



THE YOLO GARDENER

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Common Tomato Problems

Karen Wiesner, Yolo County Master Gardener

The interested gardener will find volumes written describing dozens of tomato problems. Tomatoes are susceptible to a variety of diseases, pest attacks, and abiotic disorders. A brief visit to the UC IPM website (www.ipm.ucdavis.edu) illuminates the myriad ways in which tomato cultivation can go awry and produce disappointing results! For our purposes, however, I have endeavored to document only a few of the most common problems . . . those that are, unfortunately, so familiar to Yolo County gardeners.

Verticillium wilt is a soil-borne fungal disease that is favored by cool air and soil temperatures. It infects the plant's vascular system and often first shows up as yellowing between major leaf veins. Symptoms usually appear first on one side of the plant. As the fungus moves through the plant, leaves and stems wither and ultimately turn brown and die. Older and lower leaves bear the brunt of the fungal attack, and the damage to these leaves heightens the risk of sun-related fruit damage. Though the disease rarely kills a tomato plant outright, it reduces the plant's vigor and yield to such an extent that it remains a formidable detractor to tomato cultivation. Crop rotation and sanitation procedures provide some remedial assistance, but selecting disease-resistant varieties represents the best plan of attack. To determine if a tomato variety has resistance to verticillium wilt, look for initials on the label after the variety name. If "V" is one of the initials listed (usually the first one), then the variety is resistant to verticillium wilt.

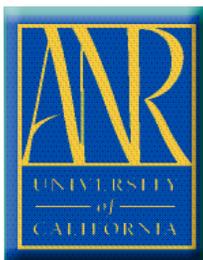


Leaves and stems affected by verticillium wilt

One of the most common insect pests of tomatoes is the easily recognizable tomato hornworm, which is named for the distinct, hornlike structure located at its hind end. Hornworms can chew entire leaves and small

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Hornworm

stems and may also attack some of the green fruit. Handpicking the worms remains the most effective means of pest management, although several parasites and predators aid the home gardener in the control of this pest.

Abiotic disorders can also cause problems. Although symptoms can be deceptively similar to those caused by diseases or insects, abiotic disorders are caused by growing conditions or genetic factors. Symptoms can include slow growth, lack of developed fruit, compromised flavor, or damaged and irregular foliage. Some abiotic disorders that affect tomatoes include blossom drop, nutrient deficiencies, leaf roll, and blossom end rot.

Blossom drop, and the failure to set fruit, can result from any of the following conditions: low nighttime temperatures (below 55 degrees) or high daytime temperatures (above 90 degrees); excessive shade; excessive nitrogen fertilizer; or premature spring planting. Alternatively, it could be that the selected variety simply is not well adapted to our location. Planting in full sun, maintaining evenly moist soil, and avoiding excessive nitrogen fertilization are a few ways to address the problem. Eliminating damaging insects and controlling diseases also can help, because healthy plants produce more flowers increasing the likelihood of fruit set. To enhance pollination and help fruit set, the gardener can also tap on the blossom stems a few times a week during the middle of the day. Finally, although a hormone spray can be effective if the problem is low temperatures, it will be of no assistance during unusually high temperatures.

Iron deficiency most often occurs in alkaline soils such as those in this area or where drainage is suboptimal. An iron-deficient tomato plant has distinctly green veins and yellow leaf tissue. Dead spots may develop between veins or at the leaf tips. Steps toward resolving the deficiency include improving drainage, amending the soil to adjust pH, and applying chelated forms of iron.

Leaves on a plant with tomato leaf roll turn stiff, brittle, and leathery and roll upward. Wet spring conditions and intense light often bring on this disorder. As temperatures warm and the soil dries out, normal growth resumes, and there is no resulting damage to subsequent fruit. Choosing less susceptible tomato varieties, keeping the soil moisture consistent, and partially shading the plant during intense sunlight are a few ways to mitigate the appearance of leaf roll. Interestingly, staked tomatoes are most likely to exhibit this disorder.



Iron Deficiency: Note the green veins surrounded by yellow leaf tissue



Blossom End Rot: Dark, sunken decay develops on the blossom end of the tomato

Blossom end rot results from a calcium deficiency in the fruit and water stress in the plant. It shows up on the bottom of a tomato as a sunken dry rot. The problem is aggravated by a high salt content in the soil and fluctuating soil moisture and occurs more frequently on plants grown in sandy soils. The disorder affects both green and ripe fruit. In green fruit, it appears as a small, light brown spot at the blossom end. This spot enlarges and dark-

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ens as the fruit matures and eventually becomes sunken and leathery in texture. Secondary pathogens can enter the fruit, causing it to decay. The most effective means of controlling blossom end rot is to keep the root zone from becoming either dried out or saturated. Amending the planting area with organic matter can improve water retention and constitutes a helpful amendment for sandy soils.

An Ounce of Prevention: In an effort to avoid altogether, or at least ameliorate, undesirable outcomes

such as those mentioned, a few general guidelines are worth noting. Do not underestimate the importance of planting your tomatoes at the proper time, as recommended for our specific geographic location. Adhere to irrigation and fertilization requirements, and rather than dealing with the consequences of these problems, avoid them in the first place by preselecting disease-resistant varieties that are well-adapted to our local area. Scrutinize plant labels to find those with documented disease-resistance. It will be well worth the effort! ✨

Pocket Gophers?

Barbara Ohlendorf, Yolo County Master Gardener

(adapted from UC IPM Pest Note: Pocket Gophers, Publication 7433)



Figure 1: Top view of a pocket gopher mound. Note the crescent-shaped mound surrounding the plug of soil covering the entrance.



