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From the Director

SAREP Refines Mission, Goals

After a decade of working to advance sustainable agriculture through research and education, we are actively planning SAREP's next ten years. At the March meeting of our Public Advisory Committee and Technical Advisory Committee, we revisited our purpose and developed the following mission statement.

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.

Many goals can be pursued under this mission. In consultation with our committees, we selected the following three programmatic goals for the next five years:

- California farmers and ranchers are more able to manage their land and businesses in ways that are economically viable and that protect and enhance both human and natural resources.
- Consumers have a closer connection to agriculture and California's communities are strengthened through participation in sustainable food systems.
- Government programs and policies encourage and support the development of sustainable farms, ranches and communities in California.

Those goals are deliberately very broad, difficult to measure, and unlikely to be achieved in five years. We are now working to set measurable, achievable objectives that will help advance our goals. At UC SAREP we will try to continue to articulate "the big picture" and move toward it in deliberate, effective steps. —*Bill Liebhardt, director, University of California Sustainable Agriculture Research and Education Program.*

New Publication Schedule

As noted in our last issue, after nine years of publication, our former quarterly *Sustainable Agriculture* is now on a three-times-a-year publication schedule, and is called a *triquarterly*, according to scholarly journals. Our issues will be labeled Vol. 1, Winter/Spring (mailed mid-February); Vol. 2, Summer (mailed mid-June); and Vol. 3, Fall (mailed mid-October). The decision to reduce the number of yearly issues was made because of the growth and success of our other publications and of our World Wide Web site (<http://www.sarep.ucdavis.edu>). We hope you continue to find our newsletter useful and timely, and welcome your feedback.

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New Market Niche for "Natural Beef" Could Help Save California Rangeland

A study funded by UC SAREP is investigating whether a new regional market for grass-fed, "natural" beef could help save grazing land from being converted into ranchettes.

"We hope this study will provide us with more in-depth information to determine whether consumers will purchase and eat grass-fed natural beef, whether raising it will be economically feasible, and whether we can develop useful marketing plans for producers," says Glenn Nader, UC livestock and natural resources farm advisor in Yuba, Sutter and Butte counties, and co-principal investigator on the project.

The study builds on the previous work of a team of ranchers, California State University, Chico, researchers, UC Cooperative Extension personnel and students who found strong consumer interest in a grass-fed beef product.

In a pilot study more than 90 percent of the Chico-area consumers who purchased and ate grass-fed, mechanically tenderized beef would purchase it again and 73 percent would pay more for similar ground meat.

"This is simply preliminary data," says Dave Daley, animal science professor at CSU Chico and co-principal investigator, "but the results are encouraging enough to warrant an expanded study of the possible market."

CSU Chico Agricultural Economist Annette Levi says that of those who purchased beef in the local survey, 97 percent had some concerns about meat, including health issues (fat, cholesterol), contamination questions (E. coli), and questions about antibiotics and growth stimulants.

Good Timing

Nader said that the team of researchers and ranchers believes the increased emphasis on natural, lower-fat products by consumers suggests this is an appropriate time to evaluate the acceptability of a grass- (or forage) fed, natural beef product, finished and distributed near the Northern California areas in which it was raised.

"The feedlot is the traditional method of raising and marketing beef," he says. "We're trying to find out if producers can be successful using an alternative way to raise and market beef cattle." Raising grass-fed beef may be an untapped market for producers, Nader says, which may also have the effect of attracting consumers who have cut back on eating beef.

The primary intent of the project is to demonstrate the feasibility of an alternative, sustainable food system, which begins to stabilize family ranches

and rural communities, according to Daley. The massive feedlot industry in the U.S. and a packing and distribution system designed to accommodate large volumes of grain-fed cattle has led to the elimination of small, local packing facilities from rural communities, and waste management and water quality issues at the feedlots, Daley says. Packer consolidation has limited marketing options for small- and mid-sized family ranches. With reduced profitability of ranches and increased urbanization of California rangeland, many have left the business, selling small parcels of their land as ranchettes.

Others sell feeder cattle to Midwestern feedlots where they are processed, and then shipped back to California for retail. "Transporting them from the region of production has a destabilizing effect on rural communities," he adds. "Grass-fed beef would be a regional product, marketed through community-based packing plants in Northern California, and would require less transportation costs than feedlot-finished beef."

Before WWII

Daley says that prior to World War II, most cattle were forage fed. "We've only been feeding cattle with high-energy grain-based diets for 50 years." The rising cost of grain-based diets has also contributed to a renewed interest in evaluating forage-fed beef, he says.

One of the results of feedlot-finished beef is more tender meat, Daley says. "However, standard taste panels used to get reaction to beef tend to be skewed by the fact that they're traditionally conducted in research facilities where average consumers are usually not part of the panel," he says.

