University of California Cooperative Extension
Sonoma County
Annual Report 2009
"Sustainability and Partnerships"
University of California Cooperative Extension

Sonoma County

“Our mission is to sustain a vital agriculture, environment and community in Sonoma County by providing University of California research-based information in agriculture, natural resource management, nutrition and youth development.”

To: County of Sonoma Board of Supervisors – Valerie Brown, Efren Carrillo, Mike Kearns, Paul Kelley and Shirley Zane

The University of California Cooperative Extension (UCCE) is proud of our partnership with the County of Sonoma. Our long time relationship has enabled many successful educational and research programs which greatly impact Sonoma County and its residents. UCCE’s innovative programs address critical issues that maintain and increase the sustainability of agriculture and natural resources in Sonoma County.

The UCCE Master Gardeners program [3] developed a ‘Specialists’ program, which focused on Sudden Oak Death (SOD). They have begun conducting workshops around the County teaching about the disease, its impact on the landscape and options for preventing further spread. The new Food Growing Specialists program has partnered with Sonoma County’s 4-H, and will educate residents about all aspects of home food gardening in community and backyard gardens.

UCCE Horticulture Advisor held educational programs, partnering with Santa Rosa Junior College and Sonoma County Farm Bureau, on integrated pest management and sustainable organic production, focusing on new specialty crops.

UCCE created a local food system, partnering with county and private agencies to improve local food access to residents. The Livestock Advisor and Meat Buying Club Coordinator developed cost studies for agricultural producers on how to market locally produced agricultural products at Farmers’ Markets, Community Supported Agriculture (CSAs), and retail stores. Beginning with the unprecedented Sonoma County Meat Buying Club, to a series of local short courses for farmers and ranchers, UCCE continues to build a continuum of local food production to consumption.

UCCE leads efforts to recover coho salmon populations in Russian River tributaries. Marine Science Advisor and the Coho Restoration Monitoring Coordinator’s research and outreach efforts resulted in successful monitoring of the Russian River Coho Salmon Captive Broodstock Program, partnering with local landowners, state and federal agencies, and the Sonoma County Water Agency.

Our 4-H program provided local children hundreds of learn-by-doing activities, serving 1,200 youth with the help of 450 adult volunteers in 28 clubs, overseeing 64 projects. The 4-H Advisor and Program Leader conducts educational and leadership opportunities for local youth, including new programs such as the Science, Engineering and Technology (SET) and a Drum and Dance Program in Roseland.

The Viticulture and Integrated Pest Management (IPM) Advisor provides vital research to the wine grape industry in Sonoma County. Their research findings will address the impacts caused by invasive species, especially the mounting danger of the European grapevine moth, Lobesia botrana. With the impending collapse of acclaimed growing areas, it will be critical for UCCE to preserve its partnerships with the grape growers, maintaining this industry’s economic viability.

The University of California Cooperative Extension looks forward to the continued partnership with Sonoma County and its many residents.

Stephanie Larson-Praplan, Ph.D.

County Director

Sonoma County 4-H Youth Development Program is focused on addressing significant environmental, economic and social issues affecting the county’s youth, families and communities. Our programs educate youth regarding sustainability issues, from backyard gardening to raising chickens to community landscaping with native plants. Youth practice what they learn in the program, and then take that information into the community, in the form of service projects.

Recent research on youth development has documented the important role that youth programs like 4-H play in the lives of young people as well as our community. Conclusions of a 2009 Tufts University study confirm that 4-H youth are behaviorally and emotionally more engaged with school, are more likely to see themselves going to college, get better grades and score much lower on a risk/problems behavior measure than youth who did not participate in a youth development program. Why? Because good youth programs provide young people with access to caring adults, responsible peers as well as skill building and leadership activities that can reinforce the values and skills that are associated with doing well in school and maintaining good physical and emotional health.

In Sonoma County each year more than 1000 youth participate in the program developing leadership, citizenship and life skills while contributing to the community with thousands of hours of volunteer service. 4-H youth can be found throughout the county conducting projects such as giving presentations on global warming, caring for our seniors, cleaning up parks and beaches, donating time to hospital patients and low income children as well as supporting our troops and veterans with gifts of books, valentines and crafts.

As an ongoing part of the process, youth frequently reflect on what they have learned about themselves, their community and the problems they are seeking to address. In this way youth develop a sense of caring for others and a better understanding of their role as active citizens. While providing 4-H programs for youth in Literacy, Drum and Dance, Leadership, Community Service and Art, Science and Technology, Sonoma County 4-H is partnering with:

• Boys and Girls Clubs of Central Sonoma Windsor, Healdsburg, Cloverdale and Roseland Club house
• Cal Calf, Calf, After School Program
• Healdsburg Community Center
• Jefferson Elementary
• Washington Middle School in Cloverdale
• Sonoma Technology High School of Rohnert Park
• Windsor Elementary
• Windsor Middle School
• Agilent Technologies
• Redwood Empire Food Bank

More than 400 adult volunteer leaders give their time each year to assist young people in developing a sense of belonging, mastery, independence and generosity. Through hundreds of hands-on, learn by doing projects and activities youth have opportunities to develop responsibility, resolve conflicts, master skills and practice making choices that will impact their future in positive ways.

