

SUSTAINABLE AGRICULTURE

Dairy BIFS survey highlights knowledge, use of new manure management practices

by Bev Ransom, SAREP, Stuart Pettygrove, UC Davis Land, Air and Water Resources, and Jenny Broome, SAREP

California dairies produce approximately 20 percent of the nation's milk and cheese; dairy is the top ranking agricultural commodity (based on farm gate value) in our state. The increasing size of California dairies, along with urban encroachment in farming areas, has resulted in public concern about the impacts of dairies on air and water quality. These concerns have led to new and pending government regulations as well as efforts by the dairy industry, government agencies including USDA's Natural Resources Conservation Service (NRCS), and the University of California to help dairy producers employ farming systems that protect air and water quality.

Many Central Valley dairies collect some portion of manure by flushing dairy stalls with water; the resulting "lagoon water" is usually applied to adjacent forage cropland. A key element of managing manure in an environmentally sound manner is the measurement and control of the quantity of manure nutrients applied to crops. Both surface water and groundwater can be contaminated when nutrients in commercial fertilizer or dairy manure applied to forage cropland exceed the needs of the crop. A relatively new system that uses an on-farm nutrient "quick test" of lagoon water, a flow meter, and careful record-keeping has been developed to help dairy producers rely on lagoon water as a dependable crop fertilizer. This could eliminate un-

necessary applications of commercial fertilizer, which saves money and protects water quality.

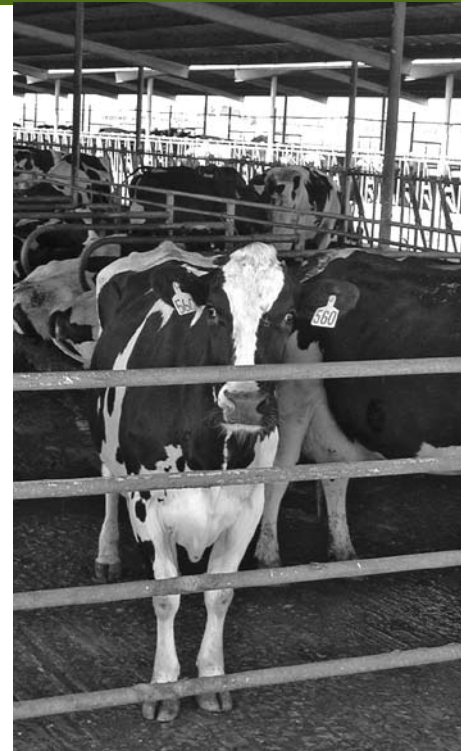
The Dairy BIFS project (1999-2003), funded through SAREP's Biologically Integrated Farming Systems (BIFS) program and led by **Stuart Pettygrove**, UC Cooperative Extension (UCCE) soils specialist, was designed to introduce more Central Valley dairy producers to new practices aimed at reducing the nutrient load on groundwater. The BIFS project, in collaboration with several UCCE dairy and forage farm advisors, UC researchers, and dairy producers, demonstrated the use of flow meters and nutrient analysis of lagoon water, lagoon water applications to alfalfa, and reduced use of commercial fertilizers.

In the spring of 2003, UC SAREP worked with Pettygrove and other BIFS project collaborators on a mail survey of dairy producers in 16 Central Valley counties to:

- assess the impact of the Dairy BIFS project and other UCCE educational efforts;
- provide a snapshot of current manure management practices used; and
- identify changes in manure management since previous UC surveys were conducted in 1988 (Meadows & Butler) and 1994 (Meyer et al.).

Survey results are based on completed questionnaires from 428 Central Valley dairies, representing a 28 percent response rate. Comparison to CDEA's 2003 California dairy statistics showed that 30 percent of the total dairy

See **DAIRY BIFS** on p.2



More Central Valley dairy producers use manure management practices that protect water quality. (photo by Bev Ransom)

INSIDE	
FROM THE DIRECTOR – NEW SAREP, CAMPUS HEAD	3
SAREP FUNDS FOOD SYSTEMS GRANTS	4
MANDARINS SHOW MARKET POTENTIAL	5
RESOURCES	6
SOURCES OF FUNDING	7
STUDENT PROGRAM	7
INTERNSHIPS	8
CALENDAR	8

DAIRY BIFS CONTINUED FROM PAGE 1

cows in the Central Valley were represented in this survey. An initial analysis of the results has recently been concluded. A complete report of survey results will be posted on SAREP's Web site at: sarep.ucdavis.edu/bifs/bifs-pubs.htm

California dairy herds increasing

California dairies have increased in size, particularly over the last 20 years (Fig. 1). The average herd size of California dairies grew from 204 in 1982 to 400 in 1992. It almost doubled again to 776 in 2002. The most recent data reflects another six percent increase in the following two years.

