

Meetings and Announcements

Thanksgiving

I hope this day went well for you and all friends and family. I had planned to send this newsletter in November, but here it is now.

Next Horticultural Tour—Spain and Portugal, May, 2025

In cooperation with Travel Gallery of Pasadena, I offer an upcoming educational opportunity, a horticultural tour to northern Spain and northern Portugal. The dates are May 11 – May 23, 2025. This will be the twelfth horticultural tour in our series.

This tour is about $\frac{3}{4}$ full in reaching our operating number. Therefore, please do sign up if you're interested.

For a detailed itinerary, please use the link to connect with Travel Gallery at <https://www.travelgallery.com/horticulture-spain-2025>

The itinerary features at least two nights in all hotels, and much less driving with more free time than our previous hort tour to the UK. The tour begins at Madrid Barajas airport, moves to the north, moves to the west to the famous pilgrimage site of Santiago de Compostela, and then turns south to northern Portugal.

We envision the southern California group traveling together from LAX to Madrid, leaving Sunday, May 11, with arrival early afternoon Monday, May 12.

Expect good food.

The euro is trading almost on parity with the dollar.

Expect interesting plants and design. As we found in our previous hort tour to Spain, I know of no other country that handles large public spaces, e.g., squares and boulevards, as well as the Spanish. And we always learn something about plant selection, often applicable to our own landscapes.

If questions, please contact me via email, jfkarlik@ucanr.edu

Master Gardener Program

Our new Master Gardener Coordinator is Jonathan Moody. He brings extensive background in teaching and in the citrus industry. It is likely we will offer classes in spring 2025. If you are interested in becoming a Master Gardener, whenever that happens, you may call our office, 661 868-6200, or email cekern@ucdavis.edu, and ask to be put on the list for contact when the MG classes begin. We already have several people interested.

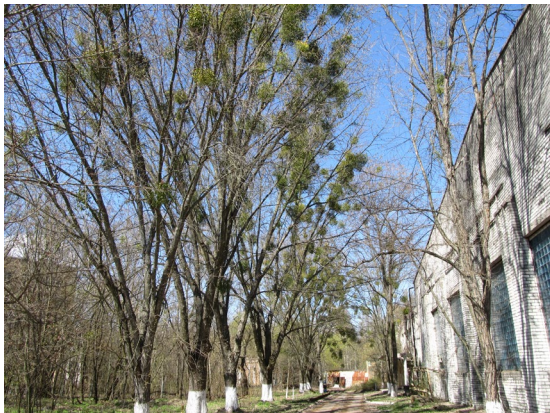
Annual Winter Pruning Demonstrations

We plan to hold our annual winter pruning demonstrations for deciduous fruit trees and grapes in January. The dates are Tuesday and Wednesday, January 7 and 8, 2025. The location, as usual, will be the UC Cooperative Extension office orchard, 1031 S. Mt. Vernon Ave. Time: noon to 1:30 pm each day. Rain or shine. No charge and no pre-registration. Come one, come all.

Plant Parasitic Mistletoes and Their Control

Mistletoes are parasitic plants affecting many trees in Kern County. Leafy mistletoes become more easily seen in autumn and winter as deciduous trees lose leaves. Management options are available but are often labor intensive. A growth regulator has been registered for mistletoe control and may be useful in some situations.

Leafy mistletoe, examples below, is *Phoradendron* spp. in the San Joaquin Valley and foothills. It is found in shade trees on the San Joaquin Valley floor, such as ash and maple, and stands of native oaks throughout the Sierra foothill rangeland. In winter, clumps of mistletoe in deciduous trees become obvious as dark green clusters silhouetted against the sky. In summer, stomata of leafy mistletoe remain open when the host tree is drought-stressed, and its own leaves have stomata that have closed to conserve water. Thus, leafy mistletoe contributes to drought stress of oaks and other trees where it is found, reducing the vigor of the host tree. Heavy mistletoe infestation apparently contributes to tree mortality of oaks in particular.



