

**Santa Barbara County**

# **CENTRAL COAST AGRICULTURE HIGHLIGHTS**

*From your Farm Advisors Serving you in the Areas of Vegetables, Small Farms, Strawberries, Field Crops,  
Livestock and Natural Resources*

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## ***National Plant Diagnostic Network: Protecting America's Agriculture, the Role of County- based Cooperative Extension***

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Western Plant Diagnostic Network, UC Davis; and R.M. Bostock,  
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As everyone is aware, following the attacks on September 11, 2001, America's attention and resources were refocused on homeland security. While emphasizing the security of structures such as buildings, dams, power plants and bridges, Congress also recognized the vulnerability of our agriculture industry. On June 12, 2002, the President signed into law the *Agricultural Bioterrorism Protection Act of 2002*. The Act covers both animal and plant production and directed the Secretary of Agriculture to develop a network linking plant and disease diagnostic facilities across the country. The Cooperative State Research, Education, and Extension Service (CSREES) established the Animal & Plant Disease and Pest Surveillance & Detection Network. The National Plant Diagnostic Network (NPDN) will focus on the plant disease and pest aspects of the program.

According to the Network's website <[www.npdn.org](http://www.npdn.org)>, its mission is:

". . . to enhance national agricultural security by quickly detecting introduced pests and pathogens. This will be achieved by creating a functional nationwide network of public agricultural institutions with a cohesive, distributed system to quickly detect deliberately introduced, high consequence, biological pests and pathogens into our agricultural and natural ecosystems by providing means for quick identifications and establishing protocols for immediate reporting to appropriate responders and decision makers.

The network will allow Land Grant University diagnosticians and faculty,



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State Regulatory personnel, and first detectors to efficiently communicate information, images, and methods of detection throughout the system in a timely manner.”

### The Network

The Network is comprised of Land Grant University plant disease and pest diagnostic facilities across the United States. Lead universities have been selected and designated as Regional Centers to represent five regions across the country. These Centers are located at Cornell University (Northeastern region), Michigan State University (North Central region), Kansas State University (Great Plains region), University of Florida at Gainesville (Southern region), and University of California at Davis (Western region).



The National Agricultural Pest Information System (NAPIS), located at Purdue University, has been designated as the central repository for archiving selected data collected from the regions. The establishment of the Network will provide the means necessary for ensuring that all participating Land Grant University diagnostic facilities are alerted to possible outbreaks and introductions, and are technologically equipped to rapidly detect and identify pests and pathogens.

California’s diverse agricultural enterprise falls within the jurisdiction of the Western Plant Diagnostic Network, coordinated by Dr. Richard Bostock, Chair of the Department of Plant Pathology, UC Davis. The Western Plant Diagnostic Network (WPDN) coordinates data gathering, diagnostic collaboration, and other activities of member land grant institutions, national agencies and state departments of agriculture, whereas primary functions are to aid in:

- Detecting new pest outbreaks
- Diagnosing the problem(s)
- Communicating diagnostic results through the national Network
- Analyzing the outbreak pattern
- Informing first responders of the select agents

### Detection - Enhancing the Problem-solving Role of County-based Extension

Cooperative Extension already plays a key role in the network. Since the local county office is the place where solutions are sought after, Farm Advisors have always been on the front line of detecting new pest introductions. The network wishes to support that role and enhance the public’s awareness of the importance of that role.

Currently, when a farmer or PCA brings a problem to a county office, a Farm Advisor may recognize the problem and provide management solutions, or determine that the sample requires identification or diagnosis. The sample is shipped to a UC expert or the California Department of Agriculture (CDFA), a diagnostic lab in Sacramento. This process will not change, but should be enhanced with improved diagnosis capacity and communication.

The Farm Advisors should continue to be the initial contact for First Detectors who have encountered something new or unusual. First Detectors are PCAs, growers, seed field inspectors, agronomists and anyone else who regularly inspects fields for pest management or crop production purposes. Farm Advisors’ input on the best approaches in developing First Detectors’ training is important to the success of the Network.