"We want to ask more consumers what they think of grass-fed beef," Daley says. He notes that those consumers in the pilot study were pleased with the tenderness of the meat, which was needle-tenderized at a meat processing facility in Chico.

Researchers are concerned that producers plan carefully for changes in their production systems. "It's critical for producers to "pencil out" the exact cost-revenue break-even point for a new marketing plan," says Levi. She says the UC SAREP grant will help researchers gather economic data for producers' marketing plans. "They should be familiar with the market and confident of success, besides just knowing what the costs of production will be," says Levi.

One of the issues for producers is the slightly yellow-colored fat of grass-fed beef. This is the result of the high beta carotene (Vitamin A) content of grass diets. The beta carotene is stored in the fat. Although the yellow color is healthy, Levi says, processors are not familiar with it since feedlot diets produce white fat. Preliminary studies indicate that consumers do not seem concerned about the color of the fat, Levi says. Needle-tenderized frozen beef lost most of the yellow color in the fat.

"It's time to think about what's out there for markets," Daley says. "Grass-fed beef may be a market for those who normally don't eat beef."

New PAC/TAC Members Join SAREP

UC SAREP is required by the California Legislature's 1986 Sustainable Agri- culture Research and Education Act to have both public and technical advisory committees to advise the university on program goals and make recommendations on the competitive grant awards. The Public Advisory Committee (PAC) includes individuals actively involved in agricultural production, as well as representatives from government, public organizations, and institutions of higher education. The Technical Advisory Committee (TAC) is made up of universitywide faculty and staff with knowledge and experience related to sustainable agriculture and makes recommendations about the scientific merit of grant applications. Each PAC or TAC member serves for three years. New advisory committee members are profiled here, with continuing members listed at the end.

Technical Advisory Committee

STEVE BLANK is a farm financial management Extension Specialist in the Department of Agricultural and Resource Economics at UC Davis, and is the Academic Assistant to the Vice Provost of Academic Planning and Personnel. He is particularly interested in financial and risk management, the economic viability of agriculture, risk management methods and farm-level decision-making, financial decision-making of firms, and the rural/urban interface.

CAROLINE S. BLEDSOE is an associate professor of soil ecology at UC Davis in the Department of Land, Air and Water Resources. She specializes in the effects of mycorrhizal fungi on plant nutrition, particularly in woody species. A secondary interest is the creation of biological databases for the study of long-term ecological processes, such as the effects of organic farming on soil organic matter. She is particularly interested in the ecological outcome of organic vs. conventional agriculture, how to assign economic costs of organic vs. conventional agriculture, and the linkages between diet and health.

ROBERT GOTTLIEB is director of the Pollution Prevention Education and Research Center at UCLA, and is an adjunct professor in the Department of Urban Planning at that campus. His expertise is in the area of environmental, resource, and toxics policy, and food systems, community food security, and social movements. He is also interested in agricultural pesticide use and direct marketing.

BLAINE HANSON is an Irrigation Specialist in the Department of Land, Air and Water Resources at UC Davis. His areas of expertise include irrigation scheduling; all phases of microirrigation systems; furrow, flood and sprinkler irrigation; soil salinity, agricultural water quality, and irrigation pumps. He is particularly interested in non-point source pollution of ground water and surface water by agriculture, and water conservation and subsurface drainage problems of the San Joaquin Valley.

JOAN WRIGHT is an Extension Specialist in Community Studies/Extension in the Department of Human and Community Development at UC Davis. Her areas of research are program evaluation related to nutrition, family and consumer sciences; and public issues analysis associated with rural lands, wildland fire, and other natural resource issues. She is interested in value-added products in agriculture; rural land use; and water allocation policy.

Continuing PAC/TAC

Public Advisory Committee: Catherine Brandel, Jenny Broome, Cynthia Cory, David Costa, Leonard Diggs, Marion Kalb, James Liebman, Ron Mansfield, Andrew Rubin, Bryte Stewart, Michael Strauss, Brock Taylor, Don Villarejo and Angus Wright.

Technical Advisory Committee: Edith Allen, Tim Hartz, Don Klingborg, Craig Kolodge, Janet Savage, Tom Shultz, Rob Thayer, and Lucia Varela. [Note: Don Klingborg is serving a second three-year term.]

Biographies of continuing PAC/TAC members appeared in the Summer 1996 (Vol. 8, No. 3), Winter 1996 (Vol. 8, No. 1), Summer 1995 (Vol. 7, No. 3), and the Fall 1994 (Vol. 6, No. 4) issues of *Sustainable Agriculture*.

Retiring PAC/TAC

Advisory committee members who have rotated off the PAC or TAC in 1997 include: PAC: Gail Gant, John Roberts. TAC: Scott Johnson, Terry Prichard. UC SAREP is very appreciative of the work that advisory committee members do for the program.

