

Meetings and Announcements

Food Preservation Class—Please respond if interested

Margaret Johns, our Advisor Emeritus for foods and nutrition presented a class session in our spring Horticulture V class on food preservation and food safety. She has offered to arrange for a more extensive session if there is interest. If you are interested in this topic and would likely attend a class on food preservation, please send me an email (jfkarlik@ucdavis.edu) or call 661 868-6220 and let me know that a) you are interested, and b) the meeting time that would work best for you. Several individuals have responded, and I expect Margaret will hold the class, time to be determined.

Fall Horticulture Classes

For more than 30 years we've offered horticulture classes to the community, and we are pleased to do so again this autumn. Upcoming classes can benefit homeowners by conveying knowledge of how to take care of turf and landscape plants as well as how to grow food, including vegetables and fruits, saving time and money. We emphasize water conservation and non-chemical alternatives to pesticides. The classes have been attended by many Kern residents as well as professionals in the turf and landscape industry, since we offer research-based information on how plants grow and up-to-date information on pest management and irrigation practices. Representatives from homeowners associations and real estate professionals may also wish to attend to pick up tips on evaluating landscapes, using appropriate terminology to request work from landscape contractors, and evaluating work that is done.

Our Horticulture I class is planned for this autumn, beginning August 29, and meeting on successive Tuesdays from 5:30-8:30 pm at our UC Cooperative Extension office. Topics include soils, irrigation systems and repair, insect biology and management, fruit trees, shade tree selection, and more. Also, Horticulture IV is to begin Monday, August 21, and offer a series of topics including training young trees, a soils lab, landscape design, large-scale composting, palm tree selection and care, and others. The horticulture classes we offer are not sequential, but rather cover a variety of specific topics. In other words, it's not necessary to have taken Horticulture I, II, or III to benefit from Horticulture IV. Cost for each is \$75. The draft syllabus for each class may be found on our website, <http://cekern.ucanr.edu/>.

Early Announcement: 2018 Horticultural Study Tour destination: Thailand

I am in the process of drafting an itinerary for our next (10th) Horticultural Study Tour, this time to Thailand. Our tentative and approximate date frame is Feb 4-14, 2018, since the weather in Thailand then is cool and dry.

Thailand is home to a number of botanic gardens, and a visit would provide

exposure to the fascinating culture of Asia. The best definition I have ever seen of sustainable agriculture comes from the demonstration farm at Mae Rim, near Chiang Mai. I would expect that our group would visit Bangkok and Chiang Mai, and we may also arrange a side trip to Angkor Wat in Cambodia. Lodging and other expenses are relatively low in Thailand.

Early Announcement: Return to Chernobyl

We are planning a return to Chernobyl to see and make measurements within the exclusion Zone. Several people have said they would like to go, and did not have previous opportunity. The time frame for the proposed visit is April 15-20. We anticipate access to areas not previously visited, and there have been developments in the social and cultural aspects of the Zone as well.

Saving Water in Landscape Irrigation

In urban areas, about half of household water use is for outdoor purposes, and of that fraction about half is used for landscape irrigation. Since an increasing number of us have water meters, and as urban areas increase in size accompanied by needs for water, landscape water conservation becomes a greater priority both individually and collectively. It is usually possible to significantly reduce water consumption without major changes to a landscape or irrigation system. Class discussions and conversations indicate people often think first of changing plants to save water, but irrigation scheduling is actually more important, since even with a landscape composed entirely of drought-tolerant plants the irrigation schedule will determine how much water is used. In the following discussion, I offer considerations and suggestions for reducing landscape irrigation amount beginning with the most effective steps.

The irrigation system should be run periodically when the operator can check valve operation and make adjustments, such as modifying direction of sprinkler heads or raising them. A system check also includes repairing missing sprinkler heads, cleaning screens in the heads, cleaning emitters, and fixing leaks. March is a good time to check the system, and that can begin by removing a sprinkler to flush the line.

The simplest and easiest way to conserve irrigation water is to reduce the application amount. With an automatic irrigation system, clock adjustments should be made at least quarterly during the year. With normal winter rainfall, irrigation systems may be shut off during winter. Water use by plants changes tenfold from winter to summer throughout Kern County, and if summer settings are not altered water is wasted during most of the year. Fall and spring are transition times when careful managers may want to adjust clock settings every month. Some clocks have a water budget feature allowing a percentage change for all circuits, so watering times can be easily increased or decreased during weeks of usually warm or cool weather. When irrigating, it is best to wet the entire root zone of plants, if possible, and so changing the number of days per week rather than the runtimes per zone is preferable for making seasonal adjustments.

In a landscape, the manager may have little idea of what the initial time settings ought to be. A simple water audit can establish baseline information from which future schedules can be calculated. To perform a water audit in a small landscape, sprinklers are run for a specific time, with water caught in cans or coffee mugs spaced evenly across the delivery area. The water depth is measured to give a precipitation rate in units of inches per run-time. If the precipitation rate is known, it can be compared to plant water needs.

In general, average per-day water requirements for landscapes in the valley portion of Kern County are 0.25, 0.16, 0.02, and 0.15 inches for summer, autumn, winter and spring, respectively.

