

# SUSTAINABLE AGRICULTURE

FROM THE DIRECTOR

## Sustainable ag and the long emergency

So far, most of us have been directly affected by the tragedy of Hurricane Katrina only through increased fuel prices. However, this disaster foreshadows the issues raised by **J. H. Kunstler** in his new book, *The Long Emergency: Surviving the Converging Catastrophes of the Twenty-First Century*. Kunstler integrates critical details about when the world will run low on the cheap oil and natural gas that have fueled modern industrial society, and more importantly, predicts how we will (or won't) deal with that occurrence. Whether or not one agrees with the predictions he describes, that world production of oil will peak between 2000 and 2010 (specifically Thanksgiving weekend 2005) and there will be great social upheavals (the Gulf Coast diaspora magnified?), the fact is, sooner or later, we will no longer be able to power our world on the cheap energy of oil and gas.

Or run our agriculture. Kunstler reviews the various alternatives to oil, including biofuels, and concludes that for most part, the energy returned does not greatly exceed the energy invested in its production. For many years, Cornell University's **David Pimentel** has been raising this concern about the way biofuels, including ethanol, are produced. Without fuel for our machines, both organic and conventional agriculture will become much more difficult and labor intensive. It is easy to forget that cheap power is only a recent phenom-



Conservation tillage production systems reduce fuel use by minimizing tillage operations between crops including disking or plowing. (photo by Jeff Mitchell)

enon, available for less than 100 years, and to forget how hard transport and work were.

Without cheap energy, the importance of the various components of sustainable agriculture will take on a whole new emphasis, gradually perhaps, but inexorably just the same. Food systems will probably have to be more local. The costs are not limited to mechanization and transport. For example, synthetic nitrogen fertilizers produced by the natural gas

consuming-Haber-Bosch process (also only a century old) are currently necessary to feed approximately 40 percent of the world's six billion people. Many experts believe there simply isn't enough land or sources of organic nitrogen to produce the food needed, which is a key reason for continuing to pursue practices that reduce this dependence. Energy costs on farms have been considered in sustainable and organic farming (as **Jenny Broome** reports from Switzerland, page 4), but it is hard to fight the sense that this is still an

academic rather than a practical exercise. Still, changes will be needed, perhaps most obviously in reducing the use of tillage even if this costs something in yields. Similarly, fertilizers will have to be used more sparingly and efficiently, both to save costs and to preserve clean water without energy-costly re-purification.

Will energy sustainability be considered in future farm bills, and if so, how and when? (See **Bev Ransom's** farm bill story, page 2.) As we have seen recently, food will be a critical priority during any emergency. Energy sustainability on the farm must become a priority for government, both in leadership and investment, lest we end up with horse-drawn plows. In the meantime, we need to develop practices and technologies that will allow us to adapt readily to whatever the future brings.—*Rick Roush, interim director, University of California Sustainable Agriculture Research and Education Program*

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# Sustainable agriculture in the 2007 Farm Bill

By Bev Ransom, UC SAREP

The Farm Bill, omnibus federal legislation that addresses food and agriculture, has vast impact on agriculture both here and throughout the world. Because it is scheduled for reauthorization in 2007, now is an important time to look at the results of current Farm Bill policies, and how changes may impact communities. Additionally, it is likely the U.S. will be required to make changes to income support programs to comply with international trade agreements. Thus, it may be possible for the next Farm Bill to offer a greater level of support for farmers and communities shifting to more sustainable agriculture and food systems.

The Farm Bill dates back to 1933, when the New Deal attempted to address a collapsing farm economy. Farm bill appropriations support food and nutrition programs such as food stamps and subsidized school lunches, commodity subsidy programs, and funding for agricultural research, extension, conservation and other environmental incentives for farmers. More than half of the Farm Bill budget is used for food and nutrition programs. The Farm Bill does not encompass all farm policy issues; several topics such as crop insurance, tariffs, marketing orders, environmental regulations, and farm labor laws are handled separately. The last Farm Bill was enacted in 2002; farm bills are traditionally revised every four to six years.