The importance of training First Detectors is twofold. First, it ensures minimal qualifications for a national standard, and second, it provides

#### What’s a Select Agent?

A select agent is a disease pathogen, plant or arthropod that has been identified as a particularly serious threat. Each region was asked to define the organisms they considered to be critical. The Western list included:

- *Ralstonia*
- Broomrape
- Fruitfly complex
- Potato/tomato late blight (*Phytophthora infestans*)
- Golden nematode complex
- Sudden oak death
- Gypsy moth complex

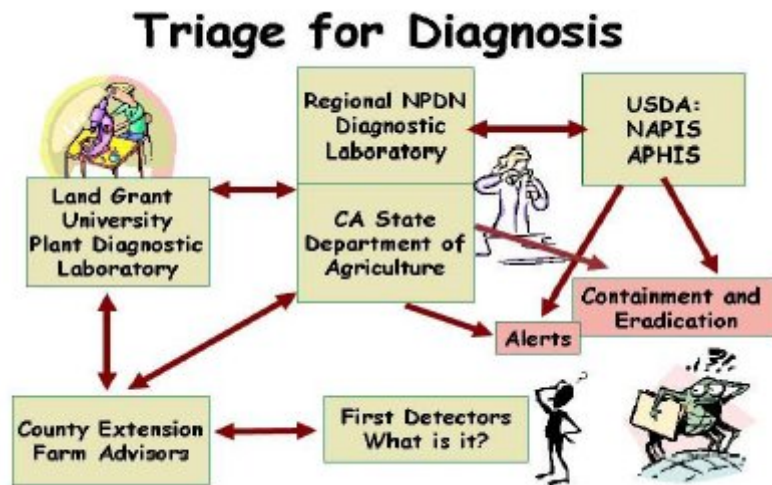
the opportunity to be listed on a national registry that will notify First Detectors to be alert for the appearance of select agents.

### Enhancing the Diagnostic Capacity

From a biosecurity point of view, new pest introductions should be contained as soon as possible, regardless whether intentionally or accidentally introduced. California faces the introduction of exotic species almost every day, and the Network can help improve our state's diagnostic capacity as well as help to emphasize vigilance. The diagnostic network in California consists of both UC labs and expertise and the CDFA diagnostic lab in Sacramento. The CDFA lab also serves as the Western Regional Center

Lab and will accept samples from other Network diagnostic labs in the region.

The bulk of funding provided in the past year has gone to improve the diagnostic labs with equipment and training. One goal of the Network is to provide standardized quality among the regional labs and among the satellite labs that feed into the regional labs. The regional diagnostic labs can forward samples suspected of being select agents to other labs with specific expertise. In some regions, there has been an emphasis on Distance Aided Diagnosis. This includes support in digital photography (both field and microscopic), and communication networks which allow real-time conferencing with appropriate experts.



This diagram illustrates potential problem diagnosis triage. It does not differ too much with current problem solving models, except for providing closer linkages between labs and responders. If the Farm Advisor recognizes the problem as a select agent or if it is an unknown, it is moved to the next level. The process is repeated until a confirmed diagnosis is found.

If the Farm Advisor recognizes the problem, the client is informed. In the future, this incident could be reported into the Network as well to record known but unusual events.

### Communications

The key to staying aware of potentially threatening pest outbreaks is in communicating and sharing results. The Network is establishing exchanges that ensure timely and secure data transmissions between Regional Centers and the National Agricultural Pest Information System (NAPIS), located at Purdue University. The Regional Centers will see all data coming from

all labs in the region and will be able to see multiple events simultaneously. The Centers have direct access to the NPDN national database, housed at NAPIS, for rapid pattern detection. This same analysis tool can be used by regulatory agencies for response planning and forensics, if required.

## Analysis

One advantage of having centralized data is the ability to see trends, develop hypotheses about outbreaks and predict future occurrences. Data of interest to the analysts include geographic spread, host and pest/disease relationships, timing of outbreaks, associated weather data, and topography. This part of the Network's mission is perhaps the most difficult, but when it is fully implemented, will be a great aid in preventing or ameliorating future outbreaks.

## Summary

The National Plant Diagnostic Network was established to improve the security of our food and fiber production systems. The success of

the Network will be to prevent outbreaks of new diseases, arthropods or weeds, whether intentionally or unintentionally introduced. County-based Cooperative Extension plays a pivotal role in this national security program.

The Farm Advisors will participate in training, become First Detector trainers themselves, and engage in the deployment of the Network to our clientele, who serve as First Detectors.

