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## **CDFFA grants support organic, biologically integrated farming systems, and farm-to-school projects**

by Lyra Halprin, SAREP

BIFS dried plum (prune) management team will participate in CDFFA project.

A new \$7 million competitive grants program to support research on California specialty crops funded by the state's Department of Food and Agriculture (CDFFA) will support 51 research projects, including two coordinated by SAREP on organic farming and on biologically integrated farming systems. SAREP will also cooperate on a project on produce distribution to farm-to-school programs.

SAREP has received a \$100,000 CDFFA Buy California Initiative grant to support the expansion and redesign of the program's Web site for organic growers, and development of organic production manuals for several crops. A second \$100,000 grant will help producers of dried plums, walnuts, citrus and forage crops implement biologically integrated farming systems.

When the Buy California Initiative grants were announced, CDFFA Secretary **William Lyons Jr.** noted that sustainable agriculture efforts were an important focus of the program.

"The fertility of California's valleys and the productivity of its growers provide an unsurpassed 'field laboratory' for researchers at the University of California's Sustainable Agriculture Research and Education Program," said Lyons. "With the support of California's agricultural community, this program seeks cost-effective ways for farmers to develop new market opportunities by using organic or other reduced input methods. Specialty crop growers reap the benefits of improved environmental stewardship while they identify new niche markets for these crops."

Lyons continued, "SAREP has developed partnerships with organic farming organizations and has earned the confidence of the industry as a source of reliable research and recommendations for growers, making it an ideal provider of the information."

A combination of federal and state money finances the Buy California competitive grants program. Congress defines specialty crops as any crop other than wheat, feed grains, oilseeds, cotton, rice, peanuts and tobacco.

"The funding to boost our organic resources information is particularly timely because the new federal organic standards were implemented October 21 and U.S. farmers and consumers are looking for clarification on research results and what constitutes 'organic,'" said **Sean L. Swezey**, SAREP director.

"Our program's Web site with its research and information databases can point them to specific resources."

The Organic Farming Information section of SAREP's Web site ([www.sarep.ucdavis.edu/organic/index.htm](http://www.sarep.ucdavis.edu/organic/index.htm)) provides links to the national rules for organic farming, allowed materials, members of the UC Organic Farming Research Workgroup, and to SAREP-funded research projects (searchable by crop, topic and organic relevance).

Butte County organic rice grower **Bryce Lundberg** says the university's organic farming recommendations will help organic growers, processors and input suppliers meet the national standards.

"I've used SAREP's Organic Soil Amendments and Fertilizers publication to help me select appropriate amendments, and determine quantity and timing of application," said Lundberg.

SAREP funds organic research, assists county-level extension programs, and summarizes information on organic farming materials. The program has funded almost \$2 million directly to research focused on organic practices, and more than \$4 million to projects that indirectly support organic farming.

## **BIFS support**

The SAREP-administered Biologically Integrated Farming Systems (BIFS) extension program incorporates a team approach to project management with on-farm demonstrations, monitoring of key biological and economic variables, and farmer-to-farmer information exchange.

The Buy California grant will build on the successes of the BIFS program, funding farmer-to-farmer outreach that will share practices demonstrated in BIFS projects. Project cooperators will assist dried plum, walnut, citrus and forage crop growers in adopting economically and environmentally sound agricultural practices by sponsoring educational field days and by providing practical educational materials.

"We are very pleased with this new funding for the BIFS projects," said **Jenny Broome**, SAREP associate director. "It will enable successful demonstration project personnel in several key commodities to increase their outreach to farmers throughout the state."

**Fred Thomas** of CERUS Consulting has been a participant in the management teams of both the dried plum and walnut BIFS projects since 1998.

"The Integrated Prune Farming Practices [dried plum BIFS] project has been underway for more than five years," said Thomas. "The BIFS funding and the support by the California Dried Plum Board and UC Cooperative Extension have given us great results in reducing applications of dormant sprays, sulfur and irrigations. The new Buy California program will go a long way toward promoting the use of these integrated approaches by prune farmers."

For more information about SAREP's BIFS program, go to [www.sarep.ucdavis.edu/bifs/](http://www.sarep.ucdavis.edu/bifs/). The site provides links to funded BIFS projects, a database of all SAREP funded projects, the BIFS Workgroup, collaborative research and extension activities, and BIFS-related Web sites and publications.

SAREP will also collaborate with the Community Alliance with Family Farmers (CAFF) on a project that will receive \$100,000 from the Buy California Initiative-sponsored program. CAFF is the principal investigator for the project that is designed to help farmers use more effective produce distribution systems for farm-to-school programs. SAREP food systems analyst **Gail Feenstra** will be evaluating the effectiveness of the program, which will focus on farm-to-school programs in five California school districts/regions. In addition to helping CAFF personnel summarize best practices for farmers in a produce distribution manual, Feenstra will help document longer-term impacts of new distribution systems, including the economic potential for participating farmers.

## **From the Director**

Ventura County Cooperative Extension, SAREP collaboration covers organic crops

Early Spanish settlers described the area as the "land of eternal summers" and the county name is a shortened version of the Spanish expression for "good fortune": (Buena) Ventura County. Gateway to the Channel Islands National Park, a 250,000-acre wilderness and marine sanctuary to the west, and adjacent to the 860-square-mile Los Padres National Forest to the east, Ventura County is also situated directly north of the second largest metropolitan county in the country, Los Angeles.

Oleg Daugovish, Ventura County farm advisor, reviews cover crop characteristics at an organic farming field day in March 2002.  
(photo by Sean L. Swezey)

On this remarkable urban/ natural border, agriculture remains Ventura County's strongest industry, bringing in more than \$1 billion in farmgate sales in 2001 on over 100,000 acres. Ventura County farmers are blessed with some of the best soils in the nation, many of which are located in a subtropical coastal microclimate where average annual temperature hovers near 74 degrees F. Ventura County ranks 10th among all California agricultural counties in total agricultural production, and is among the leaders in the production of lemons, strawberries, celery, nursery stock, and avocados.

With a growing population of 750,000 residents, millions of annual tourist visitors, and nine million urbanites to the immediate south, Ventura County agriculture is not without problems. The same attributes that make the county ideal for agriculture are also highly valued by new and prospective urban residents. One of the greatest threats to Ventura County agriculture is the threat of urban sprawl and the reduction of farmland and farm business "critical mass." Successful ballot measures have recently been implemented to plan urban development and stop loss of farmland, which is estimated at 3000 acres over the last ten years. However, these measures did not pass without opposition, and future costs to farmers will need to be borne increasingly by publicly financed agricultural open space districts, purchasing of development rights, and other public and private measures supportive of agriculture. One new and highly visible area of growth and support for Ventura County agriculture is the emergence of a successful organic production community in the county. In 2001, Ventura County ranked seventh among all California counties in number of registered organic producers (57) and organic acreage (over 4,400 acres). Organic growers and processors declared a farmgate sales value of over \$5 million in Ventura County in 2001. Lemons, oranges, berries and avocados lead the list of organic crops in the county. Growth in sales in the organic farm production sector in California has averaged nearly 20 percent per year in recent years. Given these trends, a new group of Ventura farmers and cooperative extension staff is aiming to strengthen agriculture that is environmentally friendly and responsive to consumers. A new partnership among the farming community, SAREP and the Ventura County Cooperative Extension office is a positive

response to economic and environmental trends in the region.

