

SUSTAINABLE AGRICULTURE

“Plate Tectonics”: Do farm-to-school programs shift students diets?



By Jeri Ohmart and Gail Feenstra, UC SAREP

Combination school lunch (photo by Jeri Ohmart)

Over the past five years, farm-to-school salad bar programs have begun to proliferate across the country. As programs appear, we often hear the claim that children will reject fresh produce. Yet initial reports suggest that, when presented with fresh fruits and vegetables in a salad bar format, children readily choose them. But what exactly do kids choose? What do their preferences look like, and how do their salad bar choices differ from the USDA hot lunch that is a school’s normal fare? What conclusions can we draw about their diets from these new programs? These were the questions informing a recent study conducted by **Gail Feenstra**, UC SAREP food systems analyst; **Jeri Ohmart**, UC SAREP food systems program assistant; and **Melissa Salazar**, graduate student in the UC Davis School of Education.

Since 2001, Davis Joint Unified School District (DJUSD) has been implementing a farm-to-school salad bar program. An integrated program that includes gardening, nutrition education, on-site recycling, and farm tours, it features a cafeteria salad bar stocked with farm-fresh, seasonal produce from local farmers.

During this time, we have seen total district produce purchases more than triple, from \$13,000 to more than \$42,000, and produce purchases dedicated solely to the salad bar increase more than eight times, from \$4,000 to almost \$35,000. Children’s access to produce has definitely increased.

By the fourth year of the program DJUSD Food Services Director **Rafaelita Curva** was faced with some questions about what the children were actually taking from the salad bar. Early in 2004, she requested that Feenstra and Ohmart take pictures of student lunches. It became clear that these photographs held a wealth of data about the amounts and kinds of food students were choosing.

We approached the principals at four Davis elementary school and two schools in the nearby rural community of Winters and received permission to take photos of children’s school lunches. Eight hundred and fifty photos, later we collated information and assessed the contents of students’ lunch plates. Using USDA minimum serving requirements as a baseline¹, and creating a visual model of serving sizes, we calculated for each plate the amount of protein (meat or meat alternative),

amount of fruit and vegetables, number of choices of fruit and vegetables (variety), and number of bread servings. Servings of croutons and ranch dressing were also evaluated.

At the time we conducted this study, DJUSD was transitioning from a lunch

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consisting of both a salad bar and a hot lunch entrée combination to a model that offered a salad bar only on two days per week and a hot lunch only on three days per week. Since the transition period took place gradually over a period of six weeks, we were able to photograph all three types of lunch: combination lunch, salad bar only, and hot lunch only. In this way, we could draw comparisons among types of lunches to test our hypothesis that children are taking more fruits and vegetables with a salad bar model.

The results were interesting and confirmed our hypotheses. First, we looked at overall averages for all types of lunches. In Davis, fruit/vegetable servings per plate were over the USDA minimum requirement—.83 of a cup compared to the required .75 of a cup (111% of the minimum). However, the number of choices (variety) and protein servings was below minimum, while the number of bread servings was above minimum.

Next, we looked within categories, and here we see a different profile (see Figure 1). The “salad bar only” lunch showed a significantly higher amount of fruit and vegetable servings compared to the other two categories (120% over the minimum requirement). The “salad bar only” model also showed the highest percentage in the variety, while it rated lower than minimum in protein and bread servings.

The “hot lunch only” was below the minimum in each category except for bread servings, where it was above the minimum, equaling the combination lunch. The hot lunch scored the lowest of the three in variety, and at 77% of the minimum requirement of fruits and vegetables, this lunch appeared to be the least healthful.

The combination lunch rated relatively well, with 100% in both protein and fruit/vegetable servings, but low on variety and high on bread servings.

Winters is a small community near Davis and although both are surrounded by farmland, Winters has a much more rural

