Simply Sustainable

quarterly newsletter from Western SARE

working to sustain western agriculture

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In Search of Ag Sustainability

By Al Kurki

The best way to farm hasn't been invented. I reserve the right to change my mind tomorrow."

Citing this quote from an Iowa farmer, David Granatstein, Washington State University Sustainable Agriculture Specialist, ended his presentation to extension agents who had toured his state last April as SARE Fellows. The quote captured the essence of what the SARE Fellows saw – many different approaches to sustainability and that sustainability is a direction, not an endpoint.

The SARE Fellows program is a continuing education opportunity awarded annually to four extension educators from around the country. Over a two-year period, they learn about examples and issues of sustainability in agriculture and food systems.

John Aeschliman shows Extension agents "worm tracks" in soil taken far down in his farm's soil profile. — Photo by Al Kurki

The Fellows program was started in 2008, the brainchild of Phil Rasmussen, Western SARE Regional Coordinator. It is a joint effort of the National Association of County Agricultural Agents (NACAA) and the SARE Professional Development Program (PDP).

NACAA members are eligible to apply, and those chosen are asked to report what they've learned at the end of

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New Communications Specialist

Stacie Clary, a long-time advocate for sustainable farming and ranching, was named June 1 as the communications specialist for the Western Sustainable Agriculture and Research program (SARE). Her primary responsibility will be to ensure that Western SARE funding information and project results reach all of the agricultural community in the Western Region.

Clary has an 11-year history of working toward a sustainable food and farming and ranching system and 20 years of experience with communications and outreach. Before joining Western SARE, she consulted with Roots of Change, California Certified Organic Farmers and other nonprofit organizations.

Stacie Clary

Clary was the co-director of the Ecological Farming Association and the executive director of the California Coalition for Food and Farming. In addition, she sits on the Organizational Council of the National Sustainable Agriculture Coalition and served on the Administrative Council of Western SARE.

Clary is a graduate of the

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Please take a few moments to take the poll at right to help us serve you better.

Please Take Our Reader Poll

The Western SARE staff and Administrative Council are deeply committed to providing farmers, ranchers, agricultural professionals and researchers with the most immediate news about our granting programs, the results of funded research and education projects and profiles of farmers, ranchers and researchers leading successful projects.

Having better knowledge of how our Simply Sustainable readers read the newsletter and where you go to get most of your farming and ranching news will help us do the best job we can to meet our commitment.

Please take a few moments to take this poll – it's brief and anonymous. You can take the poll online at http://www.surveymonkey.com/s/YVNDW3P or cut out the poll below and mail to: Stacie Clary, Western SARE, P.O. Box 1176, Capitola CA 95010.

Thank you for your time!

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- PDP State Coordinator
- Researcher
- Government employee
- Nonprofit employee
- Professor/Teacher
- Business Owner
- Other (please list)

(Use an extra sheet of paper as needed.)

New Communications Specialist

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University of California Davis with a B.A. in English. She resides in Santa Cruz County, California. In her spare time she enjoys cooking for family and friends with food purchased from local producers or grown in her garden and spending time at the nearby Monterey Bay.

Phil Rasmussen, Regional Coordinator for Western SARE, said Clary was selected from a highly qualified pool of candidates.

"She's the right person at the right time to help the SARE program extend its research-based information to a wider audience," said Rasmussen. "We are fortunate to have someone of Stacie's experience and skills as Western SARE seeks to expand its reach."

Western SARE has increased its commitment to successful outreach to all of agriculture by providing funding for a full-time contractor, doubled from a half-time position.

"The increased time dedicated to outreach will allow me to provide more information about potential funding opportunities for conducting sustainable agriculture research and education," Clary said. "And it will make it possible to get significant findings of previous research into the hands of the researchers, agricultural professionals and producers who need it the most."

Clary succeeds Ron Daines who served as the regional communications specialist for nine years and has agreed to continue working with the program on specific projects.

Charting New Directions

Western SARE Coordinator's Column

Dr. V. Philip Rasmussen

Previous columns referred to the Western SARE Subregional Conferences (listening sessions) held across the vast Western Region over the last three years. Members of Western SARE's board of directors (the Administrative Council, or AC) visited every major subregion for conferences in Tumon, GU; Albuquerque, NM; Cheyenne, WY; Spokane, WA; Kona, HI; Visalia, CA; and Fairbanks, AK. Representatives from every state and territory in the region attended, sending us clear signals:

1. Fund more whole-systems (life-cycle analysis) projects.
2. Find a way to fund longer-term projects (longer than 5 years).
3. Emphasize projects on local foods, soil quality, on-farm energy efficiency/sufficiency, water efficiency and respond to climate variability.
4. Find ways to better address the new generation of young farmers and ranchers (through K-12, 4-H and other programs).
5. Continue to encourage more and better farmer and rancher participation in grants, and enhance the Producer-Professional Partnership grants programs.
6. Enhance outreach programs (like subregional conferences) and partner with local organizations to increase the overall knowledge of SARE in both underserved audiences and Western agriculture as a whole.