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Livestock management in grazed watersheds: A review of practices that protect water quality.

Melvin R. George, Technical Coordinator

UC Davis Animal Agriculture Research Center and UC Agricultural Issues Center, University of California, Division of Agriculture and Natural Resources, Publication 3381. 1996

*Editor's note: This publication follows the UC Agricultural Issues Center/UCD Animal Agriculture Research Center conference, **Animal Agriculture Impacts on Water Quality in California** (reported in *Sustainable Agriculture*, Vol. 7, Nos. 1 and 2). The report was developed as part of a cooperative project between the University of California-Davis, Oregon State University and the University of Nevada-Reno. This project, entitled "Protection of Sensitive Watershed Areas by Improved Animal Production Systems," was funded by the U.S. Environmental Protection Agency's National Exposure Research Laboratory Ecosystems Research Division in Athens, Georgia.*

The complexity of the farming or ranching system is often the most difficult fact to contend with when trying to analyze and resolve concerns about agricultural production and environmental health. The information one needs to address these issues and problems is often inadequate or imperfect, and one must be willing to deal with the inexact science of human behavior and culture.

This report does an admirable job of dealing with these challenges as they relate to water quality in grazed livestock systems in the Western U.S. The authors approach the current situation from the perspective that "...there are many streams and riparian areas that can support grazing with proper management; but there certainly are situations where even the lowest level of grazing will adversely affect the stream, its riparian zone and even its watershed. We can only strive 1) to understand the stability and productive potential of rangeland ecosystems and their associated riparian areas and streams, and 2) to apply that knowledge in developing effective grazing strategies that meet management goals." (page 5)

In trying to reach water quality goals, it is clear that there are no recipes. Each stream, ranch, community and watershed system is unique. Yet from all the work on this subject over the past decade, some general management principles emerge. These management practices, according to the authors, are both art and science, and should be based on values and a vision for the future. In addition, ranchers will need to be flexible in implementing these practices because ranching systems are so dynamic.

In order to identify the best practices to redistribute grazing pressures in a watershed, the report notes that it is essential land managers ask these key questions:

- What is the topography of the allotment or pasture?
- Does the riparian area contain the only flat or gently sloping land?
- Is water available away from the riparian area?
- Can water be developed far enough from the riparian area to reduce trailing in between?
- If we reduce livestock use of the riparian area, will management objectives be met—or are there other barriers?
- Can livestock distribution practices provide sufficient “cow habitat” in the form of water, forage, shade, gentle slopes and other amenities to attract cattle away from the riparian zone?
- Are there animals in the herd that are “riparian huggers” or that lead the herd back to sensitive areas?
- Are there times when riparian grazing is not harmful, or is beneficial?
- Are there public policy rules and regulations that prevent timely response to management opportunities and hazards?
- Are the practices economically feasible?

These questions are revisited throughout the report, as the authors address six topics in detail. The section titles (with respective authors) are:

- *Developing an Effective Grazing Strategy for Riparian Vegetation* (Bill Krueger)
- *Reading a Stream’s Need for Management* (Sherman Swanson)
- *Management Practices to Change Livestock Behavior in Grazed Watersheds* (Melvin George)
- *Controlling Season, Intensity and Frequency of Grazing* (John C. Buckhouse)
- *Survival and Transport of Fecal Pathogens in Grazed Watersheds* (Royce Larsen)
- *Grazing and Ecosystem Management* (Bill Krueger)

The report recognizes that there are many unanswered questions about stream and riparian systems and how they respond to different land management practices. But, as the authors state, it is often not possible to delay management decisions while waiting for answers. The authors address this dilemma by suggesting ways to evaluate some of the different practices that redistribute livestock. They offer their own general assessment of the impact of several alternatives:

- **Season-long grazing**—detrimental to both herbaceous and woody vegetation; animals are present to graze each plant species at its susceptible stage of growth without any planned rest;
- **Rotation or deferred-rotation grazing**—seems to combine the attributes of simplicity and plant protection to

promote herbaceous growth, and in some instances woody vegetation;

- **Late-growing-season grazing**—before the fall rains, generally promotes herbaceous vegetation health; may reduce soil compaction and promote habitat for ground-nesting birds; may be inappropriate for promotion of streamside woody vegetation;
- **Dormant-season and early-growing season grazing**—may promote both shrubs and herbaceous vegetation; be alert to potential problems like lowered nutritional value requiring supplementation; soil compaction problems may result, depending on soil moisture and frost conditions; opportunity to reduce winter feed costs by grazing at this time may provide economic advantage.