In June 2005, several California non-profit food, agriculture and environmental groups came together at a workshop organized by the California Coalition for Food and Farming to learn more about the Farm Bill. Keynote speaker **A.G. Kawamura**, secretary of the California Department of Food and Agriculture, called the Farm Bill “an investment in society,” and said it is the responsibility of the nation to secure the health and welfare of U.S. citizens. Other workshop speakers described their priorities for Farm Bill reform, including increased support for:

- conservation and land stewardship practices,

- research and outreach on organic farming and sustainable agriculture, and
- linking food and nutrition programs with local agriculture.

Significant efforts toward a more sustainable agriculture system have been included in previous farm bills. The last Farm Bill, the “2002 Farm Security and Rural Investment Act,” included several funding programs in the conservation section (Title II) that focused on environmental concerns such as wetlands restoration on agricultural lands, ground and surface water conservation, improved wildlife habitat, restoration and preservation of grassland, and watershed rehabilitation. This section included the Environmental Quality Incentives Program, which provides cost-share and incentive payments to producers for environmental and conservation improvements on farms and the Conservation Security Program, which provides incentive payments for environmental stewardship through the adoption of specific management practices. Unfortunately, with the current budget deficit, many Farm Bill programs could not be fully implemented due to diminished funding levels allocated during the appropriations process.

The research section (Title VII) of the last Farm Bill, in addition to providing funds for land grant institutions such as the University of California and Agricultural Experiment Stations, also reauthorized competitive grant programs through the Initiative for Future Agriculture and Food Systems and the USDA Sustainable Agriculture Research and Education program. It also provided additional funding for research on organic farming.

Other sections of the last Farm Bill that addressed sustainability issues included the Farmers’ Market Nutrition Programs and Community Food Security Grants in the nutrition section (Title IV); funds for on-farm renewable energy systems in the energy section (Title IX); and the specialty crop purchasing program for school



Use of insectary crops like fennel (right) on an organic farm in the Salinas Valley is a practice that may be supported in future farm bills.

(photo by Robert L. Bugg)

lunches and service institutions, organic certification cost-share program, and country-of-origin labeling program included in the miscellaneous provisions of Title X.

Commodity subsidy programs (Title I) are under increasing criticism from many sources as the Farm Bill’s scheduled reauthorization approaches. Most regular subsidies have been limited to particular crops such as wheat, feed grains, cotton, rice, soybeans, other oilseeds, and milk. Except for relatively small ad hoc disaster assistance and some special provisions of marketing orders, most fruits, vegetables, nuts and other “specialty crops” grown by many California farmers aren’t eligible for commodity subsidies. The current structure of commodity payments has resulted in criticism that there is unequal access to government support based on the type of crops, and that the distribution of commodity payments is skewed to larger scale farms (since payments are roughly proportional to production). For example, 10 percent of those receiving subsidies between 1995 and 2003 received 72 percent of the funding. U.S. subsidy programs have also been successfully challenged in the World Trade Organization as inconsistent with international trade agreements. It has also been suggested that subsi-

dized crops affect global market prices and disadvantage farmers in developing countries.

The public has a stake in how food is grown and in making sure that all citizens have access to healthy food. The policies that emanate from the next Farm Bill will affect the well-being of U.S. citizens and the environment for several generations. Now is a good time to become more familiar with the Farm Bill and participate in discussions about a more sustainable agriculture. The USDA is currently inviting comments regarding the 2007 Farm Bill on its Web site at: [www.usda.gov/farmbill](http://www.usda.gov/farmbill). To add comments, click on "Farm Bill 2007 Official Comments" on the right.