In March 2002, under the leadership of Cooperative Extension Director **Larry Yee**, SAREP made a three-year grant of \$30,000 available to support the organic vegetable and row crops farming systems research and extension activities of farm advisor **Oleg Daugovish**. Daugovish has led a series of innovative and well-attended extension meetings with the production community. At a March 2002 meeting at the UC Hansen Trust Faulkner Farm in Santa Paula, Daugovish and more than 20 farmers established program research priorities including cover crop evaluation, compost quality, and soil fertility management in organic systems. Thirty-five organic and other growers met in October in Ventura at Cooperative Extension offices to hear farm advisors Daugovish, **Ben Faber**, **Mark Gaskell**, and **Jim Downer** present recent research results relevant to organic production priorities. Each meeting featured a roundtable discussion on research needs and compliance issues relevant to the organic farming community. Future research and extension topics will be established in an on-going spring meeting each year.

I would like to take this opportunity to recognize the important work for organic farming research and extension in Ventura County being supported by the first-ever collaboration among UC Cooperative Extension, the Clarence E. Heller Charitable Foundation and SAREP in Ventura County. A remarkable cross-section of farmers and professionals is helping organic production become part of the overall economic health of agriculture in Ventura County. SAREP strives to leverage these partnerships and will continue to advocate and support the role of University programs in the demonstration of successful action models.—*Sean L. Swezey, director, University of California Sustainable Agriculture Research and Education Program*

## Ventura participants enthusiastic

Those participating in the collaboration among SAREP, the Clarence E. Heller Charitable Foundation, Ventura County and UC Cooperative Extension are glad to be a part of it. Here is what they say:

*"We have a growing number of organic growers in Ventura and surrounding areas, not just because organic is an expanding consumer market, but because we always need to explore new ways to sustain agriculture. In the last 15 years of diminishing resources within the UC, it has been very difficult to begin new initiatives. This grant from the Clarence E. Heller Charitable Foundation allows the UC to get involved in organic agriculture, an area that needs support in a more focused and comprehensive fashion."* —**Larry Yee**, Ventura County Cooperative Extension director.

*"The Heller funding of Oleg Daugovish's position is really a great opportunity here for farmers and institutions to pay attention to the potential for organic growers in this area. We're very enthusiastic about what he's doing because his work formally introduces organic and sustainable concepts to an important and diverse production area. He's offering us science-based information on smother crops, weed prevention and organic matter. We've previously had to depend upon the efforts of information sources that are stretched to their limits. More research of this type will lead to solutions that benefit farmers as well as address issues confronting agriculture on the edge of urban development."*—**Steve Sprinkel**, organic vegetable crops farmer, Ventura County, owner of the restaurant/grocery "The Farmer and The Cook," ACRES, USA columnist.

*"I thought the workshop I went to that Oleg Daugovish presented was extremely helpful. As a new farmer without a farming or technical background, it gave me tangible information that I need. At workshops and field days you get to hook up with other experienced farmers, which is invaluable for information sharing, and I know that the University of California is there as a resource for me to call. Oleg is doing the trials and I don't have to. It's the essence of what research should be about, and we all benefit from it. It's putting public dollars to use for public gain."*—**Paul Herzog**, organic vegetable crops farmer, Ventura County.

*"Larry Yee and Oleg Daugovish sent everyone who has expressed an interest in this topic notices about the new organic/sustainable outreach. No one has done this before here. There have been two meetings so far with a total of about 60 people. I am very happy to know that this a much bigger group than I thought it was going to be. I grew up with conventional farming, but now I'm throwing myself full-force into organic and direct marketing. This program is helping my efforts."* —**Phil McGrath**, farm manager, McGrath Family Farms, strawberries, vegetables and flowers, Ventura County.

*"In the meeting I attended on sustainable agriculture and organic production we had a cross-section of growers represented, including small-scale and large-scale farmers. Several chemical companies representatives and Pest Control Advisers (PCAs) were present, who are trying to increase their knowledge about sustainable agriculture and crop production. The increased demand for sustainable and organic agricultural products is beneficial to the industry. In fact the organic farming industry is one of the few areas of the ag industry that has been growing and expanding in recent years."*—**Mojtaba Zaifnejad**, agronomist/PCA, Ventura County.

## **Walnut BIFS project: San Joaquin County walnut growers survey**

Farmers attend BIFS walnut field day in San Joaquin County (photo by Joe Grant)

by Bev Ransom, SAREP, Joe Grant, UC Cooperative Extension San Joaquin County, and Jenny Broome, SAREP

The walnut Biologically Integrated Orchard Systems (BIOS) project was initiated in 1998 by a group of walnut growers who approached UC Cooperative Extension San Joaquin County farm advisor **Joe Grant** to develop a pilot study on growing walnuts with fewer pesticides. In January 1999 this project received a three-year grant from SAREP's Biologically Integrated Farming Systems (BIFS) program. With BIFS funding, Grant worked with 12 enrolled growers to implement and demonstrate an integrated approach to walnut farming that seeks to reduce pesticide use and improve yield and quality through soil building, intensive field monitoring, biological control, and beneficial insect habitat enhancement to control pests. Each enrolled "BIOS grower" established a BIOS block to demonstrate practices such as pheromone mating disruption to control codling moth, nitrogen budgeting, replacing pre-emergence with post-emergence herbicides, and growing cover crops. Project results show that enrolled growers were able to produce high quality walnuts while reducing pesticide and fertilizer use.<sup>1</sup> Working with Grant, the Community Alliance with Family Farmers (CAFF) coordinated project outreach efforts to extend this information to other walnut growers in the region.

As the project was concluding in the fall of 2001, SAREP worked with Grant, **David Ramos** of the Walnut Marketing Board, and a consulting firm, Harder & Co. Community Research, to survey all San Joaquin County walnut growers. The results of this survey provide an overview of farming practices and attitudes of county walnut growers three years after the establishment of the walnut BIOS project. The U.S. Environmental Protection Agency Region 9 Agriculture Initiative provided funding for this study.

### **Methods**

A nine-page questionnaire was developed that asked growers or their farm managers questions about farming practices they used in 2001, information sources, attitudes, exposure to the walnut BIOS project, and background information on the grower and his/her farming operation. After the questionnaire was pre-tested by local walnut growers, it was sent to all 722 walnut growers on a list provided by the San Joaquin County Agricultural Commissioner's office. Growers received the questionnaires in early January 2002. By February, 322 completed questionnaires were received, representing a 51% response rate after deleting growers from the original list who reported not growing walnuts in 2001.

Brief telephone interviews with 24 randomly selected non-respondents showed that non-respondents were not statistically different from the 322 respondents in their age or answers to all seven questions on crop practices. However, the non-respondents did tend to have significantly fewer walnut acres than the respondents, indicating that growers with fewer walnut acres may have been less likely to participate in this survey than growers with larger

walnut acreage.

## Results and Discussion

### Survey respondents

A comparison of survey respondents to official county walnut acreage figures<sup>2</sup> confirms that the sample of respondents over-represented growers with larger walnut acreage. The survey sample included fewer than 30% of county walnut growers with five or less walnut acres, yet it included over 80% of county walnut growers with more than 200 walnut acres (Table 1). Survey respondents reported that they farm a total of 21,245 acres of bearing walnuts, which was 74% of the 28,838 total bearing walnut acreage in the county in 2001.

