

Simply Sustainable

Grants and Education to Advance Innovations in Sustainable Agriculture



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Hawaii Professional Development Program Supports Priority Areas

Through effective use of workshops, social media, and publications, the Hawaii Professional Development Program (PDP) successfully disseminated in 2016 research-based information to support three priority areas, identified by Hawaii's agricultural professionals in the 2015 Hawaii-Western SARE Needs Assessment Survey: 1) pest management, 2) plant / soil nutrition, and 3) food safety.

Through post-event evaluations, the state co-coordinators, Ted Radovich and Jari Sugano, found that one hundred percent of program participants rated the Hawaii PDP program good to excellent based on usefulness of information. One hundred percent of participants indicated that events improved their awareness of sustainable and organic agricultural topics covered and improved their knowledge in new areas.



Tour leaders at the University of Hawaii.

Importantly, expanded partnerships across University of Hawaii – College of Tropical Agriculture and Human Resources (UH-CTAHR) accelerated efforts at adapting sustainable agriculture

systems to tropical ecosystems, by crossing departments, linking with community colleges, agricultural NGOs, and local agricultural consultants.

See HAWAII, page 6

New SARE Research Asks: Are Birds an Economic Pest on Dairies?

By Steve Elliott
Western IPM Center

That birds can be a pest for fruit growers is no surprise. But what about to cows?

Are birds a pest on dairies? Do they bother the milking cows? And do they cause economic losses?

Using funding provided by the Western Sustainable Agriculture Research and Education program, researchers in Washington state are

See BIRDS, page 13



Birds getting the first pick of feed intended for dairy cows.

More Funding Means More Support for Western Producers and Researchers

Supporters of Western SARE,

The SARE program recently received the good news that it was given a \$2.3 million increase in funding in the Fiscal Year 2017 spending bill. This 9% increase brings total SARE funding to \$27 million, the highest level in the program's nearly 30-year history.

In recent years, USDA has only been able to fund seven percent of qualified pre-proposals for SARE Research and Education grants. An ongoing frustration of the Western SARE Administrative Council and staff is the inability to fund all worthy proposals submitted by researchers, ag professionals, non-profits, farmers and ranchers. We see creative ideas with the potential to impact Western agriculture that would be important to get off the ground if we had additional funds.

With this increase, Western SARE will fund additional innovative, producer-based research, effective outreach and successful train-the-trainer programs. Exemplary projects will advance sustainable agriculture in the West and help producers improve their farming systems for increased profitability and natural resource stewardship.

Already, Western SARE is proud of our project portfolio. Just this February, our Administrative Council approved funding for over \$2.7 million in our Farmer/Rancher, Professional + Producer, Research and Education, and Professional Development grants programs.

The projects range from watermelons in Alaska to pigs in Guam; from spider mites in California to pasture-based organic dairies in Utah; from integrating livestock into cropping systems in Montana to developing grazing strategies in Nevada. The approved projects are indicative of the high quality planning that goes into developing research and outreach activities that meet the immediate needs of Western producers.

Please read summaries of all the projects at westernsare.org/Projects/Funded-Projects-by-Year/2017-Projects.

In addition to funding exceptional projects under existing programs with the increased funding, our Administrative Council, state coordinators and staff are discussing new undertakings we should consider to support Western agriculture even more. This could include new grant programs, more evaluation of impacts and change, improved and faster outreach, or gatherings with our stakeholders. As we progress with our planning, we'll keep you updated on our decisions.

If you have ideas of how Western SARE can serve you and your audience better, please feel free to contact me to share your thoughts.



**WESTERN SARE
REGIONAL
COORDINATOR'S
COLUMN**

A handwritten signature in blue ink that reads "Rhonda Miller". The signature is fluid and cursive, written in a professional style.

Reducing Medusahead to Restore the Land

“Ranchers are hurting.”

That one thought is why Kip Panter, Research Animal Scientist at the USDA-ARS in Utah, is passionate about the collaborative work he, other Utah-based researchers, extension professionals, and ranchers have led to restore degraded grasslands. The inspired project team, studying at three ranches, found a “really good economical way to reduce medusahead and prepare the land for restoration.” This tool and other outcomes from their project led to the establishment of a larger scale project that will create an innovative grazing strategy to increase rangeland health and reduce the likelihood of crooked calf syndrome from over-ingestion of lupine.

The tool: using targeted grazing to clear the land of medusahead. The targeted grazing provides a sustainable seed bed preparation that requires only minimal disturbance to allow the planting of improved grasses and forbs. Using this method, the rancher can fully utilize the rangeland the year of the seeding and, following one year of rest for seedling establishment, then utilize the newly seeded pasture the fall of the second year.

Livestock producers in the Channel Scablands of eastern Washington confront degraded grazing lands from previous overgrazing, worsened by frequent wildfires and subsequent invasion of annual grasses and



Grazing is one strategy to restoring rangelands.

undesirable forbs. Medusahead and cheatgrass have pushed out native grasses. Without the native plants, cattle turn to eating lupine which in turn causes crooked calf syndrome (CCS). In one county alone, 4,000 calves were affected with CCS in 1997, and many had to be destroyed, with some ranchers losing as much as 100% of their calf crop. One rancher has data that showed his stocking rate throughout his ranch had dropped by more than 50% since 1990, which he attributes totally to the invasion of medusahead.

Two possible solutions are training cattle to eat medusahead and to fully restore the degraded lands allowing for the establishment of plant species with better nutrition.

Ranchers and researchers at ARS and Utah State University

partnered in looking at ways to beat back the invasive species and grow new forage. Post-doctoral scientist Clint Stonecipher states that it is not enough to get rid of medusahead and other invasives; we need to look at full restoration. “There is not one silver bullet. There will be different tools used. Natural systems are complex.”