**For more information:**

- National Agricultural Law Center (University of Arkansas) Farm Bill Web page (includes links to texts of all Farm Bills since 1933):  
[www.nationalaglawcenter.org/farmbills/](http://www.nationalaglawcenter.org/farmbills/)
- USDA Economic Research Service, Farm Policy Briefing: [www.ers.usda.gov/Briefing/FarmPolicy/](http://www.ers.usda.gov/Briefing/FarmPolicy/)
- Transcript of USDA California Farm Bill Forum (hosted by USDA Secretary of Agriculture, **Mike Johanns**) August 12, 2005 in Fresno, CA :  
<http://www.usda.gov/documents/FBFA081205.pdf>
- California Coalition for Food and Farming: Farm Bill Resources:  
[www.calfoodandfarming.org/farm\\_bill/farm\\_bill\\_resources.shtml](http://www.calfoodandfarming.org/farm_bill/farm_bill_resources.shtml)
- California Farm Bureau Federation, Preparing for the 2007 Farm Bill:  
[www.cfbf.com/farmbill/](http://www.cfbf.com/farmbill/)
- Environmental Working Group, U.S. Farm Subsidy Database:  
[www.ewg.org/farm](http://www.ewg.org/farm)

## Central Coast Vineyard Team BIFS project wins EPA award

by Lyra Halprin and Bev Ransom, UC SAREP

A group of farmers, researchers and agricultural consultants in Monterey, San Luis Obispo and Santa Barbara counties have been awarded a U.S. Environmental Protection Agency (EPA) award for reducing pollution and pesticides and promoting biologically integrated farming practices in winegrape vineyards.

EPA officials recognized the Central Coast Vineyard Team (CCVT) as a 2005 Pesticide Environmental Stewardship (PESP) Champion for helping farmers reduce pollution by using sustainable practices, and for the team's ability to track that success. The winegrape group uses the Biologically Integrated Farming Systems (BIFS) extension model that includes a team approach to project management, monitoring of key biological and economic variables, and farmer-to-farmer information flow. Much of this work was made possible by a three-year \$299,907 grant from the University of California Sustainable Agriculture Research and Education Program's BIFS program.

"We are thrilled to know that EPA officials consider our monitoring project groundbreaking," said **Kris O'Connor**, executive director of the CCVT and principal investigator of the project. "They will be using our 2005 strategy as a model for



Pomar Junction Vineyard, a member of the award-winning Central Coast Vineyard Team.

adoption for the other PESP members."

In their award notification, EPA representatives said the project "stands alone in the Pesticide Environmental Stewardship Program for the capturing and reporting of pertinent, comprehensive indicators to measure...progress..." and singled out the CCVT's "exceptional outcome measurement reporting system."

The Lodi-Woodbridge Winegrape Commission, which received BIFS funding through the UC SAREP program nine years ago, is also a 2005 EPA PESP award winner.

O'Connor said CCVT's overall goal is to reduce environmental and health risks associated with ag chemicals by increasing the use of the CCVT's trademarked Positive Points System (PPS) practices in Central Coast vineyards.

"PPS is our 1,000 point self-assessment tool for evaluating the extent of sustainable vineyard practices used in the vineyards," O'Connor said.

CCVT has found that growers who evaluate their acreage for multiple years improve their PPS scores over time.

"This suggests that the process of self-assessment motivates growers to adopt reduced risk practices," she said. The PPS was conceived and developed collaboratively by a partnership of growers, wineries, UC Cooperative Extension personnel, educators, consultants, and environmental interests.

CCVT member **Willy Cunha** manages Sunview Shandon, 800 acres of wine and table grapes that are part of a large family farm in Shandon.

"My continuing involvement with the CCVT and the PPS has helped me implement, evaluate and expand innovative farming practices that help reduce pesticide applications and runoff and enhance the quality of my crop," he said. "The process of growers working together on the PPS expands our exposure to practical applications of good practices. We educate and encourage each other

as we implement and expand these positive farming techniques."

Cunha noted that by documenting the outcomes of their experimentation, CCVT members have created a database of practical information proving or disproving the worth of new practices, which guides them toward further innovations.

O'Connor reported that more 12,000 acres have been evaluated using the PPS in the last several years. Growers who have participated in the PPS process manage approximately 70,000 acres on the Central Coast. She noted that growers have increased their PPS scores and reduced their use of high-risk materials targeted by the Food Quality Protection Act over time.

