

Simply Sustainable

Grants and Education to Advance Innovations in Sustainable Agriculture



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Researchers Say Hill-Climbing Cows May Bring Big Benefits for Ranchers

Conventional wisdom says cows don't go up steep slopes. They don't climb hills and don't travel very far from water.

But some cows never got that memo.

"I've been watching cattle for years, and there are always some cows that just take off for the hills, like they didn't know they weren't elk," said Derek Bailey, a professor of range science at New Mexico State University. "They could be belly-deep in green grass, and just bolt for the hills. They like it up there."

That got Bailey thinking.

"We can breed for other traits," he said. "Why not select for hill climbing?"

If ranchers could select for the hill-climbing trait, the same way they select for any number of other genetic traits, it could have huge implications throughout the rugged West. They could graze more cows on mountainous ranches. Rangeland would be more productive and more evenly utilized. Riparian areas could be more easily protected.

"We think this could make a big difference on



Some cows just like to climb.

the ground," Bailey said. "In agriculture, if you can get a three to five percent improvement, it's huge. We think if ranchers can get more use and grazing on slopes, they could increase stocking rates by as much as a third – and do it sustainably. In other places, it'll solve riparian problems. There's a lot of upside if we get it done."

See **COWS**, page 6

Can Eco Labels Promote Sustainable Ag Practices? Yes, they can. But...

By **Steve Elliott**
Western IPM Center

Eco Apple. Lodi Rules. SIP Certified. Whole Foods Responsibly Grown. Salmon Safe. Sysco Sustainable. And that's just the beginning.

There are dozens of eco labels and sustainable agriculture certification programs in the United States, all designed to differentiate products in the marketplace and assure consumers that this apple, potato or bottle of wine was produced in an environmentally responsible

manner.

But are eco-labeled products really better? And looking closely at one specific aspect, do they help drive the expansion of integrated pest management techniques that reduce pesticide risk?

According to certification program managers, growers and independent auditors, the answer is yes – eco-label programs do have clear benefits and promote more sustainable pest-management and growing practices. They also provide certain benefits for growers.

However, there are downsides for

growers as well, and significant differences between the programs can make judging eco labels challenging for consumers. And with dozens of similar yet competing certification programs and standards, certification chaos is likely for the foreseeable future.

Eco Labels Work

Let's start with the good news – there's widespread agreement that eco labels and

See **ECO LABELS**, page 9

Reflections on Our 2016 Accomplishments

Supporters of Western SARE,

As we enter 2017, and I approach my one year anniversary as Western SARE's Regional Coordinator, I've started to reflect on everything we've accomplished. It has been a year of change and important undertakings.

In 2016, Western SARE provided more than \$3.5 million in competitive grants and state programs. Forty-six competitively selected projects were awarded in 13 states and territories. Subject areas, as identified by the recipients, include Natural Resource Management, Animal Production, Sustainable Integrated Pest Management, Economics and Marketing, Education and Training, Field and Vegetable Crop Production, and Soil Management, Health and Quality. Our funding has increased by 9.9% since 2015, resulting in more grants that can be funded. To facilitate this growth, we have worked on making our subcontracting and reporting process more efficient, and we have expanded our Communications team, with Elliott and Nelson joining Stacie Clary in our outreach efforts.

None of this work would be possible without the extended team members that are involved with Western SARE. We have staff in four states (California, Wyoming, Montana, and Utah) who work diligently to manage the five different grants programs, get the contracts and funding out in a timely manner, provide outreach about the program, disseminate project results to a wide audience, and answer questions to help ensure the best possible submitted proposals. One of our goals has always been good customer service, and I hope that we have been there for you as needed this year.

Eighteen ag leaders – agency staff, farmers, ranchers, non-profit leaders, and agri-business personnel – dedicate a significant amount of time guiding Western SARE as Administrative Council members. These men and women direct the Western SARE program ensuring that all aspects of sustainable agriculture and our diverse region are represented. They also determine priority areas, review grant proposals, oversee the budget, and provide programmatic guidance to staff. They regularly show creativity and innovation in shepherding the grants programs and outreach to meet our stakeholders' needs.

We are fortunate to have 23 ag professionals as our state coordinators. They are the face of Western SARE in their state or territory – answering questions, representing the program at state conferences and meetings, and most importantly, leading efforts in their state to train other ag professionals about the advancements being made in sustainable ag.

I am looking forward to working with everyone on Western SARE team to continually improve our program, reach an even wider audience, and provide the service the ag community needs from us. If you have suggestions or ideas, I am always available to hear them.



**WESTERN SARE
REGIONAL
COORDINATOR'S
COLUMN**

A handwritten signature in blue ink that reads "Rhonda Miller".

State Professional Development Profile: Montana

Agriculture in SARE's Western region is undertaken in the coldest, driest and wettest and most northern and most southern agro-ecosystems in the United States. That means ag educators in the Western states and protectorates can't rely on one-size-fits-all programs to address the challenges food producers face.

Montana is one example of providing diverse sustainable agriculture programming suited to the varied landscapes and to the farmers and ranchers who reside there. The 2015-16 goals of Montana's Western SARE Professional Development Program (PDP) – under the leadership of state coordinator Fabian Menalled – included providing in-depth training on sustainable agriculture for the state's agricultural professionals through mini-grants and supporting training opportunities for educators.