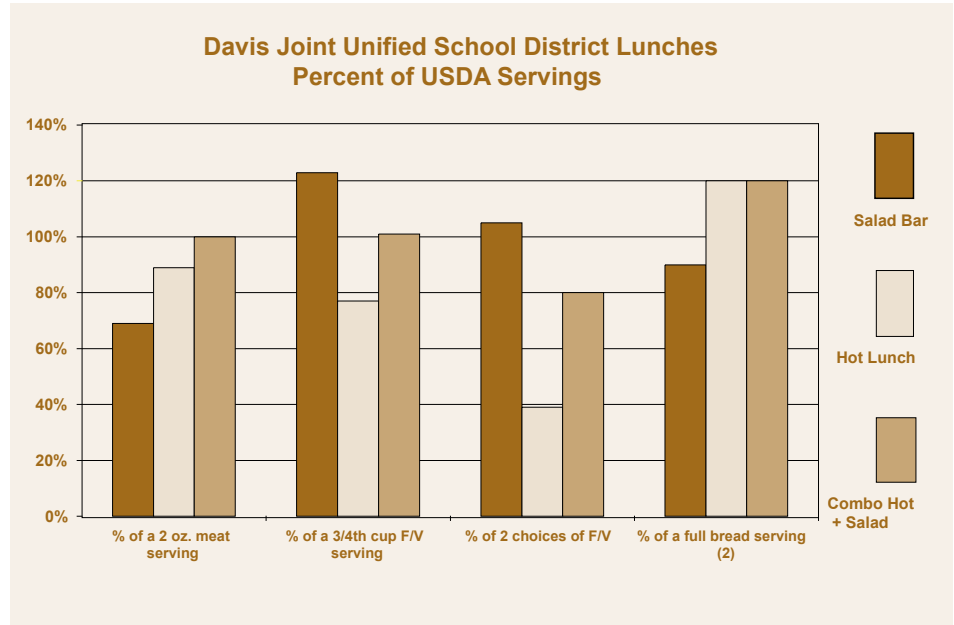


Figure 1. Servings selected by Davis students in school lunches. Data compiled by Jeri Ohmart, Gail Feenstra and Melissa Salazar. UC SAREP, Oct. 2004.

character. Over half the area’s population is Hispanic, most of the families are involved in agriculture, and the elementary schools record a higher percentage of students eligible for free and reduced lunch (over 60% compared to Davis’ 23%). In Winters, salad bar days are similar to a “combination lunch” in Davis. They are presented as “theme” days, offering in addition to the salad bar, a hot entrée corresponding to a cultural theme such as Italian (spaghetti day) or Mexican (taco or nacho day).

Results of the Winters study showed a much closer adherence to the USDA requirements. Protein servings were slightly over the minimum requirement (107%), fruit and vegetable servings were 116%, number of choices was 103% and number

of bread servings were about 78%. Looking at the photographs raises interesting questions. In addition to the fresh lettuce, carrots and tomatoes in the salad bar, children were also able to choose olives, chilies, salsa and tomato sauce, which are counted in the fruit/vegetable category.

One of the most interesting results of using this methodology was to see the extensive variety on the plates on “salad bar only” days. The contrast to “hot lunch only” days was striking (see photos). There is clearly less variety in fruit and vegetable selections on “hot lunch only” days. The study provided a fascinating insight into the ways children select their food, arrange it on the plate, and their reasons for choosing what they did.



Hot lunch



Salad bar lunch (photos by Jeri Ohmart)

Conclusions drawn from the study include:

- ◆ When many kinds of fruits and vegetables are offered, kids take them. This is most true when options are fresh.
- ◆ Salad bars raise fruit and vegetable consumption. Kids take more than the USDA minimum, and the variety is good.
- ◆ Choice and variety are important dimensions of meals. The most common reason kids cited for preferring the salad bar was the element of choice.
- ◆ In addition to looking at minimum requirements in quantity, it is important to look at the extent to which food has been processed. Specifically, it is important to consider fat content, sugars, processed vs. fresh foods, food dyes and additives. Other considerations include food packaging and delivery methods.

Children know what tastes good to them. They will choose fruits and vegetables when they are fresh and presented in an appealing way. Even children who eat “fast food” are quick to tell you when their lunch servings are not fresh or have a “plastic” taste. Being able to see the food and choose those items they want is important to children. Offering a variety of choices among fresh, minimally processed foods will pay off in long-term health. For more details on the study, contact Jeri Ohmart at jlohmarat@ucdavis.edu or Gail Feenstra at gwfeenstra@ucdavis.edu.

¹ USDA minimum requirements are 2 ounces of meat/meat alternative; 3/4ths cup of fruit and/or vegetable (plus an additional serving of 1/2 cup during the course of the week); two types of fruit and/or vegetable; two servings of bread. We counted 20 croutons as one bread serving (per Food Services). We also counted ranch dressing in number of tablespoons, although there is no guideline for ranch dressing.

