer, educator, husband, father, and loving grandfather, Jim Stordahl wore many hats throughout his life, many of which contributed to his uncanny ability to be a helpful and downto-earth advocate for sustainable and organic farming. As a young man, Stordahl studied agronomy and ruminant

leave in McIntosh County, Minnesota. People noted his friendly demeanor and extensive knowledge, and later, he was offered a permanent job with Extension; he took that job and continued to work as an extension agent in Clay, Polk, and Clearwater Counties in northwest Minnesota for 21 years until he retired in 2016. During those 21 years, he interacted with SARE as a grantee and advisor, and advanced concepts of sustainability to farmers throughout northwest Minnesota.

In addition to being an NCR-SARE grant recipient and participant, Stordahl served on the Minnesota SARE Advisory Committee for eight years, bringing his diversified expertise to the table. That expertise also made Stordahl a valued member of the Minnesota Institute for Sustainable Agriculture Board of Directors from 2002-2008, and earned him awards such as the Outstanding Agricultural Mentor Award from the Minnesota District 11 Agri-Women and the Northern Plains Sustainable Ag Society 2011 Friend of the Farmer Award. A respected educator and contributor, Stordahl was a featured speaker at events such as the Northern Plains Sustainable Ag Society Annual Conference and the Minnesota Organic Conference, and he was sought out by many journalists for his expertise as they covered ag-related stories throughout northwest Minnesota. Jim Stordahl died in March 2017 from cancer. The University of Minnesota created an Extension Organic and Sustainable Agriculture Endowment in memory of Jim Stordahl. Funds raised for the endowment will be used by farmers and Extension educators to investigate producer-led organic research projects, and scholarships also will be available for farmers to attend state and organic conferences. Questions regarding this endowment can be directed to Nancy Frosaker at frosa001@umn.edu or 701-212-2471. Gifts can be sent to University of Minnesota Extension Development, 9 Coffey Hall, 1420 Eckles Ave, Saint Paul, MN, 55108.

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

FIELD NOTES 5

Cover Crop Acreage Increases 79% in the North Central Region

by Rob Myers, NCR-SARE Director of Extension Programs

The new 2017 Census of Agriculture data was released in mid-April. One of the notable items in the survey was data documenting the progress between 2012 and 2017 in boosting cover crop adoption in the 12-state North Central region. **Overall, cover crop acreage increased 79% in our region during that time period, by more than 3.5 million acres!**

NCR-SARE has funded hundreds of cover crop projects through its 30-year history. One of the more notable cover crop related activities was funding and organizing the First National Conference on Cover Crops and Soil Health that was held in Omaha in 2014; SARE collaborated with the Howard G. Buffett Foundation and the Soil and Water Conservation Society to hold that conference. The national outreach arm of SARE has also developed many new publications, videos, and other educational resources on cover crops many of which are available online www.sare.org/covercrops.

While SARE has had a significant impact on cover crop use, the progress with cover cropping is due to many individuals and organizations. NRCS has played a major role, both with technical and financial assistance, and in general promotion of soil health. The Midwest Cover Crop Council has done a great job getting out information on cover crops and improving management recommendations. Other university and non-profit educators and researchers have had an impact, as have some state agencies. The farm media has contributed as have some private sector companies. Perhaps most importantly, many conservationminded farmers have led the way and educated their neighbors on cover crops, helping spur adoption. Ultimately, like any major change, it's taken the collective work of many people to make this progress.

There is still a long way to go. Although the North Central region's total of 8 million acres of cover crops in 2017 represents good progress, it is still less than 10% of the cropland in our 12 states. Thus, we need to continue working on education, research, and other approaches that spur further cover crop adoption, along with supporting many other management approaches that contribute to soil health and sustainability on our farms and ranches. Here's the state by state data:

COVER CROP ACREAGE FROM THE 2017 CENSUS OF AGRICULTURE

State	2017 acreage	2012 acreage	Percent increase
lowa	973,112	379,614	156.3%
Indiana	936,118	596,062	57.1%
Missouri	842,178	390,114	115.9%
Nebraska	747,903	357,264	109.3%
Ohio	717,759	357,292	100.9%
Illinois	708,105	318,636	122.2%
Michigan	673,205	437,200	54.0%
Wisconsin	611,231	553,005	10.5%
Minnesota	579,147	408,190	41.9%
Kansas	556,439	322,454	72.6%
North Dakota	404,267	213,810	89.1%
South Dakota	281,649	149,383	88.5%
TOTALS ->	8,031,113	4,483,024	79.1%

NCR-SARE Grants At-A-Glance

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

With support from SARE, the **Low Technology Institute** is testing five growing methods in Wisconsin to determine which is the most productive and least labor intensive for **small-scale potato growers**. This is SARE project FNC18-1128.

