



# THE YOLO GARDENER

Fall 2017

A QUARTERLY PUBLICATION BY THE UCCE. MASTER GARDENERS OF YOLO COUNTY

## !@#%! Bermudagrass! (part one)

*Carolle Juliano, UCCE Master Gardener, Yolo County*

Mention bermudagrass in my neighborhood and you get grimaces, groans and expletives in response. Once the darling of Northern California suburbia because of its tenacious nature and low water use, it's now viewed as an invasive, incorrigible species. A veritable demon grass with roots that can penetrate two or more feet deep.

This noxious invader has happily blanketed my front and back yards for decades, reseeding itself at will, sending runners out into the flower beds and beyond. "Enough!" I said. Time to banish this monster once and for all.

The front yard bermuda removal was a frustrating, back-breaking venture. In the end, after applying natural herbicides to no avail, torturing the grass with sod cutting, and resorting to incantations of "death to the enemy," the offending blades and roots were literally dug out, clump by clump. Fresh topsoil was spread, and happily, a new, water-wise front yard took root.



*Bermuda before solarization*

The backyard, alas, is at least twice the size of the front. Digging that much bermudagrass out would take a lifetime and break several backs along the way. Research revealed these options for grass removal: sheet covering (also called lasagna), solarization, and herbicide application.

Layering seemed impractical. Securing hundreds of yards of cardboard seemed daunting. (How many flattened bicycle boxes does it take to cover 3,404 square feet?) This technique was mostly recommended for smaller areas and in the long run would raise the soil level by approximately six inches - not an option for the pitch and grade of the backyard.

UC  
CE

*Vol. XI,*

*No. iii*

University of California  
Agriculture and Natural Resources  
Cooperative Extension

!@#%! Bermudagrass! (part one) .....	1
What are Galls?.....	3
Planting a Bare-Root Fruit Tree: It's all in the Hole.....	5
Jared Farmer's Trees in Paradise: The Botanical Conquest of California.....	7
Orb-Weaver Spider Spinning Silk.....	8
Mulching with Autumn Leaves.....	10
Chiggers in California?.....	11
Become a Master Gardener.....	12
Fall Gardening Tips.....	14
Free UCCE Master Gardener Classes.....	18

The use of herbicide for that much space just felt wrong and unhealthy. By process of elimination, solarization became the chosen modality for the kill.

I gathered as much information as I could about the pros and cons, the limitations, and the expected results. UC Pest Notes on Bermudagrass (publication 7453) and Soil Solarization (publication 74145) guided my assault. An article in *Sunset* magazine about solarizing reinforced my resolve. Moreover, I learned solarization had beneficial effects that could eliminate many pathogens, control weeds, increase soluble nutrients, and boost the number of helpful soil microorganisms, all without collateral damage, *i.e.*, earthworm death. (They apparently protect themselves from elevated soil temperature by burrowing deeper into the ground.) What's to lose?

On July 1, I followed the preparatory steps: 1) mow the lawn as short as possible, 2) irrigate the area thoroughly, and 3) cover with clear plastic. I overlapped the plastic sheeting (2 ml, which I ordered online) by a foot and weighted the overlaps and edges down with leftover patio paver blocks. It looked pristine and antiseptic. The clear plastic glistened in the sunshine. The moisture that was in the soil formed droplets on the inside of the plastic. Now we're cookin'! As the air temperature rose into the 100s for a record-breaking duration, I was certain beneath the tarp was even hotter. Surely, this nemesis could not survive such torture. I'd sit back and let it boil away.

Indeed, it must have been an inferno. By the fourth week, small tears began to appear in the plastic. I immediately blamed the neighborhood cats for prancing on the carefully laid plastic with their sharp and penetrating claws. Duct tape to the rescue! However, a few days later, more tears appeared that quickly elongated in the evening

breeze, exposing large segments of golden grass and parched soil. Apparently the recommended 2 ml plastic couldn't stand up to the relentless heat of a Sacramento Valley summer. I bought more 2 ml plastic and covered large swaths of the decomposing plastic already laid down.

Meanwhile, along the south fence and under the existing trees, an unfortunate event was taking place. A bulge formed under the plastic. It was green, healthier-than-ever bermudagrass laughing and taunting me. As a friend (or should I say, former friend) pointed out, I had created a terrarium for the demon to grow in! Because of the shade created by the trees and fence, the moisture retained under the plastic, and the warm summer temperatures, the bermudagrass was thriving.

I told myself this was a small setback. I could handle these patches of green by digging them out at a later date. Besides, in another week all the



*Installed plastic*



*Tears in plastic*



*Bermuda growing under plastic in shade*

plastic would be removed after sixty-plus days of solarization.

I watched as the plastic continued to self-destruct where I hadn't added a second layer. The torn pieces worked themselves free and blew about the yard in abandonment. Fortunately, the exposed grass looked dead. Mission accomplished. I could relax and wait out the clock as a yard warrior, victorious in battle over a formidable green foe. At least, so I thought.

Today, as I sat out back on the newly installed patio, I surveyed the state of the plastic and happily glanced at the golden, exposed segments of lawn. I was quietly patting myself on the back when OMG! Could it be? Green, I see green - ever so sparsely, but visible nonetheless.

"What now?" I wondered.

*To be continued in the next issue* 

## What are Galls?

*Jan Bower, UCCE Master Gardener, Yolo County*

Galls are abnormal growths that form on leaves, twigs, or branches. They are usually formed by the interaction between a tree or plant and an insect, and are found where the insect feeds or lays its eggs. The insect gives off a salivary secretion, which initiates an increase in production of the normal growth hormones of the tree or plant, and a gall is formed. A gall can be a simple lump or a very complicated structure, plain brown or brightly colored.

There are fifteen hundred different insects that cause galls. Most are cynipid wasps, mites, and midges. The galls are generally harmless to trees and plants, but beneficial to insects. They provide a source of food for the insects and a secure place to lay eggs and develop, safe from predators. In turn, galls benefit plants and trees by keeping larvae away, increasing weather resistance and photosynthesis, creating nutrient sinks, and repelling insects. Larvae divert a plant's nutrition (sugars and proteins) to stimulate the growth of the gall.

Gall formation generally occurs during late spring and early summer when new leaves, shoots, and flowers are forming. The insect develops inside the gall, and the gall continues to grow as the insect feeds and matures. When it becomes an adult, it usually makes its way out. Most galls are not noticed until they are fully formed and remain for extended periods of time (more than one season). Once there is one gall, many more will form with the repeated life cycles of insects. The hard, woody galls may remain on a tree for several years and can spread to adjacent trees.