Rick Roush appointed interim director of UC Sustainable Agriculture Research and Education Program

Entomologist and weed scientist **Rick Roush** was named interim director of the UC Sustainable Agriculture Research and Education Program (SAREP) on Oct. 1, 2004. Roush is also director of the UC Statewide Integrated Pest Management (IPM) Program, and will serve until a permanent SAREP director is selected.

SAREP was established in 1987 as the first sustainable agriculture program at a U.S. land grant university. It is a systemwide program based on the UC Davis campus. **Sean L. Swezey**, the program's director since 1999, has returned to UC Santa Cruz.

“I hope to support the successes of a program that is already respected and highly regarded by the sustainable and organic agriculture communities in California and across the U.S.,” Roush said. “Since 1987, SAREP has played a key role in advancing research and implementation for agricultural sustainability in California, the U.S. and around the world. I look forward to working with SAREP researchers and staff to continue important projects already underway, and to strengthen plans and finances for the future.”

Roush said SAREP is known for its wide range of activities, capabilities, and research, including evaluation of pilot farm-to-school salad bar programs, reduced impact and organic pest management, cover crops, and components of production systems like native bee crop pollination.

“Among my aims will be to build even closer relationships between SAREP and other research and extension staff concerned with sustainable agriculture in the University of California and elsewhere in the state,” he said. “SAREP has great potential for synergies with a much wider group of collaborators, and to further extend a vision for sustainable agri-

culture. I look forward to working with stakeholders to develop and implement SAREP's and the University's activities in sustainable agriculture.”

Roush received his bachelor's degree in entomology from UC Davis and earned a Ph.D. in entomology from UC Berkeley, then conducted postdoctoral research at Texas A&M University on the biology of biological control agents.



Rick Roush (photo by Kathy Keatley Garvey, UC Statewide IPM Program)

Before coming to UC IPM in 2003, Roush was a professor at the University of Adelaide in Australia and chief executive officer of the Cooperative Research Centre for Australian Weed Management for five years. He and his students worked principally on biocontrol of weeds in agriculture and natural ecosystems. Before heading to Australia, Roush taught at Mississippi State University and Cornell University. He is the author or co-author of numerous scientific papers and book chapters.

SAREP provides leadership for research and educational outreach activities that encourage California farmers, farmworkers and consumers to produce, distribute, process and consume food and fiber in ways that are economically viable, sustain natural resources and biodiversity and enhance quality of life. For more information, visit SAREP's Web site www.sarep.ucdavis.edu or call (530) 752-7556.

National limelight for UC Riverside desert cover crop project

There's good news for consumers who like salad and farmers who grow most of the nation's winter lettuce crop in desert soils near the California-Arizona border. UC researchers have found a way to enrich the region's low soil quality with cover crops.

"Typically, soils are left fallow, or empty, after a lettuce-cantaloupe rotation," said research leader Milt McGiffen, a Cooperative Extension specialist and associate plant physiologist at UC Riverside. "When we replaced the summer fallow with cowpea and sorghum-sudangrass cover crops, soil fertility and quality improved."

The successful project is the cover story in a national federal agriculture publication, the USDA's Sustainable Agriculture Research and Education program *SARE Project Highlights 2004*.

Cowpeas capture nitrogen from the air and change it into useable fertilizer. Sorghum-sudangrass enriches the soil by adding carbon and minimizes erosion and dust, a significant problem during the windy summer, McGiffen said.

Cowpeas significantly increased yields and net returns of fall-planted lettuce and the cantaloupe crop that followed, he said. Returns improved even more if the system was farmed organically.

The project found that lettuce could net as much as \$2,417 per acre if grown organically, with price premiums, compared to \$752 per acre grown conventionally.

"The economic good news interests both organic growers seeking alternatives to commercial fertilizers, and farmers wanting to sidestep rising fertilizer prices," said



UC farm advisor José Aguiar holds carrots farmed in rotation with cowpeas at Grimmway Farms in Coachella, Calif. (photo by Michael J. Elderman)

David Chaney, UC SAREP education coordinator and Western Region SARE representative. SARE funded the original research.

McGiffen said that adding a cover crop to the rotation brings other benefits, from out-competing weeds to moderating the desert's extreme soil temperatures.

"Growers were so impressed with the findings that 10 in California's Coachella Valley and more throughout the state have begun growing cowpeas during the summer," he said. "We have changed the way producers look at things and provided them

with new tools." He estimated that farmers now grow cowpeas on more than 3,000 acres in California and Arizona.