Renegade Acres, an heirloom vegetable and seed farm in Howell, Michigan, received SARE support to work on developing an **automated irrigation system** using open source hardware and software. This is SARE project FNC16-1033.

The **Savanna Institute** released series on Midwest agroforestry. With support from SARE, the six-part **Pioneer Agroforestry Farm Tour Video Series** features brief, detailed interviews with farmers who are advancing agroforestry in the Midwest. This is SARE project ONC18-049.

With support from SARE, **April Prusia**, **Bethany Emond Storm**, **and Betty Anderson** are exploring the feasibility and demand for a cooperatively owned, federally licensed, and woman-farmer led **mobile slaughtering unit** and/or retail butcher establishment in South Central Wisconsin. This is SARE project FNCI7-1094.

Spearheaded by the **Renewing the Countryside** with funding from SARE, a new guidebook, "Come & Get It: What you Need to Know to Serve Food on your Farm" supports farmers in Minnesota and Wisconsin eager to **explore on-farm food service** with resources including assessments, case studies, and research data to develop their own business plan. This is SARE project ONC18-043

At **Dirty Boots Flowers**, Casey Sabatka Campbell and Jennifer Sher received support from SARE to explore **urban soil remediation** techniques in Chicago, Illinois. This is SARE project FNC18-1141.

Building Resilience and Flexibility into Midwest Organic Potato Production

18 varieties of potatoes are depicted here as part of a SAREsupported, participatory, organic seed potato project. Photo by Laura Krouse of Abbe Hills Farm in Iowa.

When Maria Carter's parents emigrated to America from the Netherlands in 1956, they brought along a knowledge of growing seed potatoes. Shortly after they put down roots in North Dakota, they put down tubers to start their new seed potato farm. They knew potato growers needed healthy seed potatoes, and they knew how to grow them. Potatoes are most often grown from the eyes of tubers rather than seeds; growers re-plant a part of the actual potato, and these pieces of potato are referred to as seed potatoes, even though they are not seeds. While Carter Farms primarily produced conventional certified seed potatoes for more than 50 years, they had become interested in growing certified organic seed potatoes as well, but they had limited sucess despite their knowledge about potatoes. An encounter at the MOSES Conference brought Maria Carter face-to-face with Ruth Genger, an associate researcher at the University of Wisconsin who organizes organic variety trials to select for potato varieties that excel under organic management.

"Since potatoes regularly make the Environmental Working Group's 'Dirty Dozen' list (a list of the most pesticide-contaminated produce), organic potatoes are in high demand by savvy consumers," explained Genger. "Organic farmers in the North Central region face a regional shortage of organically produced seed potatoes, limited availability of desired specialty varieties, and limited information on variety performance under organic management. Very little potato breeding and selection focuses on the needs of organic farmers."

After speaking with Carter and other potato growers, Genger began to envision a decentralized network of organic farmers that could meet seed potato demands for the surrounding region. She wanted to enable farmers to be able to evaluate and select outstanding lines from crosses between existing varieties, and she wanted to promote interaction and learning among farmers. With support from a \$199,106 NCR-SARE Research and Education grant, she went about turning her vision of participatory breeding and seed potato production into a reality. Along with Carter, 15 farmers teamed up with Genger



to learn and engage in on-farm selection of potato breeding lines from true potato seeds, and to trial production of high quality organic seed potatoes from both minitubers (plantlets derived from potato tubers) and foundation seed potatoes (propogated potatoes that are grown in fields, hoophouses, and greenhouses).

The growers learned about seed potato production and potato breeding through one-on-one conversations during farm visits and phone conversations. They worked on starting seedlings, plot design, evaluation in-season and at harvest, and learned about storage of tubers for replanting. Throughout the course of the project, the group learned that potato varieties for organic production should have early vine vigor and canopy closure, leafhopper tolerance, and resistance to tuber defect diseases. They began crossing those varieties that were likely to be good parents for new organic potato varieties. For her part, Carter was able to identify optimal varieties for her growing conditions in North Dakota. Today, her farm is now the second farm producing organic certified seed potatoes in the region.