Grazing management is a component of ecosystem management. As such, land managers need to put their management decisions into the right context. The first step, according to the report, should be to determine a vision of success. What will the landscape look like? How will water quality, yield, nutrient cycling and other aspects of sustainability be affected? How will people benefit? Various resource management planning processes have been developed and are available to ranch and land managers. No matter which one you choose, according to the authors, “The keys to successful management are 1) develop the vision, 2) design management according to the vision, and 3) emphasize communication and mutual understanding. Involvement of the people is key, since people will support what they create themselves.”

For more information: Mel George, Department of Agronomy and Range Science, University of California, Davis, CA 95616.

(DEC.545) *Contributed by Bill Liebhardt*

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Evaluation of Spinosad for controlling codling moth in a conventionally sprayed and mating disruption apple orchard.

Maxwell Norton

Plant Protection Quarterly 7(1):4-6. 1997

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Codling moth [*Cydia (Laspeyresia) pomonella*] (CM) is the most important insect pest of apples in California. In the San Joaquin Valley, there are between three and four generations per year which can cause extensive damage if uncontrolled. Traditional control programs include three to four organophosphate or carbamate insecticide sprays per year.

In an effort to reduce environmental impact and preserve beneficial arthropods, many growers have been incorporating *Bacillus thuringiensis* (Bt), a biological control agent, as an alternate material for insect control. As use of Bt has become commonplace in many tree crops, there has been some concern over the development of resistance, through only one such case been reported so far. The primary weakness of Bt is its short residual.

There is also considerable interest in using mating disruption (MD) to control CM, and to supplement this technology with Bt which would be applied two or more times to control other lepidopteran pests such as leafrollers and fruitworms. It is presumed that some secondary CM control results from the Bt.

These two trials tested the efficacy of Spinosad, the common name for a [biological control] product derived from *Saccharopolyspora spinosa*. Spinosad has similar beneficial attributes to Bt. It is active against a wide variety of insect pests and it is considered to have low toxicity to beneficial organisms.

Materials and Methods

In the first trial we used a mature Granny Smith apple orchard that had a conventional insecticide program for several years. The trees were irrigated with overhead sprinklers. Weeds were controlled with herbicides in the tree row and were mowed in the middles. Diseases were controlled with a conventional fungicide program.

There were three treatments: 1) 1.5 lb/a Lorsban 50W, 2) 0.9 oz Spinosad per acre and 3) untreated check. Treatment dates are as follows: 1) 19 April—emergence of first brood, 2) 6 May—3 weeks later as a bracket spray, and 3)

13 June—emergence of second brood.

The plot consisted of six, single-tree replications in a randomized complete block design. Each tree and half of each adjacent tree was sprayed with a hand-gun sprayer to the point of run-off in such a manner that all foliage and fruit were thoroughly wetted. The surrounding trees were treated with 1.5 lb/a Lorsban.

On 29 June, 100 fruit were picked from the center tree of each replication and examined for insect damage of any type. The leaves were randomly sampled and examined for leafminer damage. The number of fruit with CM strikes were recorded. On 14 August 200 fruit were sampled in the same way.

The second trial was conducted in a similar block of Granny Smith that utilized MD as the primary control for CM during the last two seasons. There were three treatments: 1) 1 lb/a Dipel 2X [a Bt product], 2) 2.88 oz/a Spinosad, and 3) untreated check. Both materials were applied on 4 April and 12 April 1996 for the control of miscellaneous lepidopteran pests other than CM. CM control was to be achieved with Consep mating disruption dispensers which were applied 18 March, 16 May, and 18 July.

We used a randomized complete block design with four replications that were five rows wide and 20 trees long. The treatments were applied at 100 gallons per acre with a commercial air blast sprayer.

On 29 June, 200 fruit were picked from the center row of each replication and examined for insect damage of any type. The leaves were randomly sampled and examined for leafminer damage. The number of fruit with CM strikes were recorded. On 14 August the block was re-sampled in the same way except that the fourth replication was not sampled.

Results and Discussion

In the conventional orchard there was significant damage from CM. The average number of fruit with CM strikes is presented below. There was no appreciable damage from the leafminer or lepidopteran pests other than CM. There was a small amount of mice damage

The data shows that Lorsban and Spinosad significantly reduced CM damage below that of the check. Spinosad clearly shows promise as a control agent for CM in apples and warrants further testing under commercial conditions.

	Mean No. CM Strikes on	
Treatment	June 20	August 21
Check	2.3	32.7 a
Lorsban	1.0	18.3 b
Spinosad	1.0	13.1 b
	n.s	LSD 11.81

Significant at the 1% level

In the disruption orchard there was no appreciable damage from the leafminer nor lepidopteran pests other than CM. There was significant damage from CM. The average number of fruit with CM strikes is presented below.

