



# CORF News

Floriculture Education from the  
Kee Kitayama Research Foundation

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## “Buy California Initiative” Funds the Cut Flower

### Commission’s Buyer’s Guide

By Janice Wills, CCFC

You may have seen the little blue license plate icon in your grocery store’s produce section announcing that a particular item is “CA Grown.” You may have even seen the commercials with folks from different walks of life saying that they are “real Californians” even though they don’t surf or do a variety of other things Californians are purported to do. All this “real Californian” pride is brought to you courtesy of the Buy California Initiative.

The Buy California Initiative was formed in February 2002 as a way to promote California’s abundant crop of

fruits, vegetables, and other commodities to the buying public. Those of us in agriculture are aware of the variety of products grown here, but many average consumers are not attentive to the source of their produce.

Twenty-five organizations representing a broad array of California products make up the board of the Buy California Marketing Agreement. The Buy California Marketing Agreement is the largest part of the Buy California Initiative.

These organizations have donated time, energy and money to make this program

*See CCFC Buyer’s Guide—Page 11*

## Buy California Marketing Agreement

By Kris Morrissey, Director of Communications, Buy California Agreement

Turn on a TV...walk through a grocery aisle...pick up a newspaper...and you’re likely to hear “Be Californian. Buy California Grown,” the slogan of the Buy California Marketing Agreement’s “California Grown” campaign.

Funded under the 2002 Buy California Initiative, the Buy California Marketing Agreement (BCMA) uses advertising, trade promotions, and publicity to encourage Californians to look for, and purchase, California-grown agricultural products whenever—and wherever—they shop.

The best news is that California’s citizens are getting the message! After

*See Buy California Marketing—Page 2*

## CA Foundation for Agriculture in the Classroom

Some things in life are as plain as the nose on one’s face.

Dark clouds mean a good chance of rain. Bright sun means no rain at all.

Agriculture used to fall into this category. As recently as 100 years ago, when close to half of America lived on farms, it was plain as day that cotton bolls in the field were a first step toward a new pinafore for the first day of school. Everybody knew that bright yellow sunflowers eventually would yield a snack fit for the laziest of days on the riverbank.

Today’s outlook is different. The plain view of the nose on agriculture’s face has been clouded over by last century’s exodus from the farm. We’re now down to less than two percent of

*See Ag in the Classroom—Page 2*

## Editor’s Note:

We are a society manipulated by 30-second news sound bites. The sensational, dramatic, titillating stories are being told. The story of California agriculture—its importance to all California citizens, its complexities, its deep history—is rarely told. Our theme this issue is the promotion of California agriculture. We discuss programs that help educate the community about California agriculture and market its diverse high quality products.

One lead article discusses statewide programs that educate school-age children about California agriculture. The two other lead articles discuss programs in the Buy California Marketing Agreement. Farm advisors, in their regional reports, write about local programs that promote agriculture in various ways.

A related issue is developing at press time. Agriculture faces another hit, probably because our state legislators do not hear enough, or are not educated enough, about the importance of agriculture to the State’s citizens. This time the hit is in the form of proposed heavy budget cuts to the University of California that are directed right at agricultural research and Cooperative Extension for the coming fiscal year. You can read about the budget cuts and serious consequences on pg. 3.

*—Steve Tjosvold, Editor, CORF News.*

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## Ag in the Classroom

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the population living on farms, so that natural awareness of agriculture is no longer plain as day.

As a result, the California Foundation for Agriculture in the Classroom (CFAITC) was formed to spearhead a movement toward agricultural literacy in California's schools. The non-profit organization develops resources and training opportunities for teachers, helping them to understand how to plant a little agriculture into their classrooms.

"We're not asking teachers to make little farmers and ranchers out of their students," says Judy Culbertson, executive director of the Foundation. "But there's a very real necessity for young people today to be exposed to the *many* ways that agriculture touches their lives. They need to be aware that food isn't just suddenly stocked on grocery shelves, but that there is a significant route between field and table which has a tremendous economic and social impact on our nation. They need to know, too, that agriculture is not just about food, but that fiber, flowers, and forestry all fall under the agricultural umbrella," says Culbertson.

One Ag in the Classroom believer, Martha Deichler, is a San Diego County principal. She first stumbled into Ag in the Classroom in the mid-1990s through the Foundation's *Imagine this...* writing contest for students. Deichler was looking for writing opportunities for her 6<sup>th</sup> graders; what she discovered, in the long run, changed the way she teaches.

A school garden became Martha's classroom. Through it she nurtured within her students an appreciation for agriculture through all regular curricular areas – math, science, history, language arts... you name it! According to Deichler, "There isn't a subject under the sun you can't teach in the garden."

Agriculture in the Classroom provides support for educators who take on such a challenge. Three educational components – teacher training, resources, and student programs – form the core of California's program. While distinct in their purposes, their intertwined results form a strong net of support for California's teachers.

From the annual three-day statewide conference (to be held October 23-25,

2003 in San Mateo) to smaller afternoon-long introductions to Ag in the Classroom, teacher training sessions give educators the knowledge and tools with which to confidently blend agricultural information into their existing lesson plans.

Once educators comprehend the value behind using agriculture as a platform for teaching other subjects, they have access to a multitude of resources developed by the Foundation – free or low-cost multi-disciplinary lesson plans and units, educational newsletters, a website, and resource guide listing hundreds of outside sources of agricultural information for classroom use.

Finally, students in grades 3-8 take a stab at stardom when they enter the *Imagine this...* writing contest on any topic related to agriculture. Six statewide winners wind up being celebrated authors, for their stories become animated features in a half hour-long video produced with the assistance of high school artists and narrators. The *Imagine this...* video has been such a hit in recent years that it has received both state and national honors for video production in the category of videos produced by and for children.