Within six months after each:

Western SARE has taken steps to address site-specific needs, awarding approximately $50,000, via competitive grants, in every subregion. This reinforces AC support by funding grants that address each region's distinctive needs. These projects are:

Guam: Manny Duguies, GU, Replacing Feed Imports with Local Feed Resources in the Western Pacific, $47,207 - Tropical Ag

New Mexico: Dennis Lamm, CO, Farm to Fork: Connecting Our Youth with Sustainable Agriculture , $48,988 — Youth Education

Hawaii: Glenn Teves, HI, Sustaining Moloka'I Native Hawaiian Family Farms, $47,270 — Education

Wyoming: Jane Ann Boles, MT, Infrastructure Support for Small Livestock Processing Facilities, $46,796 — Animal Science

Washington: Maud Powell, OR, Expanding Small-Scale Grain Production in Southwestern Oregon, $24,040 — Education and Agronomy

California: Daniel O'Connell, CA, A San Joaquin Valley Quilt: Stitching Together a Region's Prosperity, Nutrition and Sustainability, $14,975 — Producer Networking

Kay Joy Barge, CA, Sierra CRAFT (Collaborative Regional Alliance for Farmer Training), $30,653 — Producer Networking

Gail Feenstra, CA, Developing Regional Distribution Networks to Enhance Farmer Prosperity: Retail Value Chains, $24,906 — Local/Regional Food

Alaska: Jodie Anderson, AK, Building Alaska Garden Soils from the Ground Up: Local Soils Research and Demonstration Projects, $48,497 — Soils

In the first year after each:

In its current Calls for Proposals, Western SARE has made immediate changes to address points 1, 2, and 5 on systems, life-cycle (farm to fork) analyses and producer participation. Focus areas mentioned in No. 3 have also been included.

Western SARE is sponsoring a "Systems Research Workshop" in Moscow, Idaho in September to enable USDA long-term research efforts to be integrated with proposed SARE-funded projects. The AC may also set aside funds for a new "systems" CFP.

Outreach and educational programs for K-12 (future producers) are being emphasized in future calls. SARE graduate student research grants have been strengthened and reemphasized to ensure the "next generation" of SARE researchers and extension educators. Producer (Farmer/Rancher) grants have been strengthened and additional funds were added three years ago to it and the Producer-Professional Partnerships grants programs.

Finally, as per recommendation 6, the funding for Western SARE's total outreach efforts (including a new national website) has been doubled in 2010 to address concerns that surfaced in the subregional conferences.

Long term:

Western SARE staff is preparing background information for the AC to make significant changes in future CFPs. Among them:

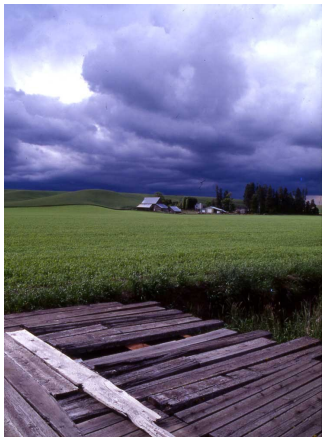
Structuring large, systems grants so that they can be renewed, based on performance, in three- to four-year increments. This will address both numbers 1 and 2 in the list above.

A possible call for long-term "systems science" projects. It is planned that the new, proposed federal budget allocation (if funded) for SARE federal-state matching projects will also emphasize "systems science" projects.

A possible call to enhance outreach to underserved communities.

A possible call to address the needs of K-12 and young producers.

"Representatives from every state and territory in the region attended (the subregional conferences) sending clear signals to the Westerns SARE staff and Administrative Council."



With no bare ground in sight, what you see, smell and feel in the Aeschliman Farm fields harkens back to a time before his Swiss grandfather first used the moldboard plow on his land in 1880.

Learning from Producers

SARE Fellows visited three Washington Farms.

Keeping Soil and Water Where They Belong

Traveling through the hilly Palouse region of eastern Washington can be a dismaying experience after a spring rain storm, watching mud run down the roadways from nearby tilled fields. That is, until you get to John Aeschliman's farm.

With no bare ground in sight, what you see, smell and feel in the Aeschliman Farm fields harkens back to a time before his Swiss grandfather first used a moldboard plow on this land in 1880. The soil has a duff layer beneath the vegetation; and for 6 or more feet below, countless earthworms do their work. The soil is soft and smells of rich humus. However, vegetation isn't native prairie grass, it's winter wheat.