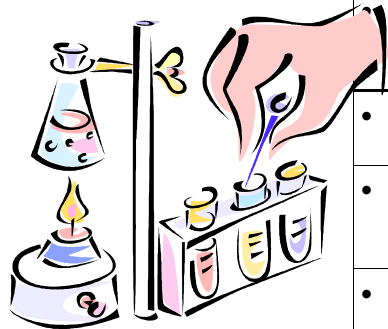
More information about the Network can be found at the Great Plains Plant Diagnostic Network <<http://www.gpdn.org>>. Contact Franklin Laemmlen <[fflaemmlen@ucdavis.edu](mailto:fflaemmlen@ucdavis.edu)> or (805) 934-6240 if you have questions related to the National Plant Diagnostic Network (NPDN).

## ***Current Research Reports: A New Column in CCAH***

*Franklin Laemmlen*

There is much more research information available than we can print in six yearly editions of this newsletter. Therefore, I am initiating a new column, which will list research reports of potential interest to Central Coast Agriculturists.

If one or more of these research titles is of interest, contact our office (805/934-6240), and we will send a complete copy.



Polyacrylamide (PAM) - Effective Erosion Fighter and Infiltration Enhancer But Not a Conservator of Water - by Laosheng Wu, CE Water Management Specialist

- Managing Fertilizer Reactions In Fertigation - by Blaine Hanson, CE Irrigation & Drainage Specialist
- Management of Aphids in *Brassica* Seed Crops with Selective Insecticides - by John Palumbo and Barry Tickes, U. of Arizona, Yuma Sta.
- Foxglove Aphids in Lettuce: Control with Reduced-risk and Conventional Insecticides - by John Palumbo, U. of Arizona, Yuma Sta.
- The Comparison of Aerial and Sprinkler-applied Delayed Applications of Kerb to Lettuce - by Barry Tickes, U. of Arizona, Yuma Sta.
- Colored Mulches Can Help Improve Basil Quality.

## ***The NRCS still Makes House Calls to Help Ensure the Health of your Farm or Ranch***

*Dawn Afman*

The Natural Resources Conservation Service (NRCS), formerly known as the Soil Conservation Service (SCS), was born out of a time of hardship and a national response to the Dust

Bowl catastrophe of the 30's. NRCS understands that agricultural producers may have difficulty today meeting the challenges for improved environmental quality. Compounding these challenges are

the Tiger Salamander listing, Oak Tree ordinance, Glassy-winged Sharpshooter issues and more. The NRCS is a non-regulatory agency, and participation in their programs is strictly voluntary.

The office in Santa Maria works closely with the Cachuma Resource Conservation District (CRCDD). Collectively, the staff of soil scientists, engineers, and irrigation technicians, has over 160 years of hands-on practical field experience. The NRCS team of specialists can help you with oak tree planting, beneficial insectary planting to combat Pierce's disease, green manure crops, grassed waterways, buffer strips, wildlife

habitat, erosion control, irrigation efficiency evaluation, water quality, and nutrient management problems. The agency is committed to helping agricultural producers develop conservation plans uniquely suited to your land and your individual ways of doing business, while maintaining and improving your economic viability.

The new Farm Bill Environmental Quality Incentives Program (EQIP) has 50% cost share available on contracts from as little as 2 to as long as 10 years. NRCS is currently accepting applications for 2005 Environmental Quality Incentives Program. Please call the NRCS office and ask for Dawn Afman, Soil Conservationist, (805) 928-9269 ext.108.



## ***Residues and Grazing Influences***

*Wayne Jensen*

Residual dry matter, the dry forage component remaining at the end of the dry season, is a major manageable factor governing productivity and plant composition on grazing lands. Residue, acting as a mulch, influences germinating plants and soil organic matter. To maintain desired forage production, it is useful to set minimum residue standards. The following will give you some idea of what I mean by this statement.

Standards vary on a statewide perspective throughout California, from as small as 200 pounds of dry matter per acre in the south to 1,250 lb/ac or more on north coast steep slopes. Retaining greater amounts of residue does not necessarily enhance total forage productivity, but it may be desirable in terms of other management objectives.

On the Central Coast a lower amount of residue in fall tends to encourage higher proportions of species, some of which are palatable and others are not. Examples would be: turkey mullein, broadleaf filaree, bur clover, red stem filaree, and other clovers.