The California Foundation for Agriculture in the Classroom is by no means the only entity striving toward an appreciation of agriculture by all. Many other local, regional, state, and national ag-related groups, such as commodity-specific organizations, also develop educational materials to support agricultural awareness. "Agriculture is fortunate to have so many groups generating materials for classroom use. The Foundation, in addition to promoting its own materials, recognizes a responsibility to help disseminate information about the availability of these many resources. Such alliances make the end result in such a large state that much stronger," says Foundation leader Culbertson.

For further information about the California Foundation for Agriculture in the Classroom, call 800/700-AITC, or visit [www.cfaitc.org](http://www.cfaitc.org).

## Buy California Marketing

*Continued from page 1*

just three months of "California Grown" advertising, more than 78% of us have seen the commercials. And a recent, statewide survey found that more and more Californians now say it is important to buy California-grown products. In fact, the percentage of people who prefer to buy California-grown has increased 12% and the percentage of people who believe that it is very important to buy California-grown has increased 23%. Even better, 44% of consumers who recall the TV commercials said they are actually buying MORE California-grown agricultural products than they were six months ago.

The BCMA itself has a very diverse membership, drawing its governing board from 25 agricultural industry groups who also provide financial support. The membership includes organizations like the California Walnut Commission, California Pear Advisory Board, California Aquaculture Association, and California Forest Products Commission. But it also offers "California Grown" merchandising programs and materials for retailers and for independent growers, processors, and shippers from any segment of California's agricultural industry.

In fact, the first independent licensee to use the "California Grown" marks to promote its products was Mainland Nursery, of Lodi, CA. "We think it's a really good campaign," said owner Jack Merrill. "We've been shipping them to our customers, including the large mass merchandisers, home improvement stores, and supermarkets." And Merrill is already talking to his customers about future promotions, including special "California Grown" weekend events and signage on plant racks and in floral departments. "We're all really excited about it," confirms the innovative businessman.

Says Scott Horsfall, Chief Operations Officer of BCMA, "Our goal is to convince Californians that buying locally-grown products, from produce to plants, helps the state's economy, its farmers, and ultimately, everyone who enjoys our very special California lifestyle."

To find out more about opportunities to promote your products with "California Grown" materials, contact Angela Gentry at BCMA (916) 651-7384 or [agentry@cdfa.ca.gov](mailto:agentry@cdfa.ca.gov)

# Q&A on Proposed Cuts to UC Cooperative Extension and UC Agricultural Research

## The Budget Situation

- The University of California took significant budget cuts this year, including a 5% cut to Cooperative Extension and 10% for research. Deeper cuts are proposed next year, starting July 1, 2003.
- UC Agriculture and Natural Resources programs, delivering research results and practical information to users in every community, will be especially hard hit by next year's cuts.
- Unless the state legislature reduces the cuts, UC Cooperative Extension will take an additional 25% cut and UC state-funded research another 10%.

## How was the Division affected by budget cuts in the current year?

UC state-funded research was cut by 10% in September 2002. The Agricultural Experiment Station (AES), which receives about one-third of these funds, had its research budget reduced by \$10 million. UC Cooperative Extension (UCCE) was cut 5%, or \$2.4 million, when the governor and the legislature

agreed on additional, midyear budget reductions. Both cuts are permanent.

## How was the spending cut for research applied?

The UC Berkeley, Davis, and Riverside campuses—where Agricultural Experiment Station research scientists are based—absorbed the 10% cut by freezing vacant administrative, staff, and academic positions, through attrition, and by relinquishing research support funds. The vice president for Agriculture and Natural Resources cut administration, froze vacant positions, and reduced temporary and discretionary funds to minimize the impacts on statewide special programs and the research and extension centers.

## What about the cut to Cooperative Extension?

The 5% cut to Cooperative Extension, which comes eight months into the budget cycle, will be managed through further reductions in temporary and discretionary funds and a hiring freeze. This will postpone the need to make the cut permanent until July 1.

## Are further budget cuts proposed for next year?

Yes. The governor's budget, released in January, proposes an additional 10% cut to UC state-funded research. UC Cooperative Extension is scheduled for an additional 25% cut. If the legislature approves these cuts, UC agricultural research will take a 20% (\$19 million) permanent reduction in less than two years. Cooperative Extension's state funding will be cut by 30% (\$14.6 million) over the same period.

## How will the Division take these cuts?

No final decisions have been made about next year's cuts, nor how they will be applied. However, one thing is certain—the Division will need to make significant reductions in programs and personnel if the cuts are approved by the legislature. Why? Because over 90% of state funds allocated for Cooperative Extension and UC agricul-

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*See UC Budget Cuts Q & A—Page 14*

## Science to the Grower—Wake Up Call for Snails and Slugs

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Snails and slugs are important pests on ornamental crops, and some states have quarantines against *Helix aspersa*, the brown garden snail, which is an introduced species that is widely distributed in California. Damage can be minimized in nurseries and greenhouses by creating barriers. For example, copper screens placed around beds or benches are effective.

Molluscicides based on metaldehyde, methiocarb, and iron phosphate have been marketed, but are not always effective. Metaldehyde makes snails sluggish, so to speak, so that they are less able to reach shelter and avoid desiccation during the day. However, metaldehyde may not be effective in cool, damp places, where snails and slugs may recover from the poisoning before they desiccate. Baited iron phosphate products kill snails and slugs slowly, so they may continue to cause damage until they are unable to eat. None of these products protects plants from snail and slug feeding.

Quite by accident, USDA scientists in

Hawaii discovered that caffeine is an effective molluscicide. Following up their initial observations, they buried slugs (*Veronicella cubensis*) in potting soil, drenched the soil with a 2% caffeine solution, and then monitored survival of the slugs. Within 3.5 hours, 75% of the slugs were dead. Within two days, 92% of the slugs were dead, and the survivors had abandoned their home. Orchid snails treated with 0.5% caffeine were dead within 4 days. A 2% caffeine solution applied to the potting mix of orchid plants was more effective than a standard metaldehyde treatment. Most plants exhibited no phytotoxicity symptoms, but leaf yellowing occurred on ferns, bromeliads, and lettuce.