"Growers enrolled in our BIFS project nearly eliminated their use of chlorpyrifos and diazinon during the project period," O'Connor said. "We believe it is critical to communicate their success to other mainstream growers in the region."

CCVT's BIFS project, which concluded in March 2005, demonstrated the use of PPS practices including treatment decisions based on monitoring, eliminating or reducing use of

pre-emergent herbicides, and the development of beneficial insect habitats in and around vineyards. Project results were shared with the larger grower community through tailgate meetings, newsletters, articles, and formal presentations. According to O'Connor, CCVT reached 1,383 growers at tailgate meetings alone, and more than 7,900 growers and pest control advisers through other industry events.

CCVT will continue work on this project with a three-year \$680,000 pesticide mitigation grant from the Regional Water Quality Control Board.

"Much of the agriculture on the Central Coast is in soils susceptible to erosion above watersheds that drain into the Monterey and Morro Bay estuaries or into rivers listed for salmon and steelhead protection," O'Connor said. "We're helping farmers reduce off-site movement of water and soil through various cover-cropping strategies."

For more information about CCVT strategies, see the EPA Web site at <http://www.epa.gov/oppbppd1/PESP/strategies/2005/ccvt05.htm>. For more information on UC SAREP's BIFS program, see <http://www.sarep.ucdavis.edu/bifs/>.

## National post-secondary education conference in January

A national participatory conference on post-secondary sustainable agriculture education is scheduled January 24-25, 2006 at the Asilomar Conference Grounds in Pacific Grove, immediately prior to the 26th Annual Ecological Farming Conference. "Facilitating Sustainable Agriculture" is designed to promote the development of sustainable ag educational programs at U.S. college and universities. It will feature interactive and participatory workshop formats with some conference content being determined by participants. To help identify the goals of participants, all registrants are asked to fill out a Needs Assessment and Interest Form.

The conference is sponsored by the UC Davis College of Agricultural and Environmental Sciences and Student Farm, the UC Santa Cruz Center for Agroecology and Sustainable Food Systems, and The Farm Foundation. Based upon preliminary assessments, organizers have identified probable content areas, including the current state of sustainable agriculture education, course/program content and teaching methods used in sustainable agriculture

education, the roles of interdisciplinary studies and experiential learning, critical analysis of learning and education theories, pedagogies and curricula, assessment of specific program development needs for sustainable agriculture education, forming collaborations to facilitate the development of sustainable agriculture programs, and strategies for developing sustainable agriculture as a field of study to meet defined education and training needs.

For forms and registration, access the Web site at <http://zzyx.ucsc.edu/casfs/> or <http://studentfarm.ucdavis.edu/>. Registration fee waivers for students may be available; for more information, contact **Albie Miles** ([afmiles@ucsc.edu](mailto:afmiles@ucsc.edu)) prior to registration. The early registration deadline is **Nov. 15, 2005**. The conference receives support from UC SAREP, Oregon State University (OSU) Department of Horticulture, USDA's Sustainable Agriculture Research and Education (SARE) program, and Education and Competence Studies, Wageningen University.



## BIFS rice project leads to new approach with weeds

by Bev Ransom, UC SAREP

Beginning in 1999, a three-year Sacramento Valley Biologically Integrated Farming Systems (BIFS) project partnered rice growers and UC researchers to manage herbicide resistant weeds and reduce the use of chemical inputs. Project leaders **Randall “Cass” Mutters**, a UC Cooperative Extension farm advisor in Butte County, and **Jim Eckert**, a UC researcher in Butte County, worked with a team of cooperators to explore alternative practices.

Weeds are a “monumental challenge” to rice growers, the researchers noted in their final report. “Unlike insects, there is no threshold of economic injury. A single escaped weed in a field can produce thousands of seeds that remain viable in the soil for years. Consequently, the weed seed bank perpetually builds,” the report states.

