Master Gardener University of California

The Curious Gardener

A Quarterly Newsletter Published by
the University of California Cooperative Extension
and the UC Master Gardeners of Placer and Nevada Counties

Vol. 26, No. 1
Winter 2019

In This Issue

UC CE

University of California
Agriculture and Natural Resources

Jazz Up the Garden with Ornamental Grasses

By Ann Wright, Nevada County Master Gardener

Thinking of a soft jazz melody, the sight of grasses swaying in the breeze offers a sense of peace and calm as the seasons change. As tiny flowers on grass stems glow with late summer and fall color, these beautiful plants can "jazz up" a garden landscape. Grasses are not just for lawns. Ornamental grasses and grassy-type plants are useful in gardens as ground cover; they add texture and color to borders and perennial gardens with the benefit of providing food and shelter for birds and beneficial insects. Tall plants in the grass family can be grown to create privacy screens; some are suited to be used as fillers in otherwise bare, drab landscapes.

Calamagrostis x *acutiflora*
'Karl Foerster' (Feather reed grass)

With hundreds of grassy-type plants from which to choose, a basic understanding may help home gardeners select grasses to accent gardens. Sedges, grasses and rushes are three families of grass-like plants, and out of the three families, ornamental grasses are known to have the showiest flowers. There is a little mnemonic that helps learn distinguishing characteristics between types of grassy plants: "sedges have edges, rushes are round, and grasses have knees that bend to the ground." Sedges are plants that fall largely among the genus *Carex*. Many sedges have a sort of triangular or 3-edged stem toward the flower, hence the term "edges." Rushes on the other hand have pithy, round stems without joints. Rushes are perennial and fall in the genus *Juncus*. Grasses consist of thousands of plants world-wide that are distinguished by hollow, round stems with knobby joints or "knees" along the stem. The California Native Plant Society reports that about 80% of California's native grasses are perennial, the rest are annual.

Continued on next page

Continued from previous page

Grasses are further characterized as cool-season or warm-season plants. Cool season grasses flower in the spring and may be found in California's central valley, the foothills and higher mountain meadows. These types of grasses thrive during the fall and early spring and may be green year round in some climates unless the temperatures fall consistently below freezing. Some examples of cool season grasses include *Elymus glaucus* (Blue wild rye), *Danthonia californica* (California oatgrass) and *Melica californica* (California melic grass). *Calamagrostis* (Reed grasses), *Festuca* (Fescue) and *Stipa pulchra* (Purple needlegrass) are other examples of cool season grasses. Warm-season grasses perform best in climates where summers are hot and dry with mild winters. During the winter when soil temperatures fall below 50˚-55˚ F, warm season grasses may go dormant and lose their green color. A common native warm-season perennial bunch grass is *Muhlenbergia rigens* (Deer grass). Other examples include *Miscanthus*, *Molinia*, *Panicum* and *Pennisetum* species. Warm season grasses can be planted in fall in our climate, before the plant goes into winter dormancy. The lovely fall foliage and dried flower stems may continue to accent the garden into the winter months.

California native deer grass. Photo by Ann Wright.

The flowering part or inflorescence of the grass adds color, shape and striking focal points amidst other plants. Grasses have showy, shimmery plumes, bottlebrush-like spikes, and silky sort of hair-like flowers which add to the beauty of the garden. Some grasses also grow to a significant height which must be taken into consideration when selecting plants—identify how big the plant will grow so it won't block other plants or irritate the neighbors.

There are up to 10,000 species of grasses in the world — the California Native Grasslands Association indicates that over 300 species of grasses are found in California, representing about 40% of California's total native plant species. Many of these species are endangered. The decline in native grasses and grasslands is attributed to intensive cultivation, over grazing and introduction of nonnative species which choke out native plants. The Plant Right website lists three grasses considered invasive and potentially harmful to the garden environment which should be avoided: *Pennisetum setaceum* (Green fountain grass), *Stipa/Nassella tenuissima* (Mexican feather grass), and *Cortaderia selloana* (pampas grass).

To learn more about ornamental and native grasses, and perhaps find a favorite to jazz up your gardens, look at the references accompanying this article, or perhaps take a trip to the UC Davis Arboretum where a number of native and ornamental grasses can be seen planted along pathways. The "Arboretum All-Stars" are selected plants that have been field tested and considered to grow well in our area (depending of course on elevation). The warm season grasses that made the cut are *Stipa gigantea* (Giant feather grass), *Miscanthus sinensis* (Japanese silver grass), and *Muhlenbergia rigens* (Deer grass). The cool season All-stars are *Bouteloua gracilis* (Blue grama grass), *Festuca californica* (California fescue), and *Calamagrostis* x *acutiflora* 'Karl Foerster' (Feather reed grass).

Once established, ornamental grasses grow with fairly little maintenance. Grasses that brown up during the summer may be cut back in the fall; others may be left until February or March as the tall seed heads add interest and beauty during the winter. Clump grasses can be secured with a piece of twine and cut below the twine or tape with well-sharpened shears.