In the first project, “Rangeland Restoration on the Channel Scablands of Eastern Washington,” two grasses along with forage kochia varieties were identified as ones that can be established on the harsh rangeland. Establishment of improved grasses mixed with forage kochia appears to reduce medusahead reinvasion over the short-term. As cattle eat more forage kochia, there is a reduction in crooked calf syndrome.

The outcomes from the research conducted on this small acreage Professional + Producer project were promising enough to lead to the larger scale Research and Education project “Training Cattle to Graze Medusahead and Avoid Velvet Lupine: A New Tool to Sustain the Economic Viability of Livestock Operations in the Western U.S.” The enthusiastic response from stakeholders who were very receptive to the original work also led to an increase in acreage being used for research and demonstration.

Juan Villalba, Associate Pro-

fessor at Utah State University, and his team are now investigating whether the nutrients provided by establishing the identified grasses and forage kochia provides the appropriate nutritional context to enhance use of medusahead and reduce use of lupine by cows and their calves, and by calves later in life. The outcomes will provide ranchers with low-cost and environmentally sound tools to enhance ecosystem services, including biodiversity and improved animal nutrition, welfare, and health. Ranchers have selected areas for experiments and demonstration sites on their ranches, provide feedback on the results, and integrate results obtained with their “real life” experiences.

In its first year, the project is generating interest. Villalba states, “Producers in the team are already applying the approach at larger scales in their operations.”

Ranchers and other stakeholders who would like to learn more are encouraged to attend a field day, Management Strategies for Lupine and Medusahead on Private Range Lands. It will be held at Brandon Spencer’s Figure 50 Ranch, 3215 E. Harder Road, Ritzville, WA, 99169, Wednesday, June 28, 2017, 10 am to 2 p.m. There is no fee but please RSVP by calling 509-725-4171 by June 16.

Discussion Topics: Crooked Calf Syndrome, Rangeland and Grassland Improvements, and Potential Seed Applications for Improvement, Reducing Lupine and Medusahead Increasing Bio-Diversity.

For more information about this event contact Paul Kuber by phone at 509-725-4171 or by email at pskuber@wsu.edu.

Where to Learn More

Annual and Final Reports

mysare.sare.org/sare_project/ow13-005/

mysare.sare.org/sare_project/sw15-003/



Seeding desirable species can improve range quality.

Soil Foodweb Workshop Makes the Economic Case for Improving On-Farm Soil Health

At her sold-out soil health workshop speaking to an eclectic audience with representation from farmers, ranchers, consultants, ag professionals, landscapers, gardeners, vintners, scientists, faculty, and students, Dr. Elaine Ingham got the audience's attention from the very beginning by claiming that on a 300-acre farm, she can save the farmer approximately \$200,000 in the first year.

How? "Pay attention to what Mother Nature is telling you. She tells you daily what's going on in your soil. She gives signals. You want this early warning system."

Ingham, founder of Soil Foodweb, Inc., captivated her audience during a whirl-wind, all day workshop that addressed soil foodweb principles, soil organism identification, how to make aerobic compost/humus to enhance soil life, making and applying biological extracts and teas, and case studies in improving soil ecosystems.

The participants left with a fundamental understanding of the way soil biology drives plant nutrition and promotes agricultural health. The workshop was hosted in Morro Bay, California, by Cal-Poly SLO's Agriculture, Food and Environmental Sciences' Center for Sustainability as part of their Western SARE Professional Development Program project.

The soil foodweb is comprised of an incredible array of organisms that range in size from tiny one-celled bacteria, algae, fungi, and protozoa, to more complex nematodes and micro-arthropods, to the visible earthworms, insects, small vertebrates and plants. As these organisms eat, grow and move through the soil, they help clean



Nathan Brickman

Dr. Elaine Ingham at the Soil FoodWebs workshop.

water and air, and release nutrients for healthy plants. Understanding who they are and how they work together enables producers to harness their power for more environmentally-sound and economical management of a wide range of agro-ecosystems.

Three beginning farmers from Salinas, California spent the day at the workshop with the hope of learning how to enrich their soil without the use of chemicals. Nicolas Ayala and Manual Cervantes are confident that all needed nutrients are in the soil and that they were learning the steps to get them out. Troy Clark believed he was learning what he needs to in order to make custom blends of compost.

Center director, Hunter Francis, noted, "Elaine Ingham has been a pioneer in bringing awareness to the important role of biology in soil health. Interest in soil health is now at an all-time high and has the

potential to transform agriculture in this century. We are very grateful to SARE for helping us to bring Dr. Ingham to the Central Coast and for support of our soil health education programs overall."

The Center for Sustainability is in the process of hosting three free, on-farm Soil Health Assessment Field Days following this workshop. The next one will be held June 22 at Full Belly Farm, Guinda, CA.

For information and to RSVP, please visit: cfs.calpoly.edu/soils-workshops.html.

Where to Learn More

Project reports

mysare.sare.org/sare_project/ew16-026/

Soil Foodweb
soilfoodweb.com/

Tapping into Nature's Free On-Farm Services

Conference Focuses on Functional Agricultural Biodiversity

Knowing that bringing natural diversity to a farm can help boost production and benefit the bottom line is just the beginning. The next level is knowing what plants to incorporate, insects to encourage and habitat to install.

Reaching that next level – teaching farmers specific tactics for bringing functional agricultural biodiversity to their farms – was the goal of a one-day conference in March funded by Western SARE and organized by the Functional Agricultural Biodiversity Work Group.

The day's program was drawn directly from a survey sent to growers and conservationists across Oregon, Washington, California and Idaho who have been involved with the work group, said Gwendolyn Ellen from the Farmscaping for Beneficials Program at Oregon State University.

"They wanted to know the specifics about habitat installation on farms and what native plants might work in their specific agricultural ecosystem," she said, "And they want to know if what they're doing works."