Figure 2: Top view of a mole mound

Pocket gophers are not pests that many people actually see. What usually catches one's eye are mounds of dirt that they push up onto the landscape, so it is helpful to be able to recognize a pocket gopher mound in order to distinguish it from a mole's mound. When viewed from above, the pocket gopher mound appears crescent- or horseshoe-shaped (Figure 1). The hole into the tunnel is usually next to the soil mound, and it is plugged with soil. The mole mound, on the other hand, is circular when viewed from above and more volcano-shaped in profile (Figure 2). Unlike gophers, moles commonly burrow just beneath the surface, so you'll see a raised ridge of soil leading to the mound.

Pocket gophers feed on a wide variety of plants, attacking garden crops, ornamental plants, vines, shrubs, and trees. Using their sense of smell to locate food, they frequently attack the underground portions of plants that they encounter when digging. Occasionally they may venture out above ground but rarely more than a foot or so from their burrow opening. Such burrow openings are called "feed holes" and instead of being adjacent to a dirt mound, they usually have clipped vegetation around the hole.

In addition to plant feeding, gophers also gnaw and damage plastic water lines and lawn sprinkler systems. Their tunnels can divert and carry off irrigation water, leading to soil erosion. Mounds on lawns look unsightly as well as interfere with mowing equipment.

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Gophers live alone in their burrows except when females are caring for their young or during breeding season. Burrows are about 2.5 to 3.5 inches in diameter and consist of a nest and food storage chamber, which can be as deep as 6 feet, and feeding burrows that are 6 to 12 inches deep and lead to areas where preferred vegetation is growing. Short, sloping lateral tunnels connect the main burrow system to the surface. Gophers create these lateral tunnels when constructing the main tunnel in order to push the excavated dirt to the surface. Openings to the burrow are sealed with earthen plugs.

Control

Pocket gophers are classified as nongame mammals by the California Fish and Game Code, which means that if they are injuring plants or other property on your land, you can control them at any time and in any legal manner. That said, however, it takes a bit of work to control a gopher population. If you only have a single gopher burrow, you're lucky. The sooner you detect the presence of gophers and take control measures, the better. It is easier and cheaper to control one or two gophers than wait until the population builds up to the point where damage becomes a major problem.

The most effective methods of controlling gophers are trapping or baiting. In order to do either, you must

locate the main burrow, which requires a gopher probe. Gopher probes can be purchased or made from a pipe and metal rod.

Once the main burrow is located, if you are baiting, you will need to use the probe to enlarge the hole enough so bait can be placed in the burrow. If you are trapping, you need to excavate enough soil in order to place the traps in the burrow. It is important that traps be placed correctly in order to increase your chances at catching the gopher. A note of caution: baiting and trapping can be hazardous to pets and children. Be sure to follow all label directions and written precautions to minimize these hazards.

For detailed "how to" information on probing, trapping, and baiting, as well as viewing a short video on trap placement, view the online version of the UC IPM Pest Note at: <http://www.ipm.ucdavis.edu/PMG/PEST-NOTES/pn7433.html>.

Once control has been achieved, it is really important to keep monitoring the area to make sure it is not reinvaded. If your property is adjacent to wild lands or other uncultivated areas, the chance of reinvansion is high, so make it a habit to check your land regularly. ✨

First Aid for Gardeners

Jan Bower, Yolo County Master Gardener

Gardening is an enjoyable and satisfying hobby or vocation, but it can be hazardous and sometimes even downright dangerous. For example, climbing on a ten-foot ladder to reach the top of your bamboo with the clipping shears is not a smart thing to do unless the ladder is well-secured or stabilized. Also, getting rid of a wasp's nest under your eaves by poking and swatting it down with a long-handled broom may be better left to a professional or some of the new available wasp traps. How many of you have gotten scratches from the thorns on roses, accidental nicks from pruning your wisteria, or a bruise from your power mower? Past injuries for myself while gardening include blisters from shoveling compost and mulch, a rash from pruning Oleander, puncture wounds from hardy cacti, and various cuts and scrapes.

Although you can't foresee every injury that might occur while gardening, you can take preventative measures: have a first aid kit close at hand; wear sunscreen (at least 30 SPF), sunglasses, a wide-brimmed hat, and a long-sleeved shirt and pants; use work or garden gloves; bend your knees when lifting; and have plenty of cold drinking water available. In addition, keep your tetanus immunization up-to-date,

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just in case you poke yourself with a dirty hand cultivator, and your medicine cabinet well stocked. Every gardener's medicine cabinet should contain antibiotic cream, calamine lotion, hydrogen peroxide, and isopropyl alcohol. These are the basics.

Below is a list of some of the more common garden mishaps and some simple remedies. However, if you have trouble breathing, dizziness, headache, nausea, fainting, chills, fever, swelling, or other serious symptoms, consult a physician. The Consumer Product Safety Commission reports that hospital emergency rooms treat more than 400,000 outdoor garden-tool-related accidents each year.

Mishap	Remedy
Cuts	Apply pressure to stop or slow down the bleeding; determine if stitches are needed; clean, apply an antibiotic, and bandage.
Bruise	Take a cold compress or ice pack to the affected area; take a pain killer (e.g., ibuprofen); wait and the reddish color will fade.
Sunburn	Apply a cold compress or towel; use anti-burn ointment, cream, or lotion.
Sunstroke	Find shade and drink as much water as possible; lower the temperature of the body with a fan or a wet towel or sheet.
Insect sting	Check to see if the stinger is embedded in your skin; remove it by scraping the area with a rub-on-stick or similar tool; put an ice pack on the sting to reduce swelling; wash the affected area and apply an antibiotic ointment.
Insect bite	Wash thoroughly with soap and cold water; apply calamine lotion or other antibiotic ointment
Blisters	Leave blisters to dry; cover them, but don't pop them, as they could get infected.
Rash or itch	Stay away from poison ivy and skin-irritating plants; use cold water and an anti-itch lotion (e.g., calamine); wash your garden clothes.
Allergic reaction	See a doctor for an analysis and prescription drug; stay away from allergy-causing flora and fauna and air-polluted situations.
Muscle soreness and back pain	Take a break from physical activity and rest for a few days; use a soothing lotion on the affected area (e.g., Bengay)
Surface wound or puncture	Use a cleansing agent (e.g., hydrogen peroxide) and cover with a bandage or a clean gauze dressing.