*Valley Oak trees in the UC Davis Arboretum*

### **Gall Characteristics**

Plant galls are known for their incredible variety of shapes, sizes, and colors. They range in size from a pinhead on a leaf to a cankerous gall on the side of a tree trunk that exceeds four feet in diameter. In color, they duplicate the full spectrum of the rainbow. Some galls are smooth and round;

others have wart-like bumps, spines, hairs, tubercles, or flared edges. Some look like balls, saucers, cups, bowls, sea urchins, caterpillars, teeth, or donuts. Some are very noticeable, while others look like normal buds, or are so small they escape detection.

### **California Oak Apples**

According to Mary Hanson, certified California naturalist with Tuleyome, seventy percent of all galls produced by insects can be found on oak trees. Leaves of willows, junipers, pines, sages, and wild plums, among others, also harbor galls. However, their disfigurements are in the form of swellings or pouches and result more from fungi, bacteria, and virus infections than invading insects.

In California, galls formed by the California gall wasp (*Andricus quercuscalifornicus*) are known as “oak apples.” These large, round, apple-like forms range in size from 1 to 2 centimeters in diameter, and are lightweight, black and tan, with a corky sphere about the size of a golf ball. They are caused by chemicals injected by the larvae of gall wasps of the Cynipidae family.

The Bohart Museum of Entomology at UC Davis houses a large cynipid wasp collection. Dr. Steve Heydon, Senior Museum Scientist, manages the collection. He has looked at 1,234 oak apple galls in his research to learn about the parasitoid community of *Andricus quercuscalifornicus* and its association with gall size, phenology, and location.

### **Galls in the Arboretum**

Sparked by Hanson’s comment and Heydon’s study, I went to the UC Davis Arboretum to see if I could find galls on one of the valley oaks. And I did! In fact, I found galls on many oaks in the Arboretum and have since found them in other areas of Davis. Most people consider galls unsightly, a cosmetic blemish, but I find the galls on oaks to be ornamental. They look a little like balls on a Christmas tree.

### **Brief History of Galls**

Plant galls have a long-standing place in the evolution of our landscape and human history. Evidence in the fossil record shows that fungi-induced galls existed 200 to 300 million years ago during the Upper Paleozoic-Triassic period in England and France. The oldest confirmed insect-induced galls in North America are from Late Cretaceous, about 115 million years ago, and were found in fossil beds in Maryland. The oldest known cynipid galls are from the Late Eocene, about 34 million years ago, in Florissant, Colorado.

Galls played a role in sustaining Native Americans. Several tribes, located in California’s Central Valley, ground the galls of the California wasps into a powder used for making eyewash and treating cuts, burns, and sores. Other galls were smoked, eaten, and used in dyes, hair coloring, and ink.

Although the science of gall study began in the seventeenth century, pathologists, who study plants, and cecidologists, who study insects, still have very little understanding of the environmental factors and specific microenvironmental requirements of the gall organisms. Scientists have been looking for a long time for the blueprint that seems to control gall characteristics. This has become the “Holy Grail” of gall research.

### **What to do about Galls**

Since galls are usually not harmful to the host plant, pest management is generally not suggested to protect the vitality of a plant. Control can be helped by pruning and destroying gall-infested twigs and branches. Plant stress can be prevented by watering during dry periods and fertilizing if necessary.

Reference: *Field Guide to Plant Galls of California and Other Western States* by Ron Russo, University of California Press, 2006. 

## *Planting a Bare-Root Fruit Tree: It's all in the Hole*

*Michael Kluk, UCCE Master Gardener, Yolo County*

Success with a fruit tree begins before you leave the nursery with your new bare root tree. Take some time to select a tree that has sound bark and a good root structure. The roots will have been cut when the tree was harvested but they should appear healthy with clean cuts. Be sure the roots of your tree are securely covered with wet shavings or something similar for the trip home. Even a few minutes of exposure to the air can begin to kill sensitive feeder roots. Once you get home, you may want to soak the roots of the tree in water for an hour or two if you are going to be able to plant it that day. If you are not, be sure to heel the tree in by digging a shallow hole adequate to cover the roots with soil for a few days until you can move the tree to its permanent home.

### Site Selection

Good site selection is essential. Your tree should be in a spot where it will receive at least six and preferably eight hours of direct sunlight each day. It should be convenient to a water source. Soil drainage is a critical consideration. If the soil does not drain adequately, the roots will be deprived of oxygen and the tree will die. One way to test drainage is to dig a hole about one foot deep. Fill it with water, let it drain and then fill it again. If it takes longer than 3 or 4 hours to drain on the 2nd filling, you have drainage problems. If there is a hardpan layer below the soil surface, you may be able to break through it with a pickaxe or jackhammer. If you have significant drainage problems that are not cured in this manner, pick a better site or consider planting your tree on a mound or in a raised bed as described below.

### Preparing the Planting Site

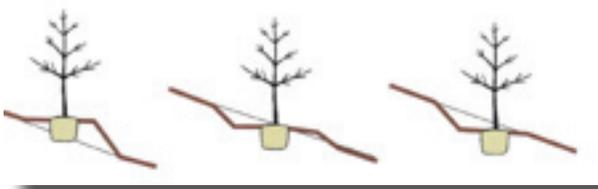
The hole for planting a bare root tree should be shallow and broad. The diameter should be at least twice that of the roots. If the soil is compacted, it should be broken with a spading fork even broader than that. Recent research from the Colorado State University Extension supports digging a hole that is *three times* the diameter of the roots. That research indicated that doing so can lead to root growth in the first year that is 400% more than if the hole is dug only as broad as the roots. It is also important to dig the hole in a saucer shape so that it becomes shallower near the edges. This will encourage the initial root growth to be in the higher, more oxygen rich, layers of soil. If you have a heavy clay soil, score the edges of the planting area with your shovel, making grooves one to two inches deep, which will help the roots grow through the transition to non-disturbed soil.



Just as important as digging a broad hole is to keep it shallow. Ideally, it should be no deeper than necessary to accommodate the roots. Placing a shovel handle or other straight edge across the hole as you are digging gives a good reference for planting height. The final soil level around the trunk should be an inch or two *below* the old soil mark on the trunk with the idea that the tree will settle some no matter how careful you are. Ideally, the top roots should be just below the soil level when you are finished. If you have had to dig through a hard pan layer, you will want to back fill and pack the soil in the bottom of the hole so that it is, again, only as deep as it needs to be to accommodate the roots.

If you are planting on a hillside, be sure to form a large flat area in which to plant the tree as indicated

in the illustration. This will give the tree more area in which to anchor, and allow rain and irrigation water to sink in rather than run off.