A high amount of residue in fall encourages dominance by plants such as slender wild oats, soft chess, medusa head, and rip gut grass. Grasses creating a canopy can shade out other species, so grass most often dominates when residue builds up due to favorable weather or light grazing pressure. With grazing to open the canopy, it will increase the occurrence of legumes and other forbs. On a moderately utilized range, livestock do not graze heavily enough to make complete use of the available forage. For this reason, a patchwork of grasses and forbs will be apparent.

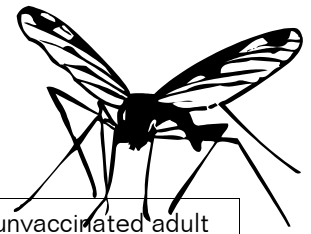
Reading this article might cause you to agree with these observations or disagree, but I hope it will prompt you to get down on the ground and see what is growing at various sites on the land you manage. Keep in mind both the quality and the quantity of forage influences on the production of the animal grazing the forage your land produces.

If you are interested in more information, call (805) 934-6240 and ask for a copy of UC ANR Publication 21327, "Guidelines for Residue Management on Annual Range."



# West Nile Virus Update

Wayne Jensen



The Centers for Disease Control (CDC) has predicted that California and the West Coast will probably be hit hard with the West Nile virus in 2004. The fact that California has not yet encountered major problems with West Nile should not be taken as a reason to be less attentive to preventive measures. Horse owners should prepare early for the onslaught of the virus this spring and summer. In light of this warning, the following information was provided for this article with permission by the Center for Equine Health\* at UC Davis.

The clinical signs for West Nile virus encephalomyelitis are not what one might normally expect for viral encephalitis in the horse, and are markedly different from those seen with Western Equine Encephalitis and Eastern Equine Encephalitis infections. The Center strongly encourages equine practitioners and owners in California and other western states to prepare themselves against a disease that may soon become a serious clinical problem.

## Vaccination Recommendations for West Nile Virus in Horses

The Center for Equine Health is recommending that California horse owners have their horses vaccinated for West Nile virus starting in March/April 2004, before the summer's peak mosquito season. There are an estimated one million horses in California. The mortality rate in horses that contract West Nile virus remains at about 30%. A horse vaccine became available in 2001 under conditional approval by the U.S. Department of Agriculture. The vaccine, made by Fort Dodge Animal Health, was granted full approval in 2002. According to the company, it has been found to be 95% effective in warding off the illness in horses.

The center for Equine Health recommends the following vaccinations for West Nile virus in horses:



1. Vaccinate all previously unvaccinated adult horses in March/April 2004 with a two-dose primary series, 3 to 4 weeks apart.
2. As a general rule, UC Davis veterinarians recommend that you avoid vaccinating pregnant mares in the first trimester of gestation whenever possible. Talk to your veterinarian about your best options for vaccinating your particular mare.
3. Vaccinate all young horses (less than one year of age) in March/April 2004 with a three-dose primary series. Allow 3 to 4 weeks between doses one and two, and allow 6 to 8 weeks between doses two and three.
4. If the foal was born to an unvaccinated mare or a mare that was not booster-vaccinated 4 to 6 weeks before foaling, begin the vaccination series at 3 months of age.
5. If the foal was born to a mare that was booster-vaccinated within 2 months of foaling, then begin the vaccination series at 4 to 6 months of age.

## Vaccinated Horses

1. If your horse was fully vaccinated last year or if the primary vaccination series was completed this year, follow up with a booster every six months.
2. Booster all horses that have not been vaccinated within the previous 6 to 8 weeks, then follow with boosters every 6 months from the date of the last vaccination.

\* The CEH provides academic leadership by serving as the organizational umbrella under which equine research is funded and conducted at the University of California, Davis, and at those California State University campuses with equine programs. For more information about the Center you can access their website at <http://www.vetmed.ucdavis.edu/ceh/>



## ***Top New Specialty Fruits and Vegetables***

*Mark Gaskell*

The California Farm Conference and North American Farmers Direct Marketing Association joint meeting, held in Sacramento on February 2-7, 2004, featured several presentations on different topics important to small farm fruit and vegetable operations. Robert Schuler, Director of Marketing at Los Angeles-based Melissa's World Variety Produce spoke at a session, entitled Creative Diversity, on the varied specialty items that are currently at the top of their market-oriented sales program. These items appear to be at the forefront of public interest in specialty produce items.