For the do-it-yourself person, there are many home remedies for garden accidents. For a bee sting, scrape out the stinger with a credit card and apply toothpaste to the sting to help dry out the venom. To relieve swelling, redness, and itch from insect bites, make a paste of baking soda and water and apply it to the bite. For a wasp bite, use onion or vinegar. For mosquito bites and sunburn, use aloe from the Aloe Vera plant. Frozen peas or other vegetables make a great ice pack. Clean handkerchiefs, sheets, and socks make good emergency bandages. But above all, a degree of caution and common sense should be your guide in gardening. And do not hesitate to seek professional medical assistance if first aid fails to treat your problem. *

Gardener's First Aid Kit



- Assorted bandages
- Gauze pads
- Roll of adhesive tape
- Scissors
- Cotton balls or swabs
- Antibiotic cream, e.g., polysporin
- Anti-itch ointment, e.g., calamine lotion
- Cleanser, e.g., hydrogen peroxide
- Antibacterial ointment, e.g., iodine or mercurochrome
- Emergency phone numbers, e.g., doctor and hospital

Changing One Garden Practice at a Time

Gwen Oliver, Yolo County Master Gardener

“Sustainability” is a word that has been used extensively during the past couple of decades, but what does it mean? Is sustainability environmental stewardship? Is it reducing your carbon footprint? Does it include cost-benefit analysis? Is it the carrying capacity of the earth? Is it sustainable development of cities and counties? When it comes to our role as gardeners, how do we impact sustainability?

The definition found on the Master Gardener Website (http://ucanr.org/sites/gardenweb/General/_em_How_do_I_practice_sustainable_gardening__em_/) is as follows: to “sustain” means to keep going or continue, and “sustainable” is the ability to carry on an activity indefinitely with minimal impact on the environment. A great place to examine the concept of sustainability is in our gardens and in the act of gardening, because one can see the results of sustainable actions in a relatively short period of time.

If you read a bit further on the Master Gardener Website, eight areas are mentioned that can be impacted by the sustainability of our gardening methods: 1) water availability, 2) off-site water quality, 3) energy use, 4) landfill space, 5) fire-safe landscaping, 6) soil degradation, 7) the spread of invasive plant species, and 8) protection and enhancement of wildlife habitat. Taking all of these items into consideration when examining our gardening practices is a tall order that can easily become overwhelming. However, if we pause and think about specific practices, it becomes clear very quickly that they are interrelated to the broader picture of the local environment.

For example, one very obvious garden practice is the use of garden chemicals--fertilizers, herbicides, pesticides, and fungicides--any of which can be very helpful in the garden when used properly. It is very important when using garden chemicals to be sure you are using the right chemical for the problem at hand.

We all enjoy picture-perfect flowers and plants, but the question becomes, “At what cost to the environment?” Some problems take care of themselves without the use of chemicals if we exercise a little patience and give nature some time. Pesticides may be applied, but realize that when using a pesticide not only are the harmful pests being eradicated but so are the helpful ones.

When applying fertilizers, be careful not to put on too much. The excess usually gets swept or washed into the gutter or can seep through the soil into the water table. Both outcomes affect water quality. Now do a little arithmetic and simply multiply these actions by the number neighbors on your street, and it should become clear that a little over-spray quickly multiplies into water quality issues.

So how do we become sustainable gardeners? Easy! We do this one garden practice at a time. Using the example above, one should properly apply garden chemicals being careful not to apply more than is necessary to do the job. Clean up and dispose of any excess properly. Focus on one practice for the next four to six months until the new practice becomes a routine gardening chore. Pick another procedure such as composting or adjusting automatic sprinklers (both for energy use and for over watering) and concentrate your efforts to make this part of the garden routine. Pay attention to what you plant in your garden so as not to introduce problem plants also known as invasive species.

Our garden habits didn't happen all at once, so slow down, decide on the obvious areas of change, and then select the one that interests you the most and/or is the easiest. Changing our gardening behaviors requires effort and commitment, and with time each of us becomes a more sustainable gardener, that is, one who continues to carry on an activity indefinitely with minimal impact on the environment. Change comes with success, and one change at a time is just fine. ✨



Searching for Yolo County's Favorite Tomatoes

Steve Radosevich, Yolo County Master Gardener

Asking gardeners to describe their favorite tomato is like asking children to describe their favorite dessert. You get a lot of bright-eyed, enthusiastic responses.



"I like a nice big juicy slicer like Beefsteak for sandwiches"

"Picking my first Sun Gold and popping it into my mouth is a real summer treat"

"The first time I sliced into a Gary Ibsen and saw that glistening orange ... wow!"

"Since I started growing Abe Lincoln, it's my favorite."

"I really like the fresh tart taste of Green Zebra."

"You can't beat Celebrity for taste and reliability."

"The intense flavor of dried Principe Borghese tomatoes can be enjoyed all winter."

"People drool when they taste my fresh salsa made with Early Girl."