Planting on a slope

**Placement of the Tree and Backfilling the Hole**

Place the tree in the center of the hole with the graft union, the “crook” on the lower portion of the trunk, facing towards the northeast to minimize the chance the graft will be sunburned. Backfilling should proceed in



*This persimmon tree was planted and cut back to a three-foot whip eight months prior to this picture being taken. As you can see, it came through the operation quite well.*

layers, lightly tamping the soil as you go. Some authorities recommend building a “cone” in the center of the planting hole to support the trunk and spreading the roots of the tree out around the cone, but the root system of some species does not lend itself to that. If possible, spread the

roots out horizontally to give them access to better oxygenated shallow soil.

Be sure to work out any air pockets around the roots. Once the hole is half filled with soil, fill it the rest of the way with water and let that drain out to settle the soil around the roots. Then complete adding soil to the proper level and water slowly again until water begins to overflow.

Do not add soil amendments or fertilizers to the backfill soil. Compost can be worked in to the backfill up to five percent of the total volume but it is just as effective when added to the soil surface. A new tree should not be fertilized for the first year.

If you have clay soil that remained formed in “clods” as you dug your hole, you need only break up those that are larger than your fist. Breaking clay soil up too much will cause it to settle more when wet, reducing the oxygen in the soil. When you are finished backfilling, the soil should slope away from the trunk of the tree.

You may want to dig a very shallow watering trench around the tree a foot or so from the trunk. Add an inch or two of compost and a two-inch layer of mulch but keep both six inches from the trunk. A thicker layer of compost and mulch can deprive the roots of air. For Very Hard or Rocky Soil – Form a Mound

If the soil is too shallow or simply too hard for the roots to penetrate easily, planting on a mound or in a raised bed may be the best solution. In either case, break up an approximately fifteen-square-foot area of the underlying soil with a spading fork, pick or tiller. Place the tree on top of the ground and shovel soil from the surrounding area around the roots forming a mound. The ditch so created can be used to water the tree in the spring and summer. If you choose to build a raised bed, it should be at least four feet on a side and one-and-a-half or two feet high. Fill it with good soil that will drain well.

**Pruning and Painting the Trunk**

Now comes the step that, for many people, is the hardest part of the entire process. You need to cut your tree off so that it is between 24 and 36 inches high and, if there is one, above the graft union. That will probably mean cutting several feet and most of the branches from the tree. If branches remain, they should be cut back to six inches. This major pruning is necessary because when the tree was harvested, the roots were cut back severely. You must cut the tree back to balance the top with the roots. Just take a deep breath and do it. Use sharp long handled by-pass pruning shears. Make the cut at an angle so that water will run off. The cut may remove all existing branches. New main branches will

spring from buds on the trunk. Be sure that the buds you want to form the main scaffold branches of your tree are at least an inch below the cut.

Next, paint the entire tree, including the tops of any branches left, with “tree white” (available at a nursery) or with interior white latex paint diluted with water by 50%. Now, sit back and feel confident that this skinny little thing will eventually grow into a big beautiful tree that will provide you with food and shade because you gave it the best possible start. 

## ***Book Review of Jared Farmer’s Trees in Paradise: The Botanical Conquest of California***

*Willa Pettygrove, UCCE Master Gardener, Yolo County*

This book is not where one would go to find out about early people’s use of oaks for food and fiber. One could also question what a historian would have to say on the topic of trees. And at first read, one might wonder why oaks are not included among the four sections of the book that cover redwoods, eucalyptus, citrus, and palms. The answers: as a historian, Farmer is diligent in his research and casts his net wide. Unlike the native oaks, these four categories of trees symbolize the role of the plants in influencing history (California’s post settlement cultures). The trees also are affected by it. Farmer has renamed this edition of his book to reflect botany as a conquest, which ebbs and flows in response to economic and political processes.

Redwoods are native to California, and rare elsewhere. There are actually two California redwoods: *Sequoia sempervivens* (Coast Redwood) and *Sequoia giganteum* (Giant Sequoia, Big Tree). These two have had very different histories. Growing in the Sierras where early tourists could remark on their beauty and great size, the Giants earned an almost sacred and protected status. Growing on the North Coast of California, convenient for harvesting and shipping to nodes of economic activity to the south, Coast Redwoods were harvested ruthlessly, and raised worries about a possible “timber famine” at the beginning of the 20<sup>th</sup> Century. Forestry experts at the University of California played varying roles, at times advocating “forestry management” which would mean selective cutting of Coast Redwoods, at others supporting the preservation of small patches of old growth within logged areas.

Three of the four examples aren’t native to California, but were brought here because of their value to a booming economy. Eucalyptus (especially *E. globulus*, the Blue Gum) was originally imported as a source for wood. By the time it was determined the trees did not produce usable wood, they were established and becoming invasive. The image part was that they are tall trees. They contributed to the idealized view of nature as a forest, replacing chaparral and meadow (grassland or wetland) with dense thickets of tall trees. Farmer argues that such treeless areas were seen by many as “biological deserts” although they were anything but.

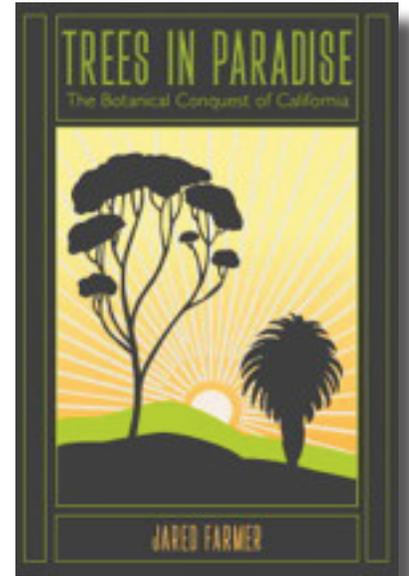
Citrus fed the image of California, especially in the south, as a new Eden that folks back east would want to come to. My mother remembered when one orange was a Christmas treat in her West Virginia home. By early adulthood, she and her Appalachian peers could enjoy abundant fruit from California, brought by train on refrigerated freight cars. First it was the Washington Navels in winter, and not long after the Valencias in summer. The University of California played a critical role in saving the citrus industry, combating major threats such as the Asian citrus psyllid, giving California a competitive advantage over its only rival, Florida.

In the case of palms, myth overwhelms the actual tree. It is hard to tell whether Farmer is describing a tree or a silhouette on a billboard or motel sign that stands for California. There is one native palm in California (*Washingtonia filifera*), another in Mexico (*Washingtonia robusta*), and now hybrids (Farmer humorously referred

to them as *Washingtonia filibusta*). One problem with palms is they just grow up, providing less and less shade as their foliage moves away from the ground. They are expensive to remove, and live a long time. They make strange images when they die, the Dr. Seuss tree (the Lorax), the trunk that snakes back to the ground or provides nesting sites for urban pests including pigeons and rats.