Snails and slugs dislike caffeine-treated plants. In a “no-choice” feeding test on ‘Napa’ cabbage, slugs offered caffeine-treated leaves ate 39% less than those given untreated leaves. Given a choice, slugs preferred untreated leaves to those treated with caffeine. Thus, caffeine may be effective as a preventive

spray.

Caffeine’s mode of action on slugs and snails is unknown. Snail heart rates increased within an hour of exposure to 0.01% caffeine, and their heart contractions were weak within 24 hours. Slugs sprayed directly with a caffeine solution responded with “uncoordinated writhing.” No commercial product is available, but caffeine is a natural product that is “generally recognized as safe” by the Food and Drug Administration, so the potential for obtaining a registration is good. By the way, a strong cup of coffee has a caffeine concentration of about 0.1%.

Hollingsworth RG, Armstrong JW, Campbell E. 2002. Caffeine as a repellent for slugs and snails. *Nature* 417:915-916.



*By Richard Y. Evans, Department of Environmental Horticulture, UC Davis*

## Regional Report

### *San Mateo & San Francisco Counties*

#### Agri-Tourism in San Mateo County



San Mateo County is geographically divided into two main areas — the rural, coastal strip on the west, along the ocean, where

there is an abundance of agriculture (including the communities of Half Moon Bay and Pescadero), and the urban eastern side, with cities such as San Mateo and Redwood City. San Francisco lies adjacent to the north. Many of the urban residents look forward to weekends spent “over the hill,” where the visitors can enjoy the beach, open space, the sense of “coastal community,” and the agricultural feel of the coast.

The agricultural community in San Mateo County has wisely developed some unique agri-tourism opportunities for the urban visitors to the coastside. Not only do the farmers benefit from money brought in from urban visitors, but local restaurants, hotels, and other merchants benefit, too. Many farmers have on-farm retail sales for regular weekend visitors, but there are several larger agricultural events throughout the year. These events are a unique opportunity to educate visitors about agriculture, and to promote agriculture as a friendly neighbor and integral part of the Bay Area.

#### **Flower Market**

On the third Saturday of each month many of the coastside flower growers participate in a Flower Market, with direct sales of cut and potted flowers in an open street market (it is held indoors in winter months). In addition to buying very fresh flowers, visitors look forward to live music at the market, and visiting local shops and restaurants. Many visitors use the Flower Market as a weekend outing, and an opportunity to visit the coast.

The Coastside Flower Market has been happening for fifteen years, and has been a positive image-maker for coastside growers. The market is strictly for flowers (no produce or other agricultural products), and it is a great opportunity to showcase the floriculture community in

San Mateo County.

#### **Tours des Fleurs**

One Saturday each summer, different wholesale nurseries and growers in San Mateo County open their fields and greenhouses to the public. Sponsored by the Half Moon Bay Coastside Chamber of Commerce, Tours des Fleurs has been a success for the past ten years. Each year, several different nurseries agree to open their doors to the ticket-buying public, and to give tours and answer questions about how their crops are produced. For much of the urban populace in the Bay Area, this is one of their few opportunities to see agriculture up close, and to talk to “real farmers.” This, too, is a great opportunity to promote coastal agriculture, and to teach urban residents about agricultural production.

Tours des Fleurs used to be only for flower growers, but in recent years has expanded to include other agricultural businesses, such as herb, berry, and vegetable producers, and a local goat cheese dairy. Visitors select the different farms that they want to visit during the day, and are given directions, a schedule of times, and a gourmet lunch. They travel on their own to the different farms.

#### **Farmers Market**

The Flower Market, mentioned above, is solely for floriculture products, and the coastside has not had a general Farmers Market until last summer. A monthly Farmers Market was started in the parking lot of Cetrella restaurant in Half Moon Bay. Based on its success, it will expand to a weekly market this summer. The emphasis is on locally-produced agricultural crops, with limitations on what can be brought in from out of the county. The origin of produce will be worked out over time, again to promote local agricultural crops, but also to be able to offer a broad range of produce to the buyers at the market. Because the coastside has a thriving fishing industry, locally-caught fish are also sold at the market.

The Farmers Market was very successful last summer and will expand this coming summer. Other groups are

exploring the feasibility of additional farmers markets.

#### **Pumpkin Festival**

Half Moon Bay’s annual Art & Pumpkin Festival has been an October fixture for more than thirty years. The weekend event brings up to 250,000 people to the coastside each year, from all over the Bay Area. The Festival includes a pumpkin weigh-off (with nationwide entries of pumpkins up to 1,000 pounds!), an outdoor arts & crafts festival, on-farm events throughout the community, a local parade, a pie-eating contest (pumpkin, of course), and a diversity of music, food, and entertainment.

Many local nonprofit organizations sell food at the festival as a fund-raising opportunity. The annual Pumpkin Festival is the major fund-raiser for many of the town’s nonprofit organizations (school groups, civic organizations, etc). Not only do these groups profit, but the community’s businesses (lodging, restaurants, and others) fare well from visitors to the festival.

Proceeds from the Art & Pumpkin Festival allow the Half Moon Bay Beautification Committee to offer grants to local nonprofits and other agencies.

#### **Summary**

San Mateo County growers have the advantage of a large nearby population and a beautiful coastside. The success of the programs in this article suggests that agri-tourism can be very successful in urban and suburban areas. By encouraging people to visit and learn about coastal agriculture, rural communities can bring in additional revenue, and urban residents learn to value all facets of agriculture in their area.

Thanks to the archives of the *Half Moon Bay Review*, the weekly coastside newspaper, for some of the information in this article.