For the past five years, Yolo county Master Gardeners have been helping local tomato lovers experience the flavors and grow some of the variety favorites mentioned above. The goal of the Tomato Project is to identify the variety favorites from the tasting, make sure they grow well and produce good fruit in Yolo County, and make seedlings of the favorites available to local gardeners.

First, a free public tasting is conducted at the Woodland Tomato Festival in August. People can sample up to twenty-five varieties of tomatoes grown by both farmers market growers and Master Gardeners, and are asked to score each variety. Scores are tabulated and the results are shared with the growers to let them know which varieties are preferred. In 2010 the five top tasting standard size tomatoes were *Black Krim*, *Hawaiian Pineapple*, *Golden Sunray*, *Gary Ibsen*, and *Radiator Charlie's Mortgage Lifter*. The top five cherry type tomatoes were *Sweet 100*, *Sun Gold*, *Red* and *Yellow Jelly Bean*, *Gardener's Delight*, and *Chocolate Cherry*.

Then in February 2011, Master Gardeners started seeds of all the top tasting varieties over the past several years, and sold seedlings at their plant sale at Woodland Community College in April. They also add several new varieties based on recommendations of local gardeners and tomato enthusiasts. Some of the new varieties this year included *Hillbilly*, *Tumbler*, *Carmello*, *Burbank*, *Tangella*, *Yellow Brandywine*, *Legend*, *Pink Berkley Tie die* and *Martino's Roma*. Thirty-eight varieties of heirloom and hybrid tomato plants were available at the April plant sale.



Master Gardener Tomato tasting at the Woodland Tomato Festival



Master Gardeners Robert Dragoon, Linda Parsons and Gail Jankowski with new tomato seedlings.

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Finally, to find out which of these tomatoes grow well in Yolo County and produce a good crop, Master Gardeners plant out all the varieties at their demonstration garden at Woodland Community College. Throughout the growing season observations are recorded on plant vigor, health, and productivity - and all this information is used to help select seedlings for next year.

Still the most important and fun part of this ongoing effort to find Yolo County's favorite tomatoes is the free public tasting at the Woodland Tomato Festival which this year will be held on Saturday, August 13th at the Woodland Farmers Market located in Freeman Park on Main St. *



The Lunatic Gardener's Guide to Moon Gardens

David Studer, Yolo County Master Gardener

What makes the lunatic gardener tick? La Luna, of course—the moon. To those who are equal parts gardener and moon lover, one of the best times in the garden is at the full moonrise. With the right choice of vegetation, the garden's enchanting glow provides opportunities for quiet contemplation and relaxation.

Creating a segregated moon garden is not necessary, however, a moon garden's location should invite as much moonlight to flood into the garden as possible—moonlight is about 400,000 times fainter than sunlight. Trees and bushes that filter sunlight into the garden during the day will also block moonlight. Brighter/whiter flowers and vegetation reflect moonlight more effectively and are more visible to the human eye. Adding white flowers and vegetation into an existing garden that already includes other colored vegetation stretches the enjoyment time into the moonlit night. Artists use the term “pop” to describe the effect of the contrast when white flower stand out against the darker background vegetation.

Don't expect to see color by moonlight. The moon garden is a basic black and white landscape. To increase interest in a moon garden, use plants with white or light colored foliage such as lamb's ears *Stachys byzantine*, a drought-tolerant ground cover with hairy white gray foliage or white varieties of roses, iris, lilies, gladiolus, daffodils, and narcissus to brighten the garden in moonlight. Annuals such as alyssum and petunias will also work. A couple of California native plants that add interest are deer grass, *muhlenbergia rigens*—a handsome four foot tall and wide bunch grass with gray green to straw colored flower spikes and California buckeye, *Aesculus californica*—with smooth, white to gray bark and white, fragrant flowers in showy spike-like clusters.

Arboretum All-Stars for a Moon-viewing Garden		
Latin Name:	Common Name:	Type:
* <i>Cerastium tomentosum</i>	Snow-in-summer	Groundcover
<i>Chionanthus retusus</i>	Chinese fringe	Tree
* <i>Crinodendron patagua</i>	Chilean lily-of-the-valley	Tree
* <i>Erigeron karvinskianus</i>	Santa Barbara daisy	Perennial
<i>Eriogonum giganteum</i>	Saint Catherine's lace	Shrub
* Planted in the Carolee Shields White Flower Garden and Gazebo		

The U. C. Davis Arboretum's Carolee Shields White Flower Garden and Gazebo is a theme garden based on medieval moon-viewing gardens of India and Japan. The Garden is located by the western end of the Arboretum near the Vet Med Center and the Arboretum Teaching Nursery.

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Bright moon,
welcome to my hut--
such as it is
-Issa

The Japanese celebrate the full moon in a ceremony called Otsukimi—or “Moon-viewing.” This practice dates back to the Jomon period which ended about 300 BCE. Formal Moon-viewing parties began during the Heian period—between 700-1100 BCE. The Japanese eat moon-like dumplings made from rice dough, write poetry, and view the mid-August full moon.

Under this bright moon
I sit like an old Buddha
knees spread wide

-Issa

Finally, don't forget to include yourself in the garden. Be sure to locate your moon viewing garden where you can see the moonlight reflected from the flowers and vegetation. Put a bench or seat in or near the garden or put the garden near a patio from where you can enjoy the view.