For those not ready to read all 592 pages (plus bibliography) of this terrific book, one can consider many of the same issues in one small section of California's desert, which is now Los Angeles. Television station KCET has produced one of its "Lost LA" series on Descanso Gardens, where camellias and roses take the place of drought tolerant natives. (See [kcet.org/show/lost-la/episodes/Descanso-Gardens](http://kcet.org/show/lost-la/episodes/Descanso-Gardens)). This documentary directly confronts themes also found in Farmer's book: water as a constraint, development and population pressures, immigration and cultural diversity.

Author's disclaimer: This is not the first Heydey Press book, or the last, I have read. Located in Berkeley, Heydey is a nonprofit started by Malcolm Margolin. This publisher has consistently produced visually beautiful and mostly accurate, if sometimes controversial, books and magazines about natural history in California. A prime example of this is California's Wild Edge, The Coast in Poetry, Prints, and History, by Tom Killion with Gary Snyder. See more at [Heydeybooks.com](http://Heydeybooks.com).



(Endnotes)

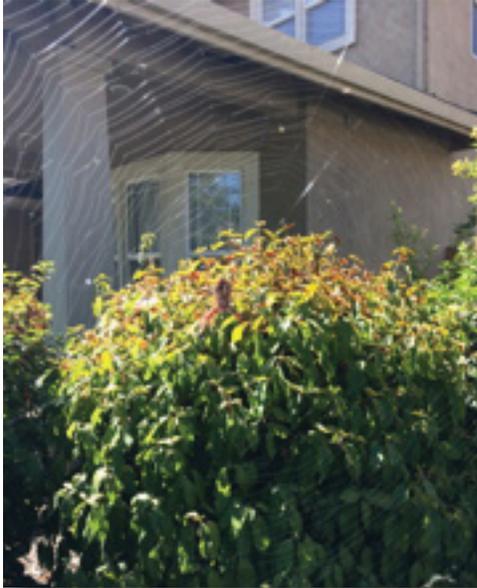
Earlier editions of this book had the title *Trees in Paradise: A California History*. The current edition was published by Heyday Press in Berkeley in 2017. 🍅

## Orb-Weaver Spider Spinning Silk

Mary Yaussy, UCCE Master Gardener, Yolo County

On a hot August Saturday morning, my grandchildren spotted a massive five-foot, circular "Halloween" looking spider web strung between my neighbor's viburnum bush and my butterfly bush. In the web center was a large eight-legged orange spider with brown markings. My daughter photographed the spider and web so we could enlarge and research the type of spider. Our identifying the spider as a beneficial, silk-spinning female Orb-Weaver was confirmed by Rachael Long, UC Davis Farm Advisor. How did this little creature make this huge structure?

All spiders are arachnids with eight legs, two main body parts, poor eyesight even with up to eight eyes, and can make silk. Spider silk is a protein or chain of two amino acids, glycine and alanine. The silk is extremely strong, about five times stronger (tensile strength) than steel of the same thickness. The silk threads can be thinner than human hair and stretched to three times its length. The silk threads are affected by rain by absorbing the water, causing the threads to swell but returns to normal after drying. The silk web is primarily used to catch food. Young spiderlings immediately begin to spin silk to survive.



*Orb-Weaver Spider Web*



*Orb-Weaver Spider*

The silk consists of liquid protein in the glands located in the abdomen. Silk comes out the spinnerets, tubes near the end of the spider's body, as a liquid. The spider pulls on the silk and the liquid hardens into a thread. Unique to the Orb-Weaver, it can change the properties of the silk it produces for different tasks.

To start its web, the Orb-Weaver lets out a silk thread across an open space. Wind carries the thread until it catches on a spot on a distant tree or bush. The spider pulls the thread tight and crawls across the silky tightsrope. Hanging from the tightsrope or bridge line, the spider builds a frame for its web. Silky spokes stretch from the center like a bicycle wheel.

Next the spider returns to the hub to weave a dry spiral web to strengthen the spokes and hold them in place. Starting from the outside, the spider spins another spiral of sticky silk going back inward, toward the hub. When the web is finished, the spider waits for insects to fly into its web. Since its eyesight is poor, the orb-weaver feels the web vibrating to know dinner is served.

An Orb-Weaver spins about one hundred webs during its lifetime. It takes a spider less than an hour to spin a web, even a complex one. If the Orb-Weaver doesn't like the web, the spider will recycle by eating the web and start all over.

Check out a spider spinning a web: <https://www.youtube.com/watch?v=4J5kArP5gAE>

#### References:

Spiders by Seymour Simon

*The Private Life of Spiders* by Paul Hillyard

<http://www.spiders.us/species/filter/california>



## Mulching with Autumn Leaves

Laura Cameron, UCCE Master Gardener, Yolo County

Fall arrives, leaves gently lose their grip, falling one at a time or as a gentle snowstorm. On a particularly vicious windy day they all drop at once.

Once the leaves have fallen, what to do? According to the EPA, thirteen percent of municipal waste is from lawns, parks and other growing spaces, and our yards. By weight, half the weight that used to go into the landfill. What's in leaves? Lots of scrumptious stuff our soil will love to have back in it.

According to the *California Master Gardener Handbook* a "leaf is a plant organ typically attached to a stem, varying in size and shape but usually flattened or needlelike and green in color that is concerned primarily with the manufacture of carbohydrates by photosynthesis." The *Sibley Guide to Trees* adds that "water is needed to hold the leaf blade in the required position.... But water is usually a limited or unpredictable resource, so the leaves are adapted to gather sunlight efficiently while at the same time conserving water." As the daylight hours lessen the leaves are compelled to stop soaking up the sun, change color, and drop off. Trees pull calcium, magnesium, potassium, and phosphorus from the soil into their trunks and out to their leaves. Fifty to eighty percent of all the nutrients trees extract from the ground end up in the leaves. Therefore leaves can be used to put this nutrition back into the soil. One source noted that leaves contain twice the mineral count of manure, pound for pound.

Leaves can be raked up and put in the street or green bins or used to create compost, mulch, and mold. The compost will add nutrients to the soil, mold will help with soil drainage and the texture of the soil, and mulch will help with weed control and water retention.

Leaves can also be left on the lawn and mulched in by mowing. This puts nutrients back into the soil and lessens the raking need. If you have a foot of leaves on your lawn this may be a bit much. Gauge what is best. Studies have shown some benefit to neutral benefits. It does eliminate raking and adding organics to the soil.