	Mean No. CM Strikes on	
Treatment	June	August
Check	27.8 a	118.3
Dipel	17.3 b	104.7
Spinosad	12.8 b	97.3
LSD	9.73	n.s

Significant at the 5% level

In the June sampling, both the Dipel and the Spinosad treatments had damage levels significantly lower than the check. In the August sampling, there was no significant differences among the treatments.

While our original intent was to evaluate control of pests other than CM, we observed a difference in CM control among the treatments. In this trial, under these conditions, the Spinosad and Dipel provided control of CM that was significantly better than the check.

For more information: Maxwell Norton, UC Cooperative Extension, 2145 W. Wardrobe Ave., Merced, CA 95340.

(DEC.546) *Contributed by Maxwell Norton*

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Economic-environmental tradeoffs among alternative crop rotations.

Terry C. Kelly, Yao-chi Lu and John Teasdale

Agriculture, Ecosystems and Environment 60:17-28. 1996

This article contributes to the growing body of knowledge about the economic and environmental impact of alternative cropping systems. The authors cite several key studies conducted over the past several years that have made such assessments (Jones et al., 1991; Kim and Mapp, 1993; Faeth, 1993; Faeth et al., 1991; Hughes et al., 1995; Teague et al., 1995). These studies evaluated a variety of cropping systems in diverse locations worldwide, but they all used the Erosion Productivity Impact Calculator (EPIC) to generate their information. EPIC is a comprehensive cropping systems model designed to analyze alternative cropping systems and their environmental and economic sustainability. The research reported here used EPIC to: 1) evaluate the long-term impacts of different cropping systems on net return, soil erosion and environmental quality; and 2) analyze the tradeoffs among net returns, soil erosion and other components of environmental quality.

Materials and Methods

The seven rotations examined in this study are ones that are currently being evaluated as part of the Sustainable Agriculture Project at the USDA's Beltsville Agricultural Research Center. This project began recently and field data will not be available for several more years. By using EPIC the authors hope to develop some preliminary information that can be compared to actual results and that can perhaps be applied across a wide range of conditions.

The seven rotations evaluated are summarized as follows:

1. Conventional 2-year rotation. Corn (May-October)—Winter Wheat (October-July)—Soybean (July-November), conventional tillage and herbicides used.
2. No-till conventional 2-year rotation (#1 above), herbicides used.
3. Cover crop rotation with fertilizer. Corn (planted into hairy vetch cover crop)—Winter Wheat (grown as cover crop and mown May 12)—Soybean planted into mown wheat (harvested in October)—Hairy Vetch (no-till planted), fertilizer and herbicides used.
4. Cover crop rotation (#3 above) with no added fertilizer.
5. Manure rotation. Corn—Winter Wheat—Forage Legume (red clover overseeded in wheat). No synthetic fertilizers or pesticides used. Manure applied twice in two years (23.76

- MT/ha applied in May prior to corn, 11.2 MT/ha applied in October prior to planting wheat).
6. Same rotation as #5, but with manure applications cut in half.
 7. Same rotation as #5, but with manure applications reduced to one-fourth.

Using EPIC to simulate conditions over a 30-year period, the authors were able to estimate for each rotation:

- Yield and income;
- Environmental hazard index based on potential contamination from nitrogen, phosphorus, and pesticides;
- Tradeoffs between income and environmental hazards related to nitrogen, phosphorus and herbicides.

Results

The model predicted that the no-till rotation would provide the greatest net returns, followed by the conventional rotation. Net returns for the two cover crop rotations were lower because the wheat grown in those rotations would be sold for hay and not grain. When considering environmental impacts, the model predicted that the no-till rotation would have the lowest nitrogen loss, and the cover crop rotations would perform best in terms of erosion and phosphorus loss. Because herbicides are necessary to control weeds in no-till, the pesticide hazard index for this rotation was high, suggesting a tradeoff between pesticide hazard and other environmental considerations. Similarly, there were tradeoffs between erosion and environmental hazard for manure and no-till rotations. The results also showed that farmers may be able to make gains on one objective without sacrificing significantly on another. In the cover crop rotation, for example, the analysis showed that fertilizer could be reduced without significant loss in income, but with substantial reduction in environmental contamination.

The environmental hazard index (a weighted average of the three individual indices for nitrogen, phosphorus, and pesticides) was developed to help decision-makers deal with some of the difficulties in examining various alternatives. An analysis of the tradeoff between environmental hazard (as defined by the environmental hazard index) and income showed that any one of three rotations might be preferred, depending on the individual's (or society's) primary concerns: no-till, manure at medium application rates, and cover crop without fertilizer. Individuals concerned mainly with economic gains would be inclined toward the no-till rotation, while those strongly concerned about reducing environmental hazard might choose the cover crop–no fertilizer rotation.

(Editor's note: These conclusions provide some useful information about the transition to more environmentally sound production systems. It will be important to follow this experiment to see if the predicted results are borne out in the actual field experiments.)