The use of cover crops is not limited to lettuce growers. Date and citrus orchard owners are using cowpeas as a result of the UC Riverside research, which published a final report in 2001.

José Aguiar, UC vegetable crops and small farm advisor, collaborated on McGiffen's project. Aguiar is pictured in a field of carrots on the cover of SARE's 2004 review of research projects. The carrot field is now farmed with cowpea in its rotation.

"It knocks down weed populations and provides nitrogen and organic matter, so growers are very happy with the system," Aguiar said.

USDA's SARE program helps advance farming systems that are profitable, environmentally sound and benefit communities through a national research and education grants program. The program, part of USDA's Cooperative State Research, Education and Extension Service, funds projects and conducts outreach designed to improve agricultural systems (see

SARE's Web site at www.sare.org). More information about the McGiffen cover crop project is at www.sare.org/reporting/report_viewer.asp?pn=SW98-044. Western Region SARE project and grant announcements are available at wsare.usu.edu. Farmers, ranchers and researchers can find more information on cover crops in SAREP's online Cover Crops Database at www.sarep.ucdavis.edu/ccrop/.

Aphid control, pruning options for dried plum growers

By Bev Ransom, UC SAREP

On a bright September 2004 morning, over 30 dried plum (prune) farmers and agricultural researchers and consultants gathered at a Yuba City orchard to discuss how to prepare for next year's crop. This field meeting, conducted as part of the Integrated Prune Farming Practices BIFS project and UC SAREP's "Buy California Initiative" BIFS Outreach project, highlighted several orchard management practices that may offer farmers a way to reduce costs while protecting the environment.

UC Cooperative Extension farm advisor **Franz Niederholzer** began the field meeting describing alternative aphid control options that dried plum growers may want to try. Recent UC field trials have shown that aphids in dried plums may be controlled using reduced rates of pesticides and spraying in early November, potentially reducing pesticide runoff into rivers and streams. Niederholzer recommended that farmers base their dormant spray decisions on orchard pest history and the results of monitoring spur samples. [More information on alternative rates and timing of dormant spray is available in the October 2004 IPFP Newsletter at www.sarep.ucdavis.edu/BIFS/IPFPnews.htm; information on dormant spur monitoring is available in the Integrated Prune Farming Practices Decision Guide (see Resources).]

UC Cooperative Extension pomologist **Steve Southwick** demonstrated tree pruning using a Maibo set of hand-held power pruning tools that are faster and easier to use than manual pruning tools. Pruning can be used to invigorate older trees; alternatively, spring and summer pruning can slow down new growth and reduce future pruning costs.

Chico dried plum farmer **Dick Jacobs** shared his experience planting cover crops in dried plums, pointing out advantages such as providing nitrogen that is readily available to trees, preventing pesticide runoff, and reducing dust.

Niederholzer closed the meeting with the reminder that farmers need to look at their whole farming system as they consider incorporating some of these alternative practices.

More information about UC SAREP's BIFS program and the "Buy California Initiative" project is available at: www.sarep.ucdavis.edu/BIFS/.



UC farm advisor Franz Niederholzer (center) and growers participate in dried plum (prune) field day in Yuba City orchard. (photo by Fred Thomas)

SARE farmer awards

The USDA Sustainable Agriculture Research and Education (SARE) program has announced the 2004 Patrick Madden Award winners, a biannual prize for producers who are not only profitable, but also value the environment and their communities. Award winners include:

- **Jean-Paul Courtens**, Kinderhook, N.Y. Courtens runs a large, innovative community-supported agriculture farm, and raises more than 50 organic vegetables. He distributes the produce to residents who buy "shares" in the farm in exchange for weekly deliveries of fresh produce.
- **Peter Kenagy**, Albany, Ore. Vegetable grower Kenagy safeguards his land and the Willamette River through stewardship measures including conservation tillage, soil-saving cover crops and riverside buffers.
- **Ron Macher**, Clark, Mo. Macher is a vegetable and livestock producer who earns profits with his value-added meat, feed and open-pollinated corn and sells commodities including katahdin lamb, heirloom chicken and vegetables through diverse outlets.

SARE's judging panel recommended that more than 30 producers be recognized as honorable mentions in the contest. Visit www.sare.org/coreinfo/madden2004_winners.htm for a complete list of award winners and details about their operations. Award booklets with profiles of award recipients are available for distribution at workshops, field days, or conferences. For copies, contact **Mandy Rodrigues** at san_assoc@sare.org.

