Simply Sustainable

quarterly newsletter from Western SARE

working to sustain western agriculture

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WESTERN SARE Sustainable Agriculture Research & Education

GRANTS TARGET LOCAL PRIORITIES

When participants at the June 2008 Western SARE subregional conference in Albuquerque brainstormed priorities for sustaining Southwest agriculture, a recurring theme bubbled to the surface: educating youth about agriculture.

In response to that perceived need, a group of producers and ag professionals from southwest Colorado applied for, and received, a $49,000 post-subregional grant titled, "Farm to Fork: Connecting Our Youth with Sustainable Agriculture."

This topical grant is one of four the Western SARE Administrative Council (AC) has funded so far in response to issues that emerged from the first four of seven subregional conferences through 2010.

In addition to showcasing SARE-funded project results, the conferences are listening sessions to elicit from stakeholders the priorities for sustaining agriculture over the next 20 years. Western SARE AC and staff are analyzing the findings to guide funding and program directions.

Tisha Casida, project cooperator with the Southwest post-subregional grant, helps kids bag seeds to take home for planting.

— Photo by Clifton Casida

"Our AC showed support for regional priorities by funding a competitive grant for up to $50,000 from each subregional conference," says Phil Rasmussen, Western SARE coordinator. "They felt that it is important to address these pressing issues quickly and show our sincere intent to listen to their needs."

The AC also funded these priority competitive grants (see pages 4 and 5 for summaries):

- Pacific, "Replacing Feed Imports with Local Feed Resources in the Western Pacific"
- Hawaii, "Sustaining Molokai Native Hawaiian Family Farms"
- Mountain and High Plains, "Infrastructure Support for Small Livestock Processing Facilities"

R&E SURVEY YIELDS NUGGETS

SARE evaluation expert Al Kurki

Farmers, ranchers and extension personnel were integrally engaged in Research & Education projects funded by Western SARE during its first 17 years.

Two-thirds of project principal investigators reported that farmers and ranchers were involved in the project at some level, and 80% said extension educators were involved as planners, speakers or learners.

Further, 70% of PIs reported the funded project results were used in college-level classroom presentations, and 60% noted an increase in support for sustainable agriculture research and extension at their institution in the past decade.

These are among the many findings of a survey Western SARE commissioned in 2006 of principal investigators and producers involved in Research and Education (R&E) projects funded from 1988 to 2004.

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Eighty-three percent of the Western SARE R&E survey respondents said they found the SARE staff response to be courteous, and 86% said they were satisfied with Western SARE's programs and services.

SARE R&E Survey Results

from page 1

Al Kurki, assistant training coordinator for Western SARE, guided the survey, conducted by the Washington State University Social and Economic Survey Research Center. (Complete results are posted on the Western SARE website, http//wsare.usu.edu under 'publications.')

"Al has done yeoman's work to complete this and other benchmark surveys of the Western region's grant programs in the last five years," says Phil Rasmussen, Western SARE coordinator.

"We'd also like to thank all survey respondents for their patience and commitment to complete what was a test of memory and fortitude."

Kurki notes that retrospective assessments of Western SARE programs and projects over 17 years was a one-time event. Future post-project surveys will be shorter and closer to the period of the project.

In thanking survey respondents, Rasmussen says their hard work has helped the Western SARE Administrative Council and staff gain a better sense of project impacts and how grants can be improved in the future.

"While most rated our grant service quite highly, we took to heart some areas of improvement suggested," he says. "For example, we continue to work at shortening the turnaround time for award and contract paperwork."

In addition, the survey results, when pooled with results and analysis from the North Central and Southern SARE regional program surveys (also spearheaded by Kurki), have told us all how we might improve project reporting systems and expectations for the future. The work has begun and should be completed by late 2009.

When it embarked on the R&E survey, Western SARE had several objectives in mind. For one, it wanted to determine if the scientific community accepted SARE research. The survey of principal investigators showed that 74% of projects reported at least 235 products generated, with a third of those being journal articles and 12% being extension publications or technical bulletins.