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For more information: Yao-chi Lu, Systems Research Lab, USDA-ARS, Bldg. 007, Room 8, BARC-West, Beltsville, MD 20705.

(DEC.547) *Contributed by David Chaney*

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Sources of Funding

USDA-SARE Western Region

Calls for proposals will be out in early July for the U.S. Department of Agriculture's Western Region Sustainable Agriculture Research and Education (SARE) program.

- The competitive research grants portion of SARE includes a joint USDA/US-EPA effort called Agriculture in Concert with the Environment, ACE. SARE and ACE research grant proposals are due **October 29, 1997** (by 5:00 p.m. Mountain Standard Time). SARE continues to target funding to whole-farm/ranch systems projects that increase understanding and adoption of sustainable agriculture practices. ACE grant funds are aimed at research on agricultural practices that minimize environmental effects and hazards.
- SARE's professional development grant proposals are due **November 19, 1997** (by 5:00 p.m. Pacific Time). This effort supports grants to develop materials and approaches which help personnel from Cooperative Extension Service, Natural Resources Conservation Service and other professionals expand their understanding of sustainable agriculture. Projects may be designed for agents working in production agriculture, 4H/youth development or other areas.
- Farmers and ranchers residing in the Western U.S. can compete for grants of up to \$5,000 each to identify, evaluate and test sustainable agriculture practices and challenges through Western SARE's farmer/rancher research grant program. (Producer groups, two or more farm/ranch operations working cooperatively, can apply for up to \$10,000 per group.) A call for proposals is set for release the first week of November 1997. The deadline for proposals will be **January 15, 1998**.

To get on the mailing list for calls for proposals, contact the Western SARE office at **Utah State University at (801) 797-2257; fnhinck@cc.usu.edu**. Calls for proposals can also be downloaded from the program's web site at: **<http://ext.usu.edu:80/wsare/>**

For general information, contact Kristen Kelleher, communications specialist at (916) 752-5987; kkelleher@ucdavis.edu The Western Region includes Alaska, American Samoa, Arizona, California, Colorado, Guam, Hawaii, Idaho, Micronesia, Montana, Nevada, New Mexico, N. Mariana Islands, Oregon, Utah, Washington and Wyoming.

Organic Research Grants

The Organic Farming Research Foundation is offering funds 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. Projects should involve farmers in design and execution, and take place on working farms when possible. Proposals of \$3,000-\$5,000 are encouraged. Matching funds and/or in-kind contributions are recommended. Proposals are considered twice a year; the next round of proposals must be received by **July 15, 1997**. To receive copies of grant application procedures and the OFRF Research and Education Priorities describing target areas, write Grants Program, Organic Farming Research Foundation, PO Box 440, Santa Cruz, CA 95061; Tel: (408) 426-6606.

IPM Funding

The California Department of Pesticide Regulation (DPR) will be sending out Requests for Proposals for pest management grants in July, which will be due at the end of November. For more information, contact **Bob Elliott** at DPR, Tel: (916) 324-4156; email: bellott@cdpr.ca.gov

Funding Resources/Web sites

Funding-seekers may want to investigate the fifth edition of *Environmental Grantmaking Funding 1997 Directory*, published by Resources for Global Sustainability, PO Box 22770, Rochester, NY 14692-2770; Tel: (800) 724-1857; Fax: (716) 473-0968; email: rgs@eznet.net; Web site:

<http://home.eznet.net/~rgs> The 952-page directory includes information on 750 grantmaking foundations. Cost is \$89 plus \$6 shipping and handling; a CD-Rom version is \$104.

Another Web site for funding sources is *The Foundation Center* at <http://fdncenter.org/> (or the “no frills” site for those with lower bandwidth Web access: <http://fdncenter.org/2index.html>). This site includes tips on the fundraising process, links to Web sites of more than 190 grantmakers, the *Philanthropy News Digest*, and other information.

Grants Web, with links to many useful sites:

<http://web.fie.com/cws/sra/resouce/htm>

Philanthropy Journal Online, <http://www.philanthropy-journal.org>

SAREP Offers More Grant Money This Year

Due to a one-time allocation from the California State Legislature, UC SAREP has considerably more funds (\$375,000) to award for grants than in the last several years. For the tenth year, SAREP is offering funding for research and education grants that lead to production or policy alternatives for the agricultural community which support environmentally and economically sound production and food systems. Grants will be made for crop or livestock production options; environment and natural resources; marketing, consumer education and community food systems; and labor, land use and other community development and public policy

issues. Small grants are being offered for graduate student support (\$2,000 per individual) and educational meetings (\$1,000 per meeting). The deadline for applications is **August 1, 1997** at 5:00 p.m. No late proposals will be accepted, nor will proposals sent via fax. The Request for Proposals (RFP) is available by mail or via the World Wide Web (<http://www.sarep.ucdavis.edu/>). The RFP has been sent to everyone on SAREP's mailing list. If you do not receive an RFP, contact SAREP at (916) 752-7556 or email the office at sarep@ucdavis.edu. If you have any questions, please contact SAREP grants manager **Bev Ransom** by telephone at (916) 754-8546 or by [email:baransom@ucdavis.edu](mailto:baransom@ucdavis.edu).