Aeschliman started no-tilling in the mid-1970s. Over time, his soils' quality, water-holding capacity, microbial activity and small grain yields have increased while his fertilizer and herbicide use has declined. He plants and harvests dryland corn -- virtually unheard of in the Palouse. He credits the soil's capacity to hold moisture for his increased wheat and barley yields, and that he can grow dryland corn successfully.

Part of Aeschliman's dark northern spring wheat crop becomes Shepherd's Grain flour. Shepherd's Grain is a farmer-owned business that provides high quality flour to millers and bakers in the Pacific Northwest and California. This Food Alliance-certified company supports eastern Washington farmers using no-till practices, as Aeschliman's does. (www.shepherdsgrain.com)

Raising Cattle While Improving Water Quality

When you listen to Tom Kammerzill, you can't help but

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'In Search of Ag Sustainability'

from page 1

their Fellowship at the annual NACAA convention. Travel costs are covered, and those who complete their Fellowship are awarded a $1,500 stipend to use in future sustainable agriculture programs.

Eight Fellowships have been awarded so far, with recipients from Texas to Wisconsin and New Jersey to New Mexico.

In late April, seven SARE Fellows visited a wide variety of eastern Washington farmers and ranchers who are profitable stewards of their land and resources. The tours highlighted some of the challenges and the new opportunities of farming in the Inland Northwest, such as wide variability in precipitation, changing agricultural landscapes and creation of new marketing opportunities. (See three examples of farm and ranch visits on this and the next pages.)

"What makes the Fellows program so rewarding to be a part of is not just what one sees on the ground, but the level of interest and commitment on the part of the extension agents to take full advantage of what they see and can then discuss," said Jim Freeburn, Western SARE PDP Coordinator and manager of the SARE Fellows program. "It is a very stimulating professional development opportunity."

WSU tree fruit specialist Tim Smith (red cap) explains apple tree V-trellises used by Auvil Fruit Co.

The SARE Fellows agreed. Asked whether their paradigm had changed as a result of the experience, participants offered these responses:

"It opened up my thinking on how to evaluate what is 'sustainable.'"

"I understand more fully that becoming more sustainable is a process for farmers."

What's more, most participants said they plan to take new ideas back to their extension programs, such as direct seeding, direct meat marketing strategies, management practices, intensive fruit production systems and more.

Freeburn offered sincere thanks to the organizers of this SARE Fellows tours — Steve Van Vleet and Norm Suverly (formerly) of WSU Extension, and to all the tour hosts and other speakers who gave their time and insights for what was once again an outstanding SARE Fellows event.

In all, the SARE Fellows visited nine farms and ranches and the Washington State University Tree Fruit Research Center.

Kurki is the Associate PDP Coordinator for Western SARE

What Works on the Ground

From previous page

hear the pride of another good land steward. Tom and his wife Cheryl raise Highland cattle outside Colfax. Part of the herd is raised on an old bottomland farm that can only be described as "rode hard and put to stable wet" in years prior to their buying the land.

By using electric Port-a Fence to restrict creek access and create "grazing lanes," Kammerzill has improved the grass base and the landscape. He has been able to demonstrate that water quality below this property is actually better than it is above. Kamerzill says that he determined this by using the research and monitoring protocol of the Washington Department of Environmental Quality.

A ranch kid from way back, Kammerzill chose Highland cattle for perhaps different reasons from what he had learned in the past. He said Highland cattle are fairly easy to manage, the cows are good mothers and the meat quality is high. They tend to be browsers, rather than grazers, so they even will eat the noxious weed yellow starthistle. This browsing helps in vegetation management.

The Kamerzills sell high quality breeding stock as well as wholes, halves or quarters of grass-fed Highland beef to a loyal, local customer base. Learn more about their operation at Maple K Farms, www.maplekhighlands.com.

Tonnemaker Hill "Island"

For almost 50 years, three generations of the Tonnemaker family have raised high quality apples, pears and peaches near Royal City. But the winds of change are blowing both in and around Tonnemaker Hill Farm.

The Tonnemakers added alfalfa and 20 acres of vegetables to the farm, and are now raising over 140 varieties of peppers. Kole Tonnemaker said his brother Kurt -- who handles the western Washington marketing -- persuaded him to go organic as a simple way to explain to consumers how the fruit and vegetables were raised. Kole said going organic wasn't a big stretch as they had applied Integrated Pest Management (IPM) for years.

Maple K Highland cattle are valuable breeding stock, meat source and weed eaters. — Photos by Al Kurki

Produce from Tonnemakers' farm goes east to the Pullman-Moscow area and west to Seattle and the I-5 corridor. They also sell fruit and produce at a farmstand that draws customers from many miles away.