Schuler described Melissa's top market demand items for specialty fruit and vegetable products. He separated the different items in terms of ethnic group specialties - particularly Latin and Asian produce items - and also organic produce trends.

Among the Latin specialty area in the group of specialty hot peppers, he mentioned jalapeño, Serrano, Anaheim, and pasilla/poblano peppers - all with growing demand. In this group, he also included tomatillos, jicama, cilantro, and yucca (cassava).

For the Asian vegetable group, Schuler includes sugar snap peas and snowpeas, ginger, daikon, bok choy, baby bok choy and nappa cabbage. Japanese and Chinese eggplants are also included among the big sellers. Nappa cabbage is one ethnic item that has risen to the point of being a mainstream leafy vegetable item.

Schuler summarized the overall demand by different ethnic groups saying that 12 million Asians in the US spend \$370 billion per year on fresh produce while 37 million US Hispanics spend \$500 billion per year. By 2010 projections estimate there will be 50 million Hispanics, and by 2020 there will be an estimated 75 million Hispanics. A wide range of additional Asian and Hispanic specialty fruits and vegetables are listed on Melissa's web site at <[www.melissas.com](http://www.melissas.com)>.

Organic fruits and vegetables are also a main specialty produce segment for Melissa's

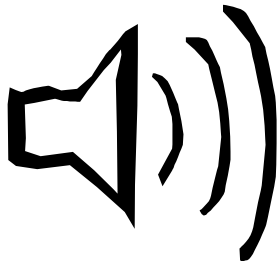


with growing demand. Schuler stated that overall organic produce represents 12-15% of Melissa's business and that it is growing 22% per year. Industry-wide, the organic segment has grown approximately 20% per year for the last 7 years. In 2001, the organic industry in the U.S. had gross sales of \$7.1 billion, and by 2005 it is expected to exceed \$14 billion.

Some of the more general current trends in produce sales indicate growing demand for such items as baby carrots, celery hearts, broccoflower, red and green grapes, and gala apples. The top ten list of specialty fruit items for Melissa's includes: plantains, strawberries, papaya, Asian pear, pummello, coconut, star fruit, quinces, plums (up 1000% in 5 years), and persimmons. Among persimmons, he is especially enthusiastic about a cinnamon variety of Hachiya. This special persimmon has mottled brown specks inside on the flesh like bits of cinnamon. It also has a consistency midway between Fuyu and Hachiya types. Seedless Concord grapes are another important specialty fruit that currently are available only 1-1.5 months per year.

The top ten list of specialty vegetable items for Melissa's are: hot-house European cucumbers, radicchio, Dutch yellow potatoes, parsnips, endive, edamame soybeans, as well as several of the ethnic vegetables mentioned earlier. Other items that Schuler singled out with growing demand were: baby kiwi, rambuttan, crimson gold apples (looks like crab apple, tastes like gala), Muscatto grapes, cocktail grapefruit, sprite melon, petite melon from North Carolina, mini watermelons, pixie tangerines, baby pineapple, pitahaya, gypsy peppers, and orange watermelon.

Schuler mentioned several new items that came on the horizon in 2003, including: orange and yellow serrano peppers, tie-dye squash, red Muscatto grapes, red-yellow-green peppers, purple broccoli, and Neapolitan grapes. Also see Melissa's web site for additional organic products, and periodic newsletter discussions of these and other specialty products.



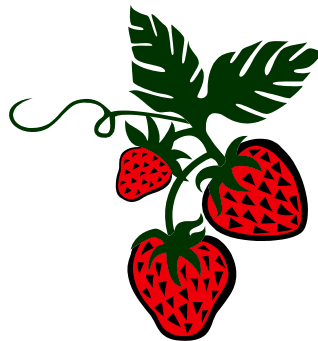
# Announcements . . .

- ◆ **Basic Management of Sudden Oak Death in Woodlands and Landscapes: Recognition, Sampling, Treatment, and Mitigation Measures.** These workshops are open, free of charge, to anyone interested in attending. They will combine lecture and field exercises in sampling and notification procedures, symptom recognition, disease risk rating and treatment, mitigation measures, and regulations.



The first session will be held in Felton on April 22, 2004. Registration materials can now be found online at <[www.suddenoakdeath.org](http://www.suddenoakdeath.org)>. Click on the TRAINING link on the home page to get to the information, agenda, and online registration form. Space is limited to 100 participants, so be sure to register early.

