HEALTHY FOOD SYSTEMS • HEALTHY ENVIRONMENTS • HEALTHY COMMUNITIES • HEALTHY CALIFORNIANS

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The Green Scene

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WELCOME TO NEW READERS FROM RIDGECREST AND TEHACHAPI

I'd like to welcome readers from Tehachapi and Ridgecrest, and especially those who participated in our night classes on horticulture for landscapes, orchards, and gardens. Several of the articles in this newsletter are in response to your questions.

WOOD ASHES FOR THE GARDEN

Wood ashes from fireplaces or stoves may accumulate in winter. There are several potential benefits of adding wood ashes to soil, first in their potassium content. Potassium, or potash, is necessary for the healthy growth of fruits and vegetables. After nitrogen, it is the nutrient used in greatest quantity in plants, and wood ashes contain about 5 to 7 percent potassium. Ashes from hardwoods contain more potassium than those from soft woods. Wood ashes also contain about 1½ percent phosphorus, also a necessary nutrient. To preserve nutrient content, ashes should not be stored where rain will leach out nutrients. Ashes may be spread at a rate of 5 to 10 pounds per 100 square feet of soil followed by incorporation. The minerals contained dissolve easily so ashes should not be used close to seedlings to prevent fertilizer burn.

However, there are several potential disadvantages of using wood ashes as a fertilizer. Many Kern County soils are already high in potassium, and further additions may not be beneficial. Unlike many soil amendments and fertilizers, ashes are strongly alkaline in reaction. Soils in Kern tend to be too alkaline already, and wood ashes further increase pH.

The free one-sheet publication "Wood Ashes as a Garden Fertilizer" is available from the Cooperative Extension Office, 1031 South Mt. Vernon Avenue, Bakersfield, CA 93307.

SAVING WATER (AND $) IN HOME LANDSCAPES, GARDENS, AND ORCHARDS

As we know, California faces a serious drought and everyone is asked to conserve water. 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 value 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.

- **How much to water?**

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 a 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 needs to be applied every day. Weather conditions will affect water needs of plants. Please see the University of California publication *Saving Water in Landscape Irrigation,* available at our office.

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

- **How to water?**

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. Irrigate and monitor. In other words, check soil moisture between irrigations with a shovel, soil probe, or screwdriver, and adjust the irrigation schedule accordingly.

- **When to water?**

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

- **What about mulches?**

Mulches, such as wood chips or shredded leaves, help save water by reducing evaporation from soil.

- **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.

- **What about "drought-tolerant plants?"**

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

Cypress Tree Problems

Leyland cypress, x *Cupressocyparis leylandii*, has been extensively planted throughout Kern County. This species is often found in windbreak plantings and around houses in the Bakersfield and other urban and suburban areas.

In recent years a number of these trees appear to be declining or have died. In almost all situations plants have apparently been adequately irrigated and otherwise well maintained. For Leyland cypress, the fundamental problem appears to be a lack of adaptation to the warm, dry climate found in Central California that renders the species susceptible to attack by a canker disease, resulting in a life expectancy of 12-15 years. It has not been uncommon to see entire rows of Leyland cypress turn brown together, almost as though a clock had struck, and this despite sufficient irrigation and appropriate maintenance. Fungal pathogens, such as cypress canker, *Seridium* or *Coryneum cardinale*, cause lesions to form on small branches, resulting in death of branch tips, often followed by colonization of larger-diameter wood. This process of decline and death often occurs over 1 - 2 years. Fungicides cannot be

expected to provide any control of this disease, and are not recommended. Although Leyland cypress trees grow rapidly and provide an excellent screen—for awhile—their short life expectancy must be considered if they are selected for planting.

Photos above and at left are examples of typical dieback of Leyland cypress.

OLEANDER SCORCH

There are several plant diseases that can interfere with water uptake and movement within plants resulting in symptoms resembling those caused by drought, including wilt diseases and scorch diseases. Of greatest economic importance in Kern County is Pierce's disease of grapevines, caused by the bacterium *Xylella fastidiosa*. The disease is spread by glassywinged sharpshooter insects. Once injected into grapevines by feeding, bacteria multiply and plug xylem tissue, causing inability of the vine to move water to leaves, resulting first in leaf scorch and ultimately in collapse of the vine. There is no remedy once the bacteria are inside the vine; prevention of transmission by controlling sharpshooter populations is the management strategy currently employed.