**TABLE 1: Comparison of walnut survey sample to California Agricultural Statistics Service data<sup>2</sup>**

| Size of walnut acreage | San Joaquin County walnut growers (#) | Walnut survey sample (#) | Percent of county walnut growers included in sample |
|------------------------|---------------------------------------|--------------------------|---|
| 0-5 acres              | 187                                   | 55                       | 29  |
| > 5-25 acres           | 307                                   | 115                      | 38  |
| > 25-50 acres          | 87                                    | 49                       | 56  |
| > 50-100 acres         | 71                                    | 36                       | 51  |
| > 100-200 acres        | 55                                    | 32                       | 58  |
| > 200-1000 acres       | 33                                    | 27                       | 82  |
| <b>Totals</b>          | <b>740</b>                            | <b>314</b>               | <b>42</b>   |

### Orchard Floor Management and Fertility Practices

Reducing supplemental nitrogen applications to levels more consistent with actual demand would save growers money and reduce the potential for leaching and groundwater degradation. BIOS growers were able to use less nitrogen fertilizer yet maintain good soil fertility by using leaf tissue analysis to monitor nitrogen status, and calculating a "nitrogen budget" to estimate fertilizer needs. Almost 40% of respondents said that they used the concept of nitrogen budgeting to estimate fertilizer needs (Table 2). Other alternative practices, such as chipping or shredding orchard prunings in field and the use of compost or manure for fertilizer, were used by a small percentage of growers (17% and 8% respectively).

Cover crops have been shown to improve soil structure, fertility, and water penetration in addition to other benefits. The use of cover crops was demonstrated as an important part of the BIOS system. Cover crops (either new planting or self-reseeded) were used by 21% of respondents. These respondents were asked about the specific benefits and challenges of using cover crops (Table 3); a majority of these growers felt they had observed increased water penetration and dust reduction. In general, drawbacks of using cover crops were observed by smaller percentages of these growers; however, over a third of these growers felt they had observed an increase in gophers, an increase in water use, and trash at harvest.

The use of pre-emergence herbicides to control weeds is a common practice of walnut growers—63% of respondents reported using it (Table 2). Since walnuts are harvested from the orchard floor, orchard floor management is an important component of the farming system. BIOS growers were encouraged to replace pre-emergence with post-emergence herbicides (such as RoundUp), apply herbicide treatments in a narrower strip, and use spot treatments to control weeds as necessary. Over a third of respondents (36%) reported that they used spot treating only around trees.



**TABLE 2: Orchard floor management and fertility practices used on bearing walnut acres in 2001 (n ranges from 294-311)**

| <b>PRACTICE</b>   | <b># of Respondents</b> | <b>%</b> |
|---|-------------------------|----------|
| <b>NITROGEN MANAGEMENT</b>  |                         |          |
| Calculation of a "nitrogen budget" to estimate fertilizer needs         | 120                     | 39       |
| Leaf analysis for nitrogen  | 106                     | 35       |
| Chipping or shredding orchard prunings in field                         | 52                      | 17       |
| Use of compost or manure for fertilizer                                 | 23                      | 8        |
| <b>COVER CROPS</b>  |                         |          |
| Cover crops (either new planting or self-reseeded)                      | 63                      | 21       |
| <b>WEED CONTROL AND TREE ROWS</b>                                       |                         |          |
| Use of RoundUp or Paraquat  | 289                     | 95       |
| Use of pre-emergence herbicides (for example Surflan, Simazine, Karmex) | 195                     | 63       |
| Use of spot treating only around trees                                  | 107                     | 36       |

### **Insect and Mite Management Practices**

BIOS growers managed codling moth, the key insect pest for walnut growers, by experimenting with the use of pheromone mating disruption and reduced risk pesticides. Frequent monitoring for pests and beneficial insects and the enhancement of beneficials were also key components of the walnut BIOS project.

Organophosphate insecticide sprays to control codling moth were used by 67% of respondents (Table 4). Only 18 respondents (6%) used mating disruption in 2001; 11 of these were BIOS growers. Clearly, the use of pheromone mating disruption as an alternative method to control codling moth in walnuts is in its infancy. Although 80% of respondents reported that they had heard of using mating disruption to control codling moth in walnuts, only 32% reported knowing how to use it.

Survey results confirmed that BIOS growers found that mating disruption works: 100% of BIOS growers agreed with the statement: "The use of mating disruption is effective to control codling moth." However, 70% of all other respondents responded "Don't know" to this statement, pointing to the importance of, and opportunities for, future outreach efforts to inform walnut growers about the effectiveness of pheromone mating disruption in walnuts.

In 2001, cost was still an important issue in the use of mating disruption. Over half of the BIOS growers disagreed with the statement: "Use of mating disruption is cost effective." New products (such as a sprayable formulation of mating disruption pheromones) are becoming available that may improve the economic feasibility of using mating disruption to control codling moth in walnuts.

BIOS growers were encouraged to implement habitat restoration and enhancement practices including setting up owl or bat nesting boxes and insectary plantings along farm borders or waste areas. Although 21% of respondents report using owl boxes or bat houses, only 2% have insectary hedgerow plantings to attract beneficials. Space limitations and a general lack of perceived potential benefits of insectary plantings may limit growers' interest in planting insectary hedgerows.

The majority of respondents understand the value of beneficial insects—78% agreed (either strongly or somewhat) with the statement "Increasing the population of natural enemies/beneficials in or near a walnut orchard can help manage pests." Only 3% disagreed with this statement; 19% responded "Don't Know."

### **Attitudes**

Growers were asked their level of agreement with several statements in the survey questionnaire. Fifty-seven percent of respondents agreed (either strongly or somewhat) that "It's worth using practices that reduce my overall chemical

and fertilizer use even when it might take a little more time or expense" showing that a majority of growers are willing to go to some effort or cost to reduce their agricultural chemical use. Sixty-four percent of respondents reported they did try to reduce their use of pesticides during the 2001 walnut-growing season. As might be expected, 71% of these respondents reported that "cost" was the most important reason for their efforts to reduce the use of pesticides. Environmental concerns, health concerns, and protecting beneficial insects were also frequently mentioned as one of, if not the most important, reason to reduce pesticide use.

Forty-six percent of respondents reported they were interested in experimenting with new management practices. BIFS projects provide the funding for many growers to experiment and demonstrate the use of alternative practices and then, through organized field days and other events, show what they have learned to other growers.

**TABLE 3: Percentage of growers who have used cover crops that observed these benefits and drawbacks (n=61)**

| <b>Benefits observed</b>    | <b>%</b> | <b>Drawbacks observed</b>             | <b>%</b> |
|-----------------------------|----------|---------------------------------------|----------|
| Increased water penetration | 67       | Increase in gophers                   | 44       |
| Dust reduction              | 67       | Increase water use                    | 38       |
| Attract beneficial insects  | 49       | Trash at harvest                      | 36       |
| Improved soil tilth         | 46       | Increased cost                        | 12       |
| Better soil fertility       | 44       | Interferes with irrigation sprinklers | 12       |
| Erosion control             | 34       | Frost damage                          | 8        |
| Weed suppression            | 30       | Limits access to orchard              | 8        |
| Less mowing needed          | 20       | Other                                 | 2        |
| Other                       | 10       |                                       |          |
| Elimination of nematodes    | 3        |                                       |          |

### **Project Outreach and Key Sources of Information**

A key element of the walnut BIOS project was outreach to other walnut growers in the region. Survey results show that almost half of the survey respondents were exposed to the project in some way. Twelve respondents (4%) were enrolled as BIOS growers in the project. Excluding these BIOS growers, 53% of survey respondents reported that they had "heard of the walnut BIOS program"; 39% had read the walnut BIOS newsletter; 21% had talked with a BIOS grower or project management team member; and 15% had attended at least one walnut BIOS field day.