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Resources

WEB SITES

SAREP WEB information:

For the second time in two years, SAREP has received a national award for its Internet World Wide Web site (<http://www.sarep.ucdavis.edu>). The 1997 silver award comes from Agricultural Communicators in Education (ACE). "We're particularly honored that this award comes from a group that focuses on agriculture and education," says **Jill Shore Auburn**, SAREP associate director. SAREP received a bronze award in 1996 from the Council for Advancement and Support of Education. The ACE award particularly honors SAREP for its user-friendly approach. "We've deliberately kept the Web site graphics smaller and uncomplicated because many of our farmer and consumer users connect to it via low-speed modems," says Auburn. SAREP's Web audience is California farmers and others interested in sustainable agriculture issues including researchers, consumers, policy makers, UC administrators and government officials. Seven SAREP staff members contribute information to the site. The site allows users to search for and view information on a cover crops database with 400 color images of plants, summaries of dozens of SAREP-funded research projects, hundreds of newsletter articles and calendar entries.

Other Related Sites...

Ag Labor Management

<http://are.berkeley.edu/APMP/>

and

<http://www.cnr.Berkeley.edu/ucce50/7grisha.htm>

Agricultural employers can now use their computers to draw from a rich and expanding stock of labor management information provided on the World Wide Web by the University of California. The UC Agricultural Personnel Management Program (APMP) has assembled a wealth of links to material on such topics as employee recruitment and selection, supervision, farm workplace safety, wages and incentive pay, discipline, interpersonal relations on the job, and labor law. Educational articles, legal and government references, teaching tools, databases, research reports, newsletters, advice, and other resources from APMP staff are available. Of special interest to many farm employers and agricultural service providers are frequently updated links to government agency publications, databases, and compliance guides. Slide sets and experiential

teaching materials can be downloaded to educators. Information in Spanish is also available. Web site guests may join AG-HRnet, an electronic forum on agricultural human resource management, or WPS-Forum, an active discussion network focusing on the federal worker protection standard and related pesticide safety regulations. A Web page serves as gateway to its reference archive. Through the "Electronic Farm Call" page, farm employers and others can contact any academic staff member of the APMP team: Farm advisors **Gregory Encina Billikopf** in Modesto, **Brian Linhardt** in Oroville, and **Steve Sutter** in Fresno, and Extension Specialist **Howard Rosenberg** in Berkeley. These Web pages are maintained by APMP Coordinator **Betsey Tabraham**, Tel: (510) 642-2296; email: tabraham@are.berkeley.edu, and Gregory Encina Billikopf, Tel: (209) 525-6654; email: gebillikopf@ucdavis.edu.

USDA Natural Resource Conservation Service, California

<http://www.ca.nrcs.usda.gov/>

The Natural Resources Conservation Service (NRCS) is the federal government agency that works with the American people to conserve natural resources on private lands.

Sustainable Agriculture Network

<http://www.ces.ncsu.edu/san/>

Visit the Sustainable Agriculture Network's (SAN) Web newly revamped and expanded site which features on-line books and a database of more than 1,000 research projects funded by the USDA's Sustainable Agriculture Research and Education (SARE) program. Aimed at farmers and ranchers, researchers, agricultural professionals, students and consumers, the site enables browsers to find sustainable agriculture experts in their own states by searching the Sustainable Agriculture Directory of Expertise, or the SARE database. Includes SARE grant forms, and information on contacting a regional SARE representative through the site's email directory.

Sustainable Farming Connection

<http://sunsite.unc.edu/farming-connection/>

Two former editors of the *New Farm* magazine have launched Sustainable Farming Connection, an interactive World Wide Web site where farmers and others searching for more sustainable food systems can find and share valuable information.

ABSTRECO

<http://www.bib.wau.nl/abstreco.html>

ABSTRECO is a current bibliography of articles, reports, books

and other publications relevant to the broad field of sustainable agriculture produced in Wageningen, The Netherlands.

Videos

UC Sustainable Agriculture Farming Systems Project, 1997, 22 minutes. Provides an overview of the long-term University of California, Davis-based sustainable farming systems (SAFS) project, including background on experimental design, the participatory research process, and current findings. SAFS is funded in part by UC SAREP. For a copy of this free video, contact SAFS Project, Department of Agronomy and Range Science, University of California, Davis, CA 95616; Tel: (916) 752-8940.