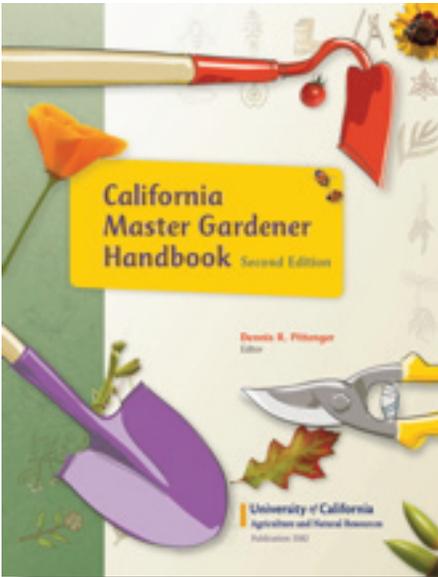


Leaf mold

Most of us have left leaves lying on the ground throughout the fall and winter for one good reason or another. What I have noticed when I was able to clean up is that the leaves had created a fine thick mat that allowed little water to percolate through. The layer close to the ground was slimy and still intact. There was no growth of unwanted weeds or grasses or anything for that matter. We are creating leaf mold, the slow fungal breakdown of shrub and tree leaves. It is considered a form of compost. Nutrients are slowly released and are then used once again by plants. Leaf mold is considered an excellent soil conditioner.

To create leaf mold, leaves can be collected intact and stored in various containers. A big plastic bag with holes ensures that a bit of moisture will collect; damp is the goal, not wet. If the leaves are dry, add moisture and a shovel of soil or manure. A big bin, perhaps 5' x 6', can also be used. Keep it covered and turn or aerate it occasionally. Or, simply rake the leaves into a big pile and leave for one to three years.

Leaf mold is ready to use when it is soft and crumbly. Use it as a mulch, ensuring that you keep it a few inches away from the base of your plants. Leaf mold has great water retention, so keeping it away from the base of plants will aid in limiting pest and disease issues. Turning it into the soil will improve the friability and drainage as well as add nutrients.



Best composting practices include cutting up organics into small bits, encouraging faster breakdown of material. This can be done with leaves as well. Shred them using a lawn mower or a leaf shredder. Shredded leaves can be put in the compost bin with other compost or by themselves to break down, becoming mulch right away or dug into the soil. If you do not shred leaves and put them in with other compost material they will take a lot longer to break down than everything else. Shredded leaves can also be used to create leaf mold; the process will happen much faster with shredded leaves.

Not all tree leaves should be used; for instance, Black Walnut and Eucalyptus trees have a natural herbicide. The pH balance in leaves can vary, and needles tend to be acidic. Be thoughtful with application. This may be beneficial for parts of your garden. A mix of leaves is a good bet if your garden provides that option; the pH may balance out or be neutral.

Fall leaves can bring so much beauty and benefit to the garden. Rake often! Rake Well! Or, let them compost on site. 

## Chiggers in California?

Cathy Sutton, UCCE Master Gardener, Yolo County

Not all garden pests attack plants. Some attack the gardener. Master Gardeners from the South and Midwest are familiar with chiggers. The microscopic mites leave wounds on their hosts which cause small welts and horrible itching, as anyone bitten by the little critters knows. But Chiggers in California? In recent years local papers have written about chiggers in their area. The *Mercury News*, *Siskiyou Daily News*, and the *SF Gate Home* guides, as well as other news sources, have reported on the mites. Chiggers have taken some of the spontaneous joy out of my gardening tasks in the summer.

According to UC Davis, Chiggers (*Eutrombicula* sp.) are actually parasites of other animals, but will happily bite humans when they are available. Chigger bites cause red papules, which can be extremely itchy. Free-living mites like to bite areas where clothing rubs. They often migrate under your clothing and tend to congregate where there are migration restrictions such as elastic or belts. Research shows they can make it from your shoes to your waistband in fifteen minutes. The University of Hawaii houses The National Chigger Collection. The curator M. Lee Goff reports they have identified 1,800 different chigger species.

Chiggers do not suck blood or burrow under the skin. They eat skin cells, which they dissolve with digestive enzymes. The human immune system defends bitten areas by forming a hard wall of cells called a stylostome. This serves as a straw-like feeding tube for the mite. Our immune system response causes the intense itching. For humans, itching usually occurs after the larvae detach from the skin, usually hours after you leave the garden.

They are most numerous in early summer when vegetation is at its heaviest. According to an Ohio State University fact sheet do this to lessen their itch:

- After returning from a chigger-infested area, launder the field clothes in hot soapy water.
- As soon as possible, take a good hot bath or shower and soap repeatedly. The chiggers may be dislodged, but you may still have the stylostomes, which can cause severe itching.
- For temporary relief of itching apply ointments of benzocaine, hydrocortisone, calamine lotion, or New Skin.™

There are many home remedies for the itch, shared freely on the internet. One that persists is painting clear fingernail on the bites to kill the chigger. By the time you are itching, the little guy is long gone. Others claim vinegar, spitting on a sugar cube and rubbing in on the welt, or rubbing coconut oil or baby oil on the wound will relieve the itching.

Chiggers like shady areas with bush and tall grasses. They are found nearly everywhere in the world. They live in forests and grasslands and are also found in the vegetation of low, damp, areas such as woodlands, berry bushes, orchards, along lakes and streams and other places where vegetation is low such as lawns and parks. They are most numerous in early summer when grass, weeds and other vegetation is heaviest.

A chigger's lifecycle goes through the stages of larva, nymph and adult. The larval mites feed on the skin cells of animals, including humans. After feeding on their hosts, the larvae drop to the ground to become nymphs, then mature into adults that are harmless to humans. They usually are found in clusters where eggs have been laid. Since they are microscopic it can be difficult to determine where they are in your yard.



*Chigger*

There are several steps you can take to deter the chiggers when you are in the garden. Spraying insect repellents with DEET on your clothing can help. Some profess that wearing long pants and tucking in your socks is helpful. My experience is that they like to climb into your socks and have a feast. I have better luck following the above advice and jumping into the shower immediately and washing my clothes in warm water.

If you are wondering what's eating you (quite literally) it might be there are chiggers lurking in and around your garden.

*There are many articles "out there" about Chiggers. UCD had limited information but other universities in states where chiggers are better known are a good source.*

<http://delusion.ucdavis.edu/mites.html>

University of Minnesota Extension, "Control of Scabies and Chiggers on Humans," John Han and Mark Ascerno;

UK College of Agriculture, Food and Environment, "Parasitic Mites of Humans"; 🍅

## *Become a Master Gardener*

*Jennifer Baumbach, UCCE Master Gardener Coordinator, Solano/Yolo Counties*

**E**ver thought about becoming a Master Gardener? Do you know who the Master Gardeners are and what they do? Do you love to garden? Would you be interested in passing on your horticultural knowledge to others? Well, here's some information for you.

The requirements to become a Master Gardener are simple:

- You have some knowledge or experience in gardening or landscape.
- You are willing to learn about horticulture and share this knowledge with others.