Collaborations that began with the BIFS rice project led to continued research partnerships. Mutters and **Albert Fischer**, a UC Davis plant sciences weed scientist, continued their work on weed problems with funds from the CALFED Bay-Delta Program; the Regional Water Quality Control Board; USDA Cooperative State Research, Education and Extension Service (CREES); and the statewide UC Integrated Pest Management program. Many rice growers who participated in the BIFS project became part of a grower advisory group that guided the continuing research.

Increased farming costs contributed to rice growers’ interest in Mutters’ and Fischer’s alternative rice weed management strategies research, which was presented at a summer field

tour at the Rice Experiment Station in Butte County. Growers have told researchers they are concerned about weed control costs that are often higher because of herbicide-resistant weeds. Severe weed problems can also involve increased tillage, which is more expensive because of higher diesel fuel costs. At the field tour, researchers described how growers could manipulate weed populations to encourage weeds that are easier and less costly to control.

In the replicated trials conducted at the Rice Experiment Station, five different farming systems were compared. Researchers tested the difference between water-seeded and drill-seeded planting regimes, and the difference between traditional spring tillage (which encourages germination and emergence of new weeds from the top soil layers) and no tillage (which does not encourage emergence of new seedlings from the soil, only those lying on the soil surface). When there was no tillage on a field, most of the weed population was eradicated with one treatment of glyphosate (Roundup®) prior to seed planting following a flush of irrigation to promote weed emergence, a practice known as “stale seedbed.” Even with spring tillage or dry-seeded rice, the practice of the “stale seedbed” using glyphosate substantially reduced the weed populations emerging with rice. This technique can reduce the herbicide applications from two or three to just one. In addition, glyphosate is effective against all the weed biotypes that have evolved resistance to other herbicides.

As growers walked through the dem-

onstration sites, it was evident that different stand establishment practices had resulted in different weeds. These alternative practices reduced the bank of weed seeds in the soil, and may also delay the further development of herbicide-resistant weeds. When water-seeding was alternated with dry drill-seeding, the emergence of aquatic weeds was strongly prevented; some aquatic weeds are serious rice weeds that have also evolved resistance to herbicides (ALS inhibitors).

In order to maintain sufficient yields in alternative systems, researchers are also exploring the impact of these alternative cultural systems on the nitrogen dynamics and plant needs.

“Even if some of these alternative systems result in reduced yields, it may well be worth it to save money on herbicides while at the same time changing the weed population of a given field,” Mutters said.

By looking at weeds as part of an integrated farming system that can be tweaked, farmers may find that a periodic shift to a different weed management approach on particular fields could be an effective tool. For more information, contact Mutters at [rgmutters@ucdavis.edu](mailto:rgmutters@ucdavis.edu).

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Above: Farm advisor Cass Mutters shows growers how weed populations were manipulated using alternative management practices at the Rice Experiment Station in Butte County.  
*(photo by Bev Ransom)*

## Swiss organic agriculture

by Jenny Broome, UC SAREP (on leave)

Organic agriculture research is flourishing in Frick, Switzerland, the home of Forschungsinstitut für Biologischen Landbau (FiBL), the “Research Institute of Organic Agriculture.” FiBL was started in 1973 as a private trust and moved to its current site in 1996. In its early years it served as the world secretariat of the International Federation of Organic Agriculture Movements (IFOAM). FiBL staff has organized key organic agriculture conferences over the years including the first IFOAM conferences in 1977 and 2000. In 1980, it set up BIO Suisse, the largest certifying organization in Switzerland. FiBL donated its green bud logo to the certifying organization.

**Urs Niggli** is the director of the institute, which has a staff of 120 in its Swiss office and smaller branches in Germany and Austria. Institute personnel conduct a range of disciplinary research as well as on-farm integrated studies. **Lucius Tamm** is the director of plant protection.

Institute scientists work with representative organic pilot farms throughout Switzerland, conduct regional and landscape studies, and socioeconomic and biological analysis of the 6,400 commercial organic farms in Switzerland. Organic farms make up 12 percent of all Swiss farms (11 percent of the land in Switzerland is farmed). Recently, the journal *Nature* published the results of a 21-year farming systems comparison trial conducted by institute researchers. About one-third of the institute’s approximately \$10 million in funding comes from the Swiss government, while 20 percent is from public European Union competitive grants, 14 percent from private funds, and 13 percent is from Swiss international cooperation projects. The remainder of the funding is from publication sales and training events.