The targeted audience included Extension Agents, Extension Specialists, ag professionals, producers, NGOs, and the public. The educational programs were developed in association with Montana State University Extension specialists, Extension agents, faculty, and graduate students interested and involved in sustainable agriculture.

More than 450 attendees participated in five workshops. Also two Extension specialists, four MSU Extension Agents, and two NRCS agents participated in two different workshops. One Extension Agent and NRCS personnel worked together with three farmers/land owners to monitor rangeland health in Montana. Finally, approximately 150



Field day at the Montana State University Post Farm.

participants attended two dryland organic farm tours organized and hosted by the Montana Organic Association.

Jim Freeburn, PDP Regional Coordinator states, "The Montana SARE program is in good hands. State Coordinator and Montana State University faculty member Fabian Menalled has a very broad and strong program with a deep emphasis on sustainable agriculture. The audiences and topics are diverse and represent important industries in Montana. The following examples demonstrate the strength of the Montana SARE program and the value that SARE dollars bring to Montana agriculture."

2015 Montana Organic Association (MOA) Farms Tours

The MOA Farm Tour Committee selected two successful operations (Jess Alger of the Alger Ranch in Stanford and Daryl and Linda Lassila of Lassila Farm just outside Great Falls, Montana) to highlight dryland cropping and livestock grazing systems. There were 80 partici-

pants at the Alger Tour and 70 to 75 at the Lassila Tour.

One ag service provider stated "Every time I attend one of MOA's Tours I feel like I am just digging deeper into the potential benefits of this system of farming – and I want to assist other farmers more and can –because of what I learn and see at the tours."

Low Stress Cattle Handling Workshop with Dr. Temple Grandin and Curt Pate

This workshop was conducted in partnership with Custer County Extension to offer an Autism Workshop, a workshop for 4-H youth, and another Livestock Handling workshop in Miles City, Montana. Thanks to this partnership Fallon/Carter Extension was able to expand the outreach of the program by offering three additional regional workshops.

Some comments from the distributed survey:

This was a wonderful opportunity! Thank you for making it available.

Thanks for bringing this program to Baker. What an incredible experience!

Locally-grown, Superfood Berries Workshops: Building Producer and Consumer Awareness and Research and Outreach Networks

Featured speakers at two workshops were Kathy Wiederholt, Director of the Northern Hardy Fruit Evaluation Project at North Dakota State University, and Bob

Thaden, a successful fruit grower and founder of Tongue River Winery in Miles City, Montana. There were approximately 30 attendees at each workshop, in addition to MSU faculty and staff directly related to the project.

Several fruit growers expressed their interest and intention of planting some of these berries and several grape growers/wine makers requested additional information on Haskaps. Following the workshop a producer from the Corvallis area who operates a large greenhouse complex began planning productions of planting or nursery stock for Haskaps and other berries.

Rocky Mountain Cider: Growing Apples to Fermenting Juice

To profit from new market opportunities for small-scale cider orchards, producers and cider brewers need information concerning 1) which varieties can be grown in the state; 2) their end use qualities; 3) basic orchard care. To meet these needs, a Montana cider makers' workshop was held that brought together local cider growers and brewers with a well-respected cider expert, Dick Dunn. The two-day workshop provided growers with increased knowledge and facilitated networks for collaboration. All attendees reported that they gained new knowledge and skills based on post-workshop surveys and discussions. There are several research and extension projects that are in planning that are based on the needs identified at the workshop. Several growers also indicated that they intended to change their management practices based on information provided by the event.

More information of the Montana Western SARE PDP can be found at the following webpages:

westernsare.org/Professional-Development-Program/State-and-Protectorate-Pages/Montana

[Montana IPM](#)

[MSU Pesticide Education](#)



Field day at the Montana State University Post Farm.

Grass-Grazers-Families: Conference Searches for Common Ground in Colorado

According to Michael Fisher, Pueblo County (CO) Extension Director, the undertaking started as a phone conversation with members of the Colorado Section Society for Range Management and the Pueblo County office for Colorado State University Extension two years ago. The key question asked at the time: “How can we get agency personnel and ranchers interested in attending the same educational conference?” The answer became “finding common ground.” Thus, the creation of The Grass-Grazers-Families: Finding Common Ground Conference held in Pueblo November 1 -3, 2016.

The Colorado Section Society for Range Management had been looking for a way to bring livestock producers and range management professionals together to ensure that the two groups were able to hear the same type of training information and, hopefully, be more understanding of both the needs and goals of the other group. At the same time, the Pueblo County office for Colorado State University Extension was trying to develop a plan for an educational conference for livestock producers. The two groups decided to partner together in an effort to bring an educational experience to both sets of learners.

This was a conference that would include speakers who would address sustainability, land and plant health, livestock health, profitability, and family communication on the ranching operation. The hope was that a connection between topics could be made to impress upon the audience that actions in one area can impact results in another area and remind the audience that rangeland management and ranching needs to be viewed as a system. There was also a desire to be able to hold live demonstrations that could show the audience how they can take action on their own operation and through their consultation with clients.

Over 100 people attended from Colorado, California, Montana, Nebraska, New Mexico, and Wyoming. Fourteen



Producers and ag professionals come together to find common ground.

