

Welcome to New Readers from Ridgecrest And Tehachapi

I'd like to welcome readers from Tehachapi and Ridgecrest, and especially those who participated in this spring's classes on horticulture for landscapes, orchards, and gardens. Thanks for your comments on the class evaluations!

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.

Saving Water (and \$) in Home Landscapes, Gardens, and Orchards

Although winter rains were above those of recent years, water conservation is still needed. It is not necessary to do a landscape makeover to save water, nor will modifications necessarily result in water savings. **The key to saving water in outdoor plantings is irrigation scheduling. Modifications to a landscape are of no benefit for water conservation unless the irrigation amount is reduced.**

Here are a few tips and ideas for saving water in landscapes and other outdoor plantings:

- **Check the system**

Periodically run the irrigation system to check for missing heads, broken risers, and sprinkler coverage. Repair as necessary. Try to keep water off sidewalks and the street, although that's difficult with odd-shaped landscape and turf areas.



- **How much water do plants need?**

In the southern San Joaquin Valley, water needs of plants in home gardens, landscapes, and orchards change by a factor of 10 from winter to summer.

Therefore, irrigation schedules should be changed at least four times per year: spring, summer, fall, and winter (when perhaps the system can be shut off).

Irrigation amounts are usually expressed as depth of applied water. In winter, about 0.02 inches per day are needed in the Bakersfield area, while in summer the value rises to about 0.25 inches per day. These values do not mean water should be applied every day. Weather conditions will affect water needs of plants. For data for other months and for other locations in Kern County and in California, please see the CIMIS website, www.cimis.water.ca.gov

- **How much water should be applied?**

Irrigation scheduling is a combination of frequency (how often) and duration (run-time). As a rule-of-thumb, plan to fill a plant rootzone and then irrigate again when about half the water has been used. Therefore, set run-times for each irrigation zone and then add or subtract days depending on season of the year. It is possible to calculate run-times and frequency based on reference values. However, a simple approach is to irrigate and monitor. In other words, check soil moisture between irrigations with a shovel, soil probe, or screwdriver, and adjust the irrigation schedule accordingly.

- **How much water am I using?**

You can measure how much water your sprinklers deliver by placing cans or coffee mugs in the landscape, running sprinklers for a set amount of time, and measuring the depth of water in the containers. You can also estimate total landscape water use from your water bill by considering water use during winter months as the baseline indoor value, assuming sprinklers are shut off during winter. Consider the amount used in addition during summer months to be water used outdoors.

- **When to water?**

Early morning is best since wind speeds and temperature are low, and less evaporation and loss to wind occur.

- **What about mulches?**

Mulches, such as wood chips or shredded leaves, help save water by reducing evaporation from soil. Mulches also help keep soil cool and favor root growth.

- **What about turfgrass?**

Turfgrass is water-thrifty if irrigated carefully. However, turf is often over-irrigated, so reducing the area of turf may lead to water savings. Experimental data show warm-season grasses, such as bermudagrass and the UC release 'El Toro' zoysia, offer water savings over cool

season turfs, such as tall fescue or bluegrass. Buffalograss uses less water still, but is not often planted in California.

- **What about “drought-tolerant plants?”**

Research-based data for water use do not exist for most landscape plants. Therefore, we often infer drought tolerance from seeing where a plant grows in nature. However, many California natives and plants adapted to desert conditions do not perform well under irrigated conditions. Such plants may be susceptible to root rot if irrigated. Drought-tolerant plants, per se, do not save water. Saving water is accomplished by changing irrigation schedules.

Estimating Landscape Water Use: How am I doing?

It is possible to make a calculation to see if a landscape is being over-irrigated, and we don't have to dig or get wet to do so. We compare reference evapotranspiration (ET_o) to the amount of water applied to a landscape. Since ET_o is the amount of water needed by an unstressed cool season turf, a landscape should require less than that. We need to know the area of the landscape, but that is easy to measure by dividing the landscape into simple geometric shapes like rectangles, and adding to get the total area.

Let's compare ET_o to water applied to a 2900 sq ft landscape. Suppose the water bill for July shows 12 ccf (a ccf = 100 cubic feet) used for outdoor water. (We get outdoor water use by subtracting water used in a winter month, say January, from July use.)

How does that amount compare with ET_o for July? Going to the CIMIS website, www.cimis.water.ca.gov, and clicking on ET_o zone maps, we find that for Bakersfield the historic ET_o for July is 8.68 inches.

If 12 ccf is applied to the landscape, that's $12 \times 100 \text{ cu ft} = 1200 \text{ cu ft}$ of water used.

$1200 \text{ cu ft of water divided by } 2900 \text{ sq ft of landscape} = 0.41 \text{ ft water applied per sq ft landscape.}$

To convert to inches: $0.41 \text{ ft} \times 12 \text{ inches/ft} = 4.9 \text{ inches water applied.}$

Is this over-irrigating? Not likely, since 4.9 inches is much less than the 8.68 inches of ET_o.

Leaf Diseases Appear on Trees and Roses

Intermittent spring rains have favored development of anthracnose on susceptible plants in the Kern area. Anthracnose is a disease caused by a fungus that may affect the leaves of many trees.

Leaves of trees, such as California sycamore, London plane, and ash—especially Modesto ash—have been infected by fungi given early spring favorable conditions of rain and cool weather. Wet leaves are necessary for fungal infection, so anthracnose is not a disease we've seen much in the last few years. Infection takes place on emerging leaves when spores are spread from old branch cankers by splashing rain. When the spores germinate, the fungal mycelium invades leaf tissue, causing irregular tan to dark brown areas to form. Leaves curl and frequently fall, and petiole infection accelerates leaf drop. Some trees may be partially defoliated as a result. Twigs may also be invaded and be subsequently killed, and the fungus can cause cankers that may girdle larger branches. Trees that have been repeatedly affected

develop a misshapen crown. No long term-injury to trees usually results, since new leaves will replace those that have fallen.

Chemical control is not necessary or practical. For effective control, a fungicide must be applied to emerging leaves ahead of the disease because fungicides that can give control are protectants, not eradicants. Good coverage of a fungicide is necessary for control, and many if not most trees in the landscapes are too large for easy treatment. Also, repeated applications of a fungicide would be necessary during rainy weather. Consequently, we usually just let the disease run its course.

On roses, we've seen a surprising amount of blackspot, a common rose disease in most of the U.S. Blackspot is named for how it appears, and can cause partial to nearly complete defoliation of rose plants. Even the resistant landscape-type roses have been affected. Like anthracnose, the best control is warm, sunny weather, and we expect plenty of both as we move into summer.

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 jfkarlik@udavis.edu or 661 868-6220.



Trees are everywhere, even inside buildings

Future Classes and Horticultural Tours

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 also thinking of offering Horticulture V in the spring of 2017. That will be the first time I've offered this class. Please contact me if interested.

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Environmental Horticulture/Environmental Science

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