- You are accepted into the local training program and can volunteer time conducting horticultural educational programming coordinated through the U.C. Cooperative Extension office in Woodland.

To become a Master Gardener, you must first fill out and submit an application along with a fee to the U.C. Cooperative Extension office. The deadline for the 2018 training will be Halloween, October 31 by 5:00 p.m. After reviewing the application, you may be invited for a short interview in early November. Following acceptance into the program, the trainee begins the core training.

The training includes daytime classes held once a week for approximately fifteen weeks. The class begins in early January and goes through April. Class attendance is mandatory since each class is a stand-alone section. Class hours are from 9:00 a.m. until 1:00 p.m. on Fridays.

University of California specialists, horticultural professionals, and veteran Master Gardeners teach the classes. Class topics include, but aren't limited to - Botany, Soils, Vegetables, Fruit Trees, Trees and Shrubs, Plant Pathology, Insects, and Turf.

A fee, which is determined by the local coordinator, is charged for the training and includes a training manual, a pest resource guide, and an official badge, once the training is completed successfully.

Upon successful completion of the classroom training and passing the final exam, you will become a Master Gardener trainee. From there, you will embark on an adventure of attaining volunteer hours. The volunteer hours can be accumulated through a variety of projects and activities, such as presentations, workshops, Farmer's Markets, and the Master Gardener phonenumber. An active Master Gardener must remain current in annual educational updates and volunteer service hours required by the UC Master Gardener program in Yolo County. U.C. Master Gardener trainees are required to complete fifty hours after training. Veteran Master Gardeners are required to complete twenty-five volunteer hours and twelve continuing education hours per year to remain certified.

Master Gardener program first years (just graduated MGs) will have Master Gardener mentors. Mentors are experienced active Master Gardeners who are paired with trainees to help guide them through a successful volunteer experience.

Master Gardener volunteers work on behalf of and under the supervision of University of California Cooperative Extension. Volunteers are required to report to their Master Gardener coordinator about all planned activities prior to conducting the program.

Most of the volunteer work is conducted outside the UC Cooperative Extension Office; some projects involve interagency interaction with school gardening projects, parks and recreation departments, however, the list doesn't stop there. The Master Gardener program makes presentations to anyone in Yolo County.

To receive an application, when they are available (which is now) for the U.C. Master Gardener Training Class you can:

- Sign up on a list found at the Master Gardener info table at a local farmers market
- Visit <http://yolomg.ucanr.edu/> and the Master Gardener page
- Stop by the University of California Cooperative Extension Office, 70 Cottonwood Street, Woodland
- Call the Master Gardener phonenumber, 530-666-8737
- Send an email to me at [jmbaumbach@ucanr.edu](mailto:jmbaumbach@ucanr.edu)
- Call the program coordinator and chat about the application process, 707-389-0645. 🍅



## Fall Gardening Tips

*Peg Smith, UCCE Master Gardener, Yolo County*

Spring is the time of year when we traditionally think of a garden being replenished and rejuvenated. Actually, fall is the prime time to garden plan to have a strong spring showing. There are many attractive waterwise perennials, bareroots and seeds available at plant sales and nurseries at this time of year. By planting in the fall a plant's roots establish over the winter giving a stronger plant by the spring. The additional benefit to an established root system is the increase in the plant's ability to draw more water from the soil to survive the hardships of summer heat.

Fall is a 'tidying' time. Checking both fruiting and landscape trees and trimming very elongated, dead or crossing branches will limit storm damage in the winter. Take the time to collect old fallen fruit; manage dormant care tasks for fruit trees; clean out old vegetables and annuals and cover crop or plant a winter vegetable garden. Divide perennials. By careful fall husbandry of the garden potential diseases are reduced, soil is improved and there is an added array of plants to attract beneficial insects to the garden. The spring reward is a garden ready for adding annuals and summer vegetables

Fall is an ideal time to reconfigure the garden hardscape. If you like to DIY here's some tips:

- Develop an overall garden plan.
- Select one area to 'improve'. Don't try to do it all at once.
- Research and plan the steps to completion. Have a budget.
- If a task is beyond your capabilities – hire some help for that part of the job.
- If your lawn is struggling and you plan to replace it with a more waterwise perennial landscape the How to Remove Your Lawn [ucanr.edu/sites/YCMG/files/187332.pdf](http://ucanr.edu/sites/YCMG/files/187332.pdf) gives step by step directions.
- Visit the UCD Arboretum, Central Park Gardens, The Woodland Community College Demonstration Gardens and walk your neighborhood to see what grows and thrives in our climate.
- Have fun!

Don't give up on the vegetable garden! Yolo County winters allow for a year round vegetable garden. Check out our Master Gardener year round vegetable planting guide and choose your favorites to plant and enjoy the home grown produce through the holiday season. Vegetable Planting Guide <http://ceyolo.ucdavis.edu/files/53274.pdf>

Take a look at the Yolo County Master Gardener Free Publications for additional information on gardening topics. <http://ucanr.edu/sites/YCMG/MoreInfo>

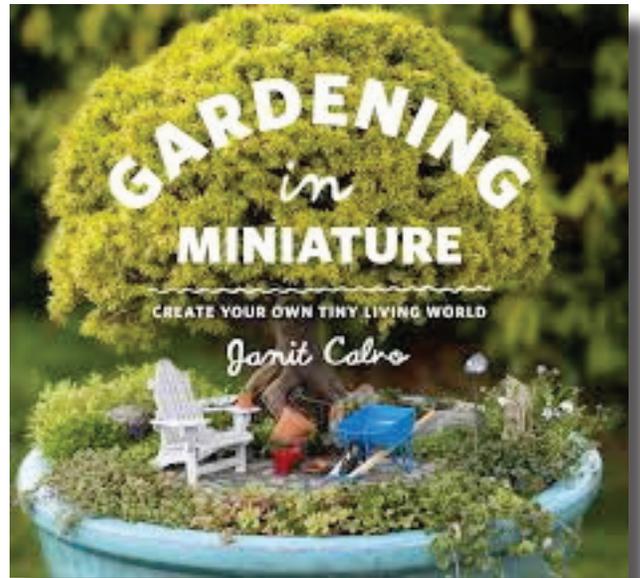
*Consider making some gifts from the garden for the holiday season. Force some bulbs indoors or make a garden from succulent trimmings. This was made with a mother-in-law's china and rocks from a father-in-law's collection. An inexpensive but meaningful gift. Favorite mugs without handles make good containers. Remember not to overwater.*



### Garden Books

If you are a garden ‘dreamer’ with little space take a look at “Gardening in Miniature” by Janit Calvo. It is a step by step guide to creating a miniaturized version of the acre garden of your dreams.