Another outcome sought was impact of the research on farming or ranching operations. Just over half of producer respondents said they made a change based on what they had learned from the R&E project, a third reported increased income and 42% said yields increased (see producer responses above).

The survey also sought to determine how many producers attended field days or had personal visits with researchers or educators in the project. Half of the PIs reported that more than 100 producers attended all of the outreach events related to the project, which means at least 5,000 farmers and ranchers visited 50 projects.

The survey also wanted to ferret out what PIs thought of the grant-making, contracting and reporting process. The results show a favorable trend line, with 79% of PIs reporting satisfaction in 1999 compared with 100% of PIs expressing satisfaction for grants funded after 2003.

Projects' Values for Farmers and Ranchers

One hundred and thirty-six producers involved in Western SARE R&E projects responded to the survey. Some findings:

- Nearly three-fourths found the information gained from the SARE project useful. Just over half used what they'd learned on their operation, and, of those, 8 of 10 had continued its use.
- Market recognition of the operations products increased for nearly half.
- Farming or ranching satisfaction increased for 45% of those who commented on quality of life factors.
- Nearly 4 of 10 cited reduced fuel and pesticide use.
- Soil and water quality improved for 4 of 10.
- Management time increased for 28%, but 6 in 10 said it stayed the same or decreased.
- Their highest priorities for information are ecological pest and disease management, followed closely by ecological weed management strategies, soil-building crop rotations, water use efficiency and producing renewable energy.
- Responding farmers and ranchers cited extension as their most preferred source of information.

New Hawaii State Coordinator

When Ted Radovich volunteered as an agroforestry extension agent with the Peace Corps in The Gambia, West Africa, his agricultural horizon expanded.

"It was in The Gambia that I was first introduced to the broader concept of the agroecosystem and the importance of addressing food production issues in a socio-economic context," Radovich says of his Peace Corps experience in the mid 1990s.

His initial enthusiasm for plants and their culture was acquired from his father, an amateur orchid grower, while growing up in Waimanalo, Oahu. That, coupled with his love of eating, channeled his interest into food crops.

Radovich, center at back in pink shirt, works with high school students from Kamehameha Schools planting bananas at the UH Waimanalo Experiment Station.

Those experiences serve as milestones on Radovich's path to his current position as assistant specialist in sustainable and organic farming systems at the University of Hawaii and as Hawaii coordinator for Western SARE.

As the new SARE coordinator, he succeeds Dr. Jonathan Deenik, UH soil fertility and soil quality specialist, Hawaii coordinator for three years.

"We will build on the strong tradition of agent trainings and field days that Jonathan has established," says Radovich. "Some shifts in focus will reflect my background as a production horticulturalist and crop ecologist as well as the results of surveys and meetings we've conducted with growers and grower groups."

He notes that Hawaii's sustainable agriculture program has been maturing in recent years, and it's time to expand from basic education to more in-depth topics. Priority needs will include:

- Efficient use of local inputs for plant and soil health
- Identifying vegetable varieties best adapted for organic agriculture
- Calculating costs of production

The program will continue to collaborate with related programs to provide training on ecologically based pest management, soil-building crop rotations and cover crops.

"We will finalize training topics and outreach activities based on recently conducted surveys of CES agents and other stakeholders," he says, "and we will continue to engage growers to increase their awareness of Western SARE resources."

He recently attended the Western SARE state and protectorate coordinators meeting in Wyoming, to improve his understanding of the program.

Radovich brings a wealth of education and experience to his Western SARE position. He holds bachelor's (1994) and master's (2000) degrees in horticulture from the University of Hawaii and a Ph.D. (2004) in horticulture and crop science from Ohio State.

He is currently the principal investigator on three grants, and co-PI on two, all five totaling nearly a million dollars, including two from Western SARE. He is the PI on SW07-073, "Enhancing the Phyto-Nutrient Content, Yield, and Quality of Vegetables with Compost Tea in the Tropics," and co-PI on EW08-013, "Promoting Adaptive Management with 'Tropic Sunn' Sunn Hemp (*Crotolaria juncea*) in Hawaii for Ecological Strategies in Weed Control, Nematode Suppression and Nutrient Management."