While many changes have come to the farm's 630 acres, what's happening around the farm represents some unsettling trends in the tree fruit industry. Kole said all the surrounding orchards are owned by absentee investors. He said the neighboring land is run by a good manager. But key management decisions are made hundreds or thousands of miles away to "protect the investment." What was left unsaid was "when investor decisions overrule local farming knowledge, how long will that farming knowledge have value and last?"

— Al Kurki

SARE Fellow Mark Kopecky, left, and Norm Suverly at the 'business end' of an orchard spray rig at Tonnemaker Hill Farm.

For almost 50 years, three generations of the Tonnemaker family have raised high quality apples, pears and peaches near Royal City.

"Our growers can learn where their wheat goes and our consumers know that they are feeding their families food that they can feel good about."

— Karl Kupers

AC Biz Rep Wins NRDC Award

By Andy Zieminski

Washington farmer Karl Kupers – who pioneered sustainable grain farming and marketing with help from a SARE grant – has won the prestigious national 2010 Growing Green Award from the Natural Resources Defense Council for his innovative business and agriculture practices.

Kupers, who won in the Growing Green Business Leader category, and three other farmers were selected from a pool of 170 entrants for the awards.

"Winning the NRDC Growing Green Business Leader Award is very special as it recognizes how a business can successfully use the marketplace to build support for and reward better stewardship," Kupers says.

After farming his 4,400 acres in a conventional wheat-fallow system for more than 20 years in Harrington, Wash., Kupers received a small SARE grant in 1996 to help him break out of a system that he felt was causing increased erosion. With the grant, he tested no-till, continuous cropping systems using alternative crops like canola, millet, corn, sunflower and buckwheat along with his wheat. He also began direct seeding with a retrofitted drill, which preserves moisture and minimizes erosion.

Soon after, Kupers and his business partner, Fred Fleming, established Shepherd's Grain, LLC, which buys wheat from a network of more than 30 growers practicing no-till and sells flour products to bakeries and restaurants throughout the Pacific Northwest. Shepherd's Grain provides the transport, processing and marketing these farmers need to get maximum value for their no-till wheat. Today, Kupers has cashed in on his sustainable practices, with profits running about 10 to 12% above what the wheat-and-fallow system yields.

"We are a 'price maker' instead of a 'price taker,' setting the price of our flour based on the cost of production, not fluctuations in the commodity market," Kupers says. "We are honest with our customers about what it costs to grow our wheat, all environmental costs included. Demand for our environmentally sound wheat continues to grow."

Karl Kupers

"From the farm to the table, our production cycle is transparent," Kupers says. "Our growers can learn where their wheat goes and our consumers know that they are feeding their families food that they can feel good about."

Kupers is a busy man who finds time to work with SARE to promote sustainable ag at the regional and national levels. He serves as an agri-business representative on, and formerly chaired, Western SARE's Administrative Council, where he and other council members make critical decisions about funding priorities and initiatives. In 2009, Kupers and three SARE grantees met with Secretary of Agriculture Tom Vilsack in Washington, D.C., to discuss the vital role that sustainable practices must play in agriculture's future.

"Through Shepherds Grain and its philosophy of promoting agricultural sustainability, Karl has led the way in helping Pacific Northwest producers protect the natural resources that support their endeavors while still making a profit," Western SARE Coodinator Phil Rasmussen says.

"His business showcases the spirit of sustainability — profit over the long term, stewardship over the nation's land and water, and improved quality of life for farming and ranching communities. It shows that agriculture and environmental responsibility are truly compatible," Rasmussen says.

"Karl's efforts serve as a success model that others might try to emulate."

Others receiving the NRDC Growing Green Award are Fred Kirschenmann of the Stone Barn Center for Food and Agriculture in Pocantico Hills, NY, Thought Leader Award; Russ Lester of Dixon Ridge Farm in Winters, CA, Food Producer Award; and Mike Benzinger of Benzinger Family Winter in Glen Ellen, CA, Water Steward Award.

"These innovators are saving energy, nurturing soils, reducing water use and showing all of us how to produce food in harmony with the environment," says Jonathan Kaplan, director of the Sustainable Agriculture Project for NRDC. The awards were presented at the NRDC 2010 benefit, "From Water to Farm to You," April 29 at Yoshi's Restaurant and Jazz Club in San Francisco.

An in-depth profile of Karl's operation appears in SARE's *New American Farmer, 2nd Ed.*, which can be read online at http://sare.org/publications/naf2/kupers.htm. Visit http://www.nrdc.org/ for more information on the NRDC awards.

Zieminski is communications associate for National SARE

Improving Alaska's Soils

Many Alaska residents would like to grow their own food as a way to obtain fresher, more nutritious food and to avoid the high costs of imports. But few can, and a big reason is the lack of soils up to the job.