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## Regional Report

### *Santa Cruz & Monterey Counties*

#### **Agri-Culture: Santa Cruz County Group Promotes Understanding of Local Agriculture Industries**



Agri-Culture is a Watsonville-based, non-profit organization with the mission of "promoting the mutual understanding and discussion of a range of topics concerning agriculture." Focus Agriculture is this organization's "first-in-the-nation" program conducted to provide community members with a comprehensive understanding of the local agriculture industry.

Agriculture is an industry that touches many issues: water, land use, housing, labor, and the environment. Those who are not involved in the business do not always understand its complexities. For some people, their only contact with agriculture is when they go to the grocery store, and that's it. Focus Agriculture, started in 1990, is a comprehensive program designed to educate members of the local community about agriculture. Participants have included members of the board of supervisors, hospital administrators, sheriff deputies, news reporters, superintendent of schools, and other business owners.

The nine, once-a-month, day-long series of seminars include farm tours and hands on experience. The seminars cover such topics as labor, politics, technology, marketing, ethnic groups, and commodities produced. One day is devoted to each participant individually spending a day on the farm with a grower. They write a report with photographs to document their experience. These reports are provided to a local museum so that people 50 or 100 years from now can read about spending a day on a farm at the turn of the century.

In addition to the Focus Agriculture program, Agri-Culture has a center of agricultural information for the public. The center includes videos on agriculture in Santa Cruz County and the Pajaro Valley and addresses specific and timely topics.

Finally, Agri-Culture has a farm employee housing fund. With families jamming into existing housing and a waiting list for subsidized housing, there is an acute need for decent low-cost housing in Santa Cruz County and the Pajaro Valley. Among those who need help are many of the local farm employees. To help meet that need, a housing fund was established that will continue in perpetuity. To date, the housing fund does not have enough funds for any one housing project, but it has proven significant for projects that need that extra funding to get going. By financing site improvements, they give the developer the leverage needed to attain financing for the rest of the project. The housing fund is strictly for loans, so the fund keeps giving back to the community. Any interest earned helps support educational programs.

For more information about Agri-Culture and its programs contact Jess Brown, Executive Director. 141 Monte Vista Avenue, Watsonville, CA, 95076. Phone: 831 722-6622. Fax: 831 724-5821. Email: [sccfb@scruznet.com](mailto:sccfb@scruznet.com)

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### **Field Observations**

#### **Downy Mildew of Snapdragon Strikes Central Coast Greenhouses**

This past winter, snapdragon growers found downy mildew reaching unprecedented destructive disease levels. In one case, nearly 100 % of a several acre crop was infected. In other cases, particularly tough-to-kill downy mildew was encountered, with unusually high levels of disease evident. At least in the most severe case, it is suspected that fungicide resistance is occurring and this hypothesis is being tested.

Downy mildew of snapdragon is caused by the fungus *Peronospora antirrhini*. On seedlings, symptoms

appear first as a downward curling of the leaves and a reduction in the size of leaves and plants. Infection of seedlings can become systemic, in that the fungus moves upward in the stem and can infect developing leaves. Often aerial-borne spores, called sporangia, directly infect the leaves. Infected leaves are a pale green color and have a downy, gray to white, fungus growth on the lower leaf surface.

This fungus only attacks snapdragons. Infection and disease development are favored at 40–60 °F and high relative humidity. The fungus can survive in dead plant parts and in soil as dormant, thick-walled oospores.

Control of the disease is accomplished by minimizing condensation and other forms of water on leaf surfaces. Drip irrigation is especially useful in cut flower production to reduce leaf wetting by irrigation.

Mancozeb (Dithane M-45, Fore) and fosetyl-Al (Aliette) are registered for use as a downy mildew control. Metalaxyl (Subdue) and chemical analogues such as mefanoxam (Subdue Maxx) have proven to be very effective, but have never been registered because of concerns that chemical resistance could quickly develop to this chemical class in a greenhouse. These products are only registered for ornamental use as a soil drench against water molds such as *Pythium* and *Phytophthora*.

There is a tremendous need for fungicide testing for downy mildew control. Stephen Wegulo, a new Cooperative Extension plant pathologist and Steve Tjosvold will be conducting fungicide trials in a commercial greenhouse with new commercially available and experimental fungicides.

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## Regional Report

### *Ventura & Santa Barbara Counties*

#### Hansen Trust Increases Public Support for Agriculture



The Hansen Trust was established in 1993 when Thelma Hansen, who spent most of her life on a family farm, be-

queathed \$12 million to the University of California to carry out a mission of sustaining agriculture through research and education. Today, the offices of the Hansen Trust are located at the Hansen Agricultural Learning Center, situated on the historic Faulkner Farm in Santa Paula. The property includes a beautiful Victorian home surrounded by acres of prime farmlands, which produced a variety of crops for five generations.

One important goal of the Hansen Trust is to increase public understanding and support of agriculture. The Trust has developed an array of programs to meet this goal. An Agricultural Literacy Council, comprised of teachers, agriculture community volunteers and program staff, provides input into planning Hansen Trust programs. Many programs evolve around teaching kids where their food comes from.

One cornerstone program is the Teachers' Agricultural Seminars. These intensive training sessions have so far reached 475 teachers and other participants who work with youth, assisting with the implementation of agriculture in school programs.

In addition, each year mini-grants are awarded to build gardens or otherwise support agricultural literacy in schools and after-school sites. These gardens are used not only to bring agriculture in the classroom, but also to expose kids to science and other curricula which otherwise may be limited in the school. So far, 150 gardens have been built in the county. The goal is for Ventura County to be the first county with "A Garden in Every School."

Children who are in schools with gardens have demonstrated pride in their school, show increased interest in

their community, and are more ecologically aware. Many schools use their garden produce in their cafeteria, donate vegetables to homeless shelters, and recycle leftovers into garden compost.