- ◆ The **2004 California Strawberry Scholarship Program** is seeking applicants for a new round of awards. You can contact our office (805) 934-6240, or the California Strawberry Commission (831) 724-1301 for applications. Scholarship awards range from \$200 to \$1,500. Application materials are available in English and/or Spanish.



- ◆ **Labor Management in Agriculture: Cultivating Personal Productivity** is the title of a manual written by Gregory Billikopf, which discusses how to reduce turnover among employees and how to cultivate greater productivity. Copies are available in English and Spanish and cost \$12.50 plus tax and shipping. Contact UC Cooperative Extension in Stanislaus County at (209) 525-6800, or contact Elizabeth Resendez, <[eresendez@ucdavis.edu](mailto:eresendez@ucdavis.edu)>.

- ◆ The **Pesticide Applicators Professional Association's (PAPA) calendar of 2004 seminars** is available. Meeting sites convenient to the Central Coast are:

Oxnard	May 12
Salinas	June 1
Santa Maria	June 16
Salinas	August 2
Salinas	October 19
Oxnard	November 10
Santa Maria	November 17

Call (805) 934-6240 for a copy of the complete calendar.

- ◆ The **7th Annual GIS [Geographic Information System] Summer School** will be held on the UC Riverside campus from July 6 to September 3, 2004. For complete information on the course, fees, accommodations, etc., call (805) 934-6240.

- ◆ There are over **375 crops grown commercially in California.** If you want to know what they are and where they are grown, call (805) 934-6240 and ask for the list.

- ◆ **Workshop Offered that Tailors Risk Management to Individual Farmer's Needs.** All people have their own personal tolerance for taking risks. San Luis Obispo and Santa Barbara County farmers will learn their tolerance styles at a workshop in San Luis Obispo on April 21 and apply them to simple, practical risk-management solutions that fit their farms and circumstances.





The workshop will be held on Wednesday, April 21, from 8:30 a.m. to 12:30 p.m., at the Cooperative Extension conference room on 2156 Sierra Way in San Luis Obispo. Participants will develop size-appropriate solutions to the five major agriculture risks: family/personal, financial, production, marketing and legal/regulatory. Topics covered at the workshop will be:

A model for approaching farm risk - Farmers will get an overview of risk in agricultural businesses and be introduced to a practical one-sheet method to look at risks, such as family, financial, production, market, legal and regulatory risks, and develop management strategies for each of them.

Family and personal risk - Participants will come to understand their own risk tolerance and their family's risk tolerance profile in order to focus on the risk management strategies that will work best for them.

Financial risk - Farmers will learn about crop insurance and other strategies to manage production risk.

Market risk - Participants will learn how to spot trends in the market and develop market strategies, allowing them to be price makers rather than price takers.

Legal and regulatory risk - A presentation on managing risk associated with workers' compensation, air and water quality, and other regulations.

The workshop is intended for all farmers, ranchers or nursery operators, however, it will have information particularly useful for those with gross receipts of less than \$250,000 per year and who have been operating for fewer than 10 years. The participants will learn scale-appropriate solutions to their risk problems.

"We will share new and emerging risk management programs to help in all farming operations," said David Visher of FACTS, an agricultural training firm that is coordinating the workshop.

Registration, including a binder of materials for each participant, is \$20. To register call our office at (805) 934-6240. To register by mail, send a check - payable to UC Regents - to Risk Workshop, Santa Barbara County UCCE, 624-A West Foster Road, Santa Maria, CA 93455.

Presentation of the program is made possible by a grant from the USDA Risk Management Agency to the University of California Agricultural Issues Center. Partners are Santa Barbara and San Luis Obispo Counties UC Cooperative Extension, the Center for Agricultural Business at California State University, Fresno, and FACTS (Farm and Agriculture Collaborative Training Systems). Other local collaborating organizations are the Central Coast Resource Conservation and Development Council, the UC Small Farm Center, the Community Alliance with Family Farmers, and the Farm Services Agency.

Other dates and meeting sites are:

Santa Cruz & Monterey Cos.	8:30 a.m. to 12:30 p.m. - <b>April 20</b>	UC Cooperative Extension, 1432 Freedom Blvd., Watsonville. Contact: (831) 763-8040
Ventura County	8 a.m. to 12 noon <b>April 22</b>	Ventura Room at the school district building near Camarillo Airport. Contact: (805) 645-1451




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