A grant from Western SARE, awarded in response to Western SARE's Alaska Subregional Conference in Fairbanks last March, aims to change the situation.

In Galena Jesslyn West, left, and Kameron Reitan gather potatoes in the garden of Jesslyn's grandmother, Freda Beasley, the photographer.

"Building Alaska Garden Soils from the Ground Up" addresses two of the top-ranked issues that evolved from the conference, soil improvement methodologies and the need for education and outreach to producers.

The project, funded at $48,497, includes both research and creative outreach that addresses the great distances between Alaska communities using videotaped workshops communicated through venues like CDs and YouTube.

In her application, Jodie Anderson, with the School of Natural Resources and Agricultural Sciences at the University of Alaska, noted that the results from a survey given to the Alaska community of Tetlin revealed that 13% of respondents currently garden, but 41% don't garden because of a "lack of soil." The survey showed that 56% are interested in participating in a community garden, and 100% are interested in workshops that teach them how to garden.

Most producers in Alaska, says Anderson, confront related soil problems, including thin root zone strips, nutrient-poor soils with low organic matter content and some issues with permafrost.

"Despite the high cost of shipping," she notes, "some producers actually import garden soils from the continental United States on a barge, unaware that many of the necessary soil components can be found locally."

For the research component, the project team includes five growers, Izetta Chambers of Dillingham, Paul Apflebeck of Galena, Rick Bellagh of Juneau, Mary Stalker of Kotzebue and Patrick Smith of Minto. Each is from one of Alaska's five distinct growing regions: Southwest, Northwest, Middle Yukon, Interior and Southwest. While this regional scale is large, the infrastructure of the state is already designed to work at this level, which means the project could enhance regional production networks.

In 2010, each producer will survey the local area for potential soil components and nutrient sources, which will be collected and sent to the research team at the University of Alaska for analysis.

In 2011, the producers will develop raised beds using the local materials as well as beds with soils synthetically fertilized. Each type of bed will be analyzed and compared throughout the growing season. The project will also compare vegetable yield in both types of soils, using potatoes as the common crop.

During the growing season, each producer will host an event where the community will be invited to view the beds and learn about the projects.

After the soil data are analyzed, producers will be provided with recommendations for further amendments, if any, so they will have guidelines for improving crop yields next season.

The outreach component, says Anderson, will go beyond the traditional how-to bulletin and web-based information. The diversity of Alaska's climate and cultures requires face-to-face workshops, but high travel costs make such workshops impractical.

The project's solution to this dilemma is to hold two soil-building workshops in rural communities in 2012. These will be filmed and a video created, which will be available on CD and the Internet and delivered to agriculture professionals for use as a teaching tool.

The producers involved in the project will participate in delivery of outreach through posters and presentations, including at the annual statewide SARE conference.

Topsoil applied to a new gardening plot in one of Alaska's remote communities.

Low-till Forage Production

Jeff Mitchell of the University California Kearny Center (white shirt) talks to participants in one of several field days on the conservation tillage project.

To fill their need for year-round, inexpensive forages, California dairy producers typically plant and harvest a series of forage crops – small grains, corn for silage, milo and sorghum sudan.

While this requires considerable tillage and seedbed preparation ahead of each successive crop, the production systems lend themselves to conservation tillage approaches developed in other regions. Adopting these approaches could:

- Reduce the time between the harvest of one crop and the planting of the next
- Lower costs
- Lessen dust by as much as two-thirds

To address these issues, Jeff Mitchell of the University of California Kearny Agricultural Center, was awarded a Western SARE Professional + Producer Grant for $9,400 to evaluate and refine strip-till and no-till planting systems for corn forage production and no-till drill winter forage planting at the San Joaquin Valley in terms of crop establishment, weed control and profitability (Conservation Tillage Forage Production in California's San Joaquin Valley, FW06-308).

The work, conducted on the Larry and Daniel Soares dairy in Hanford, also sought to determine whether conservation tillage practices could enhance the quality of life of dairy producers as measured by profitability and the easing of time and labor requirements.

The project team evaluated strip-till silage corn production following wheat forage at the 600-cow dairy. In 2006, the trials evaluated conventional, no-till and strip-till in replicated strips, each 10 acres, in an 80-acre field. After the 2005-06 winter wheat forage crop was chopped in April 2006, a 6-row 30-inch Case DMI Ecolo-Till strip-tiller was used to subsoil to 12 inches and clear soil for planting. The traditional tillage strips were disked and listed before planting.

A Western SARE Grant Profile

In 2007, because of irrigation pump challenges, the demonstration was moved to two fields, where an 8-row 30-inch Schlagel strip-tiller was used for the strip-till comparison.