Radovich coordinates the UH College of Tropical Agriculture and Human Resources Organic Working Group. A member of the American Society for Horticultural Science since 1999, Radovich has developed and taught courses in organic food crop production, vegetable crop production, weed science and herbs, spices and flavors.

His wife of 8 years, Cheryll, is also from Hawaii and received her MSc in horticulture from UH, where they met. They have two children; Oliver Kamahia'i, 6, and Sadie Miliaekēhau, 2. In addition to his family and educational pursuits, Radovich enjoys reading, hiking and kayaking.

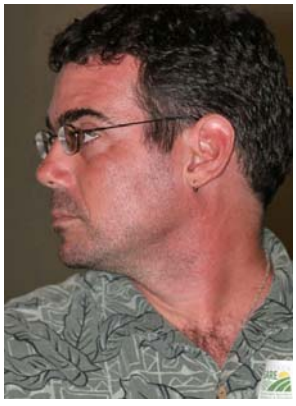
Radovich observes that while the word sustainability crops up frequently in conversation these days, there is no agreed upon single definitional box into which sustainable agriculture can be placed. However, he says, some basics underpin becoming more sustainable.

"Whatever the model," he says, "achieving sustainability requires the integration of many tools and approaches. As a result, management of sustainable agricultural systems is knowledge-intensive and requires strong research support."

To learn more, visit www.ctahr.hawaii.edu/radovicht.

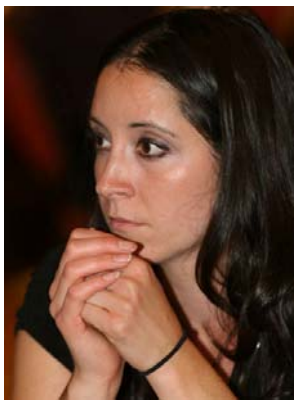
Western SARE has a state SARE coordinator in every state and island protectorate with a land-grant institution in the Western Region.

"These were initiated 15 years ago as State PDP, SARE's Extension component," says regional coordinator Phil Rasmussen. "But they have become much more than that now — they are an absolutely essential component of the total SARE program in the West."



Ted Radovich

Post Subregional Conference Grants



"Everyone benefits from a curriculum that seeks to educate our youth to guarantee our legacy and endurance in the years to come."

— Tisha Casida, Project Cooperator, Pueblo, Colorado

Pacific: Focus on Feed

Where: Agana, Guam
When: October 2007
What: "Replacing Feed Imports with Local Feed Resources in the Western Pacific," SW09-304
Who: Manny Duguies, University of Guam Cooperative Extension
How Much: $47,207

Pacific islanders value swine for their cultural and economic importance. But island producers are finding their imported feed costs rising along with prices for petroleum and commodities.

For instance, a Palau producer reports that a 50-pound bag of commercial feed that cost $10.50 in 2004 is now pushing $14.

Long before Pacific swine producers began relying on these imported feeds, islanders successfully fed a rich diversity of local feedstuffs, including breadfruit, bananas, taro and coconuts.

While a couple of Western SARE studies looking at using local feedstuffs have been encouraging, they cover only a fraction of what's available and have yet to overcome the local perceptions that local feed results in poor and variable pig growth.

Manny Duguies, extension veterinarian with the University Guam, observes that the negative results typically come from use of the wrong feedstuffs, improper processing or feeding excessive amounts.

To help overcome these challenges, Duguies' post-subregional grant will engage producers on Palau, Pohnpei, Tinian, Guam and Yap to:

- Set up farmer-to-farmer networking groups to survey area farmers on their use of local feedstuffs, how they are processed and the growth patterns of the swine fed the feedstuffs
- Collect samples of the local formulations for analysis in laboratories
- Conduct feeding trials on their own farms, including keeping records for data analysis, to compare the growth impacts of various novel formulas comprising local feeds with those currently used

The project team will organize and conduct local and regional workshops to share the results as well as assist in translating publications into local languages and dialects.