Laurie Mooney was one of the growers who attended. Mooney is a landscape designer for Pacific Foods Company, which has 20 different organic farm sites around Oregon. A key role of her job is ensure that each site has something blooming all the time.

"Those year-round blooms are helping our pollinators which in turn are helping our crops and helping our animals and keeping

"They wanted to know the specifics about habitat installation on farms and what native plants might work in their specific agricultural ecosystem."

the agro-ecosystem on every site we have health," she said.

For Mooney, one takeaway from the conference was using landscape cardboard in preparation for planting a hedgerow of native plants.

"A lot of times hedgerows may look great the first year but it's not sustaining itself because weeds might take over," she said. "I'm definitely planning on trying laying cardboard and putting mulch over it. I'm planning on doing that in May, letting it sit through the summer and doing my hedgerow planting in the fall and winter."

One of the ecosystem services on-farm biodiversity can provide is pest management, explained Mace Vaughn, the pollinator conservation program co-director at the Xerces Society and a speaker at the conference.

"When you grow a single species over a large number of acres, you're going to have pests come in that do really well there," he said. "So if we can create habitat that brings



Steve Elliott, Western IPM Center

Insect displays at the conference.

in predators or parasites that attack those crop pests that really helps, in all cropping systems."

Speakers at the conference also focused on plant selection and the best time to plant hedgerows and other habitat and ways to encourage beneficial insects for pollination and pest management. A key concept throughout the day was appreciating the complexity of interactions going on in an agro-ecosystem, looking for ways to achieve multiple benefits from new habitat plants or conservation decisions.

Christmas-tree farmer Terry Muilenburg of Green Valley Farms of Oregon has been planting cover crops between his tree rows for 30 years to prevent soil erosion and attract beneficial insects.

"I want to do a better job of what I've been trying to do," he said. "I want to know more about native plants. I've always planted grasses because they're easy to manage, and every five rows or so I'll plant something like white clover. But maybe there are some other things I could be doing, and that's why I'm here."

Where to Learn More

Annual and Final Reports:

projects.sare.org/sare_project/ew15-014/



Hedgerows provide buffers from neighboring fields and habitat for beneficial insects.

Gwendolyn Ellen, Oregon State University

HAWAII: Highlights and Impacts of the PDP Program

(continued from page 1)

2016 saw yet stronger alliances with partners at the community colleges and public and private agencies.

Through increased educational opportunities and research-based information, more extension faculty are becoming affiliated with the umbrella UH Sustainable and Organic Agriculture Program (SOAP) as topic leaders, obtaining research funding and promoting the use of sustainable agriculture practices statewide.

Success in obtaining extramural funding has improved with data and products generated by Western SARE PDP support. Topic leaders within SOAP are expanding and diversifying. Members, especially young ag professionals, are actively engaging in community outreach and



Coffee berries.

obtaining extramural funding to transfer new discoveries into the farming community via workshop presentations, newsletters, and articles in the Hānai‘Ai newsletter.

Radovich and Sugano led the following activities for Hawaii’s ag professionals:

- Partnered with the Western Region, National Association of County Extension Agents to offer an agricultural professional improvement conference in Kona, Hawaii.
- Due to the geographical separation among ag professionals on the different islands, ensured that information and handouts from educational workshops were available on-line. The SOAP website is cms.ctahr.hawaii.edu/soap/Home.aspx.
- Distributed Hānai‘Ai: SOAP Statewide Newsletter quarterly to 1,095 people.
- Reached 1,492 followers on Twitter, 703 followers on Facebook, and 126 followers on Instagram.
- Regularly updated the YouTube Channel: www.youtube.com/user/HIsustainableAg



Coffee beans drying in the sun.

- Worked actively with beginning farmer programs. The newsletter also now features a special section for New Farmer information.
- The program, using Western SARE PDP funds and other leveraged funds, also hosted events:
 - Certified organic: One event for 25 growers and 25 agricultural professionals was held in November 2016 on a four-acre certified organic field.
 - Aquaponics: One educational event in 2016 with Western SARE and SOAP presentation materials and presentations.
 - Urban Horticulture: Provided training in sustainable

and organic gardening. Statewide Urban Garden Centers continues to feature organic and sustainable gardening demonstration area and offer public workshops related to these practices.

- Socially Disadvantaged/ Underserved Farmers: Supported the Local Immigrant Farm Education (LIFE) Program with educational events on a variety of topics from safe pesticide use to cultivar selection.

Reports from every state can be found at: westernsare.org/Professional-Development-Program/State-and-Protectorate-Pages.

Western SARE Welcomes New State PDP Coordinators

Western SARE welcomes six new PDP state coordinators.

The program’s state coordinators represent each of the thirteen states and four U.S. Pacific island protectorates that are part of the Western region. They assist in promoting sustainable agriculture locally through noncompetitive state grants operated through SARE’s Professional Development Program (PDP) and through promotion of SARE funded project results. Coordinators typically use their grants to conduct educational programs in sustainable agriculture.

Jim Freeburn, PDP program regional training coordinator says, “New people and new ideas are always great. I have had a chance to meet with and interact with all of the new state coordinators and SARE is very lucky to have a group of such dedicated and enthused individuals join our team. The addition of these new coordinators has strengthened our program and broadened our expertise.”

The new state coordinators are:

- Casey Matney, Alaska
- Sonja Brodt, co-coordinator for California
- Jeffrey Stackhouse, co-coordinator for California
- Kate Painter, co-coordinator for Idaho
- Marion Murray, Utah
- Chad Kruger, co-coordinator for Washington

Information and biographies for all state coordinators can be found at westernsare.org/Professional-Development-Program/State-Coordinators/Contact.

How Much We Take Abundant Food for Granted

by **Jim Freeburn**
Western SARE PDP
Coordinator

On a recent United Airlines flight, I picked up the *Hemispheres Magazine* out of the pocket on the seat in front of me. There was an interesting article about Bill Nye the Science Guy on page 48. From my perspective it provided a stellar example of how far Americans have distanced themselves from the need for food and food security.