Sonoma County has a large stake in the healthy development, productivity and leadership capacity of its next generation in order to build strong communities and address the many challenges facing the future.

ANNUAL REPORT 2009

4-H

MASTER GARDENERS

OUR VOLUNTEERS

AGRICULTURE AND NATURAL RESOURCES

OUR GOALS FOR 2010

THANK YOU

University of California Cooperative Extension

Sonoma County

Sonoma County 4-H

S P A R T A N S

Sonoma County 4-H

P A R T N E R S  I N  Y O U T H  D E V E L O P M E N T

Annual Report 2009, Sustainability and Partnerships

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The Sonoma County Master Gardeners have provided guidance to home gardeners in Sonoma County since 1982. Through a variety of projects, 225 active Master Gardeners contributed over 18,000 hours of time to over 24,000 gardeners with science-based information. In 2009, our community projects included partnerships with the Sonoma County Water Agency, Sonoma County Waste Management Agency, Jail Industries Plant Nursery, Harvest for the Hungry Garden, Sonoma County Libraries, Sonoma Garden Park, and eight local Farmers’ Markets. Bloomin Backyards, an educational garden tour of six Master Gardener’s gardens, is held every other year (June 6, 2010 is our next garden tour) with a focus on demonstrating research-based, practical solutions to home gardening challenges.

Master Gardener Specialist programs also exist for outreach on Composting as well as Sudden Oak Death. Workshops are held at eight Sonoma County libraries, in addition to outreach that occurs at Farmers’ Markets and community gardens. The Sonoma County Fair Demonstration Garden that is designed and created by Master Gardeners is a highlight for many attendees. This garden is a wonderful teaching tool of good gardening practices, including drought-tolerant planting recommendations, composting tips, and integrated pest management (IPM) techniques.

The Sonoma County Master Gardener’s website (www.sonomamastergardeners.org) received over 100,000 visits in 2009. The website continues to attract interest, due to its focus on local gardening topics, and its continually updated assortment of articles and gardening advice. The kitchen gardening section offers answers to questions about food gardening, and the feature article on the home page always has information from which local Sonoma County gardeners can benefit.

The 2009 George Zeleny Memorial Demonstration garden featured a variety of drought-resistant species that can be used as alternatives to plants that require more water.
Agriculture and Natural Resources

Partners in Sustainability

Viticulture and Integrated Pest Management

Viticulture

Irrigation scheduling is a major component of successful winegrape production and is receiving increased attention given regulatory scrutiny of agricultural water use. Winegrape growers purposely impose water stress to increase quality fruit at the expense of yield reduction. Monitoring vine water stress allows growers to make informed decisions to balance water conservation with maximum quality and yield. Many growers use a pressure chamber to assess vine water status (water potential) to schedule irrigations. Less common, but more user-friendly grows a leaf porometer – a device that measures stomatal conductance (gas exchange from stomates). In 2009, we used these instruments in two Alexander Valley chardonnay vineyards to determine the relationship between vine water stress and yield reduction. Monitoring vine water status allows growers to take a more informed approach, and maximize vineyard profitability while minimizing the use of highly disruptive pesticides.

Alexander Valley Chardonnay Vineyards

Dr. Paul Olin’s research and outreach program promotes the sustainable use and management of coastal and marine conditions because the pest was under the bark and not exposed. Our comparison showed there was no close correlation, and that the leaf porometer reported widely diverse conductance values within the same vineyard block. Growers who want to increase their reliance on a leave porometer should take full advantage of its ease of operation and record multiple measurements in key blocks to more accurately assess water status. The pattern of water status within a season can be as useful as absolute numbers in irrigation scheduling.

Integrated Pest Management

Vine mealybug, an exotic pest first identified in North Coast vineyards in 2002, continues to spread in Sonoma County. Previous research conducted by UCCE IPM Advisor Lucia Varela had shown that the standard practice of a delayed dormant application of a highly disruptive organophosphate pesticide was not warranted under North Coast conditions because the pest was under the bark and not exposed. As part of our pesticide use reduction program, we conducted a large trial in 2009 to evaluate the efficacy of several less disruptive insecticides on the control of vine mealybug. Our work showed an insect growth regulator and various formulations of neonicotinoid pesticides significantly reduced pest populations. This research allows growers to take a more informed approach, and maximize vineyard profitability while minimizing the use of highly disruptive pesticides.