Southwest: Connecting with Kids

Where: Albuquerque
When: June 2008
What: "Farm to Fork: Connecting Our Youth with Sustainable Agriculture," SW09-401.
Who: Dennis Lamm, Lamm, Colorado State University Cooperative Extension
How Much: $48,988

Citing a "tragic lack of education" in the school system about the interrelated nature of communities with agricultural systems that surround and support those communities, a group from southwest Colorado received a post-subregional grant to fill the void.

Dennis Lamm, Western SARE Colorado state coordinator, linked with Tisha Casida and a group of farmers-turned-educators and developed a curriculum taught this spring in two Pueblo schools, Vineland Elementary and the Pueblo School for Arts and Sciences.

Kimberly Schaub, a certified nutritionist, explains portion sizes for mini pizzas students are making.

The curriculum, seven lessons each presented by a project cooperator, covered:

- Lesson 1: "Where Does Food Come From? What Is Sustainable," developed by Ginny Casida
- Lesson 2: "Seeds – What They Are and How Do They Grow?", Mike Bartolo, Colorado State University Extension, Rocky Point
- Lesson 3: "Growing a Garden, Susan Fries, executive director, Pueblo Performing Arts Guild
- Lesson 4: "Insects on a Sustainable Farm," Beki Guion, owner, Javernick Family Farms
- Lesson 5: "Grass-Pastures," Kim McIntire-Wiley, Larga Vista Ranch & Dairy
- Lessons 6 & 7: "Cooking and Nutrition Demonstration," Kimberly Schaub, certified nutritionist

The group plans to add schools as it develops relationships among more producers and communities. Other plans include children's books, self-discovery packets and student food journals, along with pamphlets, fliers and a website.

"Everyone benefits from a curriculum that seeks to educate our youth to guarantee our legacy and endurance in years to come," says Casida.

Hawaii: Sustaining Family Farms

Where: Kona
When: September 2008
What: "Sustaining Molokai Native Hawaiian Family Farms," SW09-502
Who: Glenn Teves, University of Hawaii Cooperative Extension, Molokai
How Much: $47,420.

Hawaii's isolation may make it an ideal travel destination, but that same isolation puts the islands' 1.3 million residents at risk.

Estimates of Hawaii's stored food inventory show a one-week supply, about the same time it takes a cargo ship to arrive from California. Only 20 years ago, Hawaii had 20 days worth of food on hand. What's more, an inventory of farm inputs shows more than 98% are imported.

This precarious situation for both residents and farmers prompted Molokai-based

UH Extension agent Glenn Teves to gather a team of island farmers to find local sources of inputs and to expand their crop offerings. Teves notes that 85% of Molokai family farms served by Cooperative Extension are native Hawaiian, considered an underserved audience by USDA.

The Western SARE post-subregional project will set up five tropical sustainable demonstrations on farms of producers engaged in monocropping. These demonstration farms, which will be integrated into existing farm operations, will utilize as much locally produced farm inputs as possible, including compost, fish bone meal and crushed coral.

The producers will also be required to plan and execute a production and business plan to produce at least two crops they're not presently growing to meet market demands. Teves notes that many of the farmers he serves are hesitant to risk capital on demonstrations, but they have consistently said to him, 'Show me.'

"The on-farm project will conform to the principle that farmers learn from farmers best by creating opportunities to interact at field days on these demonstration projects," Teves says.

The project will also attempt to involve the children of these farm families' demonstration efforts.

Mountain/Plains: Helping Small Processors

Where: Cheyenne
When: October 2008
What: "Infrastructure Support for Small Livestock Processing Facilities"
Who: Jane Boles, Montana State University Associate Professor of Meat Science
How Much: $46,796

To help ensure safe food, USDA is issuing new rules that require livestock processors, including small ones, to conduct microbial testing. These one-size-fits-all regulations place a burden on the small processors, which rarely have the technical skills for such testing.