Cynthia Villa

speakers gave presentations in the main hall and five separate demonstrations were conducted outdoors.

Larry Cundall, Wyoming rancher and chair of Western SARE’s Administrative Council attended the conference due to being impressed with the list of well-respected speakers. “In my world, people like Fred Provenza, Dean Anderson and Kit Pharo are names that come into everyday conversations. You may not always agree with them, but their opinions and research are reshaping the face of livestock agriculture and provoking new innovative approaches to range and livestock production and health. Many new names also made their mark on the conference.”

He left the conference believing that the combined academic professional and producer format looked to be a successful formula for a training.

From the conference evaluations, it was learned that 81% of respondents said that as a result of this conference they would change the way they



Colorado rancher Duke Phillips.

manage or recommend management of resources. In another evaluation question, 89% of respondents indicated that by implementing concepts learned at this conference they could become a better steward of resources, making them more successful and sustainable.

Western SARE provided funding to support the travel costs of several speakers for the program and the Colorado State Fairgrounds provided assistance with facilities. The conference planning committee has already begun conversations about doing another training in 2017.

Tomato grower learns to put soil before shade

Farmer/Rancher project focused on beet leafhoppers

In 2015, Peter Sinanian's Albuquerque-area specialty farm, TomatoCulture LLC, couldn't keep up with demand when beet curly top virus caused significant losses in his crop.

"It was a horrendous curly top season," he said. "We lost 30 percent of our plants to the disease, which reduced our cash flow by about \$10,000."

TomatoCulture specializes in heirloom tomatoes, a popular crop for many small-scale organic growers because they bring both a price premium and attract a growing customer base in search of old-fashioned tomato flavor. Selling 43 flavorful and interesting varieties directly at farmers' markets and to a dozen area restaurants and caterers, Sinanian went into the 2016 season hoping to reduce those losses.

"The beet leafhopper is the only known vector of the disease," he explained. "And leafhoppers prefer to feed in bright sunlight."

So, working with New Mexico State University extension agents, Sinanian developed an interesting farm-based research project. Would shading his various varieties of tomatoes reduce leafhopper feeding and disease losses? And could intercropping the tomatoes with sunflowers be as effective at warding off leafhoppers as installing shade cloth over them?

"In a backyard setting, research had found that shaded plants typically didn't get curly top when unshaded plants did," he explained. "We wanted to try it on a larger scale."

With funding from a Farmer/Rancher grant from the Western Sustainable Agriculture Research and Education Program, TomatoCulture began a two-year experiment. In it, Sinanian covered some rows of tomatoes with shade cloth, interplanted other rows with



"The soil issues overrode the shade results. The section that made money was the section where we had good soil fertility and the plants had good nutrient levels."



sunflowers, and left some untreated as control sections to measure the other treatments against. He repeated the treatments through three different blocks on his farm.

"The original plan was to use wild sunflowers," he explained. "They branch out wide and are fast growing."

Sinianian did get a lot of answers during year one of the project, the 2016 growing season. But they weren't all the answers he expected.

"The shade with the sunflowers didn't really happen," he said. "They didn't grow big enough ahead of the tomatoes."

A late-season visit with several extension agents and master gardeners did provide ideas for year two – mixed plantings of sunflowers and other flowers to provide multiple benefits, including a refuge for pollinators and natural insect enemies, shade and potentially an additional cash-generating cut-flower crop.

He also learned that the shade cloth was more expensive than anticipated.



"The cloth itself is not cheap, and there are expenses in the cloth, labor and infrastructure," he said.

The biggest lesson he learned is that in the sun-baked New Mexico climate, soil matters far more than shade. The section of his land that had received the most soil amendments the previous year was the section where his tomatoes produced best.

"The soil issues overrode the shade results," he said. "The section that made money was the section where we had good soil fertility and the plants had good nutrient levels."

For 2017, Sinanian was preparing a new section of the farm with a winter cover crop to improve the soil fertility. He planned to reduce his total plantings slightly to keep the labor costs more manageable, and to start his sunflowers earlier so they could be more effective sources of shade to keep leafhoppers away.

"To some, our results in 2016 could look like a failure, but they brought me so much knowledge," he said. "Next year, we'll repeat a lot of the same ideas but building on what I learned."

Where to Learn More

Annual and Final Reports:

mysare.sare.org/sare_project/fw16-035/

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COWS: Seeking the genetic markers for wandering

(continued from page 1)

Bailey is working with a team of scientists located across the West to investigate this opportunity, including Milt Thomas, Scott Speidel and Mark Enns at Colorado State University, Juan Medrano at UC Davis, and Larry Howery at University of Arizona. They turned to the Western Sustainable Agriculture Research and Education Program to fund the basic research that could soon turn into a cheap breeding test that would allow ranchers to select for hill-climbing traits.

“It’s very exciting research,” said Juan Medrano, a UC Davis animal geneticist. “DNA technology makes it relatively easy to test and breed for production traits like milk yield and growth rate. But it’s brand new to identify genetic markers linked to animal behavior. This could have a huge impact on food security and rangeland management.”

Gathering the Data

To identify hill-climbing cattle, Bailey and his crew put Global Positioning System collars on cows on ranches in several Western states and took measurements every 10 minutes for months at a time. They tracked each cow’s movements and habits – their slope use, elevation gain and distance traveled from water.