FiBL is a cooperator on a 2004 European Union-funded project to improve quality, ensure safety and reduce costs in the organic and low-input food supply chains. The project includes 31 research institutions, companies and universities throughout Europe and will address social and natural science objectives including producer’s aims

and consumer expectations, cost-efficiency in the organic food chain, food safety risks, environmental cost-efficiency in the organic food chain, food safety risks, and environmental impact and fossil energy use.

### Organic Winegrapes

FiBL viticulturalist **Dominique Levite** is evaluating varieties and clones suitable for organic production that include wine quality and disease resistance, focusing on downy mildew but also looking at Botrytis gray mold, powdery mildew, and black rot. The research is incorporating resistance from hybrid grape crosses as well as maintaining wine quality comparable with pure *Vitis vinifera* varietal wines.

### Compost Production and Use

FiBL researchers **Jacques Fuchs** and **Mohamed Larbi** are working on compost production and disease suppression; they are characterizing locally produced compost from municipalities for key chemical, physical, and biological properties and relating these to bioassays indicative of disease suppressiveness. A portion of the research is focusing on the damping off pathogen, *Pythium ultimum* in cucumber to assess general suppressiveness of the composts, and *Rhizoctonia solani* on basil to test specific suppressiveness potentially driven by Trichoderma species that occur naturally in the composts. They are also evaluating the use of compost extracts in both of these crop systems and looking at possible mode(s) of action. They are also testing whether the biological control is due to specific microbial organisms alive in the compost or induced resistance to the plants themselves, and are looking at using the compost extracts against downy mildew in grapes and apple scab in apples, two key Swiss pathosystems.

### Organic Plant Disease Management

Tamm’s group, including **Barbara Thuerig**, is working on the use of an aqueous extract of cell wall fragments of a dried mycelium by-product of *Penicillium chrysogenum* (PEN) used in pharmaceutical production.

They have found that PEN induces resistance to a variety of pathogens such as *Phytophthora infestans*, *Collectotrichum lagenarium*, *Uncinula necator*, and *Plasmopara viticola* in crops including tomatoes, cucumbers and grapevines. PEN works as well as some currently commercially available host plant resistance elicitors such as the harpin protein, although there are some phytotoxic effects that need to be reduced, either through greater purification of the material and/or isolating the active ingredient in the induction process, or through formulation. Researcher **Hans-Jakob Scharer** conducts trials with Tamm on organically permitted fungicides on grapes and apples, where key diseases include downy mildew and apple scab. They are looking for alternatives to copper because its overuse has resulted in water and soil quality problems.

### The Retail Sector

The Coop, the second largest food retailer in Switzerland, is the largest supplier of organic food in the country. Switzerland’s largest retailer, Migros, accounts for 25 percent of the organic retail market, with all other retailers totaling 25 percent. The Coop has provided 100 million Swiss francs (\$78 million U.S.) to address sustainability in food, energy, textiles and landscape management over the past 10 years through its Coop Naturplan fund. FiBL has received about 1 million Swiss francs (\$780,000 U.S.) annually since 2003 from the Coop for research to improve the supply chain. Swiss consumers spent more on organic food in 2004 than other European consumers.

For more information on FiBL, visit their multilingual Web site at <http://www.fibl.org/english/index.php>. FiBL also publishes monthly magazines in French and German, informational folios, conferences and workshops, and with the Danish Research Centre for Organic Farming and the German Federal Organic Agriculture Programme has created an on-line database of the published literature relevant to organic farming at <http://orgprints.org/>.