The Hansen Trust also has a Professional Development Scholarship program and numerous other types of community awards. These monies have been used, for example, to fund travel for teachers attending the California Foundation for Agriculture in the Classroom statewide conference, for awards to students for exceptional exhibits at the Ventura County Science Fair, and to encourage development of agriculture-related curricula in schools.

Other activities that increase public support for agriculture have included:

- An annual event, FarmFest, which involves the entire farming community as well as other community organizations, attracting over 3,600 visitors to the Faulkner Farm.
- Providing train-the-trainer programs so that community organizations can train low-income families to grow vegetables at home.
- Developing public education exhibits for the County Fair.

The Hansen Trust has an Ag Literacy and Issues Competitive Grants Program that funds projects to increase public understanding and support of agriculture and/or address agriculture issues. Many worthwhile projects have recently been supported.

For example, the Ventura County Ag Futures Alliance is a broad community based coalition that strives to maintain and enhance Ventura County agriculture in perpetuity. It does this by building trust, common vision, and action among parties that in the past opposed each other. Activities have been sponsored by the Hansen Trust, along with the Economic Development Collaborative of Ventura County, the

Ventura County Farm Bureau, and individual members. In February 2002 the coalition released the first of a series of planned issue papers, "Farming Near Schools: A Community Based Approach to Protecting Children."

Many positive results were realized as a result of this publication and months of meetings. The effort was prompted by a serious incident of pesticide drift near a school, an event that would have previously provoked attacks by environmental and health advocates on the agriculture industry. Instead, an open dialogue was established in the community, leading to the development of new county policies that could be adopted to meet the long-term goal of all sides.

Other projects recently funded by The Ag Literacy and Issues Competitive Grants Program include youth programs and events such as the Future Connections in Agriculture, and Junior Master Gardener; a farm-to-school program; the development of a "Gardening for Kids" video, which is available to local schools upon request; and a UC Davis farm labor study.

For more information about the Hansen Trust, visit their website at <http://hansentrust.ucdavis.edu> or call 805/525-9293.

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## Regional Report

### *San Diego County*

#### Programs to Promote California Agriculture and Educate the Public in San Diego County



There are several programs ongoing in San Diego County with a primary aim to educate and promote California

agriculture. Many of these programs focus on children. A very large program, Ag in the Classroom, is being addressed elsewhere in this issue. However, it should be noted that it is an important educational program in San Diego County, with many educational and horticultural experts providing input.

Another program, which targets children, is the school garden program. There are several supporting resources for the school garden program. First, there is a website that assists schools in planning and implementing their gardens, <http://commserv.ucdavis.edu/CESanDiego/Schlgardn/HomePage.html>. Here, schools can get advice on getting started, learning and growing tips, see other school gardens on virtual tours, and connect with other resources and links. Information about San Diego agriculture, e.g. soils and climate, production methods, economic importance, and critical issues, is also available at this site.

Personal assistance is also available to schools through a cadre of UC Master Gardeners in San Diego County, who believe that it is crucial that children learn about agriculture and nature via a hands-on experience. The San Diego Regional School Gardens Support Center, which is part of the regional Resource Conservation District, also assists K-12 teachers in using gardens as a tool to teach the connection between nutrition, agriculture and nature.

The San Diego County Farm Bureau has heavily subsidized the Green Machine. This program involves a van, which travels directly to schools and

youth organizations to promote California, especially San Diego County, agriculture to K-4 youth. This is an interactive program with children, which also provides a resource guide for the school or garden.

Plant Doctor is a statewide educational program available through CAPCA. The San Diego County chapter of CAPCA has trained volunteers to deliver this training in the classroom, but the materials are also available to teachers for their use. The program gives an overview of California agriculture, and how it differs from traditional agriculture in many other states, but also teaches about the systems and people who keep crops healthy.

Public education and promotion of California agriculture is not limited to school-aged children in San Diego County. There are several farms and nurseries which offer farm tours, school tours as well as demonstrations and workshops. Some operations even offer farm stays. Many of these operations have expanded into agri-tourism as a way to supplement farm income, but all seem to have a genuine desire to educate and promote California agriculture. More information regarding these operations can be found on the California Agri-tourism Database, at <http://calagtour.org>

Bell Gardens, in Valley Center, San Diego County, was developed by the founder of the Taco Bell chain as a way to educate the public about California Agriculture and its importance. Visitors can tour the working farm and observe demonstrations that promote agriculture. Open for less than 10 years, Bell Gardens has become a popular spot for visits, farm tours, school tours, and educational events because of the farm's dedication to education.

Public education and ag promotion are also a driving force of many of the ag-related festivals and events in San

Diego County throughout the year. The Carlsbad Flower Fields are open to the public during the bloom of the ranunculus, generally March-April. In addition to touring the flower fields, there are displays and information about horticulture in California. The Fallbrook Avocado Festival in April, the Encinitas Flower Festival and Tours in late spring, the Del Mar/San Diego County Fair mid-June through July 4, the Escondido Grape Day Festival in September, the Fallbrook Farmers' Festival in October, the Julian Apple Season throughout October, and the Encinitas Chamber of Commerce Greenhouse Tour in November are all examples of events with a primary focus to promote local agriculture and to educate the public on the importance of agriculture in California.

In a large county such as San Diego, many urban residents might not recognize that agriculture even exists in the county, despite the fact that agriculture ranks as the fourth largest industry in the county. To ensure that agriculture remains a viable industry, it is imperative that the public is educated on the importance of local agriculture to the economy, as well as its place as providers of unique and specialty crops. The San Diego County Flower and Plant Association and the San Diego County Farm Bureau have long recognized this need and maximize their opportunities to educate the public by supporting or participating in many of the previously mentioned events and programs, in addition to their own events and programs.