“The secret to this is more data,” Bailey said. “So we’ve been tracking cows all over.”

They also take blood samples from all the collared cows that

Medrano and his team analyzed for chromosomal commonalities. Medrano found overlap in genes linked to locomotion, motivation and spatial learning.

Dick and Erin Evans have the kind of spread where this research matters. They ranch on 24,000 acres in the Big Burro Mountains in Southwest New Mexico. It’s rough country and more than half of it is federal land or state land. To be profitable, the Evans’ cattle have to be efficient, and even before connecting with Bailey they were thinking along similar lines.

“We have one pasture that has one source of water,” Dick Evans said. “We started tracking how often the cows there visited water, and for some it was every day, for some it was every other day and for some it was every four or five days.”

They theorized that cows going several days without water were more efficient – water and grazing are linked – and that those cows were likely grazing further afield. But once they started working with Bailey, the GPS data told a different story.

“We had one cow we knew to be efficient and it would come to water every four or five days,” Dick Evans said. “But it never traveled more than a half-mile away from water.”

Like the Evans’ ranch, much Western rangeland is mountainous or hilly and managed for livestock production. Grazing on rangeland feeds livestock and also offers many environmental



The West’s rugged terrain makes the research important.

benefits such as keeping weeds and other invasive species in check, providing water storage and carbon sequestration, and supporting habitat for animals and plants found nowhere else in the world.

Problems arise, though, when rangeland is overgrazed and cattle spend too much time near running water where manure and calving can create water-quality risks for people downstream. Researchers have been working for decades with ranchers to keep cattle from overgrazing and congregating by creeks. They build strategic fencing, for example, and provide water and salt licks on ridgetops away from running water. Cowboys often herd cattle from low-lying pastures, but all of those management practices are labor-intensive and only a temporary fix. Breeding for the behavior would be much more efficient.

But breeding for one trait can sometimes produce unintended consequences in others. The researchers are looking closely at that possibility, and have so far found no correlation between hill-climbing behavior and undesired traits.

“We’ve looked at calf-weaning weights, pregnancy rates, blood pressure, even disposition,” Bailey said. “We had one theory that hill-climbing cows tended toward the meaner end of the scale, but that’s not the case.

“Some cows just prefer to climb more than other cows,” he said. “And if breeding can move the bell curve in that direction, management tools like fencing and herding will be much more effective.”

Dick and Erin Evans said they would happily add those genetic traits to their carefully selected herd, and not even to increase the numbers they could graze. They’re excited for the benefits widely distributed grazing could bring to the land itself.

“A lot of people talk about range and a lot of people take about livestock,” said Erin Evans, who has gone back to school to get a Master’s degree in range science at New Mexico State University. “Those and habitat for wildlife are all tied together. It’s all connected. If you’re creating a better environment, it works for the plant community, it works for your cattle and it works for the wildlife the land supports.”

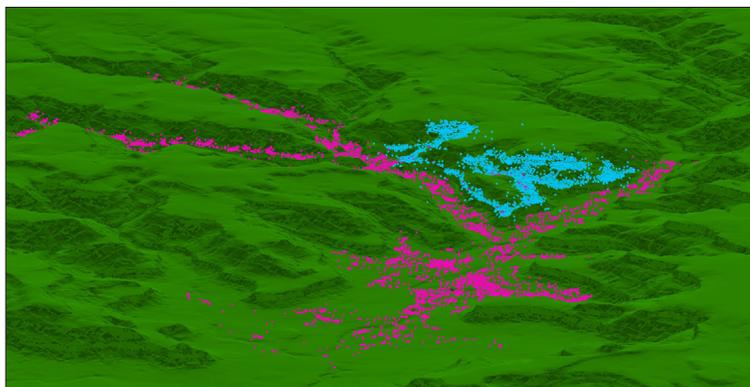
Where to Learn More

Annual and Final Reports:

mysare.sare.org/sare_project/sw15-015/

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The GPS tracks of two cows shows very different behavior.



High-residue farming describes cropping systems that reduce the volume of the soil tilled to maintain residue cover of the soil. No-till, strip-till, ridge-till, conservation tillage, and vertical tillage are all variations of high-residue farming.

Promoting High-Residue Farming to Conserve Soil

According to Andrew McGuire, Washington State University Extension, farmers in the irrigated regions of the far west have not adopted high residue farming (HRF) to any great extent. Challenges that may have slowed adoption include using HRF systems with surface irrigation; intensive crop rotations that include vegetables and other non-agronomic crops; and the relatively less urgent soil conservation issues in arid climates.

Farmers' interest in overcoming these challenges is growing due to needs for water conservation, rising interest on building soil quality, increased overhead irrigation, and a stronger focus on controlling wind erosion. McGuire observed that Extension and NRCS field personnel must adapt systems used in other regions to assist farmers with this major change.

McGuire designed his Western SARE Professional Development Program project, High Residue Farming in the Irrigated Far West, to bring together Extension and NRCS representatives from Arizona, California, Idaho, New Mexico, Oregon, and Washington

for a two-day conference to discuss the challenges of adopting HRF, how best they could help each other, and how best to reach farmers. Farmers from these states who are already using HRF also attended to guide and ground the discussions. Lastly, a training session on adult education was held to provide the most current research on what motivates adults to make large, significant changes and what methods could be used to increase adoption rates.