In the beginning of the article, Nye said “We want three things for everybody in the world; clean water, renewably produced reliable electricity,

and access to the Internet – to worldwide information.”

All admirable, but does Nye really believe those three things are the foundation to success for humankind? I don’t believe that he forgot that we need food to survive, but the comment is a glaring example of how much Americans have come to take the world’s cheapest, safest, and most abundant food supply for granted.

I would offer him this challenge: Pick 10 people to all have water, food, and shel-

ter and 10 who will all have water, electricity, and the Internet. I’m willing to make a very large wager that 60 days later, the first group will be in much better condition than the second.

Americans now spend less than 10% of their disposable income on food. According to the latest data from the USDA Economic Research Service, we spend 5.5% of our income on food at home and 4.3% on food away from home. The efficiency of the American farmer and our processing/distribution sector allows our economy to flourish by freeing up a larger percentage of income to be spent on other consumer items.

But let’s take it a step further. The latest data from the USDA ERS shows that only 11.6% of that food dollar goes to the farmer or rancher. The other 88.4% goes to processing and distribution. Some examples cited were a loaf of bread at \$3.29 and only 10 cents goes to the farmer. On an 8 ounce bag of potato chips that also retails for \$3.29, the farmer gets an average of 16 cents. And the list goes on. In fact, if the average U.S. consumer spends 9.6% of his/her income on food, and the farmer gets only 11.6% of that, the farmer gets just over one percent of that consumer’s disposable income. That’s an amazingly small percentage for the great food and



Jim Freeburn

abundant choices we have.

Considering Maslow’s hierarchy of needs, physiological needs like food, water, shelter, and rest always come at the lowest level, well before we start worrying about the Internet and access to information. While Nye’s goal is admirable, it shows a mindset that fails to appreciate the daily need for food that is met here in America. Certainly, worldwide there are people who face challenges for those basic physiological needs. Here in the United States, we have the greatest agricultural producers in the world, and I hope we never take for granted the food security and the abundance we have in our food choices.

Perhaps SARE should invite Nye and some of his TV and science friends to our upcoming SARE-ATTRA Conference in St. Louis next April so they can see firsthand the dynamic farmers and ranchers that make us forget about the need for food on a daily basis.



Alaska Creates a Blooming Industry in Peonies

by Steve Elliott
Western IPM Center

Not very long ago, if you were planning a summer wedding or special occasion, one flower you could not get at any price was a peony. The elegant, lacy blooms simply weren't available.

Alaska changed all that.

Beginning in 2001, University of Alaska researchers, cooperative extension specialists and hard-working growers around the state built a brand-new industry in Alaska and made peonies a year-round crop. Western SARE funding helped along the way.

Here's how it happened – and what comes next.

Looking for an Export

The godmother of the Alaska peony industry is Patricia Holloway. Holloway, who is now retired, was the horticulturalist at the University of Alaska, Fairbanks, where she'd been testing different plants and different varieties to see what can grow under Alaska's unique conditions.

"Anything we could think of that might grow here we tried," she said. "Mostly for gardeners, because there's not a huge ag industry in our area. But we do have the third-largest air transportation system in the world, so I was always looking for something we could put on a plane and sell."

At the Georgeson Botanical Garden at the Fairbanks campus, Holloway and colleagues planted berry variety trails, ornamentals and dye-producing plants for weavers and spinners. They planted plants sold by the chain hardware stores they knew wouldn't survive because "there's educational value in showing people what dead looks like."



The first peony trials happened here.

And Holloway planted a peony variety trial. The flowers grew in private gardens in Fairbanks, and there are peonies planted in the early 1900s in Fort Yukon – which is above the Arctic Circle – that still bloom today.

About the same time, the University of Alaska Cooperative Extension Service held a conference.

"We'd asked farmers what they wanted to learn about and invited speakers to address those topics," Holloway explained.

One of the topics was the cut-flower industry, and one of the invited speakers knew peonies.

"He told us, 'You have something no one else has – peonies in July. No one else in the cut flower industry has a peony that blooms in July,'" Holloway recalled.

In the Northern Hemisphere, peonies bloom from late April into June. Southern Hemisphere production begins about October. The July-August-September gap meant peonies were a seasonally available flower. Seasonal flowers are less desirable than a flower available year around because wholesalers have to reintroduce seasonal flowers to their clients annually, and florists can't create always-available bouquet designs with them.

There was a gap in the market. But could Alaska capitalize on it?

Crunching the Numbers

Holloway's part of the research was testing varieties. She planted 30 different varieties in different locations: on the botanical garden's south-facing slope, in the nearby community of North Pole, where temperatures are even colder than Fairbank's 50-below winter lows, and at higher elevations.

A lot of the varieties worked. As long as there was an insulating layer of snow on the ground, the peony roots could survive the harsh winter and bloom again.

At the same time, other colleagues were looking into the economics of the industry, seeing if commercial production was viable. They looked into shipping and storage. They



Retired University of Alaska Horticulturist Patricia Holloway

Photos by Steve Elliott, Western IPM Center

explored potential pest issues. They looked for any information that would tell them peonies weren't worth pursuing.

They didn't find any.

"We needed people to start talking about this, so in 2004 we organized a conference in the middle of December in Fairbanks, Alaska," Holloway said. "And people came. At that first meeting, they organized the Alaska Peony Growers Association."

Ron and Marji Illingworth were founding members, and the task ahead was daunting.

"We had to figure out all the different components of an industry," Holloway said.

Taking the Plunge

The Illingworths are retired educators who had been farming in North Pole on a small scale to sell at the Fairbanks farmers market. Peonies were intriguing, so they did their own trials.