The results for 2006 were compromised by irrigation challenges, but in the 2007 demonstration, corn plant populations were higher in the strip-tilled fields, and weed populations and yields were roughly equal in both fields.

On the whole, said Mitchell, the results were positive and encouraging.

Indeed, since the project started in 2005, interest in conservation tillage has increased markedly in the San Joaquin Valley. Growers have learned that strip-tillage involves less intercrop tillage than normally employed following winter wheat chopping in preparation for spring corn silage planting.

By converting to strip-tillage, a typical dairy producer could eliminate four to five tractor passes. With high fuel costs, fewer passes across the field are better not only for the field but also for the dairy producer.

It has also been shown that strip-tillage and no-tillage for forage production can reduce particulate matter emissions by 50-90% compared with traditional tillage.

"We estimate a reduction in costs of $50 an acre by using strip-tillage instead of traditional tillage," said Mitchell. "However, it is important to understand that strip-tillage may not work in all soil types; heavier soils may be more difficult than coarser soils."

Mitchell offers these thoughts for producers considering strip-tillage:

- When strip-tilling, having some moisture in the soil precludes bringing up large clods
- Timely weed management is needed – time herbicide applications close to planting (within a week)
- Using the same GPS system for both the strip-tilling and planting operations will keep the planter on the strip-tilled area

Improved strip-tilling could enable triple-cropping – the sequential growing of three crops in a year – which could help San Joaquin dairy producers manage manure nitrogen with minimal risk of losses. Mitchell is currently assessing this in a Western SARE Research and Education Grant, Triple-Cropping Dairy Forage Production Systems through Conservation Tillage in California's San Joaquin Valley (SW08-060).

"We estimate a reduction of $50 an acre by using strip tillage instead traditional tillage."

— Jeff Mitchell

Indian Ag Curriculum Wins 2 Awards

A curriculum designed to help strengthen Indian agriculture – and which evolved from a Western SARE Professional Development Program Grant – has received first-place awards from two national agricultural associations.

"People of the Land" received the 2010 National Bound Book Award from the National Association of County Agricultural Agents. And it received the Gold Award for Publications from the Association of Natural Resource Extension Professionals.

The self-paced, eight-chapter curriculum was developed by University Nevada Extension educators Staci Emm of Mineral County and Loretta Singletary of Lyon County. It examines the historical, social and economic attributes within a four-state region – Nevada, Idaho, Oregon and Washington.

The peer-reviewed 169-page curriculum, released in 2009, was produced as part of a 2005 Western SARE grant funded at $90,000, "Strengthening Sustainable Agriculture Programs with Native American Producers in the West" coordinated by Emm (EW05-005).

"The 'People of the Land' work is highly creative and has stretched the boundaries for Western SARE," said Jim Freeburn, coordinator of the Western SARE Professional Development Program (PDP). "Not only does the project target a key audience in the Western Region, it truly encompasses the breadth of sustainable agriculture."

Freeburn said that a distinctive aspect of the project is that it emphasizes rural sociology, the "third leg" of sustainable agriculture.

"Too often, our projects focus on the economics and environmental aspects of agriculture," he said. "But the 'People of the Land' project has focused on people and the Native American communities."

The impetus for the project was Emm and Singletary's recognition of a knowledge gap indicating a need to improve understanding and appreciation of tribal histories and cultures.

"American Indian farmers and ranchers contribute a great deal economically to rural reservations," Emm said

Staci Emm

in a University of Nevada article on the curriculum, "and even though federal programs are designed to help increase the profitability of farms and ranches, Indian land tenure can make it difficult to implement and encourage sustainable agriculture programs on reservation lands. 'People of the Land' is an effort to improve that situation."

Emm and Singletary said that they have distributed nearly 1,100 copies of the publication to date, half of which have been handed out during workshops taught in Idaho, Oregon and Nevada. They have taught the curriculum to 32 undergraduate and graduate students at the University of Nevada-Reno and to 175 participants in daylong workshops in Reno, Ely and Fallon, Nevada; Warm Springs, Oregon; and Lewiston, Idaho.

In addition to its use in workshops that Emm and Singletary conduct, the curriculum is designed as a self-paced tool for agricultural professionals who work with Indians.

"We anticipate that by increasing knowledge and broadening perceptions of USDA professionals about the social, political and economic environments unique to reservation lands, they may better understand why Indian farmers and ranchers have not actively participated in USDA programs," said Singletary.

Specifically, the intended outcomes are:

- Increase the agricultural professionals' knowledge and appreciation of the cultural, historical, social, political and economic environments on reservations as related to sustainable agriculture and natural resources.
- Improve design and outreach of programs that serve Indian producers, landowners and tribal governments, keeping in mind the distinctive qualities of each reservation.
- Strengthen and increase sustainable agriculture and natural resource management programs on Indian reservations.
- Increase participation of tribal government and individual Indian agriculture producers and landowners in sustainable agriculture and natural resources.