## CALFED

### Ecosystem restoration program

The CALFED Bay-Delta Program agencies through the California Bay-Delta Authority, the California Department of Fish and Game, the U.S. Fish and Wildlife Service, and the National Marine Fisheries Service is seeking applications for projects that assist farmers in integrating agricultural activities with ecosystem restoration. The geographic area of interest is California's Sacramento River and San Joaquin River watersheds and the San Francisco Estuary. Applications will be accepted through 5 p.m. **Dec. 15, 2005.** Proposal solicitation package is available at: [http://calwater.ca.gov/solicitation/erp\\_solicitation.shtml](http://calwater.ca.gov/solicitation/erp_solicitation.shtml)

### Proposition 50 funds

The California Department of Water Resources (DWR) will be managing the next round of grants offered by the CALFED Watershed Program for funds available from Proposition 50. DWR anticipates release of the Proposal Solicitation Package in the middle of No-

vember 2005. More information is available at <http://www.watershedrestoration.water.ca.gov/watersheds/grant.cfm>

## Western IPM

The Western Integrated Pest Management (IPM) Center has released a 2006 Request for Applications (RFA) for the Regional Integrated Pest Management Competitive Grants program. The program supports projects that develop individual pest control tactics, integrate individual tactics into an IPM system, and develop and implement extension education programs. The program is administered by the (North Central, Southern, Northeastern, Western) in partnership with CSREES. Because the specific needs of each of the land-grant university system's four regions vary, specific program priorities vary among the regions. More information on the RFA is available at [www.wripmc.org](http://www.wripmc.org) or contact **Frank Zalom**, Western IPM Regional Grants panel manager at (530) 752-3687 or [fgzalom@ucdavis.edu](mailto:fgzalom@ucdavis.edu). Applications are due **Dec. 15, 2005.**

The Western IPM Center is one of four centers established to strengthen USDA's connection with production agriculture, research and extension programs, and agricultural stakeholders throughout the U.S. It is housed in the Department of Environmental Toxicology at the University of California, Davis. It has an updated list of federal calls for proposals at [www.wripmc.org/Research/index.html](http://www.wripmc.org/Research/index.html).

## International funding database

Community of Science (COS) Funding Opportunities is a comprehensive international database of published grants, scholarships, fellowships and awards with more than 23,000 entries that have been reviewed, compiled, and formatted in a searchable database. 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. For more information see [www.cos.com](http://www.cos.com).

## PUBLICATIONS

**OAK GUIDE** *Planner's Guide for Oak Woodlands*, 2nd Edition, by **Gregory Giusti**, **Douglas McCreary** and **Richard Standiford**, UC ANR Publications, 116 pages, 2005. Publication 3491. The encroachment into oak woodlands addressed at the time of the first edition in 1992 has not stopped. As more development occurs in oak woodlands, the guide can provide a framework for preserving this icon of the California landscape. Designed for professional planners, consultants, and landscape architects, chapters cover a range of planning and conservation topics including biology of oak resources, wildlife habitat, watershed management, regional planning, mapping resources and modeling risk for improved land use planning, and ordinances. It features a sturdier binding and more photographs. \$15. To order, go to <http://anrcatalog.ucdavis.edu/InOrder/Shop/ItemDetails.asp?ItemNo=3491>.

## FAMILY FARMS

*The Fate of Family Farming: Variations on an American Idea*, by **Ronald Jager**, University Press of New England, 244 pages, 2004. Explores the history and future of U.S. family farming the agrarian values on which it's based--the fundamental good of nature, local communities, and simple living. Discusses the work of **Louis Bromfield**, **Victor Hanson**, and **Wendell Berry**, as well as the economic and ecological challenges of small farms and their strategies for survival. \$17.95. To order, contact University Press of New England, Order Department, 37 Lafayette Street, Lebanon, NH 03766; (800) 421-1561; <http://www.upne.com>.

## FARM POLICY

*Transformational Farm Policy: Will It Work?* A 2005 speech by **Chuck Hassebrook**, executive director of the Center for Rural Affairs, on the need for a new type of farm policy that

recognizes the cultural, economic and social importance of small farms, acknowledges farmers as entrepreneurs, and rewards environmental stewardship. Available online at <http://www.cfra.org/resources/speeches.htm>.