"It has been a gift to do this project with Ruth," said Carter. "We'd been trying to grow organic seed potatoes on and off for about 10 years. Of course, I had a lot of potato knowledge and background, but we just didn't have enough information to do the organic potatoes. Ruth really solidified some things for us with her knowledge and varieties. We've been selling our organic seed potatoes using the internet, and last year was a fantastic year for us; we've reached our goals and then some. I have a son attending North Dakota State University, and he is looking forward to coming back to be involved in our organic seed potato business line. To be able to do it organically has been perfect for us."

Learn more about the potato varieties missing in this study, and view photos of them online at http://labs.russell.wisc.edu/organic-seedpotato/. Read more about this potato project on the SARE project reporting website. Simply search by the project number LNC14-358 at https://projects.sare.org/search-projects/, or contact the NCR-SARE office for more information.

New Administrative Council Members for NCR-SARE

Sherman Reed, Stephanie Singer, and Dave Welsch were recently elected to the NCR-SARE Administrative Council. Representing various agricultural sectors, states, and organizations, the Administrative Council sets program priorities and makes granting decisions.

Sherman Reed has been elected as an at-large farmer representative for the NCR-SARE Administrative Council. Reed has worked as a conservationist with USDA-Natural Resources Conservation Service for 24 years. Reed is also a veteran and small beginning organic grain farmer.

Stephanie Singer has been elected as a nonprofit representative for NCR-SARE's Administrative Council. Singer is an Outreach and Education Specialist for The Nature Conservancy at the Western Lake Erie Basin Agriculture office. Her family farms in northwest Ohio growing soybeans and cover crops seeds.

Dave Welsch has been elected as an at-large farmer representative for the NCR-SARE Administrative Council. Welsch started farming in 1978 and in 1993 his family began transitioning their cropland to organic. They operate a diverse dryland farm which includes corn, soybeans, wheat, oats, alfalfa, cow/calves, chickens, beef, and pork.

NCR-SARE would like to extend gratitude to Vicki Hebb and Nancy Williams whose terms on the Administrative Council have come to an end.

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Did you know NCR-SARE is on Facebook, YouTube, Instagram and Twitter? Keep track of our grant opportunities, projects, events, and more. Follow, like, or friend us!



ABOUT NCR-SARE

NCR-SARE funds cutting-edge projects every year through competitive grant programs, and has awarded more than \$50 million worth of grants to farmers and ranchers, researchers, students, educators, public and private institutions, nonprofit groups, and others exploring sustainable agriculture in the 12 states of the North Central region.

Are you interested in submitting a proposal for an NCR-SARE grant? Before you write the grant proposal, determine a clear project goal, and look for 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.

NCR-SARE GRANT TIMELINES*

Farmer Rancher*

August - Call for Proposals Released December - Proposals Due February - Funding Decisions Spring - Funds Available to Recipients

Graduate Student*

February - Call for Proposals Released April - Proposals Due July - Funding Decisions September - Funds Available to Recipients

Research and Education*

August - Call for Preproposals Released October- Preproposals Due January - Full Proposals Invited April - Full Proposals Due July - Funding Decisions Fall - Funds Available to Recipients

Professional Development Program*

January - Call for Proposals Released March - Proposals Due July - Funding Decisions Fall - Funds Available to Recipients

Youth Educator*

August: Call for Proposals Released November: Proposals Due February: Funding Decisions Spring: Funds Available to Recipients

Partnership*

August: Call for Proposals Released October: Proposals Due February: Funding Decisions March: Funds Available to Recipients

*Timelines are subject to change.

NORTH CENTRAL REGION SUSTAINABLE AGRICULTURE RESEARCH AND EDUCATION PROGRAM CONTACT INFORMATION

Phone: 612-626-3113 Email: ncrsare@umn.edu www.northcentralsare.org



Nancy Williams, Kerri Ebert, Joan Benjamin, and Edgar Hicks (left to right) attended the 2019 Minorities in Agriculture, Natural Resources, and Related Sciences (MANRRS) conference on behalf of NCR-SARE this year. NCR-SARE wants to thank everyone who attended the SARE sustainable agriculture bus tour during the conference, and thank all who stopped to talk about advancing sustainable

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