The herd size of survey respondents ranged from 65 to 5,700; over a third of dairies housed over 1,000 cows (Fig. 2). The average herd size of respondents was 1,007 cows. This is larger than the average herd size of 856 for all Central Valley dairies during that year, suggesting that producers with larger dairies were more likely to participate in the survey.

Almost a third of respondents had increased their herd size during the previous three years. Most respondents (64%) reported that the size of their herd had stayed about the same in the last three years and only five percent had decreased their herd size during that time period.

BIFS project increased knowledge of new practices

Almost a third of respondents had been exposed to the Dairy BIFS project either by reading the project newsletter or attending a field day event. We found that respondents who had been exposed to the Dairy BIFS project were more likely to be familiar with flow meters and the on-farm nitrogen quick test (Fig. 3) and were more likely to use other improved manure management practices such as keeping records of manure applications and testing the nitrogen content of lagoon water. These results suggest that the Dairy BIFS project contributed to broader knowledge of an improved manure management system.

More outreach needed

Less than half of dairies in the survey maintained records of the dates and amounts of their solid and liquid manure applications

to crop fields, even though this is necessary to track manure applications to protect water quality.

Manure nutrient testing may increase producers' awareness that lagoon water applications can reduce the need for additional commercial fertilizer applications. Only about a quarter of respondents (27%) reported that they test the nitrogen content of lagoon water applied to fields. Nearly all of these respondents tested only once per season or less often. Since the nutrient content of lagoon water can fluctuate greatly, annual testing does not provide adequate information to target lagoon water applications to meet crop needs.

These results suggest the need for further outreach and education. Over 75 percent of respondents reported that they either previously or currently had plans to improve manure management on their dairy; we expect dairy producers would welcome additional guidance and assistance.

Partnerships aid California dairy producers

The Dairy BIFS project was only one

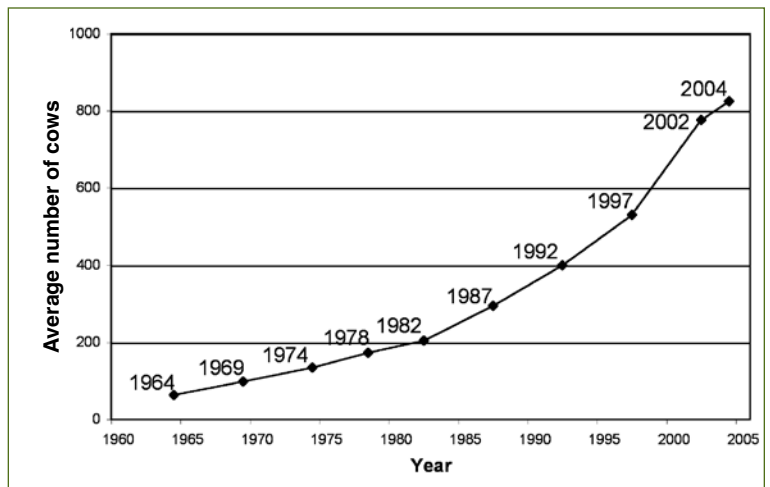


Figure 1. Growth in average herd size on California dairies.

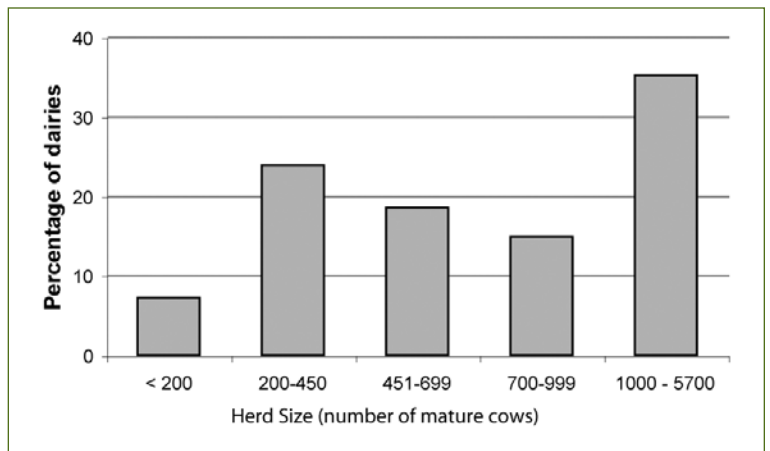


Figure 2. Distribution of herd size for survey respondents (n = 414 dairies).