SARE is funded by the Cooperative State Research, Education, and Extension Service (CSREES), USDA, and works with producers, researchers, and educators to promote farming systems that are profitable, environmentally sound, and good for communities. **David Chaney**, education coordinator for UC SAREP, is the Western Region SARE representative.

Crop pollination journal articles

Claire Kremen, Neal M. Williams, Robert L. Bugg, John P. Fay, and Robbin W. Thorp. 2004. The area requirements of an ecosystem service: crop pollination by native bee communities in California. *Ecology Letters* 7:1109-1119.

A Stanford researcher has collaborated with other researchers including UC SAREP's agricultural ecologist Robert L. Bugg on the publication "The area requirements of an ecosystem service: crop pollination by native bee communities in California," in *Ecology Letters*, 7:1109-1119.

In the summer of 1997, **Claire Kremen**, a conservation biologist who was based at the Center for Conservation Biology, Department of Biological Sciences at Stanford University, enlisted Bugg in a collaboration about landscape-scale studies of native bees and their importance in pollinating crop plants. Kremen also recruited UC Davis emeritus professor of entomology **Robbin W. Thorp**, **Neal Williams**, **John Fay**, and other researchers in a series of related studies from 1998 through 2004, jointly based at Stanford, Princeton, and Davis. The field work was conducted in Sacramento, Solano, and Yolo counties, and evaluated sunflower, cherry tomato, and watermelon pollination.

The latest publication from the project highlights the statistically significant positive effect of nearby upland wild vegetation in promoting pollination services by native bees in watermelon fields. Other factors that did not significantly affect these services included farm type (organic vs. conventional), insecticide use, field size, and honeybee (*Apis mellifera*) abundance.

Other articles that have been produced by Kremen's pollination project are listed here.

Kremen, C. 2004. *Pollination services and community composition: does it depend on diversity, abundance, biomass or species traits?* Pp. 115-123 in *Solitary Bees: Conservation, Rearing and Management for Pollination* (Freitas, B.M. and Pereira, J.O.P., eds), Beberibe, Ceara, Brazil.

Kremen, C., Bugg, R.L., Nicola, N., Smith, S.A., Thorp, R.W., and Williams, N.M. 2002a. *Native bees, native plants and crop pollination in California.* *Fremontia* 30:41-49.

Kremen, C. and Ricketts, T. 2000. *Global perspectives on pollination disruptions.* *Conservation Biology* 14(5):1226-1228.

Kremen, C., Williams, N.M. and Thorp, R.W. 2002b. *Crop pollination from native bees at risk from agricultural intensification.* *Proc. Natl. Acad. Sci. USA* 99:16812-16816.

For more information, contact Claire Kremen, Department of Ecology and Evolutionary Biology, Guyot Hall, Princeton University, Princeton, NJ 08540; ckremen@princeton.edu; www.eeb.princeton.edu/FACULTY/Kremen/kremen.html

RESOURCES

TREE FRUIT GUIDE CARDS

Tree Fruit Pest Identification and Monitoring Cards, by **Carolyn Pickel**, **Larry Strand**, **Jack Kelly Clark**.

Thirty-two pocket-sized laminated cards are to use in the field as handy references

for identifying and monitoring major insect and mite pests and several important diseases in California deciduous tree fruits and nuts. Each pest is identified by a description and close-up photographs of important life stages. Cards identifying important natural enemies are also included. The information on the cards will help pest control advisers and growers know how and when to look for these pests, in both growing and dormant seasons. References are provided to the appropriate UC Integrated Pest Management (IPM) pest management guidelines and IPM Manuals for management information. Publication 3426, \$15.00, 32 cards. Order at anrcatalog.ucdavis.edu



UC ANR PUBLICATIONS

Note: University of California Agriculture and Natural Resources (ANR) Publications switched to a new online catalog at the end of 2004. Previously published direct links to products will no longer be accurate. The Web address of the catalog home page is the same: anrcatalog.ucdavis.edu

Seasonal Guide to Environmentally Responsible Pest Management Practices in Almonds, by **Carolyn Pickel**, **Walter Bentley**, **Joseph H. Connell**, **Roger Duncan**, and **Mario Viveros**. This full-color decision guide is on coated paper in an easy-to-use foldout format. It includes information to help almond growers make environmentally responsible pest management decisions year-round without decreasing their yields or increasing

their reject levels. Based on research and results from the University of California and the Almond Pest Management Alliance. Publication 21619, \$7.00, 8 pp.