A significant result of the project was the establishment of a HRF network website that contains a listing of people and active projects, along with resources, including an annotated literature review. To promote further collaboration, the network has held three conference calls, with new representatives from Colorado and Wyoming, discussing several projects, including simultaneous events with streamed keynote speakers on soil health, a regional tour of HRF projects, and a regional HRF Under Irrigation conference.

Participants in the project found it worthwhile. A survey of

meeting participants reveals:

- 75% reported a significant increase in awareness of HRF Extension activities, research activities, and grower motivations and challenges.
- 65% reported a significant increase in awareness of adult education methods and strategies.
- Regarding HRF Extension activities, 41% reported plans to start new efforts, with another 42% planning to increase current efforts.
- 36% reported planning to start new HRF research activi-

ties, 54% planned to start new collaborations with other states, 42% planned to start new collaborations within their states.

Where to Learn More
HRF network website:
westernhrf.wsu.edu

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Eight Graduate Student Projects Funded for 2017

Western SARE approved funding for eight graduate student projects that will find solutions to challenges faced by local producers. The funded projects total over \$196,000 in the 2017 grant cycle and are located in five Western states.

Regional Coordinator Rhonda Miller states, "Western SARE is pleased that we can support a diverse group of projects across the region. Funding graduate student projects is an important investment in tomorrow's ag leaders."

The funded projects are:

"Biodegradable Plastic Mulches: Performance, Degradation, and Impacts on Agroecosystems," Graduate Student: Henry Sintim, WA; \$23,063.

The overall goal of this project is to improve the productivity and environmental sustainability of specialty crop production. The graduate student will achieve this by 1) evaluating the performance of different biodegradable plastic mulches and 2) assessing their potential effects on agroecosystems. In addition, a model will be developed that could be used to predict soil water and heat flow, as well as crop growth and productivity under biodegradable mulch production systems at any location.

"Introducing Organic Quinoa and Grain Cropping Systems in the Palouse," Graduate Student: Rachel Wieme, WA; \$24,954.

By conducting integrated on-farm crop rotation research

and education, this project will fill critical knowledge gaps that exist regarding dry-land organic crop rotations, including the introduction of quinoa. Project objectives include measuring the following agroecosystem components: 1) crop yield and quality, 2) insect pests and their natural enemies, 3) weed populations and management, 4) soil fertility and other properties, 5) interactions with arbuscular mycorrhizal fungi, and 6) economic performance.

"Evaluating the Exclusion and Non-target Effects of Shade Netting on Apple Orchards," Graduate Student: Adrian Marshall, WA; \$23,678.

Although nets may successfully exclude the brown marmorated stink bug (BMSB) in apples, they could disrupt biological control by preventing natural enemies from entering the orchards. Successful implementation of netting could ensure long lasting and highly productive orchards, especially if shade netting can be used to prevent BMSB from establishing. The graduate student aims to answer this question with three main objectives: 1) determine the effectiveness of different shade net structures in excluding stink bugs, 2) quantify the effects of netting on natural enemies and secondary pests of apple orchards, and 3) inform growers and the public on the role of netting in sustainable orchard systems.

"Management of Fusarium Wilt of Strawberry through Crop Rotation," Graduate

Student: Peter Henry, CA; \$24,999.

Fusarium oxysporum f. sp. *fragariae*, causal agent of Fusarium wilt of strawberry, is now found in all major strawberry production areas, and methyl bromide, a key ingredient in fumigation mixtures, is expected to be unavailable by 2017. Some strawberry cultivars are resistant to Fusarium wilt, but most commonly grown cultivars are susceptible. Therefore, there is an urgent need to identify rotation crops that will not support growth of the pathogen. This project will help determine which crops are least susceptible to infection and enable growers to optimize a disease prevention strategy they already employ.

"Sustainability of Dormant Season Grazing: Does Protein Supplementation Impact Beef Cattle Performance, Soil Organic Matter, Vegetation, and Residual Cover for Wildlife?," Graduate Student: Samuel Wyffels, MT; \$24,970.

Little is known about the effects of supplementation on winter grazing behavior and its potential impact on vegetation, soil, and rangeland sustainability. Information relating supplementation strategies to individual grazing behavior and vegetation use on dormant forage is lacking. Thus, the intent of this project is to examine the comprehensive agroecosystem responses of dormant season grazing, with and without supplementation, on cattle performance, soil organic matter, vegetation use, and residual cover of

rangelands.

"Effects of Subsurface Micro-irrigation on Water Use Efficiency and Grapevine Growth," Graduate Student: Xiaochi Ma, WA; \$25,000.

Owing to moisture losses associated with surface evaporation and weed growth under conventional surface irrigation methods, development of more highly efficient irrigation methods are necessary for grape growers to meet their water use challenge. A new subsurface micro-irrigation strategy was recently introduced which uses hard tubes placed vertically into soil to deliver water directly into the lower root zone of certain perennial crops such as grapes. This project is anticipated to clarify the advantages of the new irrigation method for growers when coping with water scarcity and also gain a better understanding of growth capacities of grapevines under water stress.