Respondents were asked to identify the three most important sources of information from a list of 19 different choices. Pest control advisers (PCAs) were most often identified as one of the three most important information sources (53%). This highlights the importance of the involvement of PCAs in BIFS projects. "Results of monitoring/inspecting orchard" was identified as one of the three most important information sources by 38% of respondents. Many BIFS projects support intensive monitoring, recognizing the information intensive nature of biologically integrated farming. And finally, "other walnut farmers" were identified by 32% of respondents as one of the three most important information sources. Results from a similar survey of Lodi-Woodbridge winegrape growers, conducted at the conclusion of a three-year BIFS project, also found that PCAs and other growers were most often identified as important information sources.<sup>3</sup> BIFS projects frequently provide many opportunities for growers to share their experience with other growers as well as researchers.

### **Research Topics**

Respondents were asked to list the top three walnut-related issues they would like researchers to focus on (Figure 1). Since this was an open-ended question, many respondents offered general topics such as "pest control" and "diseases," while others identified more specific topics. The disease *Blackline* was the research topic identified most frequently as a high priority. (Column totals add up to more than 211 because respondents could identify up to three research topics.)

**TABLE 4: Pest management practices used on bearing walnut acres in 2001 (n ranges from 291-304)**

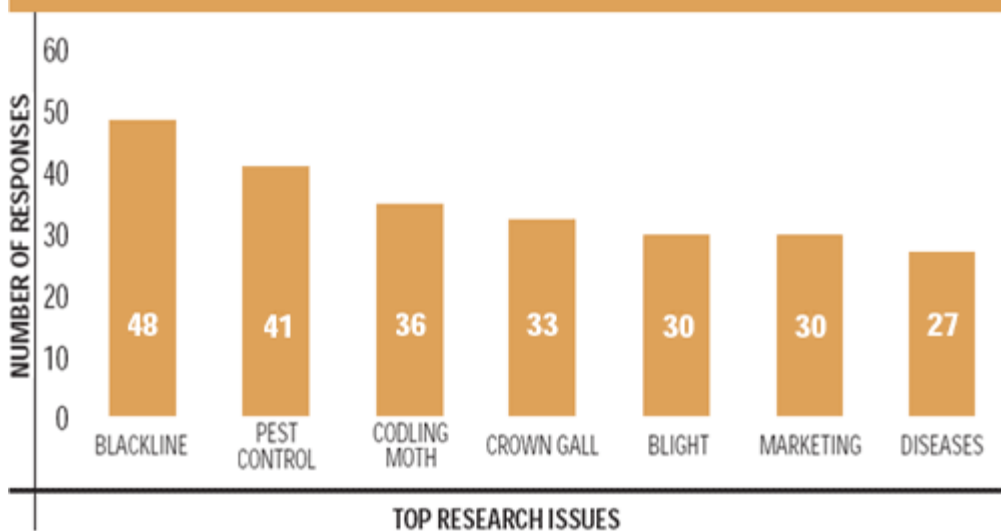
| PRACTICE  | # of Respondents | %  |
|---|------------------|----|
| Organophosphate insecticide sprays (for example Guthion, Lorsban, Imidan) to control codling moth | 201              | 67 |
| Miticide spray to control mites   | 181              | 61 |
| Relied only on beneficial insects to control mites  | 64               | 22 |
| Use of owl boxes or bat houses  | 63               | 21 |
| Pheromone mating disruption (Isomate C+ or Checkmate) for codling moth                            | 18               | 6  |
| Insectary hedgerow plantings to attract beneficial insects  | 7                | 2  |

## Conclusion

In addition to serving as baseline data for future studies, the results of this survey help to identify opportunities for further extension efforts geared toward enhancing and extending the impact of the walnut BIOS project. In summary, these results indicate that of the walnut growers who participated in this survey, the majority:

- want to reduce their chemical and fertilizer use
- are primarily motivated to reduce ag chemical use by the desire to save money
- are also motivated by concerns for health and the environment
- highly value pest control advisers and the results of monitoring/inspecting the orchard as important sources of information for farm management decisions
- do not know that mating disruption can be effective to control codling moth and do not know how to use it
- are not using BIOS practices that may help them to reduce their ag chemical use, including:
  - nitrogen budgeting to more accurately estimate fertilizer needs
  - replacing pre-emergence herbicides with other strategies such as spot treating and narrow strip spraying of post-emergence herbicides
  - establishing cover crops
  - using pheromone mating disruption

**FIGURE 1: Most important walnut-related issues for research (n=211)**



Other research topics identified included: methyl bromide alternatives/fumigation, soil fertility, imports/foreign competition, husk fly, pricing/overproduction, pesticide reduction, BIOS and/or integrated pest management, water management, varieties, mating disruption, and rootstock development.

Further dissemination of the information learned in this project will take place as part of a California Department of Food and Agriculture "Buy California Initiative" grant project that will begin in January 2003 (see article on page 1). Other current extramurally funded education and outreach programs for California walnut growers include the Stanislaus County BIOS program led by the Community Alliance with Family Farmers, the Pest Management Alliance Workplan for California Walnuts funded by the California Department of Pesticide Regulation, and the California Walnut IPM Expansion Project led by the Center for Agricultural Partnerships. It is likely that there will be further adoption of the alternative practices demonstrated in the walnut BIOS project. SAREP hopes to conduct a follow-up to this survey in order to measure these potential changes in practices.

SAREP is currently working on a full report of survey results. For more information, contact **Bev Ransom** at [baransom@ucdavis.edu](mailto:baransom@ucdavis.edu).

## References

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## SAREP hosts Humphrey Fellow



Maung Maung Lwin (photo by Jenny Broome)

The UC Davis Office of International Programs has arranged for SAREP Associate Director **Jenny Broome** to serve as a mentor to visiting Humphrey Fellow **Maung Maung Lwin** from Myanmar (formerly Burma).

Lwin has been working for the United Nations Development Program (UNDP) in integrated development projects involving agriculture, forestry, and livestock to help eliminate poverty and provide environmental protection. Lwin, who has a master's degree in veterinary microbiology from the University of Guelph as well as an undergraduate degree in veterinary science from the Institute of Animal Husbandry and Veterinary Science in Yangon, Myanmar, arrived in Davis with other Humphrey Fellows in September 2002. During the fall and winter quarters the Fellows take courses at UC Davis; they will return to their home countries after a six-week internship in Spring 2003. Lwin is particularly interested in sustainable agriculture and food security issues and as his mentor, Broome is assisting him in class selection at UC Davis, advising him on other educational opportunities, and assisting him in linking up with a meaningful internship project during his stay in California.

The Humphrey Fellows program brings accomplished professionals from designated countries in Africa, Asia, Latin America, the Caribbean, the Middle East and Eurasia to the U.S. at a midpoint in their careers for a year of study and related professional experiences. The program provides them with a shared experience of U.S. society and culture and exposure to current approaches to their disciplines. The program is designed to facilitate lasting ties between citizens of the U.S. and their professional counterparts in other countries. Initiated in 1978 to honor the memory and accomplishments of the late Senator and Vice President, **Hubert H. Humphrey**, the program's goal is to foster exchange of knowledge and mutual understanding.

## UC Davis coordinates sustainable agriculture curriculum

by Jenny Broome, SAREP

A committee has been established at UC Davis to evaluate and coordinate campus sustainable agriculture activities and curriculum. Established in April 2002 by **Neal Van Alfen**, dean of the UC Davis College of Agricultural and Environmental Sciences, the 18-member committee includes faculty and academic staff from 10 departments and several UC ANR statewide special programs based at the campus.

"While there are as many programs and as much or more expertise on sustainable agriculture at UC Davis as there are at universities with more visible programs, they are not yet well integrated or coordinated at this campus," said Van Alfen. "UC Davis has particular strengths in the disciplines that contribute to the natural science aspects of this multidisciplinary field of inquiry."