Enjoying the moon in your garden is as easy as pouring yourself your favorite beverage, relaxing, and allowing the cares of the day to fade into the moonlight. The Lunatic Gardener likes three fingers of good single-malt scotch, a fine cigar, and listening to a moon-oriented music such as *Fly Me to the Moon*, *Blue Moon*, *Moon River*, *Moon over Parma*, *Moondance*, *Harvest Moon*, etc. Enjoy and happy gardening! ✨

From the Farmer's Almanac

From the Farmer's Almanac			
Blue Moon.	Full Moons		
	<p>There are normally three full moons in a season—one each month. The third full moon of the season becomes a “blue moon” when four full moons happen to occur during the same season.</p> <p>The second full moon in a calendar month can be mistakenly called the “blue moon” due to an interpretation error made in 1946 that was discovered in 1999. Go figure!</p>	<p>Native American tribes gave each full moon its own name. These names were most prevalent in the Algonquin Nation but other tribes and areas had similar naming practices.</p>	
	Month	Name	
	January	Wolf Moon	Named for the hungry howling wolves in January.
	February	Snow Moon	Heaviest snowfall usually occurs in February.
	March	Worm Moon	Represents the appearance of earthworms and their castings in the thawing spring ground.
	April	Pink Moon	Named for the herb Moss pink, <i>Phlox subulata</i> , or Moss phlox
	May	Flower Moon	Reflects the abundance of May flowers; also called the corn-planting moon.
	June	Strawberry Moon	Could this be any more obvious?
<p>Planting by the Moon</p> <p>Common folklore stipulates we plant above-ground crops during the waxing Moon (new to full) and below-ground crops during the waning Moon (from the day after the full moon to the day before the next new moon). Plant during the daytime—planting at night is optional!</p>	July	Buck Moon	New antlers push out of the Buck's head during this month.
	August	Sturgeon Moon	This one's for the fisherpersons amongst us. Fishing for sturgeon is common during August. This is also when moon viewing parties are common in Japan.
	September	Corn Moon	Often called the Harvest Moon depending on the year (see Harvest Moon at left). Indicates the corn harvest.
<p>Harvest Moon</p> <p>The Harvest moon is always the closest full moon to the Autumn equinox. Two out of three years this moon occurs in September. The third year it occurs in October.</p>	October	Hunter's Moon	Hunting season.
	November	Beaver Moon	Beavers actively preparing for Winter—good time to set traps for furs.
	December	Cold Moon or Long Nights Moon	Long cold nights. Frost adds an extra sparkle to the moon garden.

A Study in Contrasts and Similarities

Peg Smith, Yolo County Master Gardener

Over the years visiting my family has always held a large component of time involving the garden, either working in or visiting them. Having lived in England, Australia, and the U.S., I find each garden I leave or grow seems to be a blend of favorite plants from each of my “homes”. What grows in one climate may not grow in the other although over time I have noticed a significant blurring of the plantings where California and Australian natives quite frequently are showcased in an English Garden, and vegetables such as eggplant and peppers, once a rarity, are more common.



Vegetable gardening in England is focused on the spring through summer season similar to the north or northeast of the U.S. Winter is the time to use sheep manure or compost to prepare for the spring and a shorter, intensive time of vegetable production. In Yolo County winter is the time to concentrate on growing the brassicas such as cabbage, cauliflower, and broccoli, and peas, lettuce, beets, and carrots. In an English garden one sees cabbage, beets and carrots next to corn or tomatoes and mixed in with zucchini, peppers and eggplant. Growing tomato or cucumber is a challenge many gardens feature small greenhouses so that these warmer climate vegetables can survive and produce. Garden walls that absorb the heat of the day provide micro-climates in which the more cold sensitive vegetables and ornamentals can be grown. Lettuce is grown throughout the summer without bolting (going to seed). The heat of the Central Valley

means that our lettuce production is concentrated in fall, winter, and spring.

Weeds and the job of weeding is universal. The same attitude to weeds, pull them when young, works no matter the country or weed. Columbine and dandelions are prolific in England. A weed known as “creeping bedstraw” that has become more common in Yolo county over the last ten years is known as “goose grass” here locally in Lincolnshire, England. From a large fibrous root mat it produces a very fine main stem with large masses of side stems. The stems have many hairs that can be irritating to the skin. The flower is white and as it matures produces multiple seed burrs that catch in clothing and animal fur. Pulling bedstraw here in England is complicated by the many stinging nettles that always seem to grow with the creeping bedstraw.

The classic English garden has a strong framework of traditional elements that can be seen in both the cottage garden or the estate garden. Garden spaces are defined with hard structures of wall, trellis or building. Trees and vines give vertical appeal. Perennial borders connect garden spaces together and the classic English lawn allows easy viewing and transition through the garden.

Hedges, walls, fences and buildings define garden spaces and protect from the ever present breeze and wind creating



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micro-climates of protection. This allows taller plantings such as delphiniums and peonies to thrive. Garden “rooms” are often enclosed by hedge or trellised vine creating a seating place. Hedges of beech, yew, cedar, or hawthorn are usually trimmed into shape. Rugosa (rose) gives a more freeform hedge.

Perennial borders are the focal point of an English garden often combining native and non native shrubs, bulbs, and flowers. Many of the typical plantings are familiar to Yolo county gardens. Coral Bells with foliage in every hue, columbine in many colors, geraniums trailing and upright both variegated and non variegated. Marigolds and forget-me-nots combine with more traditional flowers such as delphinium, lupine, peonies, iris, and pansies. Lavender is used extensively in borders and is often mixed with yarrow, poppies, allium, and alyssum. A variety of shrubs are used to add height and seasonal color to the perennial border including flowering quince, cypress, holly, berberis, lilac, and ceanothus a familiar California native. Perennial borders are often against the house, garden wall or outbuilding and have for vertical interest a rambling rose, clematis, wisteria, or Virginia creeper trained up the structure. The growing and flowering season for an English perennial bed is more compact than a Yolo county garden because of the harsher winters but the concept of flowering permanent perennial borders is easily translated to the central valley climate when the season, water needs, sun or shade requirements for the plants selected are considered. Many of our California natives can be used to develop a perennial bed.