"Cattle Diets and Performance: Enhancing What We Know with Advanced Plant DNA Technology," Graduate Student: Tamarah Plechaty, WY; \$24,970.

The goal of this research is to provide ranchers with an accurate assessment of the differences in cattle nutrition, which is a function of what cattle eat, in an adaptive rotational grazing management strategy compared to a traditional continuous season-long grazing strategy. By collecting

ECO LABELS: Benefits and Problems for Growers

(continued from page 1)

sustainable ag certification programs do improve farming practices, including IPM adoption.

“Absolutely yes, there’s good evidence eco labels increase IPM adoption and reduce pesticide risk,” said Tom Green, director of the IPM Institute of North America, which has created the standards for multiple certification programs. “One thing that happens very quickly in these programs is that you bring up the bottom. Growers not using IPM who come into the programs have a lot of up-front work to do to comply, and you’ll see a pretty dramatic difference one year to the next with these growers.”

Eco-label and sustainable-certification programs vary in their requirements, but most have a list of required and prohibited practices. In addition, most programs also include a longer list of practices or goals growers can choose from to earn points or credits toward the certification standard, enabling participants to enact the practices most relevant to their farms or ranches. Compliance is documented through a combination of paper audits and on-site inspections.

A list of prohibited pesticides is one feature that reduces pesticide risk in many of the programs. The United States Department of Agriculture’s Certified Organic program is perhaps the most restrictive (and well known), but many other programs also limit or ban the use of the most-toxic pesticides.

Last summer, the Administrative Council of the Western Sustainable Agriculture Research and Education Program learned about the Sustainability in Practice, or SIP Certified program, during a visit to a SIP Certified vineyard. That program began in California’s Central Coast, and its banned pesticide list is drawn from the California Department of Pesticide Regulation’s most hazardous categories, including those known to cause cancer or reproductive harm, as well as toxic air pollutants and water contaminants.

“We started the program in 1998 as a self-assessment of vineyard farming practices,” explained Beth Vukmanic Lopez, manager of the program. “And we really saw the people doing the self-assessment improve over time. They’d compete with themselves, and improve their practices to get the extra five points.”

It evolved into a certification program 10 years later.



“In the early 2000s, we started seeing a lot of green claims in the marketplace and wanted a way to differentiate ourselves,” she said. “Ultimately we chose the certification program as a means of

enacting this, so people could see all our rules online.”

Knowing a program’s rules is important because the programs are different and promote different outcomes. Organic rules focus on restricting the use of synthetic fertilizers and pesticides. Salmon Safe in the Northwest was designed to protect the region’s waterways and wildlife. And SIP and Lodi Rules are broadly focused and include standards ranging from air quality to farmworker protection.

Jim Strollberg of Maverick Farming and Hampton Farming manages about 1,600 SIP-certified acres for multiple owners, as well other farms that aren’t in the program.

“The SIP program makes you more cognizant of what you’re using and how you’re spraying,” he said. “It makes sure you have to justify all the sprays. On non-SIP properties, a couple of those ranches definitely spray more material than I do on adjacent ranches or others nearby, to get very similar pest-control results.”

Benefits for Growers

Participating in an eco-label program costs growers money, so those that sign up have calculated the benefit as worth the cost. Most cite three benefits: access to certain markets or buyers, improvements in their own farm operations and regulatory relief as actual quantifiable benefits.

“When I would speak with growers, I’d tell them this is going to be the price of getting on the shelf,” explained Steve Balling, a Western SARE Administrative Council member who retired earlier this year as the director of agricultural research, environment and sustainability for Del Monte Foods. “More and more it’s happening, especially in the fresh market.”

Whole Foods Market’s Responsibly Grown program is a good example. With “good,”

“better” and “best” subcategories, Responsibly Grown set minimum standards and anyone wanting to sell to the store has to achieve them to be considered.

It’s happening in wine as well, Vukmanic Lopez said.

“You definitely see it in Europe and Canada, and a lot of restaurants are eco focused,” she said. “You’ll see whole wine lists that are eco focused – organic, biodynamic or sustainably certified.”

Growers can use the programs to improve their own operations and profitability.

“There are absolutely economic benefits,” said Steve McIntyre of McIntyre Vineyards, one of the original SIP Certified growers. “It’s not always altruism. I look for ways to do two tasks at once, which lowers my fuel costs and reduces pollution. It’s faster, better and cheaper.”

Strollberg also uses the program rules as a good-farming guide.

“Educationally, it’s a big help,” he explained. “It’s a pretty good roadmap of options you can use, and it does help you think about what you’re doing. It makes sure you’re doing things with a purpose, and documenting them.”

Participating in certification programs can especially benefit smaller growers, Balling said.

“Growers can use these programs to improve their fundamentals,” he explained. “The big growers already have the data, but the smaller guys collecting it for the first time can really benefit.”

In some cases, participating in a certification program can bring regulatory relief. SIP growers, for instance, are required to do 10 of the 12 practices the local water quality control board needs documented, and accepts the certification as proof of those.

“It’s hugely reduced the amount of paperwork growers have to do for the water board,” Vukmanic Lopez said. “The work’s already been done and certified by outside inspectors.”

Negatives as Well

But for all the positives, eco labels and sustainability programs have their downsides and critics.