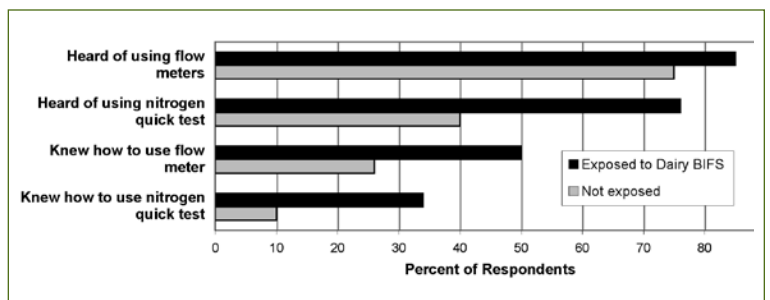


Figure 3. Knowledge of new manure management practices.

of several projects and programs available to Central Valley dairy producers for education and guidance. Several practices demonstrated in the BIFS project were introduced to dairy producers during earlier research projects on lagoon nutrient management led by **Marsha Campbell Mathews**, Stanislaus County farm advisor, and **Thomas Harter**, UCCE hydrologist. In addition to their efforts to assist dairy producers through field days, newsletters, and personal assistance, almost all Central Valley UCCE dairy and forage farm advisors collaborated with the Dairy BIFS

See DAIRY BIFS on p.6

SAREP, campus anticipate new director

A great deal of attention and excitement at SAREP over the last few months has been focused on the recruitment of a new director. By agreement with the UC Division of Agriculture and Natural Resources (ANR) in Oakland, the new SAREP director will also serve as the director of the new Agricultural Sustainability Institute, which is part of the College of Agriculture and Environmental Studies (CAES) at UC Davis. Additionally, the selected candidate will be appointed as a full professor and the first holder of the UC Davis W.K. Kellogg Endowed Chair in Sustainable Food Systems.

After a truly international search with applicants from every inhabited continent, each of six candidates was exhaustively interviewed by several groups that submitted recommendations to Dean **Neal van Alfen** of CAES and ANR Associate Vice President **Rick Standiford**. Each candidate presented a public seminar, and faced questions from students as well as senior academic faculty.

In addition to a campus-based selection committee and a committee of other UC staff members (including several SAREP staff members), there was a very distinguished and active External Stakeholder Committee, which included **Don Bransford**, Colusa rice grower; **Judith Redmond**, Capay Valley organic grower and president of the Community Alliance with Family Farmers; **Cornelius Gallagher**, Bank of America senior vice president/agribusiness; **Jonathan Kaplan**, Natural Resources Defense Council; **Richard Rominger**, UC Regent, former director of the California Department of Food and Agriculture, former Deputy Secretary of Agriculture under President **Bill Clinton**, and Winters farmer; **Pam Marrone**, AgraQuest Inc. co-founder; **Karen Ross**, president, California Association of Winegrape Growers; **Craig McNamara**, Winters organic farmer; **Howard Shapiro**, Seeds of Change vice president for agriculture; **Al Medvitz**, Solano County sheep/grain producer; **Ann Thrupp**, California Sustainable Winegrowing Alliance and Fetzer Vineyards; and **Claudia Reid**, policy director, California Coalition for Food and Farming.

The process is not yet complete, but it is public knowledge that one of the candidates, **Tom Tomich**, has been on campus for a second interview. A native Californian from a farming family, Tomich trained as an agricultural economist and received his doctorate at the Food Research Institute

at Stanford University; he currently serves as global coordinator for the Alternatives to Slash-and-Burn Programme (www.asb.cgiar.org). It is hoped that a new director will be appointed by this fall.

* * * *

After a gap of several years, SAREP is pleased to award nine food systems grants this spring. SAREP had awarded community food systems grants since the early 1990s, and is pleased to be able to fund these grants for \$80,349 (see story page 4). These grants are intended in part to stimulate farmers, consumers and communities to work together to create a more self-reliant and financial viable food economy

With all of the pressures on farm incomes, especially with the increasing concentration of marketing in the hands of a relatively few companies, I have often wondered why farmers don't increase their marketing clout by organizing to bargain for higher prices. I know this runs against the cultural grain for many growers, who may want to go their own way when it comes to marketing.

Richard A. Levins, emeritus professor of applied economics and extension farm management specialist at the University of Minnesota, has written a great deal on this topic (www.apec.umn.edu/faculty/dlevins/). In a food market controlled by retailers, where farmers are usually price-takers instead of price-makers, Levins claims that growers can improve their finances by organizing themselves to bargain for higher prices. He cites several examples including the Organic Farmers Agency for Relationship Marketing, and Co-operatives Working Together, which has been described as a dairy farmer-funded self-help program.