A lawn, neatly mowed and edges trimmed, is more easily accomplished in the English climate. Rain is frequent and fairly evenly distributed throughout the year. Gardens and lawns rarely use any additional water even in the summer. Average annual rainfall for the east coast of England is about 20 inches which is similar to the average rainfall for Davis but Yolo County rain is concentrated between October and April with a dry summer. Average July temperatures in Davis for July are 92°F. Average temperatures for England in July are 72°F. With our hot summers lawns require regular additional water. An attractive way to combine an English style perennial garden with the limitations of the Yolo County climate is to reduce the size of the lawn, use native grasses or plant the low water varieties of grasses such as UC Verde Buffalo.



When visiting the nurseries in England, I found it clear that some native Californian shrubs and flowers have become common place in an English garden. It felt like meeting an old friend each time I saw a Californian ceanothus blooming next to a English lilac. There are many ways of designing a garden from only native species to exotic plants that require a great deal of pampering to survive in a foreign environment. The framework of an English garden combining vegetables, perennials, shrubs’ trees, vines, and hard structures provides a skeleton for design that can be adapted to any region with consideration of the climate and local conditions. ✱

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Finding “Growing Points” to Support Success in Community Gardening

Margaret Pettygrove, Tillamook County Master Gardener and Willa Bowman Pettygrove, Yolo County Master Gardener

Note from second author: After years of watching their mom (with varying success) garden in Davis Community Gardens, both of my daughters have become community garden advocates too. Now Margaret has “kicked it up a notch” by doing a research project to identify the constraints, challenges, and supports crucial to success or failure of community gardens.

Urban agriculture and community gardening are widely promoted to improve food security and open space, and to build social capital in urban areas. Cities are beginning to recognize the value of urban agriculture and support community gardens through policy initiatives. De-industrialized rust belt cities like Flint, Michigan, and Cleveland, Ohio have recently considered revising zoning codes to incorporate provisions for urban agriculture. This contrasts with suburban cities in the West, such as Davis and West Sacramento, where community gardens are promoted as publicly owned park-like amenities that support community diversity and self-help efforts among residents.

Community garden advocates in Yolo County have much to learn about both the values and challenges of gaining local support and approval for garden development. Margaret surveyed community garden efforts in Milwaukee, Wisconsin to learn more about these challenges and barriers. She followed on the thinking of other scholars, who have seen the ways urban community gardens are contested spaces in which broader political, social, and cultural conflicts are enacted. She focused on gardens in one Milwaukee neighborhood, primarily residential and comprised predominantly of racially diverse low-income residents. Its rich history of community organizing culminated in 2007 in a collaborative neighborhood planning process that identified food security, health, and environment as high priority issues for the neighborhood. There are six community gardens, five of which have been built since 2006. The City of Milwaukee grants a land use permit or lease to residents to legally garden on the lots for either 6 months or 3 years.



Resource scarcity is one of the primary constraints on both potential and existing gardens, as resources for community-organized projects are limited. Milwaukee community gardens built on vacant, city-owned lots require financial resources for land and water use permits (which must be renewed annually), raised bed construction materials, and clean soil (which the city requires as mitigation against potentially contaminated soil, because most of these are sites of former houses). All of the gardens have succeeded in raising donations to cover costs, but the dependence on donations means that community garden development is limited by resource availability.

Volunteer labor is another important resource because of the time-intensive nature of building and maintaining gardens. Sustaining resident volunteer participation is difficult, particularly as many residents are elderly or employed. Once gardens are built, residents are entirely responsible for day-to-day maintenance. The emphasis on donations and volunteerism to sustain community gardens may unfairly burden resource-poor grassroots community garden groups.

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Because of dependence on volunteers, the need for **organizational capacity** is a significant stress on the community gardens Margaret studied. As one community garden organizer explained, “Groups must do a lot of community organizing before they ever start the garden.” Residents must organize to plan, apply for the necessary city land use permits, recruit volunteers, raise funds, and coordinate ongoing garden work.

Other significant constraints on urban community gardens derive from **local government policies**. Even where vacant lots abound, the City of Milwaukee prioritizes housing and commercial land uses and permits community gardens on vacant public lots for interim use only. The city requires community groups to apply for permits to build gardens on vacant, city-owned lots and to obtain water from fire hydrants. The city grants maximum 3-year lease tenure to community garden groups and is generally reluctant to grant long-term tenure or to sell land even to groups with financial means.

The city typically requires a six-month trial period before granting 3-year leases to community gardens. The seasonal six-month permit is renewed annually and can be denied renewal at any time if the city decides it wants to use the land for other purposes. This short-time frame makes it harder for a group to demonstrate the quality of the garden and convince the city of the legitimacy of longer land tenure.

Neighborhood community groups rely on network connections to acquire material resources for garden development. Some groups have acquired small monetary grants, while others cobble together resources from in-kind donations. In many cases, this includes donated volunteer labor or consulting from nonprofit organizations.

Because neighborhood community gardens are developed by volunteer citizen groups, they are amenable to citizen control and are able to serve various social and community-building functions. They provide opportunities for people to engage on their own terms and to take at least partial ownership in local space.

However, reliance on volunteer labor may constrain the development and survival of community gardens and may reproduce unequal relations on the basis of class, race, or individual ability. Without citizen involvement and leadership, community gardens do not develop or thrive. Groups that are unable to recruit skilled volunteers are less likely to maintain successful community gardens.