Van Alfen has charged the committee with developing an inventory of all work related to sustainable agriculture at UC Davis, recommending an umbrella organization to coordinate activities, review and provide recommendations on possible undergraduate and graduate curriculum, and facilitate communication and collaboration.

"Sustainable agriculture, properly organized, could become a major theme for the College of Agricultural and Environmental Sciences at UC Davis," Van Alfen said.

The committee is expected to report its findings to Van Alfen in Winter 2003.

### Members of the College of Agricultural and Environmental Sciences Committee on Sustainable Agriculture:

Chair: **Eric Bradford**, *professor emeritus, animal science department*

**Kent Bradford**, *professor, vegetable crops department*

**Janet C. "Jenny" Broome**, *associate director, UC Sustainable Agriculture Research and Education Program*

**Ted DeJong**, *professor, pomology department*

**R. Ford Denison**, *professor, agronomy and range science department*

**John Eadie**, *professor, wildlife, fisheries, and conservation biology department*

**Howard Ferris**, *professor, nematology department*

**William Horwath**, *associate professor, soil biogeochemistry; associate soil biogeochemist, land, air and water resources department*

**Desmond Jolly**, *director, UC Small Farm Center; consumer extension specialist, agricultural and resource economics department*

**Chris van Kessel**, *professor and chair, agronomy and range science department*

**Karen Klonsky**, *farm management extension specialist, agricultural and resource economics department*

**Paul Marcotte**, *lecturer, community studies and development, human and community development department; academic coordinator, International Programs*

**Robert Norris**, *professor emeritus, vegetable crops department*

**Kevin Rice**, *professor, agronomy and range science department*

**Roberto Sainz**, *International Agricultural Development (IAD); associate professor, animal science department*

**Steven Temple**, *extension specialist, agronomy and range science department*

**Mark Van Horn**, *director, UC Davis Student Experimental Farm*

**Frank Zalom**, *specialist in Cooperative Extension, entomology department*

## **SAREP, USDA-ARS cooperate on sustainable vineyard floor management research**

by Kendra Baumgartner, USDA-ARS and Jenny Broome, SAREP

SAREP's Associate Director **Jenny Broome**, cover crop analyst **Robert L. Bugg**, and **Kendra Baumgartner** of the USDA-Agricultural Research Service (ARS) are teaming up to develop sustainable practices for vineyard floor management. This new ARS-UC cooperative agreement allows SAREP to hire two new staff members for the project, **Lissa Veilleux** and **Xiaomei Cheng**, who are working on the research with wine industry cooperators **Mitchell Klug** and **Daniel Bosch** of Robert Mondavi Winery.

The California winegrape industry played a key role in creating the new ARS sustainable viticulture position housed at UC Davis. Baumgartner, a UC Davis plant pathology graduate, was hired a year ago for the ARS position; with these new funds she and her lab will be able to target weed management challenges for the industry.

Vineyard floor management practices include weed control and cover crop management, which typically are carried out in different parts of the vineyard floor. Weed control is focused on the vineyard floor directly beneath grapevines, in an effort to prevent weeds from competing with grapevines for water and nutrients and to keep climbing weeds from growing up into the grapevine canopy where they interfere with harvest. Cover crops are planted and managed in the vineyard middles (between rows of grapevines) to reduce soil erosion from winter rains, to improve soil chemical and physical properties, and/or to attract and support beneficial predatory insects.

Weed control in California vineyards frequently relies on the use of preemergence herbicides. Preemergence herbicides remain active in the first few centimeters of soil for up to a year. While their persistence in the soil makes them effective against weed species that germinate months after herbicide application, this characteristic also makes them more likely to contaminate groundwater than contact herbicides. Most research on weed control in vineyards has focused on evaluating the efficacy of different herbicides; less research has been done on non-chemical alternatives. One objective of this research is to compare the efficacy of chemical, mechanical, and cultural weed management practices and evaluate how these practices affect weed population dynamics over time. The effects of weed management practices on soil chemical and physical properties and on grapevine growth and yields will also be monitored.

Cover crop management is often used to modify soil chemical, physical, and biological properties. The extent to which modifications to the soil in the vineyard middles actually impact the soil in the vineyard rows and the grapevines likely depends on the proximity of grapevine roots to the cover crops. A second objective of this research is to study the effects of vineyard cover crops on grapevine fine root distribution, nitrogen availability, soil organic matter, and arbuscular mycorrhizal fungi.



## Strawberry short course

Responding to the growing need for information about organic strawberry production, SAREP director **Sean L. Swezey** and the UC ANR Organic Farming Research Workgroup are coordinating the first UC program focused on organic strawberry production Feb. 27 and 28 in Salinas. UC and USDA researchers will be joined by industry speakers to cover issues including certification, economics and production. Course materials will draw from the forthcoming *Organic Strawberry Production Manual*.

"In response to cost and regulatory issues in the last few years, the California strawberry industry has been working to reduce pesticide use and seek alternatives to methyl bromide," Swezey said. "At the same time, organic strawberry production has been increasing-in 2002, more than 130 growers in 35 counties were growing organic strawberries valued at more than \$9.5 million. This course is designed to meet the needs of growers and consultants, but may also be of interest to newcomers to the industry."

Simultaneous Spanish translation will be provided. The costs of the course is \$125, which includes course materials, continental breakfast and lunch each day, and field trip transportation. To register for the course, contact UC Davis Extension, 1333 Research Park Dr., University of California, Davis, CA 95616-4852 or call toll-free (800) 752-0881. In Davis or Woodland call (530) 757-8777. Enroll in section 023AGR113. Scholarships to defray registration costs for limited-resource participants are available by contacting **Kristen Rosenow**, Ecological Farming Association, 406 Main St., Suite 313, Watsonville, CA 95076; (831) 763-2111. Funding for the course has been provided as part of a Buy California Initiative grant to SAREP from the California Department of Food and Agriculture.

## Dairy farmers use manure, prepare for regulatory changes

by Lyra Halprin, SAREP



Keeping records of manure fertilizers will help dairy farmers when EPA regulations go into effect in 2006. (photo by Marco Barzman)

Not only will dairy farmers save money by tracking manure and using it as fertilizer, but it will also prepare them for U.S. Environmental Protection Agency regulations that debuted in December, according to a team of University of California researchers and San Joaquin Valley dairy farmers.

"Revised federal EPA regulations for concentrated farm animal operations will eventually require producers to submit documents showing they are applying manure nutrients at appropriate rates," said **Alison Eagle**, project coordinator of the Biologically Integrated Farming Systems (BIFS) dairy project, administered by SAREP. "We have found that by keeping good records now, farmers can be good stewards of the land, save money, and be ready for the environmental regulations—a real 'win-win' situation."

On December 15 the EPA signed regulations that were open to public comment until last August. They will be published in the public record in January 2003, and final compliance with the regulations will be required by January 2006.

Growers have long known that dairy manure water pumped onto adjacent farmland where corn or winter forage for cow feed is grown contains useful nutrients, but because it hasn't been easy to estimate nitrogen and other plant nutrients in dairy manure water, farmers have added additional commercial fertilizer. But data from the BIFS project and several other UC research projects using flow meters and nitrogen "quick tests" on dairy manure water has made it possible for farmers to measure nutrients in the lagoon water, enabling them to reduce or eliminate use of synthetic fertilizers. The results have been cost savings to the growers and reductions in groundwater contamination from both chemical fertilizer and dairy manure water.

"Participating dairy farmers save money, maintain their yields and reduce groundwater contamination when they use the flow meter and rapid ammonia test we've developed," said **Marsha Campbell Mathews**, UC Cooperative Extension farm advisor from Stanislaus County and principal investigator on a SAREP project on dairy manure management. She is also a cooperator on the dairy BIFS project, headed by UC Davis Cooperative Extension specialists **Stu Pettygrove**, **Deanne Meyer** and **Dan Putnam**.