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# Get Cultured: How to Adjust pH of Soils

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By Dr. Donald Merhaut, Extension Specialist, Nursery and Floriculture, UC Riverside

This is Part IV of a five-article series on soil/water pH, which started in the summer issue of CorfNews, 2002. No chemical equations this time, so don't panic!

The process of adjusting 'soil' pH is the process of changing the amount of H<sup>+</sup> or OH<sup>-</sup> ions that are bound to the colloidal surface of soil particles. This is referred to as the buffer pH or the reserve acidity. Adjusting soil pH is best done before crop production, since the chemical reactions that need to take place often occur over a season. Therefore, it is necessary to be proactive.

## Steps to adjust soil and media pH:

1. Know the recommended pH for the crop in question.
2. GET A SOIL TEST DONE - **CAUTION:** Follow recommended procedures for sampling. Most labs will provide guidelines. Always take multiple samples from different areas in the field or media heap and combine them, mix thoroughly and take a sample from the mixed multiple sample. Otherwise, the analyses may not represent the average chemical profile of the soil/media.
3. Follow recommendations of the lab. However, please remember that the change in soil pH, even after amendments are added can take several days or even months to adjust, depending on the amendment added.

## Methods of adjusting soil pH:

1. Soil amendments—addition of specific soil amendments such as peat moss, pine barks, etc.
2. Chemical amendments—addition of specific fertilizers such as aluminum sulfate, sulfur, sulfuric acid, calcium carbonates, etc.

## LOWERING SOIL pH

Organic matter amendments:

Incorporating organic matter into the soil will usually lower pH. The degree of pH change will be correlated with:

1. Amount of organic matter added.
2. Duration of time since the organic matter has been in the soil.
3. Components of the organic matter - i.e. peat moss, bark, added amendments such as lime - some companies will add lime and other nutrients to neutralize pH, so be aware of product components.
4. Size of organic matter particles - the larger the particles, the longer it will take for organic matter decomposition and lowering of soil pH.
5. Stage of decomposition of the organic matter.

Chemical amendments:

1. Sulfur—Sulfur is the primary agent for acidifying media and soils. However, like nitrogen, the chemical process of acidification is biological (See *CORF NEWS* Winter, 2003) and will take up to a year to occur, depending on the soil and sulfur product used. Most sulfur products are elemental sulfur. However, in some field sites, sulfuric acid has been injected into the soils for instant acidification. *This is done ONLY by trained professionals since use of concentrated sulfuric acid is extremely dangerous and can be deadly if handled improperly.*
2. Aluminum—Aluminum will acidify the soil. However, in mineral soils, aluminum can also be toxic to roots. Therefore, most recommendations of aluminum sulfate are restricted to artificial growing media for containers where organic matter component makes up from 50-100% of the mix. Aluminum sulfate is often recommended for hydrangeas, azaleas and other acid-growing crops.
3. Ferrous sulfate—Both the iron and sulfur will acidify the soil. However, the use of this product is limited as iron toxicity can easily occur since the plant requirements for iron are very low.
4. Ammonium fertilizers—The reaction of ammonium in the soil, as well as the uptake of ammonium into the plant, will result in soil acidification. Fertilizers containing ammonium are often part of a recommended program for acid-loving plants.

## INCREASING SOIL pH

The primary way of increasing soil pH is through chemical additions. The fertilizer compounds described below will increase soil pH. The time required for the soil pH to increase after incorporation of the product depends primarily on particle size of the compound. The finer the particle size, the more quickly the soil reaction will take place.

1. Oxides—Calcium and magnesium oxides will react with soil to increase soil pH.
2. Hydroxides—Calcium and magnesium hydroxides will react to increase soil pH.
3. Carbonates—Calcium and magnesium carbonates will increase soil pH.

Note: Please be careful of the calcium and magnesium concentrations of the soil. Toxicity of calcium and magnesium can occur if liming products are used excessively.

Unfortunately, we cannot give exact quantities of acidifying and neutralizing agents needed since all production systems are different. However, as mentioned in the previous article (Winter, 2003), the Western Fertilizer handbook (California Plant Health Association, 2002) has a wonderful discussion of soil pH and amendments with some general guidelines.

Next month - Adjusting pH of irrigation waters.



## CCFC Buyer's Guide

*Continued from page 1*

work. It should also be noted that the Buy California Initiative was the recipient of a \$64 million federal grant, and a \$6 million grant from California's general fund. Additional funds were also contributed by the board members of the Buy California Marketing Agreement. The program is overseen by the California Department of Food and Agriculture.

In early 2002, a decision was announced by the Buy California Initiative to offer \$7 million in competitive grants to the agriculture industry at large. The Buy California Initiative received over 700 applications for funds. A panel of specialists screened each proposal and sent their list of recommendations to CDFA Secretary William J. Lyons, Jr. for approval. fifty-one proposals were chosen and those projects are expected to generate an additional \$3.6 million in matching and in-kind contributions.

Among the proposals submitted and approved was a request from the California Cut Flower Commission

(CCFC) for funds to develop a new Buyer's Guide. The CCFC staff got their proposal ready in less than a week, including letters from allied industry and legislative representatives. The last CCFC Buyer's Guide was produced in 1994 (with a supplement in 1996). CCFC received \$150,000 in support from the Buy California Initiative to develop the new guide and will use approximately \$60,000 from the CCFC budget to complete the project. The CCFC hopes to have the Buyer's Guide published by October to distribute at WF&FSA's trade show in Atlanta.

Other proposals that were funded by the Buy California Initiative are:

- The "California Heartland" program on public television.
- Alternatives to methyl bromide (California Strawberry Commission).
- Field Test of the Automatic Weed Control System (UC Davis).

- Web site update and manuals for organic grower (UC Sustainable Agriculture Research and Education Program).
- Development of new potato varieties, production practices and packaging (UC Davis).
- Promotional campaign for SoCal Farmers' Markets (Southland Farmers' Market Association).
- The School Garden Program (The Agricultural Network).