Lessons learned: Although at first glance the community gardens in Milwaukee and in Yolo County have little in common, the city gardeners could teach their country cousins many important lessons:

- Gaining control of a resource such as land, even on a temporary basis, is a complex social, economic, and political process. Land tenure, even measured in years or decades, is a precious resource.
- The end users of a community garden may have, or may choose to commit, little more than their own time and energy. Public and nonprofit agencies may help with the organizing, but they should be realistic about what this may involve, and how long it will take. Skilled volunteers can play an important role.
- Advocates for a garden must be realistic about the interests that various actors bring to the table. Their expectations, and their idea of what constitutes a successful effort, may vary greatly. ✨

SUMMER GARDENING TIPS

Linda Parsons, Yolo County Master Gardener



We have planted our summer gardens with much anticipation and the warm days of summer are coming slowly. It rained today and the temperatures barely touched 60 degrees. It seems this spring is a repeat of last year. These cool temperatures will likely delay our fruit and vegetable production this summer. Fungal diseases in the garden and lawn are likely to persist until daytime temperatures rise above 75 degrees..

My watering schedule is set for early spring weather. I am closely monitoring the weather, as it is not uncommon for this cool weather to end abruptly, leaving our gardens thirsty. I anticipate I will need to be an attentive gardener during the next few weeks. Summer days will be here soon!

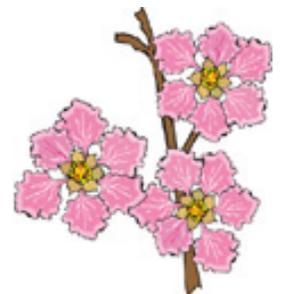
Unless you are a very early morning gardener, take a few moments to protect yourself by putting on a broad brimmed hat, sunglasses, sunscreen. Garden gloves are a must for protection. For ease of cleaning, slather your hands with hand cream and dig your finger nails into a bar of ivory soap. Unless you prefer to drink out of the garden hose, take along a large glass of ice water. Also, assemble the tools and supplies you plan to use, as this will save countless trips to the garage or tool shed.

Water

- ✿ Become familiar with the water requirements of your plants. Many gardeners are including more drought tolerant plants in their gardens, Remember to place plants with similar water requirements together in your garden to maximize water efficiency. For a comprehensive list of Water Efficient Plants visit the Master Gardener Free Handout List at www.ceylo.ucdavis.edu. Day Lily (*Hemerocallis*), lavender (*Lavandula*), yarrow (*Achillea millefolium*), and rosemary (*Rosmarinus officinalis*) are among my favorites.
- ✿ Additional ways to conserve water and keep your plants happy are to keep the weeds to a minimum and add mulch to your garden. Two inches of mulch will inhibit weeds, conserve water and keep you plant's feet cooler. Also, if you are not using drip irrigation consider this for some areas of your garden.
- ✿ Visit www.centralparkgardens.org or the Master Gardener website at www.ceylo.ucdavis.edu

Pests and Diseases

- ✿ Prevention is the easiest way to minimize plant damage. Stroll through your garden several times a week and scout out potential problems. Regularly check the leaves and flowers for evidence of pests and diseases. Typically, the summer months present more pest problems.
- ✿ Whitefly, spider mites, and katydids enjoy feasting on many kinds of plants. Thrips and horntail wasps disfigure roses, and leaf miners and hornworms chew tomatoes. Blasts of water and handpicking (hornworms) deter most infestations. Next, use a homemade or commercial soap or oil spray. Doing this once a week in the morning, usually keeps the pests under control. If this fails, consult the Integrated Pest Management site at www.ipm.ucdavis.edu for control guidance.
- ✿ This spring our temperature and humidity were erratic and thus caused an increase in powdery mildew and rust fungus on susceptible plants, such as crape myrtles and



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roses. Warmer temperatures will jump start infestations of aphids, spider mites, and katydids. Carefully exam your plants now, before these problems overwhelm you and your plants. If necessary, use a hand lens to check the underside of the leaf. This is where these problems can first be detected.

✿ To help identify the pest or disease your plant may have, consult www.ipm.ucdavis.edu for an extensive list of articles and photos featuring pests and diseases that are common in the garden.

✿ Continue to watch for slugs, snails, and earwigs. They are still lurking about in your garden, especially in damp and dense foliage areas. Slugs and snails can be controlled by commercially available iron phosphate, which is both effective and non-toxic. Copper tape is also available at your garden center to use in repelling slugs and snails.

✿ To help control unwanted pests, consider incorporating plants that attract beneficial insects. Some good choices are yarrow, cosmos, feverfew, thyme, lavender, and parsley.

Lawns

✿ The lovely, lush green lawn of springtime is giving way to the more troubled summer lawn. As with all your garden plants and trees, lawn watering needs to be monitored and adjusted according to the weather. Each time you water your lawn, the root zone (five to six inches deep) should be moist. Once you determine the time it takes to achieve this, you can set your watering timer or schedule. Two inches a week is best to keep your lawn thriving. Over-watering can cause root rot and lawn fungus. Keep a garden journal and devise several watering schedules, depending on the season. I consult mine regularly to keep track of water and planting schedules.



✿ If one area of your lawn receives more sun or has faster drainage, you may need to increase watering in this section. During the summer months you will need to water two or three times a week. If the temperature rises above 100° F, you will need an extra watering day. Fertilize your lawn now and be sure to water it in to prevent fertilizer burn.

✿ Other ways to keep your lawn healthy are to be sure your sprinklers are clean and working properly, and to allow the grass to grow a bit taller by raising the blade on your mower. You should never remove more than one-third of the grass blade during mowing. Another benefit of leaving your lawn a bit higher is that it crowds out weeds.