"We ordered 25 roots, which look like sweet potatoes," Marji said. "There were five of each variety, and for the most part, they lived. So we put in few more the next year. Then we'd put in a couple of hundred, maybe 250, at a time."

For the first three years or so, the plants produce one harvestable stem, but that number goes up. After about five years, growers can cut three to five stems per plant, sometimes more. And the plants could produce for 30 to 40 years – no one really knows in Alaska.

"We started small and went slow," Marji

PEONIES: Summer-Blooming Flowers Fill a Global Niche

(continued from page 8)

said. “And about year three we realized we had to learn how to market. Now we’re just starting to get a big harvest and have 12,000 roots in the ground.”

The Illingworths and other area producers formed a co-op, and expect to deliver 60,000 peonies this year.

“We can put together orders of 4,000 stems,” Ron said. “We’re going for the bigger wholesalers and larger quantities.”

Alaska peonies hit the market in 2007, and worldwide prices went up because peonies had become a year-round flower. The Alaska Peony Growers Association has also grown, from its initial 10 members to around 100.

“We’re probably more focused on education, training and developing our standards than any group of farmers you’ll find,” Marji said. “We have new growers’ schools and producers’ workshops and harvester training. We have an annual conference to share the latest research and address issues.”

Managing the Problems

Pests aren’t a huge issue generally in Alaska, but the state isn’t insect or disease-free either. Botrytis is the big disease of peonies, and early research shows 12 different species are present in the state, including one that’s unique to Alaska. Some peony roots imported into Alaska had tobacco rattle virus, which

is more of an economic threat to the state’s potato crop than its peonies.

“Three years ago, we had an outbreak of lygus bug where we hadn’t had any big problems prior to that,” Marji said. “The only entomologist around here is at the university’s Museum of the North, but he was able to identify what it was and we got it controlled.”

Aphids and cutworms can also cause problems, and University of Alaska researchers have a grant from the Western Sustainable Agriculture Research and Education program to begin developing integrated pest management protocols for peony producers. Western SARE has also funded research to identify the diseases of peonies in Alaska and the Pacific Northwest, and to evaluate the use of high tunnel greenhouses in their production.

Another issue is labor. There isn’t a migrant labor supply in the state, and available workers gravitate to the fishing industry in the summer because it pays more than ag work. The Illingworths and others rely on high school students for their critical harvest period.

“Once harvest starts, we pick at 6 a.m., 10 a.m., 2 p.m. and 10 p.m.,” Marji said. “We picked our entire harvest in 10 days last year.”

Infrastructure is another issue. The Illingworths have two cold storage chillers on their farm – peonies last longer in the vase if they



Peonies beginning to emerge.

spend two days after harvest at near-freezing temperatures – and four other nearby farms have built chilling facilities as well.

Together they serve as pack houses, inspecting peonies coming in from other farms, storing them at 34 degrees, then packing and shipping them onto buyers. The co-op could use a bigger cold-storage facility, but because they only need it three or four months a year it’ll be hard to recoup the expense as it sits empty most of the time.

But it may be worth it.

The Illingworths are already experimenting with different storage protocols to see how long they can store stems and still have good vase life once they’re delivered. Because even though Alaska does fill the summer gap, there can still be a few weeks in September or October where the supply is thin because the south-of-the-equator flowers haven’t quite reached market yet.

And people want peonies.

“Our price goes up the longer we hold them,” Marji said.

Where to Learn More

Annual and Final Reports

projects.sare.org/sare_project/gw16-021/

projects.sare.org/sare_project/ow15-030/

projects.sare.org/sare_project/fw10-007/



Marji Illingworth of North Pole Peonies.

Our Farms Our Future

The Next 30 Years of Sustainable Agriculture

Save the Date!

April 3-5, 2018

St. Louis, Missouri

Mark your calendars for an important national sustainable agriculture event one year from now, the Our Farms, Our Future conference, hosted by SARE and NCAT/ATTRA. This national event will bring together our diverse agricultural community: farmers and ranchers, agricultural professionals, agribusiness, students, researchers, scientists, agency representatives, and nonprofit leaders. Every decade, SARE hosts a conference to look at the progress of sustainability in agriculture, and to understand our trajectory for the future.

You can look forward to:

- Dynamic keynote speakers
- Engaging panel sessions featuring new and established farmers and ranchers
- Farm tours
- Project posters by SARE grant recipients
- Breakout sessions on such topics as cover crops and soil health, grazing for beef and dairy, urban agriculture, success stories in farming and ranching, and water challenges
- A pre-conference session led by NCAT/ATTRA for military veterans featuring previous Armed to Farm program participants

Stay up to date at: sare.org/Events/Our-Farms-Our-Future-Conference



Vineyard Team Tests Cover-Crop Assumptions



Stacie Clary, Western SARE

“Research is formalized curiosity. It is poking and prying with a purpose.”

– Zora Neale Hurston

Successful research projects often validate assumptions. But proving assumptions wrong with research can be just as beneficial to the grower, as a group of wine grape growers in California learned.

The planting of winter cover crops is a widely used management practice in California’s Paso Robles Groundwater Basin’s vineyards due to the many benefits, such as reduced erosion and nonpoint source pollution, increased soil organic matter, and improved infiltration of rainwater. However, declines in the groundwater basin and many years with little rain have growers looking closer at water conservation practices. These growers became concerned that the common cover cropping practices were depleting soil moisture that had been replaced by any winter rains. They questioned if the benefits realized from their cover cropping practices were worth the potential cost in terms of water that would have to be replaced by irrigation during the growing season.

To determine if this was indeed the case, the grower group Vineyard Team led a study investigating whether and to what degree the depletion of soil moisture over the winter by certain cover cropping practices might affect the quantity of groundwater pumped for irrigation to replace these losses. The researchers and growers started with the assumption that different species of cover crops would deplete soil moisture at different rates during the winter and early spring and that the timing and manner of terminating a grass cover crop would impact how much water was lost from the soil.