More information on the Buy California Initiative and the Buy California Marketing Agreement can be found at: <http://www.cdfa.ca.gov/mkt/mkt/buycal.html> and [www.californiagrown.org](http://www.californiagrown.org)



# Campus News & Research Updates

Submitted by Julie Newman, UCCE Farm Advisor, Ventura and Santa Barbara Cos.

## Documentation of *Xylella fastidiosa* in New Landscape Hosts

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*Xylella fastidiosa* is a bacterial plant pathogen that causes a variety of diseases in a broad range of plant species. Multiple strains of *X. fastidiosa* with different host ranges have been identified. Two strains of this pathogen are presently causing severe economic losses in Southern California: one strain causes Pierce's disease (PD) in grape, and the other causes oleander leaf scorch (OLS). The PD strain does not appear to infect oleander, and vice versa.

Until recently, *X. fastidiosa*-induced diseases of ornamental plants were primarily limited to oleander. During the past years however, three new plant species, liquidambar, olive, and ornamental plum showing symptoms of leaf scorch or dieback tested positive for *X. fastidiosa* using ELISA and PCR analysis of plant tissue. Preliminary studies of *X. fastidiosa* isolated from these hosts indicate that the strain(s) present appear to differ from the PD and OLS strains found in grape and oleander respectively. However, their exact relationship to other previously identified strains, and the host range of these isolates, remains unknown. Further work is planned to determine the host range and damage potential of the new strain(s). ❖

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## UC Budget Q & A

*Continued from page 3*

tural research are used to pay salaries and benefits for county-based advisors, campus-based specialists, AES research scientists, and the staff that support them. Even if all non-salary support funds were eliminated (e.g., supplies, telephones, travel, computers, equipment, etc.), they would not cover the proposed cuts.

### UC research and Cooperative Extension took substantial budget cuts in the early 1990s, but the Division was able to avoid layoffs... what is different about next year's cuts?

While it is true that UC agricultural research and Cooperative Extension absorbed spending cuts of about 20% during the early 1990s, these cuts were spread over a four-year period. In addition, UC offered an early retirement incentive program (VERIP) that saw a significant number of scientists, advisors and specialists leave the University voluntarily.

The combination of budget reductions over a four-year period, early retirements, and targeted cuts in program support and administration avoided layoffs. This round of cuts is much different. For example, the 30% spending cut for Cooperative Extension (5% this year and 25% next year) will need to be implemented in less than a year, rather than over four years. With 90% of state funds for UCCE allocated for salaries and benefits, a cut of this magnitude cannot be achieved without layoffs.

### What will it mean for Californians if the legislature approves the cuts?

An additional 25% cut for Cooperative Extension and 10% for UC research means:

- The Division will need to close offices and facilities, begin layoffs, and eliminate core Cooperative Extension and agricultural research programs.
- The network of UCCE county-based advisors will be decimated.
- UC research discoveries and innovations—advances that fuel economic

growth, sustainable use of agricultural and natural resources, better human health and nutrition—will slow or be lost.

Division scientists and advisors will no longer be able to respond to threats from bioterrorism, exotic pests and diseases, and natural disasters.

In the end, all Californians—whether they live in cities or rural areas, work on farms or in high tech, are longtime residents or newly arrived—will feel the cuts. The state economy will be affected, as UC programs that generate new ideas, technological advances, and creative innovations that California agriculture and other businesses rely on to compete globally are shut down.

For more information and updates on the state budget, go to [www.ucanr.org/budgetnews.shtml](http://www.ucanr.org/budgetnews.shtml) and [www.ucop.edu/news/budget/welcome.html](http://www.ucop.edu/news/budget/welcome.html). ❖

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# IPM Update—Using the Department of Pesticide Regulation Website for Pesticide Registration Information

The California Department of Pesticide Regulations (DPR) maintains a list of all pesticides registered for use in California. It is the most accurate and up to date listing of products as the database is updated each weeknight. The database may be searched for products containing a specific ingredient, where a pesticide can be used, and if there are any special registrations for the production (e.g. special local need or emergency exemption).

To access the database, first go the DPR website <http://www.cdpr.ca.gov/index.htm>. Choose “Look up Pesticide Products” which can be found under “Reference Links” on the right hand side of the web page. From there you can search on any or all of the following choices:

Product Name(s), Registration Number(s), Site Code(s), Chemical code(s), and Pesticides with target pest information. Multiple variables are possible to be searched at one time too. With this function, one could search for pesticides with a specific percent active ingredient, product name, manufacturer (firm), registration number, site code, formulation signal word, and pesticide type. You may also choose to get the report with only currently registered products or all that fit the criteria regardless of whether the registration has been dropped.

The site code lets you select which sites the pesticides are registered for. Follow the site code (lookup) to find the code or codes you are interested in. For example, if you are interested in what is registered for use on nursery, follow the link for site code lookup, enter nursery in the box and select the code you want to enter in the query. You may choose several sites to search at one time. For example, if you want to know all fungicides registered for gladiolus, go to “sitecode lookup,” type in gladiolus and choose “submit query.” This will give you the site code for the crop - 31111. Next, go back the multiple query page and put 31111 in the site code section. Scroll down to “Pesticide type” and choose fungicide. Scroll down to make other choices. Click on “Retrieve actively registered products only” and then click on the Submit button. The output will be all the fungicides registered in California for use on gladiolus. Please note that you still need to consult the product label for specific use of the pesticides.