## ON-FARM FOOD SAFETY

*Food Safety Begins on the Farm: A Grower's Guide*, University of California Small Farm Center, 2005. This online guide provides farmers with food safety tips. As it is difficult to completely sanitize produce once contamination has occurred, the key to reducing risks is preventing contamination before it happens. To access the guide, go to [www.sfc.ucdavis.edu](http://www.sfc.ucdavis.edu).

# RESOURCES

# CALENDAR

## \* SAREP WEB CALENDAR AND ONLINE COURSE

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

## \* NATIONAL/INTERNATIONAL CALENDAR

The National Agricultural Library maintains a calendar as part of AgNIC at [www.agnic.org](http://www.agnic.org). It links to more than 1,200 major national and international agricultural conferences.

## NOVEMBER

**13-15 California Farm Conference 2005**, Marriott Hotel, Ventura, CA. Focus is on finding solutions/sharing information about issues, resources, techniques, opportunities for economic survival/betterment of small farms. Tasting & wine reception, trade show, preconference farm tour, short courses, workshops. Keynote speakers: John Ikerd, Michael Abelman. Information: Tel: 530-756-8518, ext.38; Web: <http://www.californiafarmconference.com/>

**15-16 Central Coast Inaugural Sustainable Ag Expo**, California Mid State Fairgrounds, Paso Robles. Sponsored by Central Coast Vineyard Team (CCVT). Trade exhibits, grower workshop on sustainable practices. Equipment/materials show; speakers on reduced risk practices, water quality, Conditional

Ag Discharge Waiver for Irrigated Lands. Contact CCVT for information on exhibitor reservations, general registration at [info@vineyardteam.org](mailto:info@vineyardteam.org), 805-369-2288. [www.vineyardteam.org](http://www.vineyardteam.org).

**19 Oregon Tilth's 31st Annual Fall Conference**, Salem Conference Center, Salem, OR. Workshops, seminars, local, seasonal, organic food. Information: 503 378-0690, [www.tilth.org](http://www.tilth.org)

**30 Calif. Dept. of Food & Ag Fertilizer Research & Education Program (FREP) 13th annual conference**, National Steinbeck Center, Salinas. Information: [www.cdfa.ca.gov/is/frep](http://www.cdfa.ca.gov/is/frep).

## JANUARY 2006

**25-28 26th Annual Ecological Farming Conference**, Asilomar, Pacific Grove, Calif. *Savoring Connections from Seed to Table*. World's foremost sustainable agriculture conference features prominent keynote speakers, 50 + workshops in ag production, marketing, & research, + opportunities to exchange information, renew spirits. Farm tour, seed swap, organic wine tasting, exhibitor marketplace. Contact: Ecological Farming Association, 831-763-2111; [www.eco-farm.org](http://www.eco-farm.org)

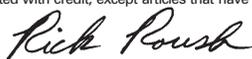
## AUGUST

**15-17 National SARE Conference--North Central Region**. Olympia Resort and Conference Center, Oconomowoc, Wisconsin. Information: [sare.org/ncrsare/2006\\_national\\_conference.htm](http://sare.org/ncrsare/2006_national_conference.htm)

## UC Davis ag sustainability director search

UC Davis and the UC Division of Agriculture and Natural Resources (ANR) are seeking a director of the UCD Agricultural Sustainability Institute (including existing campus sustainable ag projects) and the ANR Sustainable Agriculture Research and Education Program (SAREP). 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. For more information about the position, see <http://asidirectorsearch.caes.ucdavis.edu>. Questions about the position may be directed to **Howard Ferris**, Search Committee Chair, College of Agricultural and Environmental Sciences Dean's Office, University of California, One Shields Ave., Davis, CA 95616. Tel: (530) 752-8432; [hferris@ucdavis.edu](mailto:hferris@ucdavis.edu).

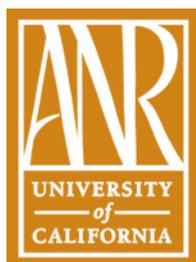
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