The BIFS dairy project has been working with 11 dairy farmers since 1999. Many of them are very enthusiastic about results on their dairies, which include cost savings of up to \$80 per acre.

"We're saving enough money with the flow meters that it should get the attention of every dairy producer," said **Rich**

**Wagner** of Wagner Dairy in Escalon, a farmer-participant in the BIFS project.

Wagner said he had always used fertilizer on the corn he planted, but learned during the BIFS project that it wasn't necessary if he added the nitrogen-rich lagoon water.

He noted that the BIFS dairy project encompasses a diverse region, with several soil types and conditions. "There are huge differences in the soils," Wagner said. "Our ground is a lot heavier than other San Joaquin County locations and our water table is a lot lower, but I think the end result is probably the same, using the flow meters."

Dairy farmer and project participant **Steve Wilbur** of SBS Ag in Tulare was similarly enthusiastic.

"We cut our commercial fertilizer use way back and still managed to maintain our yields," Wilbur said. "My neighbor has begun to do the same thing. I think there has been a transition in the whole dairy industry."

**Tom Barcellos** of T-Bar Dairy/Barcellos Farms in Porterville noted that his operation has seen positive results from the very beginning of his participation in the BIFS dairy project.

"We tried a test plot," Barcellos said. "We put in water metered right from the beginning that proved really beneficial because that told us what we were doing wrong. We were actually just about drowning the corn in nutrients. Wherever I can manage lagoon water properly with a meter we don't put any commercial fertilizer on at all—we haven't had to put zinc, we haven't put any boron, we haven't basically put any micronutrients either, because there were already enough there, accumulated over the years. This just gave us the opportunity to manage it better."

**Jeff Strom** of Clauss Dairy Farms in Hilmar said that educating farmers about the benefits of the meters would help them in all regions and with all management styles.

"All dairies are set-up differently—the way they feed their cows, the way they apply and match nutrients to crop needs, the ground, the irrigation system. So not one way to do something is a fix for everybody," he said. "Everybody's got to be able to have some flexibility and be able to make that work for them."

"It is very exciting to see growers so enthusiastic about this," said **Jenny Broome**, SAREP associate director. "Their enthusiasm will help convince other dairy operators throughout the state that using flow meters and monitoring exactly what is leaving their lagoons and going onto forage crops will maintain yields and save them money."

Funding for this BIFS project came from California Assembly Bill 1998 (**Helen Thomson**, Yolo County) via the California Department of Food and Agriculture's Department of Pesticide Regulation, and the U.S Environmental Protection Agency Region 9 Agricultural Initiative.

BIFS projects' main components include a team approach to project management involving UC scientists, farmers and consultants, on-farm demonstrations, monitoring of key biological and economic variables, and farmer-to-farmer information exchange.

"The dairy team BIFS project addressed the main environmental challenges faced by Central California dairy operators without compromising their economic viability," said Stu Pettygrove. "By promoting a system that integrates soil fertility, plant nutrition, and pest management decisions, the project has helped reduce excessive nutrients and chemicals moving into aquifers of the San Joaquin Valley."

"Growers participate in the project because they believe that it is an important process, and they can see we can save them money and reduce groundwater contamination," said Deanne Meyer. "It is critical to communicate their successes to other dairy producers. All dairy producers will eventually be subject to a variety of regulations from counties, water districts and other jurisdictions. But all of them will benefit from keeping track of manure nutrient applications—if they start keeping good records of how they manage their fields and lagoons now, it will be a lot easier to fill out the forms that will be required."

For more information on this project or for other BIFS projects, see <http://sarep.ucdavis.edu/bifs>.



## **BIFS Workgroup focuses on partnerships, nitrogen, project evaluation**

by Jeri Ohmart, SAREP

"Grower Participation in Agricultural Partnerships" was the lead session for the Biologically Integrated Farming Systems (BIFS) Workgroup plenary meeting on October 1, 2002 at UC Davis. Each year, the workgroup meets to discuss current issues in the science of sustainable agriculture and discuss potential workgroup projects to further the goals of BIFS and BIFS-like programs. Workgroup attendees totaled 42 participants, representing 10 academic departments at three UC campuses, farm advisors from eight counties, and over 20 other federal and state program administrators, private foundations, commodity representatives, pest control advisers (PCAs), and farmers.

### **Social Science of Partnerships**

The first session was led by UC Santa Cruz doctoral student **Keith Warner**, whose work is supported by a BIFS Workgroup research project directed by principal investigators **Margaret Fitzsimmons** of the UC Santa Cruz environmental studies department, SAREP Associate Director **Jenny Broome** and **Christy Getz**, a UC Berkeley Cooperative Extension specialist in natural resource dependent communities. He based his talk on his doctoral thesis "Agroecology in Action: Nature, Networks, Knowledge and Risk in California Agriculture," and focused on questions of agricultural partnerships-how they work, how they influence pest management decision-making processes, the role of growers in partnerships, and the role PCAs play in decision-making.

Warner defined a partnership as "an intentional network of relationships." A social scientist, he suggested an alternative approach for agricultural extension based on partnerships that support a "knowledge system" taking all actors into account, allowing collaboration. He said this differs from the traditional agriculture model, which assumes that growers, researchers, extension specialists and PCAs are separate entities and develop their expertise in isolation. This model sees farmers as "users," with technology and information being "delivered" to them, while a partnership model strives to legitimize grower knowledge of his/her agroecosystem, incorporating that knowledge into research and extension activities.

A partnership strategy has many advantages for agriculture as well as for growers. Warner believes that, "the partnerships with the greatest impact have been able to persuade growers to accept a more complex definition of risk, one that integrates economic, agroecological and environmental factors, worker safety factors, regulatory pressures and public perceptions of agriculture."

### **Nitrogen Panel**

The second session was a panel presentation on nitrogen (N) management in orchards, row crops and dairy operations. **Marco Barzman**, former SAREP BIFS coordinator, presented an overview of the literature on off-site movement of nitrogen and its environmental and health effects. **Stu Pettygrove**, of the UC Davis land, air and water resources department presented "The Problem with Bessie," a look at the management of dairy manure and nitrogen in a long-term BIFS project with the dairy and forage crops industry. Pettygrove's project involves reducing the use of commercial fertilizers by using lagoon water (liquid manure) in measured quantities as fertilizers on forage crops. Pettygrove emphasized the need to look at the whole farm system-all inputs and outputs-before being able to accurately analyze nitrogen use.

**Will Horwath**, also of the UC Davis land, air and water resources department, and **Alison Berry**, UC Davis environmental horticulture department, spoke on the use of cover crops in managing fertility in row crops and orchard crops. Horwath focused on the effects of cover crops on soil nutrients, and described a study in which he compared conventional rotations to organic and low input systems. Indications are that cover crops not only add nitrogen (N) to the soil, but can capture N that is already in the soil, making it more available for use by crops. This appears to also increase yield if the cover crops are managed properly.

Berry's presentation affirmed these ideas. Legumes as cover crops are nitrogen fixers. They do not merely cycle, but contribute a net input to the soil. Her studies have shown that the no-till management of leguminous cover crops in sprinkler-irrigated orchards leads to rapid breakdown of mowed vetch residue and that the majority of the nitrogen is released in the first four weeks. Prompt N uptake by young almond trees was also demonstrated. Her lab is conducting similar work on winegrape vineyards.