FREE ONLINE ANR PUBLICATIONS

The following publications can be accessed free as an HTML Web page or as a downloadable PDF document from anrcatalog.ucdavis.edu. Check for other new publications at anrcatalog.ucdavis.edu and click on “New Additions.”

FARM WATER QUALITY PLANNING SERIES:

Publication 8118: *Evaluating Water Quality* Publication 8119: *Pesticide Selection to Reduce Impacts on Water Quality* Publication 8124: *Sediment Management Goals and Management Practices for Nursery and Floriculture*

BIOCONTROL CONFERENCE PROCEEDINGS

Proceedings of the one-day organic farming session at the July 2004 Biocontrol Organic Symposium at UC Berkeley are now available on the SAREP Web site, www.sarep.ucdavis.edu/Organic/workgroup.htm under “Workgroup Meetings.”

HEDGEROWS RESOURCE GUIDE

Hedgerows for California Agriculture: A Resource Guide, by **Sam Earnshaw**, 2004, Community Alliance with Family Farmers. Design and production by **Timothy Rice**. Contributors include **John Anderson**, Hedgerow Farms; **Robert L. Bugg**, UC SAREP; **Jeff Chandler**, Cornflower Farms; **Rex Dufour**, ATTRA; **Phil Foster**, Phil Foster Ranches; **Gwen Huff**, **Molly Johnson**, **Megan McGrath**, CAFF; **Rachael Long**, UC Cooperative Extension; **Daniel Mountjoy**, NRCS; **Corin Pease**, UC Davis; **Paul Robins**, Yolo County Resource Conservation District. Funding provided by USDA Sustainable Agriculture Research and Education (SARE) Professional Development Program. Information about hedgerows as a system component that helps reduce pesticide use, increase on-

farm biodiversity and on-farm habitat for beneficial organisms and wildlife, reduce wind and water erosion of soil, beautify the environment and diversify farm products. For more information, contact CAFF at (530) 756-8518, www.caff.org, or email caff@caff.org.

DRIED PLUM (PRUNE) GUIDE

Integrated Prune Farming Practices (IPFP) Decision Guide, by **William Olson**, **Carolyn Pickel**, **Richard Buchner**, **William Krueger**, **Franz Niederholzer**, **Maxwell Norton**, **Wilbur Reil**, **Steven Sibbett**, **Fred Thomas**, **Larry Whitted**. Edited by **Steven Sibbett** and **William Olson**. Software database by **Jed Walton**. Environmentally sound and economically viable dried plum (prune) farming practices, developed and demonstrated during the IPFP/BIFS project, are described in this tabbed loose-leaf binder. In addition to step-by-step decision guidelines on managing pests, irrigation, and nutrition, the binder includes pocket-sized UC ANR *Tree Fruit Pest Identification and Monitoring Cards* and a Windows-based record-keeping software program to store and organize field monitoring and pesticide use data. Binders are available for \$32.00 from local Cooperative Extension offices. The text of the Decision Guide is also available at: www.agresearch.nu/ipfp_wsrld.htm.

NEW SARE UPDATES

The USDA Sustainable Agriculture Research and Education (SARE) program Web site was updated recently. It includes information about grants and other resources available from the SARE program and SARE’s outreach arm, the Sustainable Agriculture Network. SARE’s new Web site is at www.sare.org.

The revised SARE bulletin, “How to Conduct Research on Your Farm or Ranch,” is at www.sare.org/publications/research.htm. The free, updated, downloadable bulletin outlines how to conduct research at the farm level, offering practical

tips for both crop and livestock producers, as well as a comprehensive list of more in-depth resources. Available individually or in quantity for agricultural educators.

FARM/COMMUNITY PUBLICATION

Civic Agriculture: Reconnecting Farm, Food, and Community, by **Thomas A. Lyson**. Civil Society Series-Tufts University Press, University Press of New England, 136 pages, 2004. Lyson writes about the counter trend toward localizing some agriculture and food production, which has arisen at the same time the American food and agriculture system has followed a path of industrialization and globalization. He calls this “civic agriculture,” because it is linked to a community’s social and economic development. Lyson was a featured speaker in the 2003 lecture series *The Science of Sustainable Agriculture: Measuring the Immeasurable* at UC Davis, where he discussed “Civic Agriculture and Food Citizenship: Sustaining Local Food Systems in a Globalizing Environment.” He is the Liberty Hyde Bailey professor in the Department of Rural Sociology at Cornell University. \$16.95. Available in bookstores or online at www.dartmouth.edu/~upne/online_ordering.html.