Rangeland and Watershed Conservation

Ranch Planning and Conservation Monitoring

The UCCE coordinator for Ranch Planning and Conservation Monitoring, Michael Lennox, uses on-farm research to help manage land for improving agricultural and natural resource sustainability. Options for how to restore streams can be overwhelming as we offer expertise with numerous partnering agencies for what will happen at a site following conservation efforts such as control or exclusion fencing along creeks designed to limit livestock access.

UCCE offered new tools for watershed management to County residents over the last year by organizing the annual Sonoma County Farm Cattlemen’s Association, Farm Bureau, Western United Dairymen, Resource Conservation Districts, and Natural Resources Conservation Service). To assist ranching landowners comply with new Conditional Grazing regulations. Over 160 parcel owners submitting the required Annual Certifications to the San Francisco Water Board following three public workshops with 106 attendees, over 40 phone consultations, and 14 ranch visits. UCCE is continuing to provide one-on-one assistance to complete ranch plans and prioritize water quality improvement projects.

UCCE offered new tools for agriculture and Natural Resources Conservation Service (NRCS) and Local Resource Conservation Districts improve their watershed restoration projects. “The UCCE feedback of our stream restoration is good information for improving agricultural and natural resource sustainability. Options for how to restore streams can be overwhelming as we offer expertise with numerous partnering agencies for what will happen at a site following conservation efforts such as control or exclusion fencing along creeks designed to limit livestock access. UCCE provided educational information for dairy and livestock producers to become and/or maintain their organic certification. Specialty Crops Sustainable and Organic Horticulture

This program serves over 800 tree fruit, berry, vegetable, herb, and cut flower farmers on about 5,000 acres in Sonoma County. Through partnerships with the SIRC and Farm Bureau several integrated pest management and sustainable organic crop production seminars were held. Four were one-day field courses for new small-scale olive oil producers on cultural practices, processing and sensory evaluation. Others were held to demonstrate growing new varieties of specialty apples, ornamentals, cherries, raspberries, and blueberries. One-on-one marketing efforts are helping producers convert what they grow into value-added products. Partnering with the local Slow Food Group and Apple Corps is helping increase awareness and sales of our heirloom Gravenstein apple.

Organic dairy and livestock products. Rangeland Conservation and Management

UCCE research efforts have developed a better understanding of the climatic processes occurring on local range and pasture lands. Over 30 percent of Sonoma County’s total land is rangeland, management strategies developed by UCCE help maintain the viability and sustainability of these lands. Research conducted examined different management practices for increased carbon sequestration, landscape production and biological diversity. Target grazing systems examined the use of livestock to effectively reduce invasive species thus reducing fire fuel loads and needs for herbicide applications.

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• Continue partnering in a comprehensive, ongoing monitoring program to document the success of efforts to recover endangered coho salmon populations in Russian River tributaries in collaboration with the local landowners, State and Federal agencies, and the Sonoma County Water Agency.

• Continue researching ways to control, combat, and monitor for invasive pests, including Light Brown Apple Moth, European Grapevine Moth, Vine and Grape Mealybugs, and Spider Mites, including studying the impact of indigenous natural enemies on these introduced invasive pests.

• Establish two grapevine rootstock trials using newly released plant materials for the purpose of evaluating tolerance and resistance to the grapevine fanleaf virus.

• Increase access to locally-produced foods through educational programs for local farmers and the development of a Local Food System Network that expands the Sonoma County Meat Buying Club into the Sonoma Buying Club.

• Expand the 4-H program to include new clubs in the Mark West and Cotati areas to help youths develop responsibility, resolve conflicts, master skills and make choices that will positively impact their future.

• Start a new after-school program for teens by adding a 4-H Bloco program in Roseland area of Santa Rosa to help reduce gang participation and provide an exercise venue.

• Reduce urban water use by 30% through Master Gardener educational programs, including teaching homeowners the benefits of making and using back yard composting and how do reduce or eliminate pesticide use. Conduct advanced training for Master Gardeners in the areas of Sudden Oak Death and Food Gardening (see below).

• Establish science-based outcomes for how conservation practices have affected local natural resources, watershed health, ecosystem services, and ranch viability, including tools to control invasive exotic shrubs in restored creeks on public and private land.

**Master Gardener Food Growing Specialists**

As interest in backyard food gardening continues to grow, Master Gardener Food Gardening Specialists will be assisting gardeners at community gardens and other locations around the county. This new project is in partnership with the iGrow initiative (a part of Sonoma County Health Action). These Specialists receive advanced training in all areas of Food Gardening and in turn are available to provide expert advice, through workshops and one-on-one consultations.