Jane Boles of Montana State received a Western SARE post-subregional conference grant to help smaller livestock processing facilities comply with new and ever-changing food safety requirements.

Boles will take the exper-

tise of the Montana State University Meat Lab to work with five processors from across Montana (Brian Engle, Pioneer meats, Big Timber; Kurt Gamble, C&K Meats, Forsyth; Clay Moran, M3 Meats, Sydney; Wes Plummer, Lower Valley Pack, Kalispell; Wayne Worley, Forcella Meats, Whitehall) and state meat and poultry inspector Mike Finnegan.

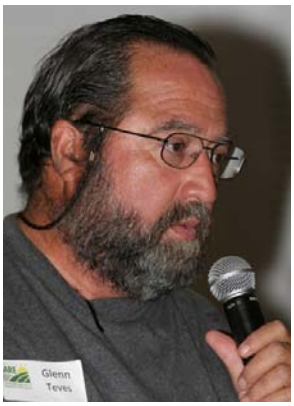
Processors are being surveyed about current food safety processes and volume produced, which will aid in developing a statistical testing scheme for individual plants.

Boles will visit each plant to demonstrate testing of carcasses, trim and ground meat and to collect microbial data. These statistics will be supplied to the processors quarterly along with written standard operating procedures that will include what to test, when to test it and how much to test. A follow-up test will be done at each plant to assure suggested procedures are being implemented.

Once the project is completed, processors will have a written testing plan tailored for their processes that will help them comply with ever-changing inspection requirements. And they will have data to support their procedures and track progress for microbial food safety.

Results will be distributed to livestock processing plants across Montana and other states in the western region.

Post Subregional Conference Grants



"The on-farm project will conform to the principal that farmers learn from farmers best by creating opportunities to interact at field days on these demonstration projects."

— Glenn Teves, Extension Agent, University of Hawaii

The Wyoming Business Council Agribusiness Division was clearly pleased to receive a Western SARE 2009 Professional + Producer Grant, FW09-319, Enhancing Rural Agriculture Family and Community Development in Wyoming Through Sustainable Biofuel Crop Production. The Council sent out a news release on the grant to media in Wyoming and Montana, many of which ran the news, including Wyoming Livestock Roundup, The Prairie Star, AG Week, Casper Star-Tribune and Gillette News Record

ATTRA Features SARE Project

Western SARE Farmer/Rancher Grant recipient Deborah Walton feeds the Olde English Southdown Miniature Babydoll sheep at her Canvas Ranch west of Petaluma, Calif.

Deborah Walton of Canvas Ranch near Petaluma, Calif., raises a short-statured breed of sheep with a long name, Olde English Southdown Miniature Babydoll. Walton figured that these knee-high browsers might be effective grazing in vineyards. They could mow down competing vegetation without reaching and damaging the trellised vines overhead. Her SARE grant, FW04-028, was titled Organic Vineyard/Orchard Weed and Grass Management Using Miniature sheep.

The June/July issue of ATTRA News, the newsletter of the National Sustainable Agriculture Information Service, highlights the success of Walton's project in an issue devoted to sheep and goat production.

The lead article notes that Walton leases her sheep to organic and biodynamic vineyards on the North Coast, where growers find the sheep can keep the grass short, precluding the soil compaction that would occur if tractors were used to mow. At the same time, the sheep fertilize the fields as they graze. For more information, see www.canvasranch.com.