CALIFORNIA’S FOOD ECONOMY

Ripe for Change: Rethinking California’s Food Economy, by the International Society for Ecology and Culture (ISEC). 100 pages, 2004. Focuses on the globalization of California’s food economy and its relationship to ecological degradation, risks to human health and food security, and economic injustice. Looks at trends in food production, subsidies, and policy initiatives, and how shifts toward local food economies might benefit communities, farmers, businesses and the environment. Order through for ISEC for \$12 (plus \$1.80 shipping, CA residents add \$0.96 tax), at www.isec.org.uk/books.html Email: california@isec.org, uk for more information.

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 (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/

■ NATIONAL/INTERNATIONAL CALENDAR

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

■ MONTHLY MEETINGS

Lighthouse Farm Network The Community Alliance with Family Farmers (CAFF) sponsors informal monthly meetings for growers to discuss issues related to pesticide use reduction. Contact: Molly Johnson, (530) 756-8158, ext. 30, molly@caff.org; or Merrilee Buchanan, (831) 761-8507, merrilee@storypages.com; www.caff.org

JANUARY 2005

18 *Organic Vegetable Production Workshop*, Salinas. UC Cooperative Extension, 1432 Abbott St., Salinas. Information/registration: Milt McGiffen, milt@ucr.edu or Richard Smith, rifsmit@ucdavis.edu. Co-sponsors: UCCE, Calif. Dept. of Food & Ag *Buy Calif. Initiative*, SAREP, CAFF.

19-22 *25th Annual Ecological Farming Conference*, Asilomar, CA. Silver anniversary speakers: Eliot Coleman, Michael Pollan, Sandra Steingraber, Paul Stamets, 50+ workshops in ag production, marketing & research, organic farm tours, organic meals, wine tasting. Information: www.eco-farm.org/efc_05/efc_main05.html

30-Feb. 1 *Association of Applied IPM Ecologists 2005 annual conference: Adding Value & Reducing Costs: New Ways for IPM Professionals to Make a Profit*, Tenaya Lodge, Fish Camp, CA (near Yosemite). Keynote: Charles

Benbrook. Breakout sessions, round tables, panels, trade show, tour of pest management in Yosemite National Park. Information: Jill Klein, director@aaie.net, 707-265-9349, www.aaie.net.

FEBRUARY

1-2 *34th annual meeting of California chapter of Agronomy Society of America: Science and Policy Issues in California Agriculture*. Modesto. Topics: soil nutrient management, impacts of water regulations, waivers, pest management, new field technologies/management strategies. Information: calasa.ucdavis.edu/

5 *10th Annual PlacerGROWN Farm Conference*, Lincoln. 25 workshops on organic certification, grass-based livestock marketing, viticulture, beginning farming, mandarin production/marketing. Keynote: Jane Eckert on agritourism. Information: ceplacer.ucdavis.edu/Custom%5FProgram140/

MARCH

23-24 *Challenges of Calif. Agriculture symposium*, Sacramento. Sponsors: UC Davis, Cal Poly-San Luis Obispo, CSU Fresno. Co-sponsors: Calif. Dept. of Food & Ag, industry groups. Keynote: Calif. Secretary of Food/Ag A.G. Kawamura on forces driving Calif. ag. Limited to 300 participants. \$125 reg. by Feb. 25. Information: www.CalAgSymposium.org, 530-752-1748, 752-2320.

APRIL

12 *Organic Olive Production Workshop*, Santa Rosa. Santa Rosa Junior College Farm, through UC Cooperative Extension. Information: Paul Vossen, pvmossen@ucdavis.edu. Co-sponsors: UCCE, Calif. Dept. of Food & Ag *Buy Calif. Initiative*, SAREP.

22-24 *Marin Environmental Film Festival*, Smith Rafael Film Center, 1118 4th St, San Rafael. Films, panel discussions on environmental issues, + Sustainable Food Tasting Event to inspire community support for the farmers, producers & chefs working to promote a healthy, sustainable food system in Northern California. Sponsor: Environmental Forum of Marin. Information: www.marinenvironmentalfilmfestival.org

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: www.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

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SUSTAINABLE AGRICULTURE

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