Levins has examined prices organized farmers receive compared to those who are not; premiums for organized growers tend to be in the range of 10-20 percent, and have ranged up to 42 percent for farmers who are organized.

Levins has recently written *Market Power for Farmers—What it is, How to get it*, which includes a discussion of farmers' legal right to collective bargaining. Distributed by the Institute for Rural America, the book serves up some critical food for thought (see *Resources*, page 6, for more information).—*Rick Roush, interim director, University of California Sustainable Agriculture Research and Education Program*

SAREP funds community food systems grants

Nine projects—ranging from help for African American farmers at farmers markets to a needs assessment for small-scale livestock processing facilities—have been granted a total of \$80,349 by the UC Davis-based statewide Sustainable Agriculture Research and Education Program (UC SAREP).



Will Scott, Scott Farms, Fresno, president, African American Farmers of California. (Photo by Richard Molinar, UCCE)

The awards are for county-based UC Cooperative Extension advisors and directors who are partnering with community-based organizations, according to Rick Roush, UC SAREP interim director.

Gail Feenstra, UC SAREP food system analyst who coordinated the granting process, said that one of the goals of the grants is to encourage farmers,

consumers and communities to work together to create a more locally based, self-reliant food economy.

“These projects reveal a real demand within Cooperative Extension to pursue community-based approaches supporting local food systems,” Feenstra said. “SAREP is happy to provide seed funding to our extension partners and their communities, and we look forward to sharing the results and outcomes with the broader Cooperative Extension network.”

The projects include:

Need Assessment for Small-Scale Livestock Harvesting and Processing Facilities in Northern California

Morgan Doran, UC Cooperative Extension, 501 Texas St., Fairfield, CA 94533, (707) 784-1326, mpdoran@ucdavis.edu. \$9,976

This project will quantify the demand for small-scale livestock slaughtering and processing services in Northern California and determine ideal geographic areas for such businesses.

Trinity Heritage Orchard Project

Larry Forero, UC Cooperative Extension, 1851 Hartnell Ave., Redding, CA 96002-2217, (530) 224-4900, lforero@ucdavis.edu. \$9,584

A heritage apple and pear orchard at Lee Fong Park will be used as a site to promote the use of heirloom fruit, as a focal point for agritourism and value-added marketing, and a site to demonstrate production techniques.

Seasonal Availability Calendar for Placer County Produce

Cindy Fake, UC Cooperative Extension, 11477 E Avenue, Auburn, CA 95603, (530) 889-7385, cefake@ucdavis.edu. \$7,989

This project will develop a seasonal calendar of Placer County produce to build awareness of local agriculture and stimulate the consumption of local agricultural products.

Humboldt County Local Food Distribution Project

Deborah Giraud, UC Cooperative Extension, 5630 South Broadway, Eureka, CA 95503, (707) 445-7351, ddgiraud@ucdavis.edu. \$10,000

This project will focus on creating new markets for local farmers by piloting a farm-to-institution purchasing program in the county.

Small Farms Marketing Assistance Program (M.A.P.)

Richard Molinar, UC Cooperative Extension, 1720 S. Maple Ave., Fresno, CA 93702, (559) 456-7555, rhmolinar@ucdavis.edu. \$10,000

This project will support the sustainability and diversification of the new “Golden West Side Farmers Market,” particularly for African American farmers, through training and technical assistance to farmers and market management. A secondary goal is to raise public awareness of local and sustainable food systems, especially through direct market channels.

Farms of Tuolumne County Marketing Association

Jay Norton, UC Cooperative Extension, 2 S. Green St., Sonora, CA 95370, (209) 533-5686, jbnorton@ucdavis.edu. \$3,505.

This project will support the development of a Web site and promotional materials featuring the Farms of Tuolumne County logo, ensuring the expansion and continuity of Farms of Tuolumne County.

Community Food Systems in Marin County: Connecting the Dots

Ellie Rilla, UC Cooperative Extension, 1682 Novato Blvd., Suite 150B, Novato, CA 94947, (415) 499-4204, erilla@ucdavis.edu. \$9,775

The project continues support of farm-to-school programming that connects food service and farmers in Marin County through on-farm tours and training for farmers.

Solano County’s Agricultural Sustainability at the Crossroads... Which Way to Turn, What Choices Will Count?

Carole Paterson, UC Cooperative Extension, 501 Texas St., Fairfield, CA 94533, (707) 784-1320, capaterson@ucdavis.edu. \$10,000

This project will increase awareness of growers, policymakers and local citizens about marketing options, agritourism, and sustainability issues in Solano County agriculture, through workshops and community forums.