“I’m not particularly supportive,” Balling explained. “They add a generally unnecessary expense to a grower’s production system, without fair compensation. Most, other than

ECO LABELS: How do you make the criteria meaningful?

(continued from page 9)

organic, generate zero dollars for growers. They also add to the burden on growers, particularly the paperwork burden. Growers want to be out in the field, not sitting at a computer.”

The cost and number of programs a grower participates in – sometimes without really wanting to – are another issue. Large growers who sell to a number of companies have to meet the requirements of each, keep records for each and be inspected for each, which can lead to audit exhaustion.

“It’s a grower’s nightmare,” Balling said. “You can be subject to 10 or 12 inspections a year, and that chews up a massive amount of time and money.”

A Crowded Space

Another problem with eco labels is that there are simply so many that consumers have a hard time knowing what they mean. Is Salmon Safe better than Responsibly Grown? Is Lodi Rules superior to SIP Certified? How does organic compare?

Those aren’t easy answers. Consumer Reports has created a food-focused website at greenerchoices.org that compares labels and their requirements. It’s a useful comparison tool, but misses some critical information.

Salmon Safe, the certification program in the Pacific Northwest, gets downgraded because it doesn’t “prohibit toxic pesticides.” Which is true – to a point. Salmon Safe, which focuses on water quality and protecting salmon from pesticide harm, doesn’t ban certain products outright, but it does specify what can be used near streams and how it can be applied.

And it’s had some remarkable successes. In the Milton-Freewater area in eastern Oregon, growers adopting Salmon Safe helped reduce pesticide pollution significantly.

“We were able to reduce the maximum residue limits in water from 700 times higher than the benchmarks to below the benchmarks and that’s been sustained for the last nine years,” said Clive Kaiser with Oregon State University Extension. “Milton-Freewater is a shining example of what’s achievable when growers work together.”

The Greener Choices site also generally recommends organic, without noting some of the limitations of that certification program. For instance, organic rules allow one field on a farm to be managed organically, while other fields on the same farm can be managed with any registered pesticide. Salmon Safe requires whole farms to meet its certification

standards, because the whole farm is part of the watershed it’s trying to protect. And SIP has standards for farmworker protection that prohibit some dangerous pesticides that growers could use on non-organic parcels.

Making Programs Meaningful

Whatever their views on eco labels overall, people do agree that the certifications should be meaningful. Balling, for instance, generally a critic of the programs, joined the board of Protected Harvest, a Wisconsin-focused certification program, to try to ensure that it provided actual on-the-ground benefits.

“We need to try to develop the metrics that work best and that are relatively simple for growers to use so we don’t burden them with regulations that don’t benefit the environment,” he said.

Green said the IPM Institute put a lot of effort into designing programs to do just that.

“We really work hard to put programs together that make a difference and don’t just create busywork for growers,” he said. “We translate science, land-grant-university work and research, into criteria for these eco labels.”

Those criteria fall into two basic categories – practice-based criteria or outcomes-based criteria. Practice-based criteria ask about specific farming practices: Do you scout for pests? Do you use thresholds to decide when to spray? Outcomes-based criteria, also known as performance-based criteria, doesn’t ask what you did, it asks for measurable end results: How much water did you use per unit of crop? How much fertilizer did you use per unit of yield?

“I think with practice-based, it’s pretty easy to cheat the system,” Balling said. “In outcomes-based programs, we don’t care how you did it, but did you reduce water use? Did you reduce nitrogen use? Are you keeping nitrogen out of groundwater, and nitrogen and phosphorus out of rivers and streams?”

It’s creating outcomes-based criteria that gets tricky.

“What’s a performance metric for IPM?” asked Kevin Scrivner, who is on the Vinea Sustainable Trust and a Salmon Safe partner. “It’s a delightful challenge. How do you correlate IPM criteria into performance measures, not practice measures?”

For Scrivner, it’s not an academic question. He’s designing a new certification program for vintners in the Walla Walla Valley of eastern

Washington and Oregon. They’ve been certified by the LIVE Program – Low-Input Viticulture and Enology – but feel that program is too geared toward the cooler, wetter Willamette Valley than their conditions.

And that gets back to having so many certifications that it’s hard to know what matters.

“I said years ago we should expect complete chaos in the certification space for a while,” Balling said. “There are too many people pulling in too many directions.”

Balling and others foresee a consolidation in the future, where several programs combine and align their criteria. Others predict a continued proliferation of locally meaningful programs, like Eco Apple in the Northeast or Salmon Safe in the Northwest. The future could bring both, where large processor-based programs align, and fresh-market programs localize.