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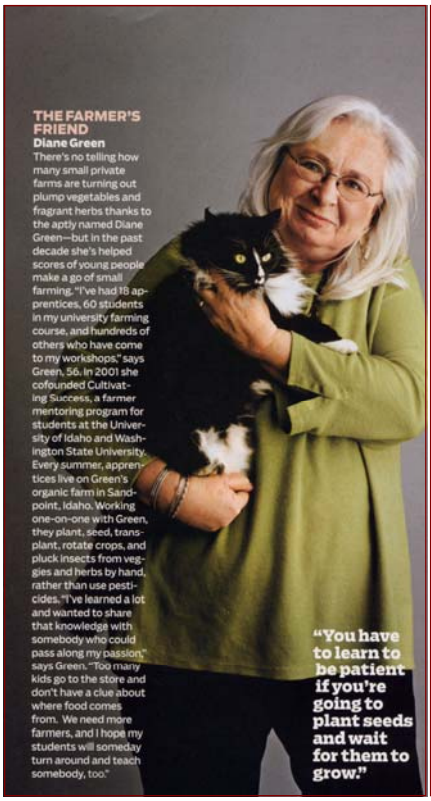
Reports on SARE and Ag Sustainability



Farmer/Rancher Grant recipient Diane Green of Greentree Naturals in Sandpoint, Idaho, was featured in the May & June issue of AARP magazine as part of a feature on 'Elder Wisdom.' Green's 2001 grant, FW01-025, "Developing a Sustainable Market for Small Farms in a Rural Community," developed and conducted workshops on the subject and produced and distributed brochures on selling tips, grower collectives and sustaining local farms. For more information, visit www.greentreenaturals.com

Craig Madsen of Edwall, Wash., operates a vegetation management business called Healing Hooves. He hires out his goats to deal with a variety of pesky vegetation. Madsen, whose 2007 Farmer/Rancher Grant (FW07-009) focuses on testing the goat's effectiveness on leafy spurge, is featured in a June 5 article in the Capital Press weekly ag newspaper written by Doug Warnock, himself a Western SARE Professional + Producer grant recipient (FW03-308).

Warnock extols Madsen's skills in managing vegetation with livestock, noting a paradigm shift. Instead of livestock graziers paying for land to graze on, they're being paid as an important tool.

Teaching Livestock (& Producers) to Behave

When it comes to rewards and punishment, animals are like people – their behavior depends on consequences: positive consequences increase a behavior's frequency, negative ones decrease it.

Indeed, with a firm handle on these animal behavior traits, livestock producers can change the habitat their animals select, increase the variety of forages they consume and improve the health of pastures and rangelands.

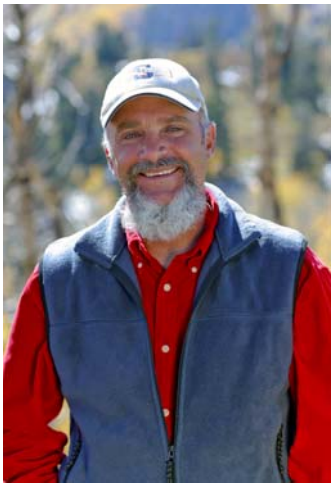
Nearly three decades of research into animal behavior, conducted by Dr. Fred Provenza of Utah State University, and others, along with numerous examples of the research's application on the landscape, underpin management tools producers can employ to modify animal behavior.

"Not only is this a kinder, gentler way to manage livestock," said the project's final report, "it is also a means for improving quality of life for producers and enhancing their bottom lines, using what's in their heads (knowledge of behavior) rather than what's in their wallets (more expensive technology)."

To help extend and apply this knowledge, Beth Burritt, Provenza's long-time research assistant at Utah State, and Kathy Voth, who operates Livestock for Landscapes in Loveland, Colo., applied for, and received, a Western SARE Professional Development Program Grant.

Their project, "BEHAVE Facilitators Network" (EW04-016), sought to train 110 people who work for extension and the Natural Resources Conservation Service across 10 western states in the principles that govern the diet and habitat selection of livestock.

Burritt and Voth's objectives were to :



Fred Provenza, pioneering animal behavior researcher with Utah State University.

— Photo by Gary Neuenswander

A Western SARE Grant Profile

- Create a BEHAVE Facilitators Network handbook
- Conduct workshops and distribute training materials
- Create the BEHAVE Facilitators Network website
- Create examples and project updates in PowerPoint for recently trained facilitators
- Follow up with facilitators to evaluate the usefulness of the training and the network

The handbook, created in early 2006, includes a description of the network, tips for presenting successful workshops and information about learning styles and adoption of new information. It includes PowerPoint slides, 26 fact sheets and examples of applying behavioral principles for livestock and wildlife management.