PlacerGROWN Collaborative Community Supported Agriculture Project

Roger Ingram, UC Cooperative Extension, 11477 E Avenue, Auburn, CA 95603, (530) 889-7385, rsingram@ucdavis.edu. \$9,520

This project will pilot a collaborative community supported agriculture (CSA) project, supplying members with fresh, local produce from six to 10 farms.

Funding for these grants was made available from savings within SAREP over the last several years. See project descriptions above for individual project contact information. For more information about current or past projects, contact SAREP at (530) 752-7556 or access the program’s searchable Web site at sarep.ucdavis.edu.



Placer County mandarins. (Photo by Wayde Carroll for Placer County Ag Marketing Program)

SAREP study: Mandarin oranges show potential for market expansion

by Lyra Halprin, SAREP

What's bright orange, fits in a pocket, easy to peel and has marketing potential in the United States? If you answered "mandarin oranges," you would be right, according to local food systems researchers at the University of California's sustainable agriculture program.

"Rising demand for mandarins in the U.S. is related to their developing reputation as a healthy, easy-to-eat food, and the fact that more Americans are including greater amounts of fresh fruits and vegetables in their diet," said **Gail Feenstra**, UC SAREP food systems analyst.

The world supply of mandarins is showing an upward trend as they become more popular, but the United States is far behind other regions in production, she noted.

Feenstra and graduate researchers **Heather Ricks** and **Erin Derden-Little** have completed a report on the marketing potential for mandarin growers in Placer County. The researchers found that Placer County growers are boosting production to fill the growing demand for the fruit in the United States while creating more demand for mandarins through marketing.

"Even though we can see production beginning to increase, growers and other ag experts sense that the local market for mandarins has barely been tapped," said Derden-Little. "The main objective of this project is to identify and assess potential marketing strategies for mandarin growers in Placer County."

Americans eat approximately three pounds of mandarins per year, most of which are consumed fresh, according to the report. China, Spain and Japan are the top three world producers, growing almost 60 percent of all tangerines (a variety of mandarin). California is among the leaders in increased acreage planted to mandarins in the United States, with Placer County ranking fifth in production in the state. Per capita consumption in Placer County was up to almost four pounds last year, according to Derden-Little.

"Area mandarin growers, though, are facing major roadblocks in local and statewide markets because of the effects of global ag trends, and a lack of grower knowledge about marketing and production," she said. "Although ag land is threatened by development, we have detailed the opportunities that do exist for increased local mandarin sales."

Assessing the Local Marketing Potential for Mandarin Growers in Placer County, available as a free download at sarep.ucdavis.edu/cdpp/foodsystems/mandarin.pdf, details the advantages Placer

growers have been located in a county with a well-established system of farmers markets, the 10-year-old Mandarin Festival that attracts 30,000 visitors, and a new Mountain Mandarin Magic grove tour.

Derden-Little said one of the chief advantages for the area is education and marketing support. In addition to having the only county-appointed agricultural marketing specialist in the state, Placer County has excellent support from UC Cooperative Extension farm advisors as well as local officials and agricultural support staff sympathetic to farming issues, she said.

The UC SAREP report also outlines opportunities for mandarin growers, said Feenstra.

"We note that there is a marketing opportunity in educating consumers about the unique flavor of mountain-grown mandarins and the support they can provide by buying local produce," she said. "Other opportunities for growers include using Internet Web sites for advertising and sales, and capitalizing on direct retail sales and agricultural tourism."

Feenstra said the report is part of UC SAREP's participation in a multistate research project funded by the USDA.

"In addition to providing a concrete assessment of the marketing system in place in Placer County for mandarin growers, we also focused our analysis on ways in which local small-scale producers are attempting to sustain their foothold in the ag economy," Feenstra said.

Feenstra said specialty fruit producers, marketers, and others interested in targeting niche markets for agricultural goods might also find the report valuable.



RESOURCES

MARKETS FOR FARMERS

Market Power for Farmers: What it is, How to get it, Richard Levins, Institute for Rural America, 60 pages, 2006. Levins compares prices received by farmers who are organized compared to those who are not. \$11.35 includes shipping and handling in the U.S. Order by telephone at (800) 858-6636.

Blithe Tomato, Mike Madison, forward by Deborah Madison, drawings by Patrick McFarlin. A Great Valley book by Heyday Books. \$15. Madison, a Winters, Calif. farmer, writes a wry insiders look at farmers market society across America and the thousands who gather each weekend to pinch, poke, smell and probe the produce. To order, contact Heyday at heydaybooks.com

SAN WEBSTORE NEW PUBLICATIONS

The USDA's Sustainable Agriculture Network (SAN) has three new releases that may be downloaded free from its Web site or ordered as print publications at sare.org/WebStore/ or by calling (301) 374-9696 or sending check or money order to Sustainable Agriculture Publications, PO Box 753, Waldorf, MD 20604-0753. Specify title when ordering by mail.