It is helpful and time efficient if you maintain a list of site codes for your operation so that you won't need to look them up each time. Some codes that ornamental growers may find useful are:

(151) N-GRNHS GRWN CUT FLWRS OR GREENS  
(152) N-OUTDR GRWN CUT FLWRS OR GREENS  
(154) N-OUTDR CONTAINER/FLD GRWN PLANTS  
(28021) SUNFLOWER (ALL OR UNSPEC)  
(31003) ORNAMENTAL HERBACEOUS FLOWERING PLANTS (ALL/UN)  
(31013) AGERATUM/FLOSSFLOWER/PUSSY-FOOT  
(31030) BACHELOR'S BUTTON/CORNFLOWER  
(31045) BUTTERFLY FLOWER/POOR MANS ORCHID  
(31054) CAMPANULA (BELLFLOWER, CANTURBURY BELLS)  
(31073) CONEFLOWER  
(31146) SUNFLOWER, ORANGE  
(31191) STRAWFLOWER  
(31194) SUNFLOWER  
(31204) TRUMPET FLOWER  
(31209) WALLFLOWER  
(31401) DAYFLOWER; COMMELINA SPP.  
(32006) ORNAMENTAL PERENNIALS (ALL OR UNSPEC) (FLAG-“W”)  
(34095) CALONYCTION, MOONFLOWER; CALONYCTION ACULEATUM  
(35008) ORNAMENTAL FLOWERING TREES (FRUIT, NUT, ETC.)

(35052) ALMOND, FLOWERING(ORNAMENTAL); PRUNUS DULCIS  
(35053) APRICOT, FLOWERING (ORNAMENTAL); PRUNUS SPP.  
(35055) CHERRY, FLOWERING (ORNAMENTAL); PRUNUS SPP.  
(35059) PEAR, FLOWERING (ORNAMENTAL); PYRUS SPP.  
(35060) PLUM, FLOWERING (ORNAMENTAL); PRUNUS SPP.  
(35102) PRUNUS (FLOWERING ALMOND, CHERRY, PLUM, ETC.)  
(39000) ORNAMENTAL NONFLOWERING PLANTS (ALL OR UNSPEC)  
(39009) DRIED FLOWERS  
(39005) ORNAMENTAL PLANTS - GREENHOUSE (ALL OR UNSPEC)  
(40005) SOIL APPLICATION, PREPLANT-INDOOR(GREENHOUSE,ETC.)  
(61006) GREENHOUSES (EMPTY) (ENVIRONS, BENCHES, ETC.)  
(61015) GREENHOUSES (IN USE)  
(31165) RANUNCULUS  
(31202) TRANSVAAL DAISY/AFRICAN DAISY (GERBERA JAMESONII)

*Cheryl Wilen, Area IPM Advisor  
Ornamentals, UC Statewide IPM Project*

## New Publications

*Compiled by Ann I. King*

**1. U.C. Postharvest Handling Publications:** A series of publications is available from the University of California. Two of the newer publications in the series are:

*Commercial Cooling of Fruits, Vegetables, and Flowers* (#21567; 61 pages; \$10)

*Refrigerated Trailer Transport of Perishable Products* (#21614; \$18.00; 28 pp. and 2 posters)

Contact the UC ANR Catalog office at (800) 994-8849, or log onto the catalog web site at <http://anrcatalog.ucdavis.edu>

**2. Spanish Publications:** Many agricultural safety-related publications are available on the internet through NIOSH (National Institute for Occupational Safety and Health), which is part of the U.S. Centers for Disease Control and Prevention (CDC). One publication is *Simple Solutions: Ergonomics for Farm Workers*. Check out their web site at:

<http://www.cdc.gov/spanish/niosh/pubs-sp.html>

For English publications on **agricultural safety** from NIOSH (including *Simple Solutions: Ergonomics for Farm Workers*), the web site is <http://www.cdc.gov/niosh/topics/agriculture/default.html>

If you do not have internet access, call NIOSH for these publications at 1-800-35-NIOSH (1-800-356-4674)

**3. More safety training, on-line:** OSHA has some on-line training programs (back safety; forklift safety; respirator use, etc.) at <http://www.free-training.com/osha/Soshamenu.htm>



*CORF News* is the quarterly publication of CORF, the California Ornamental Research Federation, a statewide partnership of growers, floriculture associations, allied industry and researchers/educators whose mission is to identify and meet the research and educational needs of the California floriculture industry. Reproducing and distributing material from this newsletter is encouraged, provided credit is given to the author and *CORF News*

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## Calendar of Industry Events

### May

22 ..... CORF Hands-On Irrigation  
Training Workshop, Half Moon  
Bay, 831/724-1130  
28-29 . CCFC Committee & Board  
Meetings, Sacramento, CA, 831/  
728-7333

### June

TBD ... ICFG Production School on Water  
Quality, Davis, 517/655-3726  
5 ..... CORF Floriculture & Nursery  
Marketing Workshop,  
Watsonville, 831/724-1130  
18 ..... CORF Water Quality Workshop  
& Tour, Davis, 831/724-1130  
24 ..... CORF Hands-On Irrigation  
Training Workshop, Ventura, 831/  
724-1130  
26 ..... CORF Hands-On Irrigation  
Training Workshop, Nipomo, 831/  
724-1130  
27 ..... SDF&PA Annual Meeting,  
location TBA, 760/431-2572

### July

21-23 . CCFC Growers Open House,  
various locations, 831/728-7333  
23-26 Fun'N Sun Weekend 2003,  
Anaheim, CA, 831/722-2424  
23 ..... CORF Maintenance of Irrigation  
Systems (Spanish), Oxnard, 831/  
724-1130  
24 ..... CORF Maintenance of Irrigation  
Systems (Spanish), Carpinteria,  
831/724-1130

### August

3-5 ..... CSFA Floriculture Weekend  
Retreat, Carlsbad, 916/448-5266  
12-16 . WF&FSA Management Institute  
& Summer Sales Camp, TBA,  
410/573-0400  
21 ..... CORF Hands-On Irrigation  
Workshop, Moss Landing, 831/  
724-1130

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