In the early 1990's drought-stress and dieback symptoms were noticed on oleanders in the Palm Springs and Riverside areas. These symptoms were unusual since oleander is so well adapted to dry conditions because of its leaf structure, and we see the practical effect of its drought tolerance in the hundreds of oleanders in many freeway medians where irrigation is infrequent. Subsequent investigation in Southern California revealed the presence of *Xylella fastidiosa* in the affected oleanders, although not the same strain that affects grapevines. Therefore, infected oleanders cannot result in transmission to nearby grapevines or vice versa.

Thanks to the work of Joe Nunez, plant pathologist with UC Cooperative Extension, and his colleagues, oleander scorch has been confirmed in plant samples taken from oleanders at Bakersfield College. Polymerase chain reaction, a technique for amplifying DNA, and bacterial culture have both confirmed the presence of *X. fastidiosa* in these oleanders. Oleander scorch now seems to be widespread in Bakersfield.

The number of sharpshooter insects would be expected to affect the rate of transmission to oleanders around the county. Unfortunately, glassywinged sharpshooters are now frequently found throughout the Bakersfield area. If dieback of oleander is observed, pruning out affected branches may retard the spread of the bacteria within the plant.

There are other causes for dieback of oleanders, such as mineral toxicities and long-term lack of water. In colder-winter areas like China Lake oleander dieback is seen after winter. However, oleander has been one of the most persistent and durable plants in Kern County. Time will tell with regard to the disease impact of oleander scorch in the Bakersfield area.

There are UC IPM Pest Notes on both oleander scorch and the glassywinged sharpshooter, available at http://ucipm.ucdavis.edu/PDF/PESTNOTES/index.html.

Photo at right shows an example of symptoms of oleander scorch.

Dieback of Raywood Ash

Dieback in Raywood ash trees has been observed in a number of locations in the Bakersfield area. While not all Raywood ash trees are affected, the incidence of the problem seems to be greater than in past years, perhaps because more Raywood ash have been planted. The cause of this problem is not yet known.

In northern California, dieback of Raywood ash (*Fraxinus oxycarpa* 'Raywood') has been observed since the latter 1990's. Ed Perry, a horticulture advisor with UC Extension in Modesto, described the symptoms observed in that area. "The main symptom of the disorder is a rapid dieback of branches throughout the crown. Branches die completely back to their points of attachment. Leaves dry rapidly and remain attached to the dead branches for a short time. The pattern and extent of dieback varies from tree to tree. In some cases, only a few small branches growing along an otherwise healthy and vigorous large branches are killed. In severe cases, major branches die back to the trunk. As the bark of affected branches dries and cracks, a distinct callus margin appears at the bases of branches, where dead and living tissues meet. Vigorous water sprouts often grow at the bases of large branches that have died. The symptoms appear in spring through early summer [not matching our observations in Kern County]. In many cases, lightly affected trees recover completely. While most trees are not completely killed by the disorder, affected trees are disfigured and remain unsightly."

Insect borers have not been associated with the dieback problem in Kern County. Therefore, drilling holes in trees for insecticide implants, use of systemic materials, etc., is not warranted. Furthermore, the symptoms do not match those of leaf diseases, and summer leaf diseases are uncommon anyway in the southern San Joaquin Valley given the rain-free environment. Therefore, application of fungicides to the tree canopy, especially after dieback is seen, does not make sense.

The cause remains elusive. The symptoms could be due to internal infection by fungi or bacteria, e.g. by wilt fungi such as *Verticillium*. A weaker surface pathogen affecting wood may be involved. The susceptibility of Raywood ash to dieback should be considered during tree species selection. However, the incidence of dieback appears to be much less frequent than in areas further north in the Central Valley.

Volunteering for Horticultural Projects

In years past I had a Master Gardener program, which includes a managed volunteer component. Although in Kern County we moved away from the volunteer aspect and hence away from the Master Gardener program per se, we continue to offer horticultural classes, and we still have the largest 4-H program in California--made possible by adult volunteers. Through surveys I have found our horticulture class participants are volunteering in many ways and through many outside organizations. Occasionally someone would like to volunteer but isn't sure where or how. If you can't find an opportunity, please feel free to send me a note or call and I may be able to suggest a project.

100th Anniversary of the University of California Cooperative Extension

Cooperative Extension was formed to connect the University of California to all parts of California, and was established as a result of the federal Smith-Lever Act of 1914. Therefore, in 2014 we celebrate the 100th anniversary of the establishment of UC Cooperative Extension in Kern County. We are planning a celebration to be held August 21, 2014 at the Kern Ag Pavilion, further details TBA.

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