Smart Water Use on Your Farm or Ranch. March 2006. Spotlights innovative research into a range of conservation options related to water use, including managing soia to improve infiltration, selecting drought-tolerant crops and native forages, and designing innovative runoff collection systems. 16 pages. Download free at sare.org/publications/water.htm, or order free hardcopy edition (no shipping charge).

DAIRY BIFS CONTIUNED FROM PAGE 2

project. Beginning in 2000, Mathews and Tulare County farm advisor Carol Frate offered Lagoon Nutrient Management short courses to dairy producers in six Central Valley counties. In some cases, they were able to use results from the Dairy BIFS project to demonstrate the main concepts of their courses.

Our survey suggests that the Dairy BIFS project in combination with other efforts within and outside the University of California has been successful in introducing improved manure management practices to many Central Valley dairy producers. As Central Valley dairies change in response to industry trends, environmental concerns, and government regulations, opportunities continue to exist for UC researchers and extensionists to work with the dairy industry and government agencies toward the use of improved manure management systems.

Resources

UC Lagoon Nutrient Management web site - Tools and information to help dairy operators use the lagoon water as a reliable source of nutrients for their crops. groups.ucanr.org/LNM/

UC Davis Groundwater Cooperative Extension Program – List of

- *How to Direct Market Your Beef*. March 2006. Describes how a ranching family became a profitable, grass-based beef operation focused on direct-market sales. 96 pages. Download free at sare.org/publications/beef.htm, or purchase print copies (\$14.95 plus \$5.95 s/h).
- *Manage Insects on Your Farm: A Guide to Ecological Strategies*. December 2005. Offers help to farmerson effective, affordable and environmentally sound insect pest management strategies. Download it free at sare.org/publications/insect.htm, or purchase print copies (\$15.95 plus \$5.95 s/h).



Significant discounts are offered on orders of 10 or more SAN books, including:

- *Managing Cover Crops Profitably*. Comprehensive look at the use of cover crops to improve soil, deter weeds, slow erosion and capture excess nutrients.
- *Building a Sustainable Business*. A business planning guide for agricultural entrepreneurs that follows one family through planning, implementation, and evaluation.
- *Building Soils for Better Crops*. How ecological soil management can raise fertility and yields while reducing environmental impact.
- *Steel in the Field*. A combination of farmer experience, agricultural engineering and university research address how to reduce weed control costs and herbicide use.

dairy/AFO environmental quality web sites. groundwater.ucdavis.edu/dairy_links.htm

California Dairy Quality Assurance Program – Information on cost-sharing opportunities, environmental stewardship short courses and certification. (866) 662-3727; cdqa.org

UC Dairy BIFS Project: Integrating Forage Production with Dairy Manure Management - Final project report available at: sarep.ucdavis.edu/bifs/ (click on "Dairy") or contact SAREP at (530) 752-7556.

References

- Butler, L.J. and C.A. Wolf. 2000. California dairy production: Unique policies and natural advantages. *Research in Rural Sociology* 8:141-161.
- CDFA Dairy Marketing Branch, 2004. California Dairy Statistics Annual. Available online at www.cdfa.ca.gov/dairy/pdf/Annual/2004/dairyStats2004.pdf
- Harter T., H. Davis, M.C. Mathews, R.D. Meyer 2002. Shallow groundwater quality on dairy farms with irrigated forage crops. *Journal of Contaminant Hydrology* 55:287-315.
- Meadows, C. and L.J. Butler. 1988. Dairy waste management in California: A survey. Sustainable Agric. Competitive Grant Program No. 240, Final Rep. Dept. Agric. & Resource Econ., Univ. of California, Davis.
- Meyer, D.M., I. Garnett, and J.C. Guthrie. 1997. A survey of dairy manure management practices in California. *Dairy Sci.* 80:1841-1845.

SUSTAINABLE AGRICULTURE, FOOD SYSTEMS, AND ORGANIC FARMING

Western Region SARE program

wsare.usu.edu/

The Western Sustainable Agriculture Research and Education program invites proposals for its 2007 competitive grants program. Areas of funding are:

- Graduate Student projects: proposals due **May 31, 2006**
- Research & Education projects: pre-proposals due **June 14, 2006**
- Farmer/Rancher grants: proposals due **December 6, 2006**
- Professional + Producer grants: proposals due **December 6, 2006**
- Professional Development projects: proposals due **November 1, 2006**

People with disabilities or without Internet access may call Western SARE at (435) 797-2257.