Among the many impacts of the curriculum so far are:

- Requests from the National SARE director and SARE regional coordinators to teach the curriculum in SARE regions

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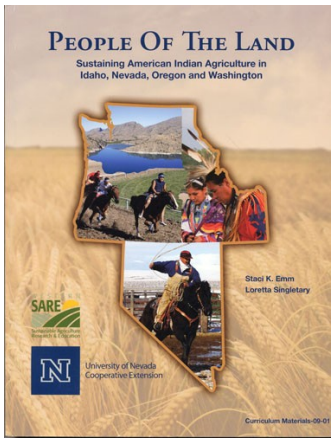

"We anticipate that by increasing knowledge and broadening perceptions, (ag professionals) may better understand why Indian farmers and ranchers have not actively participated in USDA programs."

— Loretta Singletary

SUSTAINABILTY IN THE NEWS

Water from the acequia ultimately reaches Bustos' crops through drip irrigation in his farm's greenhouses.

Western SARE Administrative Council member Don Bustos, who operates Santa Cruz Farm and Greenhouses in Espanola, N.M., was featured in an article on water in the April issue of *National Geographic*.

The article describes Bustos standing on the banks of a trickling ditch – "sunbaked and thickly bearded" – as he demonstrates how he irrigates $130,000 worth of produce on 3.5 acres. "I lift this board" – he points to a plank that forms a gate in the ditch – "and I shove in a stick to hold it up." Gravity does the rest.

The system is known as acequia – networks of community-operated ditches – which has been used in the Desert Southwest for more than 400 years.

"Without the acequia, there would be no farm," the article quotes Bustos who has also built a water tank with drip-irrigation hoses that feed some of the acequia water directly to the plant roots cutting his water use by two-thirds.

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"Sustainability is a movement, not a buzzword."

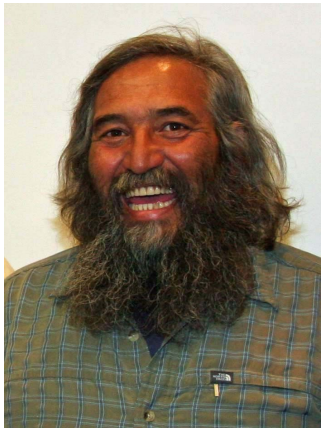
So says the new Oregon Certified Sustainable Wine program on its website, http://ocsw.org.

In discussing sustainability, the site says that while people are increasingly gravitating toward sustainable viticulture because of the quality wines it produces, a bigger reason is the legacy it leaves.

"By practicing sustainable grape growing and winemaking, we are ensuring that the land, animals and rivers to which many of our vineyards drain will still be here for generations to come."

Among the program requirements is that 97% of fruit in a bottle must have been grown in vineyards certified under at least one of five programs: Food Alliance, Low Input Viticulture and Enology, the Demeter biodynamic certification program, USDA Organic Certification or Salmon Safe.

Reports on SARE and Ag Sustainability



Don Bustos

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Seventy-seven percent of western region farmers taking part in a Rabobank U.S. Farm & Ranch Survey state that they have taken steps toward implementing sustainable agriculture practices, a higher number than in other regions. The survey demonstrates that sustainable practices are on the rise. More on the survey can be found at www.rabobankamerica.com/survey.

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The Idaho Department of Labor is asking 5,000 randomly selected Idaho employers how many 'green' jobs they have and what's their potential for growth. Listed among a half dozen or so categories is sustainable agriculture.

The department will use the results, and a $6 million grant, to prepare workers for these emerging jobs.

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Washington State University researchers and Western SARE grant recipients Lynne Carpenter Boggs and Chad Kruger were featured in a recent issue of the *Capital Press* weekly ag newspaper talking about WSU's sustainable goals and how they're making agriculture 'greener.'

Speaking in Seattle, Kruger, interim director of WSU's Center for Sustaining Agriculture, observed that as less land is being fallowed to produce more food for rising demand, the soil has less time to recover. He also cited nitrogen and energy inefficiencies as targets of concern.

Carpenter-Boggs, research leader for Biologically Intensive and Organic Agriculture, listed several sustainability projects her group is pursuing, including research on methyl bromide, composting animal carcasses and nitrogen use. Nitrogen costs, she noted, have skyrocketed: 150 pounds applied per acre on 1,000 acres cost $120,000 in 2009, up from $30,000 five years earlier.

Chad Kruger

Lynne Carpenter-Boggs

Kruger's SARE grant involved on-farm evaluation of biogas technology, Carpenter-Boggs, no-till livestock-grain rotation on diversified farms.