Instead, the project team found that neither the timing and method of terminating a grass cover crop nor the selection of cover crop species differed consistently in terms of soil moisture depletion compared to clean cultivation or fallow/no-till control, according to Craig Macmillan, Vineyard Team’s Technical Program Manager.

“These outcomes suggest that growers have the freedom to choose cover cropping management practices based on factors other than potential soil moisture depletion in this area during low-rainfall years,” states Macmillan. And in exit interviews of cooper-

ating growers, there was agreement with this assertion.

Over 40 growers attended two tail gate meetings to view the experiments and learn of the results. In addition, the Vineyard Team’s educational module attracted 28 visitors.

Where to Learn More

Annual and Final Reports:

mysare.sare.org/sare_project/ow14-032/

Fact Sheets

westernsare.org/Learning-Center/SARE-Project-Products/Fact-Sheets/Selecting-and-Managing-Vineyard-Cover-Crops-to-Reduce-Consumption-of-Net-Basin-Water

Educational Module

vineyardteam.org/virtual-tailgates/managing-cover-crops/

Western SARE Funds 34 Projects for \$2 million

The Western SARE's Administrative Council approved funding in February for 34 projects totaling over \$2 million in the 2017 grant cycle. Projects are located in 11 Western states and protectorates. The following projects were approved under the Farmer/Rancher, Professional + Producer, Research and Education, and Professional Development grants programs.

Full descriptions can be found at westernsare.org/Projects/Funded-Projects-by-Year/2017-Projects.

Alaska

Farmer/Rancher Grant: FW17-026, "Grafted Watermelon Production in Southcentral Alaska," Principal Investigator: Robert Brown, AK; \$19,999.

Arizona

Professional Development Grant: EW17-006, "Collaborative Training for Southwest Grassland Restoration under Environmental Uncertainty," Principal Investigator: Barbara Hutchinson, AZ; \$71,503.

Farmer/Rancher Grant: FW17-017, "Honey Bee Mating Control and Production Cost Analysis in Africanized Regions Using Instrumental Insemination," Principal Investigator: Jaime de Zubeldia, AZ; \$20,000.

Farmer/Rancher Grant: FW17-048, "Sustainable Alternative Livestock Feed System for Small-Scale Ranchers," Principal Investigator: Chelise Largent, AZ; \$20,000.

California

Professional Development

Grant: EW17-012, "Growing California Agritourism Communities," Principal Investigator: Shermain Hardesty, CA; \$73,010.

Professional Development Grant: EW17-014, "Building Knowledge of Cover Cropping Techniques for Increased Adoption Rates," Principal Investigator: Jamie Meek, CA; \$52,172.

Farmer/Rancher Grant: FW17-054, "Honeybee Regeneration Project," Principal Investigator: Aidan Wing, CA; \$19,851.

Professional + Producer Grant: OW17-043, "Beginning-farmer Research and Instruction on Growing in High Tunnels," Principal Investigator: Nathaniel Harkleroad, CA; \$49,999.

Professional + Producer Grant: OW17-054, "Advancing Sustainable Nitrogen Management in Strawberries through Participatory Research and Education," Principal Investigator: Gerry Spinelli, CA; \$49,937.

Research & Education Grant: SW17-060, "UAS (Unmanned Aerial System)-guided Releases of Predatory Mites for Management of Spider Mites in Strawberry," Principal Investigator: Elvira de Lange, CA; \$49,878.

Guam

Farmer/Rancher Grant: FW17-014, "My Boars Are In Iowa," Principal Investigator: Eddie Saure, Guam; \$13,597.

Farmer/Rancher Grant: FW17-050, "Ducks in a Row: Raising Ducks on Guam for

Production and Pest Control," Principal Investigator: Maegan Paloma, Guam; \$19,206.

Hawaii

Professional Development Grant: EW17-004, "Breadfruit Agroforestry for Pacific Island Revitalization," Principal Investigator: Craig Elevitch, HI; \$73,689.

Professional Development Grant: EW17-028, "Sustainable Agriculture Outreach Training for Hawaii's Immigrant Farming Communities," Principal Investigator: Marisol Quintanilla, HI; \$66,570.

Farmer/Rancher Grant: FW17-034, "The Mango Loa Project," Principal Investigator: Umi Martin, HI; \$19,878,

Professional + Producer Grant: OW17-037, "Successful Cacao Establishment through Improved Soil Management," Principal Investigator: Jean Brokish, HI; \$49,789.

Research & Education Grant: SW17-050, "Assessing and Sharing Breadfruit Management Practices," Principal Investigator: Noa Lincoln, HI; \$220,811.

Idaho

Farmer/Rancher Grant: FW17-039, "Saving Water and Improving Soil Health Through LESA, Cover Crops, No-Till, and Management Intensive Grazing," Principal Investigator: Pat Purdy, ID; \$20,000.

Farmer/Rancher Grant: FW17-055, "No-till Potatoes into Cover Crop, Using Modified Conventional Planter," Principal Investigator: Jeff

Parkinson, ID; \$20,000.

Montana

Professional Development Grant: EW17-011, "Integrated Parasite Management: Train the Trainer," Principal Investigator: Dave Scott, MT; \$74,189.

Professional + Producer Grant: OW17-009, "Soil Moisture Network and Tools - MT and WY Collaborative," Principal Investigator: Brad Brauer, MT; \$49,995.

Professional + Producer Grant: OW17-021, "Evaluating Nitrates and Forage Quality in Fall Re-growth of Annual Cereal Forages," Principal Investigator: Tracy Mosley, MT; \$19,972.

Professional + Producer Grant: OW17-026, "Montana Food Economy Initiative," Principal Investigator: Kaleena Miller, MT; \$50,000.

Research & Education Grant: SW17-016, "Soil Acidity Management of Long-Term No-till Fields in Montana to Prevent Crop Failure," Principal Investigator: Richard Engel, MT; \$264,016.