The nitrogen panel concluded with a discussion of the adoption rates of new techniques for managing N inputs by **Mark Cady**, program director of Community Alliance with Family Farmers (CAFF). He described a nitrogen budgeting worksheet for almond and walnut growers to calculate optimal fertilization rates. **Patrick H. Brown**, of the UC Davis pomology department, developed the nitrogen fertilization model on which the worksheet is based with funding from the California Department of Food and Agriculture's Fertilizer Research and Education Program and SAREP. Online interactive versions of the nitrogen model are available for almonds and walnuts at:

- [http://fruitsandnuts.ucdavis.edu/almond/html/almond\\_n\\_model.html](http://fruitsandnuts.ucdavis.edu/almond/html/almond_n_model.html)
- [http://fruitsandnuts.ucdavis.edu/walnutnmodel/html/walnut\\_n\\_model.html](http://fruitsandnuts.ucdavis.edu/walnutnmodel/html/walnut_n_model.html)

While this nitrogen budgeting tool has been made very easy to use, there is still a problem with growers actually putting it to use, Cady said. He also noted that many growers define cover crops in different ways so it is difficult to get an accurate picture of actual practices in the field.

### **Project Impact Assessment**

The meeting concluded with a session on impact assessment. **Joe Grant**, UC Cooperative Extension farm advisor for San Joaquin County, and **Bev Ransom**, BIFS coordinator, presented the results of an extensive survey of walnut growers in San Joaquin County. The purpose of the survey was to get a picture of the practices walnut growers use in alternative and conventional systems. (See "Walnut BIFS project: San Joaquin County Walnut Growers Survey," page 4 for an account of the survey and its results.)

**Kris O'Connor** and **Craig Macmillan** of the Central Coast Vineyard Team winegrape BIFS project demonstrated their database system, as did **Gary Obenauf** and **Jed Walton** of the Integrated Prune Farming Practices BIFS project. These databases are designed to help growers keep records of many aspects of their farming system, including pesticide and fertilizer inputs, irrigation schedules, pest and beneficial organism monitoring data and more. **Minghua Zhang**, of the UC Davis land, air and water resources department, presented her GIS database containing the California Department of Pesticide Regulation's pesticide use data, and a poster of her recent analysis of the San Joaquin County walnut Biologically Integrated Orchard Systems (BIOS) project's pesticide use trends.

To be added to the BIFS Workgroup listserv, send an email to [bifs@ucdavis.edu](mailto:bifs@ucdavis.edu). To view notes of workgroup discussions, visit the BIFS Workgroup section of SAREP's Web site at [www.sarep.ucdavis.edu/BIFS/workgroup.htm](http://www.sarep.ucdavis.edu/BIFS/workgroup.htm).

## Organic Workgroup showcases information

by Sean L. Swezey, SAREP Director

On Nov. 13, 2002, the ANR Organic Farming Research Workgroup convened in Davis with 52 attendees. Faculty and researchers from eight academic departments at four UC campuses, farm advisors from 10 counties, and over 25 other interested researchers, federal and state program administrators, private foundations and industry representatives and farmers met for an all-day plenary which featured speakers from diverse research and extension venues in California and the Western United States.

Workgroup chair and SAREP Director **Sean L. Swezey** discussed SAREP's **Organic Farming Initiative** and the funding of 2002-03 Workgroup member projects in the context of the needs of a growing California organic industry. UC Cooperative Extension Specialist **Milt McGiffen**, UC Riverside botany and plant sciences department, reviewed results of his long-term desert organic vegetable production research, presenting data on the "organic effect" of transition in desert agricultural soils.

Monterey County UC Cooperative Extension farm advisor **Bill Chaney** discussed the challenges of organic pest control research in the Salinas Valley, and Ventura County farm advisor **Oleg Daugovish** discussed his recent research on cover crops, pest suppressive effects of compost, and biofumigation and weed control with mustard varieties. UC Cooperative Extension Organic Program Coordinators **Steve Quirt** (Marin County) and **Annie Eicher** (Humboldt County) shared information on the development of local organic research and extension programs in their respective counties.

Also of particular interest was a presentation by **David Granatstein**, specialist at the Washington State University Tree Fruit Research and Extension Center in Wenatchee, who reviewed organic production research history in Washington, and shared information on WSU's new commitment to campus-based organic research, extension, and teaching efforts.

**Eric Brennan** (USDA-ARS, Salinas), **Julie Guthman** (UC Berkeley geography department), and **Brian Baker** (Organic Materials Review Institute, Eugene, Ore.) rounded out the program with presentations on cover crops, the political economy of organic production, and pesticide residue analyses of organic fruits and vegetables. **Ray Green**, program manager of the California Department of Food and Agriculture's organic program and **Stacy Carlsen**, Marin County agricultural commissioner, gave updates on organic compliance issues relevant to UC research and extension efforts.

The Workgroup has established an organic farming research section of SAREP's Web site ([www.sarep.ucdavis.edu/organic/index.htm](http://www.sarep.ucdavis.edu/organic/index.htm)) at which Workgroup member names can be searched by research interests and bibliographies. It also includes a searchable database of projects relevant to organic agriculture funded by SAREP. The page continues to be updated with member information and links, making it a useful "one-stop shop" for information on UC organic farming research activities. A 15-member Workgroup steering committee will convene in January 2003 to plan future projects and the status of the workgroup.

Workgroup activities are supported by a grant from the Division of Agriculture and Natural Resources Program Council. Additional major support for activities related to California's growing needs in the organic community comes from the Clarence E. Heller Charitable Foundation. To be added to the members' directory or the Organic Farming Workgroup listserv, contact SAREP Education Coordinator **David Chaney** at [dechaney@ucdavis.edu](mailto:dechaney@ucdavis.edu).

## Program Notes

### Staff Activities

**Sean L. Swezey**, SAREP director, made a July presentation in Point Reyes Station at "Organic Strawberry Production," the third in a series of farm diversification workshops sponsored by UC Cooperative Extension, the Marin Agricultural Land Trust and Marin Organic. Other presenters included **Carolee Bull**, a USDA plant pathologist who was a principal investigator of a SAREP-funded strawberry methyl bromide alternatives project, and berry farmers **Vanessa Bogenholm** and **Brandon Ross**.

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Swezey presented a paper on organic cotton production in the Northern San Joaquin Valley at the 14th International Federation of Organic Agriculture Movements (IFOAM) in Victoria, British Columbia in August. SAREP Associate Director **Jenny Broome** also attended the IFOAM conference as well as the Organic Wine Conference held just prior to IFOAM. Swezey and SAREP education coordinator **David Chaney** attended the third annual National Small Farm Conference in Albuquerque, New Mexico in September. In association with that conference, Swezey chaired the plenary meeting of the USDA's SARE program's Western Coordinating Committee for Sustainable Agriculture and made a presentation on organic farming practices and materials. In October, Swezey made a presentation on "Concepts and Growth of Organic Agriculture in California" to a meeting of the Central Valley chapter of the California Association of Pest Control Advisers (CAPCA) in Modesto. He also made a presentation in October to the statewide UC Cooperative Extension Master Gardeners conference in Asilomar on the principles of biointensive and organic pest management in the home garden.

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In October, Broome made a presentation on SAREP's Biologically Integrated Farming Systems (BIFS) program at the statewide CAPCA conference in Anaheim.

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**David Chaney** serves as co-chair of the steering committee of the USDA-SARE program's Sustainable Agriculture Network. He and **Gail Feenstra**, SAREP food systems analyst, facilitated a short-course on direct marketing at the November California Farm Conference in Ventura.