USDA CSREES Funding Opportunities List

csrees.usda.gov/fo/funding.cfm/

Sort by due date to get current Requests for Proposals.

Western Region IPM Center Funding Opportunities List

wrpmc.ucdavis.edu/Research/index.html

List of funding opportunities and grant programs for Western Region researchers and educators.

US EPA Region 9

epa.gov/region09/funding/rfps.html

Calls for proposals on a variety of target issues and topics; variable funding cycles.

Sustainable Agriculture and Food Systems Funders

safsf.org

SAFSF is a national working group of grant-makers that seeks to promote a more sustainable agriculture and food system.

Organic Farming Research Foundation / Scientific Congress on Organic Agriculture Research

ofrf.org/research/index.html

OFRF is dedicated to promoting organic farming through funding of on-farm research and dissemination of the results. Proposals are considered twice a year. See their Web site for most current deadlines.

Building Better Rural Places: Federal Programs for Sustainable Agriculture, Forestry, Conservation and Community Development

attra.ncat.org/guide/index.html

Publication written for those seeking help from federal programs to foster innovative enterprises in agriculture and forestry in the United States. The guide addresses program resources in community development, sustainable land management, and value-added and diversified agriculture and forestry.

Community of Science (COS) Funding Opportunities

cos.com

A comprehensive database of published grants, scholarships, fellowships and awards with more than 23,000 entries. Other services available are COS Expertise, a worldwide database of profiles of researchers, scholars and other experts, and COS Abstract Management System, a comprehensive Web-based system for managing the submission, review and approval of abstracts.

Michigan offers organic farming certificate program

Michigan State University's Student Organic Farm in East Lansing, Mich. is offering a 12-month organic farming apprenticeship and course work for 40 units of academic credit, beginning January 2007. Up to 15 participants will work on the campus' 10-acre four-season certified organic farm, which includes 10,000 square feet of unheated greenhouses and 4,000 square feet of heated greenhouses. The farm produces fresh vegetables, fruit, herbs and flowers for a 50-member, 48-week CSA (subscription farm) and a summer farm stand. The program also includes management of a half-acre permaculture plot (native, edible forest garden), honeybees and

free-range laying hens, plus an on-farm or community garden-based internship.

The program will prepare participants for a career in organic farming, food security and farm-to-school projects, organic agriculture education, community garden projects, the Peace Corps, and other programs. For more information, contact **Corie Pierce** at piercee@msu.edu, 517-355-5191 (then dial 1, ext. 411). Additional information about workshops and on-line courses for individuals who cannot participate full-time but want to learn about organic farming is available at msuorganicfarm.com/snav/483/page.htm.

Summer internships at UC Davis Student Farm

The UC Davis Student Farm is offering a limited number of part-time internships in the summer of 2006. Internships may focus on:

- certified organic crop production (using student farm market garden/CSA program)
- field and tractor/equipment operations and maintenance (part of student farm crew)
- organic gardening and ecological horticulture (in student farm ecological garden)
- combination of the above.

See studentfarm.ucdavis.edu for program descriptions. Internships are available from mid-June through late September. Interns work 15-25 hours per week. To arrange academic credit, see the Office of Summer Sessions Web site (summer-sessions.ucdavis.edu) for fee information. Contact **Mark Van Horn** at the Student Farm for more information: mxvanhorn@ucdavis.edu; (530) 754-7885 or (530) 752-7645.

CALENDAR

* SAREP WEB CALENDAR AND ONLINE COURSE

SAREP offers a regularly updated sustainable agriculture calendar on our World Wide Web site at: sarep.ucdavis.edu (click "Calendar" on top menu bar). Please feel free to add sustainable agriculture events. In addition, we offer an on-line course for pest control advisers and others titled *Ecological Pest Management in Grapes*. Up to 11 CE credits for California PCAs. See sarep.ucdavis.edu/courses/grapes/

*NATIONAL/INTERNATIONAL CALENDAR

The National Agricultural Library maintains a calendar as part of AgNIC at agnic.org. It links to more than 1,200 major national and international agricultural conferences.

JUNE

7-11 *Joint conference of The Association for the Study of Food & Society & The Agriculture, Food, & Human Values Society: PLACE, TASTE & SUSTENANCE: THE SOCIAL SPACES OF FOOD & AGRICULTURE*, Boston University. Keynote speakers: Davia Nelson & Nikki Silva – The Kitchen Sisters, also Alex Prud'homme, Sandy Block, others. Lobster/clambake. Terroir tastings, tours (the Food Project-Urban Farming & Agricultural Sustainability, Farm-to-Table). Details at bu.edu/lifelong/conference/; 617-353-9852.