Among the examples, Wyoming rancher Bob Budd used behavioral principles to improve riparian habitat, increase use of upland areas by cattle, reduce invasive species and increase habitat for migrating songbirds. Budd used a rider to move cattle out of stream bottoms (a negative consequence) and onto upland areas where forage was better (a positive consequence). As the cattle have learned to use the upland areas, the herd has been increased to 800 from 600 animals and weaning weights have risen. What's more, he's saved on the cost of fencing, which would have come to $1 million over 30 years.

In Montana, rancher Ray Bannister altered grazing management to encourage cattle to utilize unpalatable and palatable species at the same time to reduce impacts from plant toxins. He grazes his pastures intensively, then rests them for two years. His 7,200 acres now has some of the highest vegetation cover and diversity in the state, even during drought.

Workshops teaching the principles of behavior and how they can be harnessed to achieve results like Budd and Bannister's were hosted from January 2006 to March 2008 by state coordinators appointed in each of 10 states. The 10 state coordinators and 135 new BEHAVE facilitators were trained in workshops in Logan, Utah, (9 facilitators trained), Saratoga, Wyo. (14), Salmon, Idaho (6), Corvallis, Ore. (13), Moses Lake, Wash. (13), Auburn, Calif. (21), Miles City, Mont. (31), Winnemucca, Nev. (22), and Arizona (11).

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"Not only is this a kinder, gentler way to manage livestock, it is also a means for improving quality of life for producers and enhancing their bottom lines using what's in their heads rather than what's in their wallets."

— Western SARE PDP Grant "BEHAVE Facilitators Network"

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Teaching Livestock (& Producers) to Behave

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So did the project work?

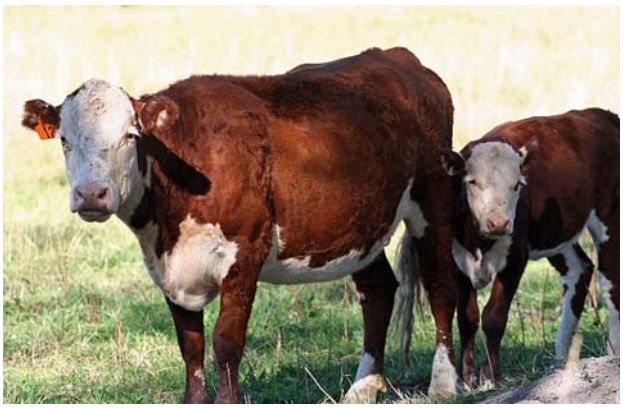
In a follow-up survey – 53 responses to 145 surveys – 26 respondents strongly agreed and 27 agreed that the training was a good use of their time. Workshop participants rated their experience as 3.7 on a scale where 4 was the highest rating.

"Several participants commented that the BEHAVE facilitators network workshop was one of the best trainings they had attended in a long time," said the final report.

What's more, 20% of respondents said the workshop changed the way they viewed grazing animals, and half used the information gained in at least one presentation.

Several participants took further actions based on their newfound knowledge.

Educators in Nevada and Utah have incorporated a presentation about behavioral principles into the Nevada



Rangeland Management School for Ranchers. Educators in Wyoming have given several talks on principles of animal behavior to producers. And a project was initiated in California using aversive conditioning to train sheep to eat vegetation in the understory of vineyards but to avoid eating grapevines.

Burritt and Voth have created the BEHAVE Facilitators Network website, www.behave.net/BFN/BFN_facilitators.html, which includes a list of facilitators by state, research updates from the BEHAVE project, additional examples for facilitators, a PDF of the handbook, presentation tips and workshop feedback and summaries. They also presented a poster at the North American Colleges of Teachers of Agriculture and handed out 40 CDs containing a wide range of information, slide shows and videos on managing animals using behavioral principles.