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Feenstra and **Jeri Ohmart** of SAREP attended the first national farm-to-cafeteria conference in Seattle in October and the national Community Food Security Coalition annual conference. In November Feenstra attended the first technical committee meeting of the federally funded national research project "Sustaining Local Food Systems in a Globalizing Environment (NE-1012)" in Minneapolis. SAREP is launching a local project in Stanislaus County as part of NE-1012.

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Feenstra and **Robert L. Bugg**, SAREP senior analyst, gave presentations during a series of agriculture seminars for Knight Journalism Fellows at UC Berkeley's Graduate School of Journalism in September. Feenstra participated in a panel on "Food and the Family." Bugg was on the panel "Agro-forestry and Farming with the Wild."

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Additionally Bugg made presentations for the Auburn Department of Recreation; at UC Davis on sustainable vineyard management with **Richard Hoenisch**, UCD viticulture and enology department; for a group of Chinese agriculturalists organized by **Michael Miller**, state Department of Water Resources; on cover crops for San Mateo County growers organized by **Tim Frahm**, Farm Bureau and **Ann King**, UC Cooperative Extension; for Monterey County growers with **Richard Smith**, UC Cooperative Extension; to **Patty Kiehl**'s pest management class at Sierra College, Auburn; on ecological crop management for an IPM continuing education seminar organized by **Richard Dodson**, Merced



## Resources

### Print Publications

#### What's Cooking in Your Food System? A Guide to Community Food Assessment

A new publication on community food assessments, *What's Cooking in Your Food System? A Guide to Community Food Assessment*, is now available through the Community Food Security Coalition (CFSC). "Community food assessment" is the term for the analysis of food-related resources and needs. SAREP, the California Department of Health Services and the California Nutrition Network funded this new guide, which was written by **Kami Pothukuchi**, **Hugh Joseph** and **Andy Fisher** and edited by **Kai Siedenburg** and **Kami Pothukuchi**. The National Food Stamp Program and USDA's Community Food Projects Competitive Grants Program provided additional support. The guide includes case studies of nine food system assessments, guidance on research methods, strategies for promoting community participation, and ideas for translating an assessment into action. To order the \$18 (plus shipping) publication, contact CFSC, PO Box 209, Venice, CA 90294; (310) 822-5410; [cfsc@foodsecurity.org](mailto:cfsc@foodsecurity.org) or [www.foodsecurity.org](http://www.foodsecurity.org).

#### Foodshed case studies: Placer, Alameda, Stanislaus

Studies of three foodsheds in Placer, Alameda and Stanislaus counties are now available through SAREP. The reports provide an overview of important trends in each county's food system, and analyze trends in the development of sustainable, local food systems in each region. They are designed to provide information for residents, farmers, local businesses, nonprofits, governments agencies, and local policymakers interested in the future of each region's food and agricultural system.

"Agriculture and food systems in the U.S. have changed dramatically over the last 50 years, and these counties are no exception," said Gail Feenstra, SAREP food system analyst and lead researcher and co-author of the three studies. "Smaller family farms have declined with larger, integrated operations now supplying food and other agricultural products to a global economy. Farms in these regions that were quite diverse have become specialized or have disappeared."

The studies show how, in response to global food trends, community-based organizations as well as regional and national groups have begun to revitalize local food systems through greater interactions among local farmers, ranchers, retailers, processors and consumers. The reports highlight the trends and food system efforts in each county. The California work is part of a national study, "Consumers, Commodities and Communities: Local Food Systems in a Globalizing Environment" in which a partnership of 18 land grant universities throughout the country are collaborating to study local food production, distribution and consumption in a global economy. Participating states are each studying regional food systems in three distinct areas: an urban county, an urbanizing country, and a rural county.

The three case studies are:

- *Alameda County Foodshed Report*, by **Shauna Cozad**, **Shawn King**, **Henry Krusekopf**, **Sarah Prout** and **Gail Feenstra**
- *Placer County Foodshed Report*, by **Shawn King** and **Gail Feenstra**
- *Stanislaus County Food System Project*, by **Jamie Anderson**, **Gail Feenstra** and **Shawn King**

For copies of the \$10 reports, contact Feenstra at SAREP at (530) 752-8408, [gweenstra@ucdavis.edu](mailto:gweenstra@ucdavis.edu). Web versions of the studies will be available in January at [www.sarep.ucdavis.edu](http://www.sarep.ucdavis.edu).

College; on salmon-friendly farming at the Nimbus Fish Hatchery in Citrus Heights organized by **Dwight Harvey**, U.S. Fish and Wildlife Service; and for UCD professor **Bruce Jaffee**'s soil science class at Dixon Ridge Farms.

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**Bev Ransom**, SAREP BIFS coordinator/grants manager, gave a presentation on the walnut BIFS project at the UC BIFS Workgroup meeting in October (see page 4 for a complete report.)

## Visitors

**Marco Barzman**, former SAREP biologically integrated farming systems (BIFS) coordinator, hosted **William Mgcayi**, an agricultural technician with the Agricultural Research Council in Elsenburg, South Africa in August. Barzman and Mgcayi toured organic farms and institutions with information on organic agriculture. Mgcayi was interested in specific information on organic production and management to take back to his farmer-clients. The USDA sponsored his visit to California.

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In September, SAREP staff members **Lyra Halprin** and **Jeri Ohmart** hosted **Shoji Shinkai**, assistant professor of farm management from the Department of Agriculture and Resource Economics at Kyushu University in Fukuoka, Japan. Shinkai was in California doing research on farmers markets, and toured the Davis farmers market with manager **Randii MacNear**, a SAREP program advisory committee member. In Japan there are both privately run and public farmers markets. At the larger markets, local farmers pay approximately 15 percent of their gross sales to participate, while outsiders are charged 20 percent. Shinkai's family runs a private farmers market.

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**Jenny Broome** and **Desmond Jolly**, UC Small Farm Center director, met with visitors from South Africa interested in rural development and the way Cooperative Extension-the university link with county government-can work to further community development. UC Cooperative Extension Fresno County agriculture labor management advisor Steve Sutter also attended the October meeting.

## Sources of Funding

### SAREP Request for Proposals

Look for a new SAREP Request for Proposals (RFP) in January 2003. SAREP will offer grants for research and education projects in the community development and public policy sector that support the development of sustainable food systems. SAREP grants are available to individuals affiliated with California public or private educational institutions, non-profit, tax-exempt organizations, or state or federal government agencies. Awards typically range from \$10,000 to \$20,000 per year. The RFP will be posted on SAREP's Web site at [www.sarep.ucdavis.edu/grants/request.htm](http://www.sarep.ucdavis.edu/grants/request.htm). The site also provides links to previously funded projects. For more information or to receive a paper copy of the RFP, contact SAREP grants manager **Bev Ransom** at (530) 754-8546; [baransom@ucdavis.edu](mailto:baransom@ucdavis.edu).

### Organic Research grants

The Organic Farming Research Foundation offers research grants of up to \$15,000, twice a year. Funds are offered for organic farming research, dissemination of research results to organic farmers and growers interested in making the transition to organic production and consumer education on organic farming issues. The deadlines for proposal consideration are **January 15** for the spring funding cycle and **July 15** for the fall funding cycle. Contact **Jane Sooby** at OFRF, PO Box 440, Santa Cruz, CA 95061, (831) 426-6606 or email [research@ofrf.org](mailto:research@ofrf.org) or [jane@ofrf.org](mailto:jane@ofrf.org).

### USDA Cooperative State Research, Education and Extension Service (CREES) grants

Applications for two new USDA CREES integrated pest management grant programs are now available. Access [www.reeusda.gov/1700/funding/rfaintegrated\\_03.htm](http://www.reeusda.gov/1700/funding/rfaintegrated_03.htm) for more information.