Don’t forget to keep a record of your gardening efforts. “The Gardeners Companion” (price \$18) produced by the UC Master Gardeners-Yolo County is specifically written for Yolo County and packed with information. It is available by visiting the UCCE-Yolo office at 70 Cottonwood Street, Woodland. Monday through Friday from 8AM -Noon and 1:30-5PM.



### Fall Cleanup

- Remove fallen fruits, vegetables, leaves, spent flowers, and weeds.
- Pinch back plants to allow tomatoes, melons, and squash enough time to mature before frost sets in.
- Remove unproductive plants.
- Take down squash, melon cucumber and tomato supports. Get them ready for planting peas and sweet peas in October.
- Clean garden supports and stakes with a diluted bleach solution before storing them for future use.
- Pick tomatoes when daytime temperatures no longer exceed 65° F. Wrap them in newspaper and let them ripen indoors.
- Maintain your compost pile by adding clean garden waste and leaves.
- Control earwigs, snails, and slugs.
- Apply liquid copper to citrus to prevent brown rot.
- Apply the first dormant spray to fruit trees in November. See: <http://homeorchard.ucanr.edu/calendars/>
- Apply the first round of liquid preventatives to nectarines, peaches, and apricots in November.

For Peach leaf curl – <http://ipm.ucanr.edu/PMG/PESTNOTES/pn7426.html> For Brown rot -<http://ipm.ucanr.edu/PMG/GARDEN/FRUIT/DISEASE/aprbrownrot.html>

For Shot hole -<http://ipm.ucanr.edu/PMG/GARDEN/FRUIT/DISEASE/shothole.html>

### Fertilize and Amend

- Fertilize and amend your garden soil. Add manure and compost to improve soil structure and fertility.
- Apply a layer of leaves, straw, or newspaper to your soil surface to reduce weeds next spring and improve soil structure.
- Amend your soil and add a complete fertilizer if you plant winter crops, flowers, bulbs, or seeds.

Consider planting a crop of green manure on any open ground to loosen the soil and add nitrogen before planting in the spring. <http://ceyolo.ucdavis.edu/files/53466.pdf>

### Lawn care

- Renovate a poorly performing lawn by de-thatching, aerating, fertilizing, and over-seeding it with either an annual or perennial rye or fescue mix, which will keep it green through the winter.
- Fertilize lawns in early fall with a pre-emergent and a complete fertilizer (one that contains nitrogen, phosphorus, and potassium).
- Fertilize in late fall with a slow-release complete fertilizer, such as one labeled “winterizer.”
- Adjust the watering cycle on your lawn. It will require less water in the fall and little or none in the

winter.

- Continue to mow weekly and check your sprinkler system. Be sure it is properly adjusted and that all the nozzles are working.
- Remove dead leaves from your lawn regularly to prevent your lawn from expiring from lack of sunlight or from contracting fungus infections.
- Fall is the best time to put in a new lawn with either seed or sod.

For complete lawn care see UC IPM Healthy Lawns at <http://www.ipm.ucdavis.edu/PMG/menu.turf.html>

### Annuals and Perennials

- Continue deadheading and removing unsightly leaves.
- Divide and transplant bulbs, tubers, and corms.
- If your oriental poppies, bearded iris, peonies, agapanthus, and daylilies are becoming less vigorous and more unattractive, fall is the season to divide and replant them.
- Share extra bulbs, corms, and tubers with a friend.
- Enjoy the fall color of perennials. Wait until spring to trim or cut them back.
- Evergreen perennials should not be cut back in the fall. These include rock cress, creeping sedum, creeping phlox, and hens and chicks.
- Roses should keep producing flowers into December, but do not fertilize after September. Deadhead as needed unless you prefer colorful rose hips to develop and provide winter interest.
- Plant fall flowers such as calendulas, chrysanthemums, bachelor buttons, dianthus, forget-me-nots, sweet peas, primroses, and violas. Many of these will over-winter and provide lush color in the spring.
- Spring-blooming perennials such as foxglove, columbine, salvia, and daylilies can be planted now. Combine these with daffodils, freesias, tulips, and other spring bulbs, which should be planted no later than the end of October.
- Fall is the best time to introduce perennials to your garden.
- Plant winter vegetables such as broccoli, lettuce, endive, parsley, garlic, and onion sets now.
- Take cuttings of your favorite annuals. Favorite choices are geraniums, coleus, begonias, and impatiens. Gradually move plants to shadier locations so they will adjust to the lower light levels when you move them indoors.

### Trees and Shrubs

- Fall is the best time to plant trees and shrubs.

Suggested Trees for Yolo County <http://ceyolo.ucdavis.edu/files/53031.pdf> Problem Trees for Yolo County <http://ucanr.edu/sites/YCMG/files/181041.pdf>

How to Plant Tree <http://ceyolo.edu/sites/files/53455.pdf>

Watering and Drought Care of Trees <http://ucanr.edu/sites/YCMG/217955.pdf>

The cooler air temperature and still-warm soil provide ideal conditions for new plant roots to take hold.

- For autumn colors of red, gold, or yellow, choose these trees: Chinese pistache (*Pistacia chinensis*), ginkgo (*Ginkgo biloba*), tupelo (*Nyssa sylvatica*), scarlet oak (*Quercus coccinea*), red oak (*Quercus rubra*), chanticleer pear (*Pyrus calleryana* 'Chanticleer'), or red maple (*Acer rubrum*).
- Plant drought-tolerant trees such as valley oak (*Quercus lobata*), blue oak (*Quercus douglasii*), or a Japanese pagoda tree (*Sophora japonica*). A new favorite is the Chinese Fringe Tree (*Chionanthus retusus*).
- Apply manure and compost to help your trees emerge from dormancy with lush leaves and flowers.
- Plant easy-care and drought-tolerant shrubs such as crape myrtle (*Lagerstroemia*), California lilac (*Ceanothus* hybrids), heavenly bamboo (*Nandina domestica*), tobira (*Pittosporum tobira*), and western redbud (*Cercis occidentalis*).
- Prune and shape trees in late fall.

**Garden Keeping**

- Sharpen spades, loppers, pruners, and your lawn mower blade. You can use a file or take your tools to a professional sharpener.
- Take your lawn mower to a professional for an annual tune-up.
- Clean, disinfect, and oil your tools, so they will be ready for pruning roses, trees, and shrubs from late fall to early spring.
- Keep birdbaths and feeders clean and full for migrating birds.
- Check out your local farmer’s market or pumpkin patch for a colorful selection of fall decorations, including pumpkins, gourds, dried corn, and fall flowers.
- Keep a journal. Record your watering cycle information, pruning, spraying, and planting information. Make a list of garden improvements and fun ideas.
- Collect seeds from your garden.
- Check out your favorite garden catalogs. It is time to think about ordering next spring’s seeds, bare root roses, and garden tools.