✿ If you see irregular brown patches in your lawn, you may have sod web worm. These worms feed at night and can destroy a lawn in a few days, if it is heavily infested (fifteen or more grubs per square yard of turf). To detect this pest, visit your garden at twilight and see if small (3/4 inch) moths are flying over your turf. You can also pull up damaged turf and discover whether there are pinkish grey to yellowish brown grubs feeding on the roots of your grass.

✿ If you want additional information on watering your lawn consult <http://www.ceyolo.davis.edu> and select the article on *Lawn Irrigation*.

Fruit

✿ If you haven't thinned your fruit trees and vines, they can still benefit. Thin fruit trees (apple, peach, cherry,

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apricot, and grapes), so that there is six inches between each fruit or cluster. This may seem drastic, but your fruit will be larger, more flavorful and it will greatly reduce the risk of broken limbs and branches. Mature fruit trees need a deep soaking every three to four days during crop production. Grapes do best with deep water to a depth of eighteen inches and then allow them to dry to a depth of six inches between watering. Birds can be deterred by using netting and by placing shiny objects in the canopy. Specific help for thinning fruit trees and growing better table grapes can be found at www.ceyolo.ucdavis.edu.



- ✿ The Cherry Maggot (*Drosophila suzukii*) has invaded home cherry crops for the past several summers. The maggots are not discovered until the cherries are ready to harvest. There are several methods of reducing or eliminating this pest. The most environmentally friendly method is to use Spinosad with four to six tablespoons of molasses per gallon of water. For a complete discussion of this pest problem visit <http://www.redwoodbarnnursery.com> or <http://www.farmer-fred.com> or <http://www.ipm.ucdavis.edu/EXOTIC/drosophila.html>

Vegetables and Herbs

- ✿ The most popular vegetable (technically a fruit) is the tomato. It usually grows effortlessly and is happiest when it is deep watered (eight inches), two times a week. This helps reduce cracking, ridging, and blossom end rot. Many of our local nurseries are offering more unusual tomato varieties, including Green Zebra and Brandywine. For a longer harvesting season, select indeterminate tomato varieties.
- ✿ To keep vegetable crops continually blooming, harvest regularly, and continue inspecting for pests. In August, pinch back the plants to help the existing fruit to ripen before the cooler weather arrives. Harvest herbs just as the flowers begin to form for the most intense flavor. If your harvest is bountiful, dry your herbs by hanging them upside down in bunches for future use.
- ✿ Now is the time to begin thinking about your fall vegetable harvest. Fall vegetables, such as broccoli, cabbage, snap peas, beets, carrots, and winter squash need to be seeded in July or transplanted in August for your fall vegetable garden.

Flowers

- ✿ Flowers need to be deadheaded to encourage repeat blooming. Continue to fertilize your flowers, especially heavy feeding roses, every six weeks through October. For a full October bloom, prune your roses back by 1/3 in August. If you prefer the beauty of rose hips, then refrain from pruning your roses in August.



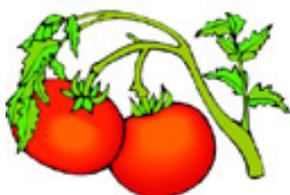
- ✿ Potted plants and hanging baskets need a weekly feeding of liquid fertilizer (15-30-15). They also require more frequent watering.
- ✿ Herbaceous plants such as cosmos, delphiniums, foxglove, and peonies need to be staked or supported. Continue to keep your garden free of weeds.
- ✿ Prune spring blooming shrubs (camellias, azaleas, and bridal wreath spirea) after the blossoms drop. Spring blooming vines such as lavender trumpet vine and clematis should be pruned after the blooms have faded. Fertilize after pruning to encourage bud set for next spring

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- ✿ It is not too late to plant quick blooming summer seeds, such as nasturtiums, sunflowers, and cosmos. You can also plant summer blooming bulbs, such as dahlias and cannas.
- ✿ Continue to harvest your vegetable and herb crops on a regular basis, to promote and prolong summer's bounty.
- ✿ If you tend your summer garden like the good friend it is, it will provide a season of bountiful rewards and be a welcoming summer retreat.

My favorite summer garden rewards are my tomatoes and herbs. During the past several years, I have added new tomato varieties and herbs to my garden. While I keep a few old favorites (Early Girl, Ace, and Celebrity), I delight in my new finds. Last year, I discovered Gary Ibsen, Sun Gold, and Green Zebra. This year, I planted Jelly Bean, Cherokee Purple, and Black Krim. I added Delfino Cilantro to my herb garden. It has a fernlike leaf that is very showy and tasty. If you are interested in learning about tomatoes, *The Complete Guide to Growing Tomatoes: A Complete Step-by-Step Guide, Including Heirloom Tomatoes*, is an enjoyable way to learn more about slicers, stuffers, sauce tomatoes and many more tomato varieties.



If you have been wondering about organic gardening and making your garden more hospitable to beneficial insects, Sally Cunningham's *Great Garden Companions: A Companion-Planting System for a Beautiful, Chemical-Free Vegetable Garden*, is an enjoyable and easy to follow guide.

What new garden adventures are you looking forward to this summer? ✿

"If you've never experienced the joy of accomplishing more than you can imagine, plant a garden."

--Robert Brault



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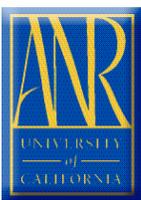
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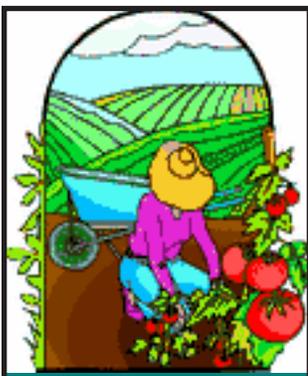
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