25-28 *5th Annual UC/CSU/CCC Statewide Sustainability Conference: TURNING THE TIDE: IMPLEMENTING SUSTAINABLE STRATEGIES*, UC Santa Barbara. Topics: Green building, energy, waste management, sustainable transporta-

tion, food systems & more. Pre- & post- conf training by US Green Buildings Council. Participants: UC, CSU, community college, private campuses, gov't agencies, contractors, suppliers, public. Information: sustainability.ucsb.edu/conference/; Email: turningthetide@geog.ucsb.edu.

AUGUST

7-9 *The Future of Agriculture: Science, Stewardship & Sustainability*, Hyatt Regency (downtown) Sacramento. Sponsors: US-EPA ORD Hazardous Substances Tech. Liaisons Prog., Nat'l Institutes of Environ. Health Sciences, Midwest Hazardous Substance Res. Center-Kansas State Univ., & Calif. EPA. Success stories in air quality, water quality, waste management, environmental stewardship. Technical sessions, panels, group discussions. Topics: air & water quality, waste management, environmental stewardship; lessons from EPA's Superfund program & ag; best management practices; integration of sustainable practices into planning, policy, regulations, decisions, & incentive strategies. See www.dce.ksu.edu/dce/conf/ag&environment/

15-17 *National SARE Conference--North Central Region*. Olympia Resort and Conference Center, Oconomowoc, Wisconsin. Information: sare2006.org

OCTOBER

7-11 *Community Food Security Coalition conference: BRIDGING BORDERS TOWARD FOOD SECURITY*, Vancouver, BC. Information: foodsecurity.org.

9-12 *California's Oaks: Today's Challenges, Tomorrow's Opportunities* (6th California Oak Symposium), Doubletree Hotel, Rohnert Park, CA. For more information visit danr.ucop.edu/ihrmp/symposium.html.

SUSTAINABLE AGRICULTURE is a publication of the UC Sustainable Agriculture Research and Education Program (SAREP). SAREP provides leadership and support for scientific research and education to encourage farmers, farmworkers, and consumers in California to produce, distribute, process and consume food and fiber in a manner that is economically viable, sustains natural resources and biodiversity, and enhances the quality of life in the state's diverse communities for present and future generations. SUSTAINABLE AGRICULTURE is published three times yearly by SAREP staff from its UC Davis offices, with assistance from ReproGraphics, UC Davis. Mailing address is: UC Sustainable Agriculture Research & Education Program, University of California, One Shields Ave., Davis, CA 95616-8716. Internet: sarep.ucdavis.edu Email: sarep@ucdavis.edu Telephone: (530) 752-7556, Fax: (530) 754-8550. Material in this publication may be reprinted with credit, except articles that have been reprinted from other publications.

Rick Roush

The University of California, in accordance with applicable federal and state law and University policy, does not discriminate on the basis of race, color, national origin, religion, sex, disability, age, medical condition (cancer-related), ancestry, marital status, citizenship, sexual orientation, or status as a Vietnam-era veteran or special disabled veteran. Inquiries regarding the University's non-discrimination policies may be directed to the Affirmative Action Director, University of California, Agriculture and Natural Resources, 300 Lakeside Dr., Oakland, CA 94612-3550. (510) 987-0096.

SUSTAINABLE AGRICULTURE

Editor/Public Information Representative: Lyra Halprin lhalprin@ucdavis.edu
 Education Coordinator: David Chaney dechaney@ucdavis.edu
 Agricultural Ecology Analyst: Robert L. Bugg rbugg@ucdavis.edu
 Food Systems Analyst: Gail Feenstra gwfeenstra@ucdavis.edu
 Program Assistant*: Jeri Ohmart jlohmart@ucdavis.edu
 BIFS Coordinator: Bev Ransom baransom@ucdavis.edu
 Computer Resource Specialist (shared position): James Cannon jhcannon@ucdavis.edu
 Financial Manager: Joanna Luna jluna@ucdavis.edu
 Interim Director: Rick Roush rtroush@ucdavis.edu
 On leave: Jenny Broome jcbroome@ucdavis.edu
 *grant-supported



SUSTAINABLE AGRICULTURE

UC Sustainable Agriculture Research & Education Program
 One Shields Avenue
 University of California
 Davis CA 95616-8716

#5678

ADDRESS SERVICES REQUESTED

PRSR STD
 U.S. POSTAGE
PAID
 UC DAVIS



UNIVERSITY OF CALIFORNIA AND THE UNITED STATES DEPARTMENT OF AGRICULTURE COOPERATING