Replacing Imported Feeds

In the Pacific islands, the high cost of imported feed has sent producers scavenging for alternative feeds from local sources.

Micronesian swine producers typically offer dry and liquid feeds, but fermented feed is rarely used to grow-finish pigs.

However, a simple observation – that domestic pigs often eat breadfruit that has fallen to the ground and fermented – led Jim Currie, vice president for Cooperative Research and Extension at the College of Micronesia, to pursue a Western SARE Professional + Producer Grant.

"Replacing Imported Energy Feeds by Storage of Excess Breadfruit as Pig Feed" sought to develop sustainable practices for fermenting breadfruit. If successful, Currie figured, he could then develop a feed formula using the breadfruit to reduce feed costs by at least 25%, at the same time improving growth performance for growing-finishing pigs.

Breadfruit, meanwhile, is one of the most common indigenous trees in the tropical islands. Its football-size fruit has long been a traditional starch crop throughout Oceania. Breadfruit is relatively high in dry matter (40-50%) and produces twice as much energy as bananas.

Although not rich in protein, breadfruit is a fair source of minerals and vitamins.

Jim Currie

A Western SARE Grant Profile

Scavenging domestic pigs routinely eat over-ripe breadfruit that has fallen to the ground, which suggests that breadfruit can be an acceptable energy source for swine.

The project team gathered and fermented enough breadfruit to conduct feeding trials with these treatments: a commercial control diet (100% Nutrena) and fermented breadfruit (65%) along with commercial protein (35%) as a modified diet.

The fermentation was done on three varieties of breadfruit, Musunwac, Ikunial and Putaktack, and samples were taken weekly to measure pH.

The breadfruit was considered to have been fermented when the pH of a batch reached 3.9 or less. During fermentation, the breadfruit pH declined from 6.3 to 4.0 in just one week, falling to 3.8 after two weeks, and remaining at that level for at least five weeks.

Each feeding trial was balanced for sex (gilts and castrated male pigs) with eight growing pigs at a live weight of 115 pounds. The pigs were penned and fed twice daily for two weeks, with data collected on feed intake and daily gain.

Reducing the pH to 3.8 was responsible for the bactericidal effect, along with protein digestion, in the stomach.

"To achieve such pH without fermentation would have required the addition of organic acids (lactic acid), which is very expensive," Currie said. "Adding the quantity needed to reduce the diet pH to 4 would result in considerably higher diet costs."

He deemed the project sufficiently successful that outreach, with recommendations, is being conducted in Micronesia as well as other Pacific islands in SARE's western region.

"The study successfully developed a method to ferment breadfruit, which resulted in improved growth performance compared with animals fed commercial and non-fermented feeds," said Currie.

"Fermenting the breadfruit is a simple method that farmers can apply on a small scale."

At far left, a perfect breadfruit, and, at left, breadfruit after three months of fermentation.

Engly Ionis of the College of Micronesia climbs in search of breadfruit on Pohnpei.

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Focus on Indian Agriculture

From page 9

- A request from the director of the newly established U.S. Office of Indian Affairs for 25 copies to distribute to national policymakers
- A request for in-service trainings for Nevada public school teachers along with a copy for every school district in the state

In addition to the 2005 PDP grant from Western SARE, Emm and Singletary received a $10,000 award in 2009 from National SARE Outreach. The purpose is to support travel to other SARE regions to present the curriculum and to serve as SARE Ambassadors in those travels.

The funds have helped them travel to Tulsa for the National Association of County Agricultural Agents, where they will receive one of their awards and meet with tribal representatives from the Cherokee Nation and Creek Nation, headquartered near Tulsa.

The four color curriculum, illustrated with historical and contemporary photos, covers the history, society and economy of the four states in eight chapters: 1) American Indians on the Western Range, 2) Federal Indian Policy: A Brief Overview, 3) American Indian Land Tenure, 4) Agriculture Irrigation and Water Rights on Reservations, 5) Tribal Governance and the Federal Relationship, 6) Indian Self-Determination: Contracting and Compacting, 7) Quality of Life on Reservations: Results of a Four-State Survey, and 8) Implementing Agriculture and Natural Resource Programs.

Thanks for Responding

Western SARE wants to thank agricultural extension educators in the West who completed the regional extension sustainable ag survey last fall and winter. Thanks too to the state Professional Development Program (PDP) coordinators and extension directors who provided feedback on the survey and helped make the survey effort work. Western SARE PDP has conducted the regional extension sustainable agriculture survey every five years to establish funding priorities and redesign its grants programs when necessary. The survey results are also shared with state PDP coordinators for planning their educational programs.

The 2009-10 survey completion rate was 76%. Results are being analyzed and will be posted to the Western SARE website this autumn. The next issue of *Simply Sustainable* will highlight key findings.