Research & Education Grant: SW17-080, "The Impacts of Integrating Livestock into Cropping Systems on Soil Health and Crop Production," Principal Investigator: Devon Ragen, MT; \$249,502.

Nevada

Professional Development Grant: EW17-025, "Grazing Strategy Indices for Range Quality Assurance," Principal

BIRDS: Wintering in Barns Increasingly Common

(continued from page 1)

trying to find out.

A substantial portion of Washington's 471 dairies are located in the northwest corner of the state, and that area has also seen substantial new acres planted in blueberries and raspberries, explained Washington State University dairy management specialist Amber Adams-Progar.

"As more and more berries came into the area, we started seeing more and more night roosts in barns on dairies," she said. "And the question is, 'Is this a problem, and if so, how can we fix it?'"

Birds – primarily European starlings – flock to the dairies during the winter months, roosting in barns, eating feed put out for the milking herds and contaminating that feed with their feces. In the spring, they largely leave the dairies and go back to being a problem for berry growers in the northwest corner of the state and grape growers in the Yakima Valley.

Adams-Progar and her team of researchers crafted a survey for the state's dairy farmers, asking about bird damage.

"There was a small SARE-funded survey a few years ago, but it just scratched the surface," she said. "Of the dairy farmers who responded, there was a wide variety in their estimates of the economic loss caused by birds, from \$1,000 a year to \$200,000 a year."

The new survey was designed in collaboration with U.S. Department of Agriculture research economist Stephanie Shwiff and is much more detailed and focused.

"We have to get a better grasp on this," Adams-Progar explained. "A \$1,000 a year loss isn't a significant problem for most operations, but \$200,000 a year is huge. We need a better understanding of the true costs and true economic impact."

The team has been conducting bird counts on 11 dairies, and just finished installing video cameras on four to monitor the behavior of the cows as they interact with the birds.

"I've been at farms where there were so many birds on the feed in the feed bunks that cows had to push them out of the way with their noses to eat," Adams-Progar said.

Does that bother the cows? And if so, does it bother them enough to have an economic



Marcy Bartelheimer, Oregon State University

A flock of starlings takes flight on a Washington dairy.

effect? As an animal behavior specialist, Adams-Progar wants to know.

The team is also looking at more directly measurable impacts. They're analyzing the nutritional content of new feed – what the cows should be getting – and comparing that to the nutritional value of the feed that remains after birds have picked it over. And they're looking at the type, quantity and effect of the pathogens introduced into feed through bird fecal matter.

If the results show there is a problem and quantifiable loss, the next step will be looking for solutions using an integrated pest management approach.

"Our goal is to test different bird-deterrence methods with a focus on ones that could be more environmentally friendly and sustainable," Adams-Progar said. "Can we use netting in barns to limit their entrance? Can we draw in more natural raptors and does that make a difference?"

The research team also includes Dr. Susan Kerr, a Washington State University regional dairy and livestock specialist and Karen Steensma, associate professor of biology and environmental studies at Trinity Western University, who is a dairy farmer herself. But it may expand in interesting ways.

An idea they're discussing with colleagues in computer sciences and engineering is an autonomous bird-scaring drone. It'd be designed to look like a bird of prey that would come out periodically, fly through the barns to chase off the starlings, then return to its charging perch.

"It'd be like a Roomba for birds," Adams-Progar said.

Where to Learn More

Annual and Final Reports:

projects.sare.org/sare_project/sw16-013/

Thanks, Bob, for All You've Done for SARE over 20 Years

By V. Philip Rasmussen
Regional Coordinator Emeritus

This April, Western SARE deputy regional coordinator and Utah state PDP coordinator Bob Newhall retired after more than 20 years with the program. Bob will remain a valued colleague, advisor, and friend. His hard work for sustainability as well as for soil, water and resource conservation will have a lasting impact on Utah, the West, and across the globe. We wish him well in his future activities, wherever they take him.

Bob is, without question, the most honest, trusted, hard-working, loyal, and versatile employee that I have had the honor to work with. Karl Kupers, Western SARE Administrative Council member, notes Bob's "great work ethic and huge commitment to his role in Western SARE."

I first became acquainted with Bob in 1981 when he called and asked to work with me as my graduate student. I soon learned that Bob had a deep personal passion for soil and water conservation in both the farm and ranch setting. He felt that we, as agriculturists, could do much better in enhancing sustainability by saving soil, preserving clean water, enhancing the profitability of farmers/ranchers. Hence, with this shared interest, we quickly became productive research partners in an enterprise of establishing no-till and reduced tillage across the State of Utah as part of his Master of Science research

After time with NRCS, where his supervisors there soon began to appreciate his amazing work ethic and tenacity to "get the job done," Bob joined me in a conservation tillage/sustainable agriculture program. That was the start of over 30 years of research and Extension collaboration.



Bob Newhall

In 1995, Bob joined Western SARE as the Utah state coordinator for the Professional Development Program and became the region's deputy coordinator in 1998. Last year, the Utah state program under Bob's leadership reached approximately 1,000 ag professionals in workshops, field days, and tours.

Bob was always loyal to the Western SARE program, the Western SARE Administrative Council, and his personal ethical standards. He was never afraid to speak out when something just wasn't measuring up to Western SARE's standards and goals as established by the Administrative Council. He would often say of proposed projects or ideas: "Where's the sustainability in this?" He always stood as a guardian of the goals of SARE.

He also has an absolutely incomparable work ethic, at all times and in all places. A memory I have that, to this day, sticks in my mind is of him driving a tractor pulling a no-till drill, seeding a research plot of Austrian peas on a ranch near Parowan, Utah. The conditions were horrible. There was a 30 mph blowing wind at 10 degrees Fahrenheit, snow was falling at an increasing rate. Yet, Bob stayed to get the job done even as daylight was fading.

