

Fall 2016 Horticulture Classes Offered by UC Cooperative Extension

For more than 30 years we've offered horticulture classes to the community, and we are pleased to do so again this autumn. Our goals are to enhance and expand green planting and to reduce pesticide application. We will especially focus on water conservation, including how to estimate plant water needs and how to irrigate. We'll have fun, too, in our class discussions.

Horticulture I for Landscapes, Gardens, and Orchards will be offered beginning August 22 and will extend 15 weeks, with one three-hour class session per week. The class will meet 5:30 – 8:30 pm Mondays.

The Horticulture I class can be of benefit through knowledge of how to take care of turf and landscape plants as well as how to grow food, including vegetables and fruits. Additional topics will include plant selection, soil science, landscape design principles, tree pruning, and pest management with an emphasis on organic and IPM methods, as well as sessions on vegetable crops, deciduous fruits, and citrus. We will discuss appropriate terminology to request work from landscape contractors and to evaluate work that is done. We will discuss how to save time and money. A syllabus is available.

Horticulture III for Landscapes, Gardens, and Orchards will be offered beginning August 30 and will extend 15 weeks, with one three-hour class session per week. The time will be 5:30 – 8:30 pm Tuesdays. Topics will include xeriscape, plant propagation, soil properties, weeds and herbicides, and one or two field trips. A syllabus is available.

We ask those interested in either class to contact the Cooperative Extension office at cekern@ucdavis.edu, or 868-6200, to pre-register to reserve a space and help us track class size. Cost of each 15-week class is \$75.

Tree Problems in the Bakersfield Area

by John Karlik, UCCE Kern County and Jim Downer, UCCE Ventura County

Diseases appear to be affecting several species of trees found in the Bakersfield area.

Liquidambar has been one of the most reliable shade trees in the Bakersfield and greater Kern area, but no more. For the past several years, and especially since 2015, liquidambar (*Liquidambar styraciflua*, sweetgum) trees in many locations are dying from outer top branches to lower branches (two photos right). These symptoms match those resulting from infection by a bacterium, *Xylella fastidiosa*, which is the same bacterium that



causes Pierce's disease of grapes and also oleander scorch. Both of those diseases occur in Kern County.

Xylella is transmitted by sharpshooters, particularly the glassy winged sharpshooter (*Homalodisca vitripennis*) which feeds on leaf tissue. The insect acquires bacteria from infected plants and then injects them into uninfected plants during feeding. As bacteria multiply, they plug the water-conducting tissue (xylem) leading to symptoms of drought stress followed by leaf loss. In oleander, the corresponding disease is called oleander scorch, and it typically kills a plant in 3-5 years. The photo to the right shows an oleander with scorch symptoms. (Also see the UC IPM Pest Note *Oleander Leaf Scorch* found at <http://ipm.ucanr.edu/PMG/PESTNOTES/pn7480.html>)



Disease progression in liquidambar seems to be similar in that trees die back and eventually succumb over a period of several years. Unfortunately, there is no control, chemical or otherwise. Extra water may help a tree temporarily, but since the disease blocks water transmission within the plant, extra water won't be absorbed as the disease progresses. Samples taken in May from symptomatic liquidambars were negative for the pathogen, but we plan to resample toward the end of summer when the bacteria have had time to multiply.



Xylella also affects purpleleaf plum (*Prunus cerasifera 'Krauter Vesuvius'*), another mainstay of local landscapes. Affected trees lose leaves and die back even though they receive adequate water (photo at right).



Botryosphaeria spp., more simply referred to as bot, is a fungal canker disease of trees that is opportunistic; that is, it attacks stressed trees. It, too, can cause twig and branch dieback. We suspect bot is also playing a role in the dieback of liquidambar.

Another shade tree that has been reliable is Raywood ash, *Fraxinus oxycarpa*. Until recently, we have not seen the dieback problems in Raywood ash that have been reported in northern California. But now we see numerous Raywood ash exhibiting dieback symptoms (photo at right). The fungus *Botryosphaeria* spp. has been associated with these dieback symptoms. Again, there is no chemical or other control for this problem other than normal reasonable irrigation and perhaps a little nitrogen fertilizer in spring and pruning out affected branches below the cankered or dead tissue.



Loss of at least some of raywood ash, liquidambar, and purpleleaf plum will certainly change the appearance of Bakersfield and Kern landscapes. These species now should

be planted with more caution and, for large landscapes, with other species mixed in. Greater allocation of water resources will forestall disease as will removal of competing trees and shrubs.

Xeriscape Principles for Water Conservation

In the mid-1980s, there was a strong movement in California and elsewhere toward water conserving landscapes. There were conferences held in the Central Valley, Los Angeles, and northern California to promote the use of drought-tolerant plants and a then-new design approach called xeriscape. From the Greek word xeros, dry, the idea was to conserve water while maintaining an aesthetically attractive landscape. About that time, seven principles were enunciated by the National Xeriscape Council, apparently originating with Denver Water and its associated volunteers. Since that time, the principles have become widely incorporated into landscape design. These principles are the following:

- Planning and design
- Soil analysis
- Appropriate plant selection
- Practical turf areas
- Efficient irrigation
- Use of mulches
- Appropriate maintenance

I think these are useful principles for water conservation, but I think they should be ranked differently for our area. I re-order them as follows and comment on each:

- Efficient irrigation
- Use of mulches
- Planning and design
- Appropriate plant selection
- Practical turf areas
- Appropriate maintenance
- Soil analysis

Efficient irrigation: This has to be the key to any attempt at water conservation, for without attention to irrigation design and scheduling, the other points have no value. Plant selection, etc., does not save water. It's irrigation scheduling that results in water savings, and so this principle is first and more important than the others.