Soil and plants should be monitored and irrigation adjusted accordingly. Plants indicate moisture stress by color change, or in more advanced condition, by wilting. Soils can be occasionally checked with a soil probe or screwdriver to gauge the depth of water penetration. If runoff occurs, multiple short cycles may be necessary to apply the needed amount of water. Some types of turf heads, such as stream rotors, offer low precipitation rates for soils with low infiltration rates. Early morning is the best time of day to irrigate to minimize water loss from wind and evaporation. Mulching around plants can reduce soil evaporation and help provide more uniform moisture.

A non-uniform irrigation system, especially on turf, can waste large amounts of water, because it is common for homeowners to irrigate until the driest spot is wet, which may result in twice as much water as needed in other areas. In general, the output from a sprinkler should reach the adjacent sprinkler (head-to-head coverage). High overall uniformity can be obtained with single-stream heads, stream rotors, or impact sprinklers. Fan-sprays are more difficult to work with to achieve high coefficients of uniformity but are needed for irregularly shaped areas. For shrubs, groundcovers and trees, drip irrigation is often a useful method for water delivery.

The landscape design, including the irrigation design, often sets limits on water conservation. Plants with similar water requirements should be in the same irrigation zone, and plants on the same irrigation line should need similar amounts and frequency of irrigation. For example, in a residential landscape, turf should be irrigated from one or more lines, shrubs and groundcovers on others, fruit trees on others, and so forth. These plant types may need different frequencies of irrigation, in other words, more or fewer days per week. Low-priced irrigation controllers used for home landscapes may not allow setting days on/off independently for each valve. Improved controllers are now available that allow greater flexibility in scheduling. For a drip system, one cost-effective solution is to have two inexpensive irrigation controllers, one for valves operating most days per week, and a second for valves operating once or twice per week for long periods of time.

Drip Irrigation for Home Landscapes

Drip irrigation was developed by the Israelis so that poor quality water could be used in field agriculture. Water high in salts could be applied constantly at the base of a plant, moving salts away from the center of the plant root system to the periphery of the roots. We don't use drip that way, since water quality is usually good for home systems and Kern agriculture. Rather, we use drip irrigation as a delivery system and a way of applying water precisely.

For a home landscape, let us consider two approaches for installing drip. The first is to connect black poly hose to a riser and to place emitters on the poly hose at the locations of plants. There are a number of different emitter types, including small sprinklers. Installation is easy, simply a matter of punching a hole and inserting the barbed fitting of the emitter. Because of the slow delivery rate of emitters, dozens can be placed on a single poly line without pressure loss in the line. I prefer to stay with 2 gal per hour or greater flow rates for the emitters, since lower flow rates can result in clogged emitters. However, for this approach to work well, an inexpensive pressure-reducing valve is needed at the beginning of the drip system, often installed at the beginning of the poly line. Most home

irrigation systems, like the main household water line, operate at about 50 psi, or more. At that pressure drip emitters will blow off. A poly line should have a pressure of around 20 psi, easy to obtain with a pressure-reducing valve.

Another approach for installing drip in selected areas of a landscape is to purchase drip heads that thread directly onto risers. These heads contain a pressure-reduction feature, so it is possible to simply install them (with Teflon tape), adding spaghetti lines to reach plants if needed. The flow rate is controlled by the color-coded head.

Agricultural suppliers usually have standard sizes of drip hose and emitters, whereas the home stores may carry brands with odd sizes to encourage brand loyalty. The ag or irrigation stores may also have lower prices and a wider selection of compatible fittings for drip irrigation.

Summer Pruning of Shade Trees

Winter is the preferred time for pruning for most deciduous and broadleaf evergreen ornamental trees and shrubs, but tree growth may result in the need for summer pruning. The four categories of reasons I list for pruning shade trees are structure, plant health, safety, and appearance. Rapid growth may result, for example, in obstruction of view of motor vehicle drivers, a safety consideration, so plants may need summer pruning. Summer pruning may be conducted without detriment to plants if several factors are considered.

Summer pruning will have more of a dwarfing effect on plants than does winter pruning, because the plant has expended energy to grow leaves with an expected payback in the form of carbohydrates produced by photosynthesis. Removal of leaf surface leads to loss of productive capacity and potentially a lower quantity of stored carbohydrates.

The greatest risk to trees from summer pruning in Kern County is sunburn. Thin-barked trees like maples and ornamental pears are more susceptible to overheating of the phloem and cambium, resulting in streaks of dead tissue. Foliage in the crown shades the inner wood, and so loss of this cover in midsummer can result in sunburn of the trunk or upper sides of limbs. Light rather than heavy thinning and attention to placement of limbs with regard to the sun can minimize the problem. Sunburn is a common problem in valley and desert locations within Kern County, so pruning of trees in some cases could be postponed until autumn or winter.

Although maple species are relatively uncommon in Kern County, less sap flow will occur from cuts if these species are pruned in autumn rather than winter or spring. In northern climates, fall pruning of maples is often recommended.

John Karlik
Environmental Horticulture/Environmental Science

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