At Western SARE conferences and meetings, he simply stayed on the job, no matter what the job was, until it was done. He has a strong sense of "what needed to be done" and then to get it done. Bob was often like Radar O'Reilly from M*A*S*H - he would often bring the Western SARE staff something we needed, before we realized we needed it.

We all thank Bob for his many years of dedication to the program.

Calls for Proposals for Western SARE grants released

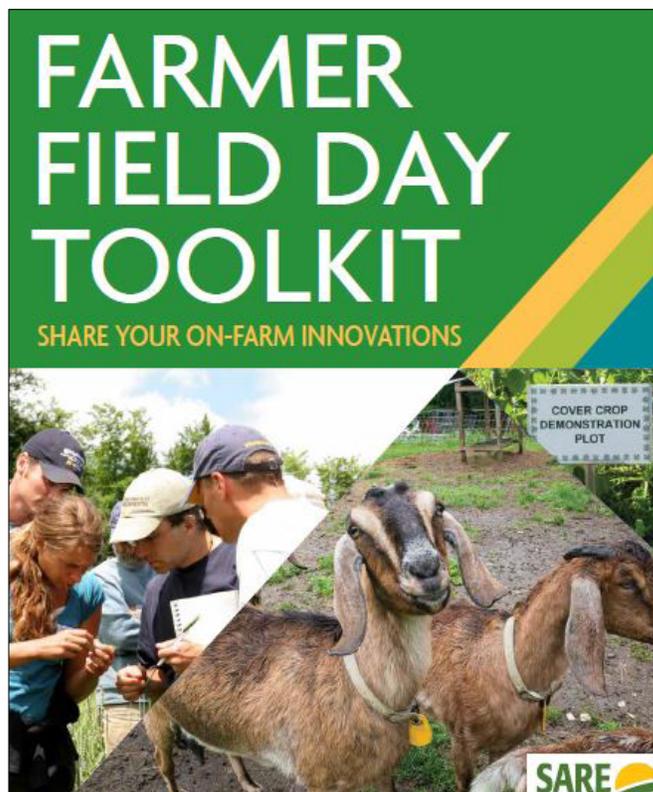


Calls for Proposals for Western SARE grant programs have been released. Descriptions of each program can be found at westernsare.org/Grants/Types-of-Grants. The grants programs include:

- Professional Development
- Farmer/Rancher
- Professional + Producer

Deadlines vary; please read the call closely. The Western SARE Administrative Council will select reviewed proposals that are innovative, diverse in content, subject matter, and geography; demonstrate tangible outcomes; and provide readily adaptable technologies and information suitable to the adoption of sustainable farming and ranching systems by producers in the western region.

Farmer Field Day Toolkit Available Online



Download the toolkit at sare.org/Grants/Farmer-Field-Day-Toolkit

Field days are a rewarding opportunity for farmers and ranchers to showcase their hard work and achievements. These events can be a great way to share innovative ideas and impart knowledge in sustainable agriculture with producers and the local community.

To get the right tools and tips into the hands of those interested in hosting a field day of their own, SARE has released its new digital Field Day Toolkit: a comprehensive resource of step-by-step instructions, timelines, downloadable tools, and templates for planning and hosting a successful event. Users will also learn the ins and outs of working with the media, creating press releases and PSAs, generating public interest, capturing the event with video, and sharing it online.

With advance planning and coordination, a field day can succeed in educating others on best practices, specific management practices and equipment, or in highlighting research methods and results. It's a win-win for the producer, who may benefit from an increased market and brand recognition, and the attendees, who may be inspired to take what they've learned and adapt it for their own production system.

FUNDED: 34 Western projects funded

(continued from page 12)

Investigator: Sherman Swanson, NV; \$42,369.

Oregon

Professional + Producer Grant: OW17-008, "Training Seed Producers and Increasing Local Markets for Seed Production," Principal Investigator: Dana Kristal, OR; \$49,750.

Professional Development Grant: EW17-019, "Western Region Pesticide Risk Reduction through Professional Development for Western State IPM Programs," Principal Investigator: Paul Jepson, OR; \$63,299.

Professional + Producer Grant: OW17-024, "Resistant,

Resilient and Long Storing Garlic Varieties for Organic Farming Systems and Markets, Principal Investigator: Alexandra Stone, OR; \$49,971.

Utah

Research & Education Grant: SW17-046, "Grass-birdsfoot Trefoil Mixtures to Improve the Economic and Environmental Sustainability of Pasture-based Organic Dairies in the Western U.S.," Principal Investigator: Blair Waldron, UT; \$ 214,123.

Research & Education Grant: SW17-077, "Best Management Practices for Regionally-Distinct Populations of the Blue Orchard Bee," Principal Investigator: Theresa Pitts-Singer, UT; \$ 246,910.

Washington

Professional Development Grant: EW17-021, "Westside Pasture Calendar for Agricultural Professionals in the Pacific Northwest," Principal Investigator: Steve Fransen, WA; \$74,555.

Farmer/Rancher Grant: FW17-015, "Development of a Locally-Adapted Apple Rootstock for the Maritime Northwest," Principal Investigator: Eric Lee-Mader, WA; \$13,988.

Professional + Producer Grant: OW17-051, "Sustainable Crop-Livestock Integration for the System Health in the Dryland Inland Pacific Northwest," Principal Investigator: Leslie Michel, WA; \$49,724.

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Western Sustainable
Agriculture, Research and
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First Western SARE Annual Report Available

For the first time, we are sharing a yearly snapshot of our work. The stories provided typify the creative, participatory, and integrated research Western SARE annually funds – led by land grant institution researchers and graduate students, Extension and other ag professionals, and nonprofit leaders in full partnership with producers.

Download the report at
westernsare.org/Learning-Center/Annual-Reports/2016-Annual-Report.