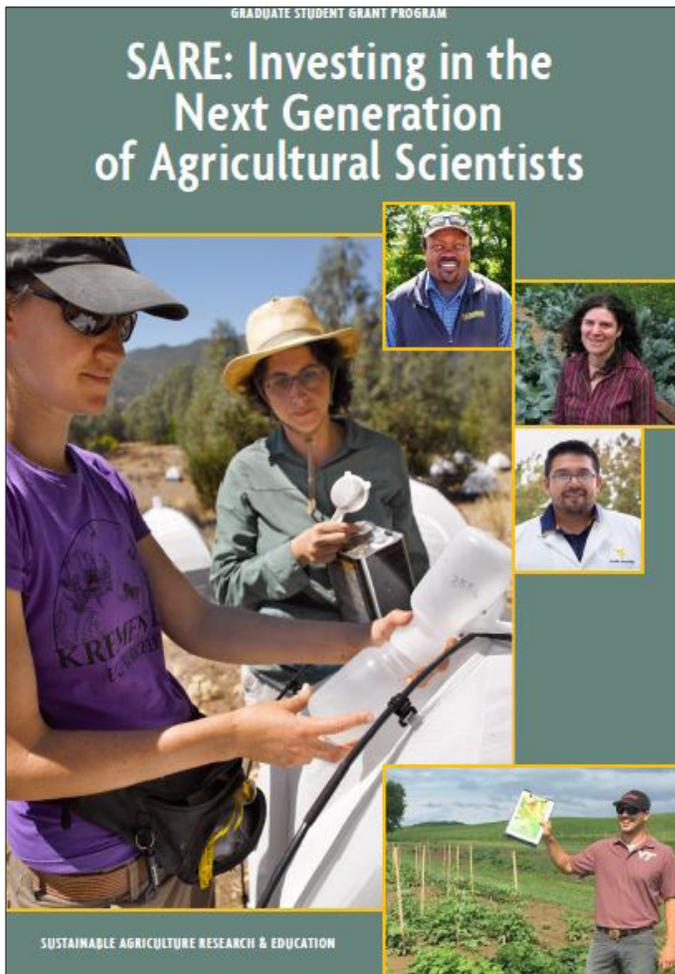
The good news for consumers is the programs publish their criteria, so people can research them and choose products whose certifications are meaningful to them. People most concerned about synthetic pesticide residues can choose certified organic or Demeter Biodynamic. Folks most concerned about protecting wildlife can choose Salmon Safe. Those concerned about farmworker safety can look for Equitable Food Initiative-certified produce. And those looking for overall sustainability can look for broadly designed programs like SIP and Responsibly Grown.

Another thing consumers can do vote with their pocketbooks: Ask stores to stock products with meaningful eco labels, and buy those products even if they cost a bit more. That directly supports the growers who participate. Finally, consumers can educate themselves, and others, using factual information from university extension services and other science-based sources.

“I feel for the consumer,” Scrivner said. “It’s not a simple situation.”



Investing in the Next Generation of Ag Scientists: The SARE Graduate Student Grant Program



The challenges that farmers and ranchers face today are growing more and more complex, and the cornerstone of the SARE program is the idea that sustainable solutions to these challenges arise when scientists, educators, and producers work together to test theories in real-world, on-farm situations.

However, for this approach itself to be sustainable, there must always be a strong pool of agricultural scientists rising through the ranks who believe in it too—professionals who know how to use collaborative, applied research to address the real-world needs of farmers and ranchers.

This is precisely why SARE offers research grants through its unique Graduate Student Grant program, and why we are proud to say we hit a major milestone in 2016 when we awarded our 600th Graduate Student grant. Since 2000, the four SARE regions have awarded a total of \$7.2 million to 600 graduate students.

In this report, you will learn about the considerable impact of this investment on both the students and sustainable agriculture through the stories of eight grant recipients.

Download report and watch one Graduate Student grantee describe how the SARE program was integral to her career: sare.org/Learning-Center/SARE-Program-Materials/National-Program-Materials/Investing-in-the-Next-Generation-of-Agricultural-Scientists

GRAD: Eight Western projects funded

(continued from page 8)
data, the impact of grazing strategy on animal nutrition and behavior will give ranchers a better decision-making tool when deciding what grazing strategy will help them meet their operation objectives.

“Navajo Spinach: Improving Seed Germination from Wild Populations Gathered across Native Lands of the Four Corners,” Graduate Student: Rea-

gan Wytsalucy, UT; \$24,969.

As Native American cultures became more integrated into western societies, some traditional agriculture practices have been abandoned. A focused effort on re-establishing local food production of traditional crops and exploring underutilized food sources of historical significance are required to address malnutrition and community food security. The focus of this

project is to 1) better understand the germination and early growth of Navajo Spinach from distinct populations found across the Four Corners region of the Southwestern U.S. and 2) to begin compiling a record of its historic uses.

Full descriptions of each project can be found at westernsare.org/Projects/Funded-Projects-by-Year/2017-Graduate-Student-Projects.

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Western Sustainable
Agriculture, Research and
Education Program

Collaborative Grazing for Sage-Grouse Video

This video focuses on how grazing management affects sage-grouse survival. Better understanding is key to increasing sage-grouse populations.

The project, *Collaborative Grazing for Sage-Grouse Project in the Centennial Valley*, received funding from Western SARE in 2013, and the video is just one part of this project. According to Principal Investigator Bok Sowell of Montana State University, the decline of sage-grouse over the years has been attributed to cattle grazing, even though there are no controlled, replicated studies which have examined this relationship. This project is test-

ing the direct effects of grazing on sage-grouse habitat, nesting success, hen survival, and brood survival.

Watch video: westernsare.org/

[Learning-Center/SARE-Project-Products/Videos-and-Webinars/Collaborative-Grazing-for-Sage-Grouse-Centennial-Valley](http://westernsare.org/Learning-Center/SARE-Project-Products/Videos-and-Webinars/Collaborative-Grazing-for-Sage-Grouse-Centennial-Valley)