Towns in Transition: Managing Change in Natural Resource-Dependent Communities, 1996, 30 minutes, Oregon State University. Natural resource-dependent communities faced with change frequently go through “stages” described by researchers studying transition. This video shows how three communities in California, Oregon and Washington are managing change, and comes with a companion study guide that offers practical information to help other towns in transition. Tulelake, Calif. is in the first stage of transition due to relatively recent limits proposed for agricultural irrigation and pesticide use. Forks, Wash. is in the “Neutral Zone,” as it has been dealing with restrictions on logging since the late 1980s when the northern spotted owl was listed on the Endangered Species List. After more than 20 years of managing changes in the fishing industry, Astoria, Ore. has come through those stages and is in what is called “New Beginnings.” This video is aimed at leaders and other residents of natural resource-dependent communities, Extension agents, community development organizations, city, state and county economic development agencies, and federal and state agencies that manage natural resources. Narrated by “Northern Exposure” actor John Cullum, the video is \$30, payable to Oregon State University by check, money order or purchase order. Send to: Publication Orders, Extension and Experiment Station Communications, Oregon State University, 422 Administrative Services, Corvallis, OR 97331-2119; Tel: (541) 737-2513.

Calendar

SAREP offers a regularly updated sustainable agriculture calendar on our World Wide Web Site at: [http://www.sarep.ucdavis.edu/cgi-bin/SAREPcal.exe/list events](http://www.sarep.ucdavis.edu/cgi-bin/SAREPcal.exe/list%20events). Please feel free to add sustainable agriculture events to our Web site calendar.

MONTHLY MEETINGS

Lighthouse Farm Network The Community Alliance with Family Farmers Foundation sponsors informal monthly meetings for growers to discuss issues related to pesticide use reduction. Contact: Jill Klein, CAFF, (916) 756-8518.

July

14 -25 Permaculture Design Course, Internat'l Institute for Ecological Agriculture (IIEA), Half Moon Bay, CA. Instructors: Bill Mollison, Scott Pittman. Contact: IIEA, PO Box 620930, Woodside CA 94062; (415) 365-2993; dblume@igc.org; <http://members.aol.com/ourfarm1/permaculture>

25-26 Global Challenges in Ecosystem Management in a Watershed Context, internat'l symposium with 52nd annual conference of Soil & Water Conservation Society (SWCS), Toronto, Canada. Contact: SWCS, 7515 NE Ankeny Rd., Ankeny, IA 50021; Tel: (515) 289-2331 or (800) 843-7645; Fax: (515) 289-1227; <http://www.swcs.org>; email: swcs@swcs.org

August

3-5 Organic Rules! Are We Ready? 3rd Organic National Business & Regulatory Leadership Conference, Claremont Resort, Oakland, CA. Sponsor: Organic Farming Research Foundation (OFRF). Speakers include SAREP associate director **Jill Shore Auburn**, Bob Anderson, Craig Weakly, Betsy Lydon, John Blackstone (CBS News). Topics: Internat'l trade & verification, World Wide Web, Eco-labeling, Food Safety, Regulatory Impact Reports. Natural Business Financial & Investment Symposium Aug. 3. Fees: 1 day \$160, 2 days \$280, conf. & symposium \$350. Lodging through Claremont Resort. Contact: OFRF, PO Box 440, Santa Cruz, CA 95061; (408) 426-6670; Fax: (408) 426-6670; research@ofrf.org

September

4-6 Sustainable Tree Care Conference - An Intensive Course in Soil Fertility, Tree Health & Insect/Disease Resistance, Univer. of Calif., Los Angeles. Sponsors: Internat'l Society of Arboriculture, Calif. Arboretum Foundation, Committee for Sustainable Agriculture, World Sustainable Agriculture Association, Calif. Urban Forests Council, Resource

Conservation District of the
Santa Monica Mountains, McCullough's Tree Care. 30 hrs. continuing educ.
Contact: Sustainable Tree Care Conference, 2931 Markridge Rd., La
Crescenta, CA 91214; Tel: (818) 248-4425; Fax: (818) 248-
9522;email:sustainable treecare.org

17 Your Access to the European Union Organic Food Market - A Practical
Primer for the US Organic Food Industry, Baltimore, MD. Sponsor:
Internat'l Federation of Organic Agriculture Movements-EU-Group. 1-day
seminar prepares US processors, certifiers, traders to access European
organic food market. Registration by email to Hanspeter Schmidt,
100574.1042@compuserve.com

October

19-24 2nd Internat'l Congress for Vector Ecology, Orlando, FL. Contact:
Gilbert Challet, PO Box 87, Santa Ana, CA 92702; Tel: (714) 971-2421, ext.
148; Fax: (714) 971-3940.

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