Use of mulches: Mulches reduce surface evaporation, provide insulation for soil so temperatures can be cooler, and suppress weeds. Bark or other organic mulches are preferred. Adding mulch is an easy step that confers direct benefits.

Planning and design: I take this to be zoning of the irrigation system for plants; that is, placing plants with similar water requirements on the same line or valve. Otherwise, the more needy plants cause irrigation to be increased for all plants on the line.

Appropriate plant selection: Plant selection is important in this context only to the extent that plant selection allows irrigation to be reduced. In almost all landscapes, modifying the irrigation schedule results in large water savings, and further modifications, such as changing plants, result in additional but smaller savings.

Practical turf areas: Turf is quite water-thrifty. When driving west from the Mississippi River into the Great Plains, trees become infrequent but grass remains. Turf is water-thrifty if it is a warm-season grass, and if it is irrigated according to best practice. In most home landscapes, irregular turf areas and lack of uniformity of the irrigation system result in overwatering. Reducing turf areas may result in less applied water.

Appropriate maintenance: That could apply to any landscape. However, mowing height will affect turf water need, and tree pruning can result in more or less shade.

Soil analysis: Soil is what it is. Soil analysis can say something about the physical or chemical situation, but in many landscape situations soil nutrient levels are adequate and soil analysis may not say much about how to save water.

Is the Grass Greener on the Republican's Side of the Fence?

The answer is not necessarily, but it is probably mowed often. If you've wondered about the political persuasions of your neighbors, their landscapes may provide clues. A study done by geography professor Roger Ulrich and then-graduate student Thomas Cosgrove investigated the relationship between appearance of landscapes and the politics of their owners. This study was reported more than twenty years ago in *American Nurseryman* (December 1, 1988 issue), but I have no reason to think the results of this study aren't still valid. The results might also give new meaning to the term political landscape.

For his master's thesis, Cosgrove took color photos of 66 matched pairs of middle-income front yards from subdivisions in the Wilmington-Newark, N.J., area. Each pair contained a registered Democratic and Republican household. Most were next-door neighbors, and all were within a few houses of each other. Cosgrove asked a landscape architect to rate the yards for various categories of plant selection and maintenance.

Quoting from the *American Nurseryman* article, "Republican or conservative yards were neater and more orderly. They had significantly higher scores for maintenance, such as pruning, trimming, and edging...." However, that is not to say Democratic yards were neglected. "Democratic yards had a greater diversity [word choice in the original] of vegetation—greater numbers of trees, bushes and shrubs."

As part of the study, Cosgrove also questioned 22 pairs of households about landscaping attitudes and activities. Again, from *American Nurseryman*, "The Republicans tended to engage more frequently in the maintenance activities of trimming and edging....The Democrats said they spent more time on the nurturing activities of watering and fertilizing."

What about your neighborhood? I wonder if this study helps explain some of the tree pruning practices found in Bakersfield, and some of the approaches toward pruning, such as the emphasis on shearing. A few illustrative photos follow....



A democratic landscape?



Republican influence here?



Leaf mulch is good for water conservation, but does this landscape also reflect democratic influence?



Republican influence as seen in pruning?

Return to Chernobyl, Ukraine

It has been 30 years since the world's worst nuclear accident occurred in 1986. Chernobyl has become a premier case study on the effect of radiation on the environment. There is a lot of activity in the "Zone" these days, and government has opened the area to visitors on a supervised basis. Much of the flora and fauna is returning, and we want to go back to make additional measurements of trees. We've been there twice previously with groups, and I want to offer others the opportunity to come along. It's not a place most of us could visit on our own, and a group setting offers advantages.

Our guide at Chernobyl will be Sergii Mirnyi (right), who was a radiation control officer working in the Zone right after



the accident, and has been involved there since. He has very good scientific credentials with an M.S. in physical chemistry and an M.S. in environmental science, and he speaks English well.

Our plan is to begin with arrival in Kiev, Ukraine, on Sunday, Sept. 4. On Monday, Sept. 5, we have a day to adjust to the time zone and see a few sights around Kiev, a notable city with a history dating from the 400s. Monday is also a buffer in case of flight delays. We have reserved space to visit the Chernobyl Zone departing early Tuesday morning, Sept. 6, and returning in the evening, Sept. 7. Thursday we plan to spend in Kiev.

Please contact me for more information, and I can send you a flyer with details including cost. By email that's jkarlik@ucdavis.edu or 661 868-6220.



Trees are everywhere,
even inside buildings

Future Horticultural Tours and Classes

The next horticultural tour I plan to offer is to Iceland in July, 2017. When I have an itinerary including dates, I will make a further announcement and post the itinerary. I am also considering a spring, 2017, horticultural tour to the Skagit Valley of Washington state with a day at Butchart Gardens in Victoria, BC, Canada.

If you're wondering, I am likely offering Horticulture V in the spring of 2017. That will be the first time I've offered this class. Please let me know if you are interested.

*John Karluk
Environmental Horticulture/Environmental Science*

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