*Food Growing Specialist Trainees complete the first of several trainings scheduled for this year.*

**Spotlight on Invasive Species:**

**European Grapevine Moth, Light Brown Apple Moth, and Vine Mealybug**

In the last 10 years several new exotic pests have been detected in Sonoma County vineyards. These include vine mealybug, light brown apple moth and the recently identified European grapevine moth, Lobesia botrana. Viticulture Advisor, Rhonda Smith and Integrated Pest Management Advisor, Luca Varela have developed outreach materials, articles and research reports on all of these invasive species. All publications are posted on the Viticulture and Integrated Pest Management programs web pages at: cesonoma.ucdavis.edu.

European grapevine moth larvae feed on flower parts and inside grape berries. Besides direct damage, feeding triggers infections by rot organisms causing fruit loss. Portions of Sonoma County are under quarantine for this pest which was first reported in Europe over 200 years ago. Since the detection of this new pest in September 2009 in Napa Valley, UCCE advisors have conducted numerous outreach programs to educate grape growers, vineyard managers, pest control advisors and farm workers on identification, monitoring and control. The goals for this year are to further educate about this pest and conduct several research projects to:

1. evaluate sustainable control measures
2. test insect development models to accurately time insecticide applications
3. investigate if indigenous, natural enemies predate upon this pest's eggs, larvae or pupae
4. determine if, under California conditions, grape is the sole host plant, or if egg laying and larvae development occurs on alternate host plants.

Portions of Sonoma County are also under quarantine for light brown apple moth. Its larva roll leaves in several host plants including grapevines and ornamentals and feed on leaves and superficially on fruit. Light brown apple moth is native to Australia. Dr. Varela took a sabbatical leave to study this insect in Australia and New Zealand where it has been a pest since the 1900's. She wrote an article reporting her findings in California Agriculture entitled 'New Zealand Lessons May Aid Efforts to Control Light Brown Apple Moth in California' which can be found at http://californiaagriculture.ucanr.org/index.cfm.
UCCE is able to accomplish many of its goals through collaborative efforts, none of which would be possible without the devotion of our valued partners. Their continued dedication towards our common goals is greatly appreciated. Following is a list of some of the partners whom we collaborated with this past year.

Thank You to Our Partners

A-H Foundation
American AgCredit
Alliance Medical Center
American Society of Horticultural Science
Americorps
Army Corp of Engineers
Bodega Marine Lab
Boys and Girls Club Rohnert Park
California Aquaculture Association
California Association of Pest Control Advisers
California Oak Mortality Task Force
California Olive Oil Council
California Sea Grant
California State University, Sonoma
Canvas Ranch
Carneros Vine Mealybug Workgroup
Center for Ecosystem Management and Restoration
City of Santa Rosa
Creek Stewardship Program
Schools
Clos du Bois
Clover-Stornetta Farms
Community Action for Preservation of Sonoma County
County of Sonoma Department or Agency:
Health Action, Grow
Health Services
Regional Parks
Agricultural Commissioner
Agricultural Preservation and Open Space
Economic Development Board
Emergency Services
Office of Education
Fair
Libraries
Waste Management
Water Agency
Domaine Chandon
Don Clausen Warm Springs Hatchery
Environrment
Future Farmers of America
Grange Credit
Jefferson Elementary School
Kid Street Learning Center
Laguna Farms
Latino Service Providers
Marin Resource Conservation District
Napa & Marin County Agricultural Commissioners
National Sea Grant Office
Natural Resources Conservation Service
NOAA Fisheries
North Coast Regional Water Quality Control Board
North Bay Woolgrowers’ Association
Occidental Arts and Ecology Center
Pacific Aquaculture Caucus
Pacific Shellfish Institute
Pesticide Applicators Professional Association
Point Reyes Bird Observatory
Prunuske Chatham, Inc.
Resource Conservation Districts, Sonoma County
Gold Ridge
Sotoyome
Southern Sonoma County
San Francisco Bay Regional Water Quality Control Board
Santa Rosa Junior College
Shone Farm
Scripps Institution of Oceanography
Slow Food Movement
Sonoma County Farm Bureau
Sonoma County Grape Growers Association
Sonoma County Vineyard Technical Group
Sonoma County Winegrape Commission
Sonoma Fish and Wildlife Commission
Sonoma Marin Animal Resource Committee
Sonoma Marin Cattlemen’s Association
Sonoma Marin Weed Management Area
Sonoma Olive Festival Association
State of California, Departments:
Fish and Game
Food and Agriculture
Forestry and Fire Prevention
Pesticide Regulation
Tierra Vegetables
Trout Unlimited
University of California, Berkeley
University of California, Davis
University of California, San Diego
University of California Division of Agriculture and Natural Resources
US Army Corps of Engineers
USDA Sustainable Agriculture Research and Extension Program
USGS Conte Anadromous Fish Research Center
Vino Farms
Walsh Vineyard Management
Westside School
Windsor Unified School District

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