For more information on vegetables, ornamentals, fruit trees, and lawn care, visit <http://www.ipm.ucdavis.edu>.

**Garden Fun**

- Make a fall wreath and table decorations from dried or fresh garden cuttings. Use a hollowed-out pumpkin or gourd as the vase.
- Plant spring bulbs for a fresh look come March or April after we have a rainy winter.

**Fun Fall Events**

- Master Garden Public Education, Check out the free public workshops offered by the Yolo County Master Gardener Program. A detailed calendar is included in this newsletter. Please check the Yolo County Master Gardener website as dates and times may change.
- Sacramento Farm-To-Fork Festival 2017 September 23 (<http://www.farmtofork.com>):.
- Check for UC Davis Arboretum events (<http://arboretum.ucdavis.edu/calendar.aspx>):
- Fair Oaks Horticulture Center ([http://ucanr.edu/sites/sacmg/Plant\\_Clinics](http://ucanr.edu/sites/sacmg/Plant_Clinics)):
- Hoes Down Harvest Festival presented by Fully Belly Farm ([www.hoesdown.org](http://www.hoesdown.org)). 

*Questions about your garden?  
We’d love to help!*

**UCCE Master Gardener, Yolo County Hotline..... (530) 666-8737**

Our message centers will take your questions and information. Please leave your name, address, phone number and a description of your problem. A Master Gardener will research your problem and return your call.

**E-Mail..... mgyolo@ucdavis.edu**

**Drop In..... Tuesday & Friday, 9-11 a.m.  
70 Cottonwood St., Woodland**

**Web Site ..... <http://yolomg.ucanr.edu/>**

**Facebook..... UCCE Master Gardeners, Yolo County**



## UC MASTER GARDENERS - YOLO COUNTY PUBLIC WORKSHOP SCHEDULE

September – October 2017

Dates and times subject to change.

Please check at <http://yolomg.ucanr.edu/> for updates.

All workshops are free and open to the public.

Workshops are held in several different venues.

### DAVIS

Date	Time	Topic	Venue
Sunday, September 17	2:00 PM – 4:00 PM	It's Fall – Plant Now Dividing Perennials	Davis Library**
Saturday, September 30	9:30 AM – 11:00 AM	Ornamentals, Vegetables, Fruits, Perennials? What to Plant in Fall?	CPG*
Saturday, October 7	9:00 AM – 10:00 AM	A Forum: What Happened This Year in The Garden? Bring your questions to ask and stories to share.	Grace Garden***
Saturday, October 14	9:30 AM – 10:30 AM 11:00 AM – Noon	TBA TBA	CPG*
Sunday, October 15	2:00 PM – 4:00 PM	Master Gardener Open Forum	Davis Library**
Friday, October 20	3:00 PM – 5:00 PM	Ask a Master Gardener	Ace****
Sunday, October 22	2:00 PM – 4:00 PM	Year Round Kitchen Garden – Bare root planting, Seed Saving, Herbs and cool season vegetables	Davis Library**

\*CPG (Central Park Gardens) at the corner of 3rd and B Streets in Davis, CA 95616

\*\*Davis Library (Davis Branch of Yolo County Library), conference room, 315 E 14<sup>th</sup> Street, Davis 95616

\*\*\* Grace Garden 1620 Anderson Road, Davis, CA 95616. (At the back of the church parking lot.)

\*\*\*\* Ace 240 G Street Davis, 95616

### WOODLAND

Date	Time	Topic	Venue
Saturday, September 23	9:00 AM – 10:00 AM	Fall/Winter Vegetable Gardening	WCC*
Sunday, September 24	2:00 PM – 4:00 PM	UC Master Gardeners of Yolo County Open House Learn About the UC Master Gardener Program 2018 Master Gardener Training Information Gardening Items available for purchase	UCCE Office**
Saturday, September 30	9:00 AM – 10:00 AM	Extending Color in the California Native Garden	WCC*
Saturday, October 7	9:00 AM – 10:00 AM	Fall Planted Annuals for Spring Bling	WCC*
Saturday, October 14	9:00 AM - Noon	Plant Sale and Open House 9:00 – 10:00 AM Fall Floral Arrangements 10:15 – 11:15 AM Bugs That Bug You in The Garden	WCC*
Saturday, October 21	9:00 AM - Noon	Plant Sale and Open House 9:00 – 10:30 AM Waterwise Gardening	WCC*

\*WCC (Woodland Community College) 2300 E. Gibson Road, Woodland, 95776

\*\* UCCE, (University of California Cooperative Extension) 70 Cottonwood Street, Woodland, 95695

### WEST SACRAMENTO

Date	Time	Topic	Venue
Tuesday, September 26	10:00 AM – 12:00 PM	How to Grow Flowering Bulbs	West Sacramento*

\* West Sacramento Community Center, 1075 West Capitol Avenue, West Sacramento, CA 95691





U.C. Cooperative Extension  
UCCE Master Gardeners of Yolo County  
70 Cottonwood Street  
Woodland, CA 95695

## *The Yolo Gardener - Fall 2017*

Send a Letter  
to an Editor!

email: [mgyolo@ucdavis.edu](mailto:mgyolo@ucdavis.edu)

Please put: *Yolo Gardener* in the subject line

or

UCCE Yolo County  
70 Cottonwood St.  
Woodland, CA 95695

### STAFF

Jim Fowler, Managing Editor  
Jennifer Baumbach, Editor  
Karen Wiesner, Layout

### WRITERS

Jennifer Baumbach, Jan Bower,  
Laura Cameron, Carolle Juliano,  
Michael Kluk, Willa Bowman Pettygrove,  
Peg Smith, Cathy Sutton, Mary Yaussy.

### PRODUCTION

UCCE Master Gardeners, Yolo County



*It is the policy of the University of California (UC) and the UC Division of Agriculture & Natural Resources not to engage in discrimination against or harassment of any person in any of its programs or activities (Complete nondiscrimination policy statement can be found at <http://ucanr.edu/sites/anrstaff/files/215244.pdf> )*

*Inquiries regarding ANR's nondiscrimination policies may be directed to John I. Sims, Affirmative Action Compliance Officer/Title IX Officer, University of California, Agriculture and Natural Resources, 2801 Second Street, Davis, CA 95618, (530) 750-1397.*

This newsletter is a quarterly publication of the University of California Master Gardener Program of Yolo County and is freely distributed to County residents. It is available through the internet for free download:

<http://yolomg.ucanr.edu/>

Jennifer Baumbach, UCCE Master Gardener Program  
Coordinator Yolo and Solano Counties