Leafy mistletoe produces flowers followed by small white berries that mature in autumn. The berries are attractive to birds, and the sticky seeds within the berries pass through the bird digestive tract to be spread to surrounding plants. If the seed lands on a suitable host plant, it produces rootlike structures called haustoria. These penetrate tree bark and begin to grow up and down within the branch where the seed has germinated. The haustoria extract water and nutrients—leafy mistletoe does contain chlorophyll and so photosynthesis occurs resulting in production of carbohydrates. Therefore, leafy mistletoe is best described as semi-parasitic, since it does produce its own food. With time, as the plant develops, green shoots of mistletoe emerge from the wood, and ultimately flower and produce fruit leading to further spread.

The leafy mistletoe used in holiday decorations is *Viscum album*, a European plant that was introduced to northern California and has since naturalized. It is harvested in some locations, but it is not found in the southern San Joaquin Valley foothills.

In the higher foothills and mountains, dwarf mistletoe occurs. It is a parasite of needle evergreens, such as pines, cypress, and junipers. Dwarf mistletoe, *Arceuthobium* spp., shown below, is a different genus than leafy mistletoe and has a much different appearance as well as being more destructive to trees. Dwarf mistletoe shoots are golden to yellow-green, resembling the scaly leaves of a juniper, and erupt from swollen areas of tree branches and trunks. Dwarf mistletoe also flowers and fruits in autumn, but seeds are ejected by the fruit and may be propelled up to 50 feet from the plant. Birds are not as important as carriers of dwarf mistletoe as they are for leafy mistletoe, but birds can move dwarf mistletoe seeds to the tops of trees where a new center of infestation will develop. Once a dwarf mistletoe plant develops high in the crown of a tree, susceptible understory trees will likely be infested.



The most effective control method for leafy mistletoe is pruning to remove infested branches. When pruning, cut a foot or more below the clump to remove wood harboring haustoria. Cut to a lateral branch or remove the branch entirely rather than leaving a stub. However, it is possible that removing branches will disfigure a tree. Cutting only the mistletoe clump will give temporary control, since new shoots begin to reappear after nine to twelve months. Additional control can be achieved by cutting the clump and then wrapping that part of the branch with black plastic to deprive regrowth stems of light.

However, from a practical standpoint, it may be difficult to reach branches to wrap them, and from an aesthetic standpoint, not everyone wants trees with branches wrapped in plastic.

For dwarf mistletoe it may be best to remove the whole tree, preventing spread to surrounding trees in the forest. There are other strategies for management in forested land, where number and size of trees make individual attention difficult.

Ethylene is a naturally occurring growth regulator that affects many plants. Ethepon is a chemical that breaks down to release ethylene. Ethepon under several trade names has been registered for use in conifers against dwarf mistletoe, and for use in deciduous trees for use against leafy mistletoe. A few years ago, Dr. Ralph Phillips, Extension Range and Livestock Advisor, and I conducted several field experiments to investigate the use of ethephon for limiting or removing leafy mistletoe in rangeland oaks. We found berry drop was complete following ethephon application in fall, and there was some thinning of mistletoe clusters and some leaf drop at the low rates of application we tested. At higher rates, mistletoe cluster thinning was more extensive, but phytotoxicity to oaks was observed in spring as foliage began to emerge. Ethepon apparently affected dormant buds, causing foliage to be sparse on trees treated at the highest rates, which were higher than the label rates. We did not see the amount of mistletoe leaf drop and cluster removal as has been observed in northern California. Therefore, I would say ethephon can serve a purpose in limiting development of seeds in mistletoe clusters (by knocking off berries) and thus helping to limit spread, but it will not clean out mistletoe infestations in oaks.



Dwarf mistletoe seeds (berries). The photo at left shows berries have been dispersed.

Herbicide Injury to Trees

Extensive injury to trees in county parks has been reported in Ventura County, apparently from use of an herbicide--and it isn't glyphosate, which does not injure trees. More about this in a subsequent *Greenscene*.

John Karlik
Environmental Horticulture/Environmental Science

Disclaimer: Discussion of research findings necessitates using trade names. This does not constitute product endorsement, nor does it suggest products not listed would not be suitable for use. Some research results included involve use of chemicals which are currently registered for use, or may involve use which would be considered out of label. These results are reported but are not a recommendation from the University of California for use. Consult the label and use it as the basis of all recommendations.

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