Consider the enjoyment ornamental grasses may bring to your gardens and, as Roger Grounds reflects,"what is magical about grasses is their intimacy with the natural world—the way they reflect every mood, catching the sunlight in their flowers and seedheads... changing with the passing hours, ebbing and flowing with the seasons."

References:

- Greenlee, John. *The American Meadow Garden.* Timber Press. 2009.
- Grounds, Roger. *The Plant Finder's Guide to Ornamental Grasses*. Timber Press. 2002.
- Harlow, Nora, K. Jakob. *Wild Lilies, Irises and Grasses.* University of California Press. 2003.
- Hightower, Steve. *Pruning Ornamental Grasses.* http://sonomamg.ucanr.edu/2010_Feature_Articles/Pruning_Ornamental_Grasses/
- Torr, Eddie. *Grasses and Sedges and Rushes, Oh My!* http://www.methowconservancy.org/course/grasses_sedges_rushes_visalli.pdf
- Weeks, Patty. *CA Native Grasses, Rushes, Sedges*. 2012. https://ucanr.edu/datastoreFiles/268-534.pdf.

Pruning Fruit Trees

By Laurie McGonagill, Placer County Master Gardener

Pruning is a science that can take years to understand fully; it can seem intimidating! However, persevere and you will learn as you make those cuts. There are few principles to keep in mind. If you abide by these, your tree will be structurally strong and produce good fruit. Understanding *why* we prune lays a good foundation for the *when* and *how* of it. Finally, we'll wrap up with a discussion of pruning tools and their maintenance.

Why Prune?

There are many reasons to prune a fruit tree. *The growth of the tree can be controlled*, encouraging it to grow laterally or vertically, for instance. *Air circulation and exposure to sunlight can be improved* by removing crossing branches and excessive interior growth. Removing these branches strengthens the tree and allows the fruit to grow large and healthy. *Fruit formation can also be directed by pruning* because, depending on the type of fruit tree, fruit grows on spurs or last year's (second year) wood. Pruning your tree correctly and regularly is as important as proper irrigation, mulching, and amending the soil.

For a young fruit tree, pruning is even more vital; newly planted bare root trees need topping immediately! We NEVER want to lop the tops off *landscape* trees, but it is important to train *fruit* trees to produce low branches from which fruit can be easily picked. In addition, a new tree needs to be trained right off the bat to grow in healthy ways. This includes removing some branches so they don't compete for space and sunlight with each other. Prune so that lateral branches alternate. You can also nip off any smaller or less vigorous branches to encourage the larger, healthy branches.

When To Prune

Prune most deciduous fruit trees during the dormant season to direct structural growth. December and January are optimal months to prune. Apricot and cherry trees are exceptions; prune them in summer right after they bear fruit to discourage Eutypa blight. Summer pruning is also useful for other deciduous fruit trees to check the vigor of non-fruiting growth. You don't want those green leaves and branches to take the energy from the fruit. You may need to remove this vigorous growth to improve the productivity of the tree several times during the summer.

Citrus trees are evergreen and do not need the typical heavy annual pruning of deciduous fruit trees. It is enough to check the tree over occasionally throughout the year and remove interior dead wood and suckers which grow from the rootstock below the bud union of the tree, or water sprouts which grow, generally vertically, from the trunk or branches of the tree. Citrus *do* benefit from light pruning just after the tree is harvested. A hard pruning every seven or eight years can reinvigorate the tree with a flush of new growth, though usually the tree will not produce a significant fruit crop for a year or two.

A heading cut removes the tip of a branch and leads to vigorous growth of shoots from buds just below where the cut was made, as shown in the photo above. Thinning cuts remove a branch back to the trunk or a main branch, as seen in the lower photo.

How To Prune

Three tools will see you through pruning: Hand pruning shears, loppers, and a pruning saw. These tools need to be kept sharp and clean for maximum performance. (See next section.)

There are two types of cuts, heading and thinning. Heading cuts are used to define the structure of the tree by removing part of a branch to direct growth. Cut at a 45° angle away from a bud or branch and about ¼ inch above it. Vigorous growth will be stimulated just below the cut.

Thinning cuts open the interior of the tree by removing entire branches and shoots and any other unwanted growth such as branches that cross each other or dead limbs. The main branches are defined and sunlight penetration is improved.

Continued on next page

Continued from previous page

Look carefully at your tree as you prune to make sure that you are not removing fruiting spurs or fruiting wood. Apple, pear, cherry, pomegranate, and plum have long-lived spurs, short branches that bear flower buds and thus fruit. These spurs are a few inches long and can live up to 10 years. You do not want to prune them! Peach, nectarine, fig, and quince bear fruit on second-year wood. The spurs are short and easy to overlook. If buds are forming, you do not want to inadvertently nip them off. Apricot trees bear fruit on both spurs and second-year wood.

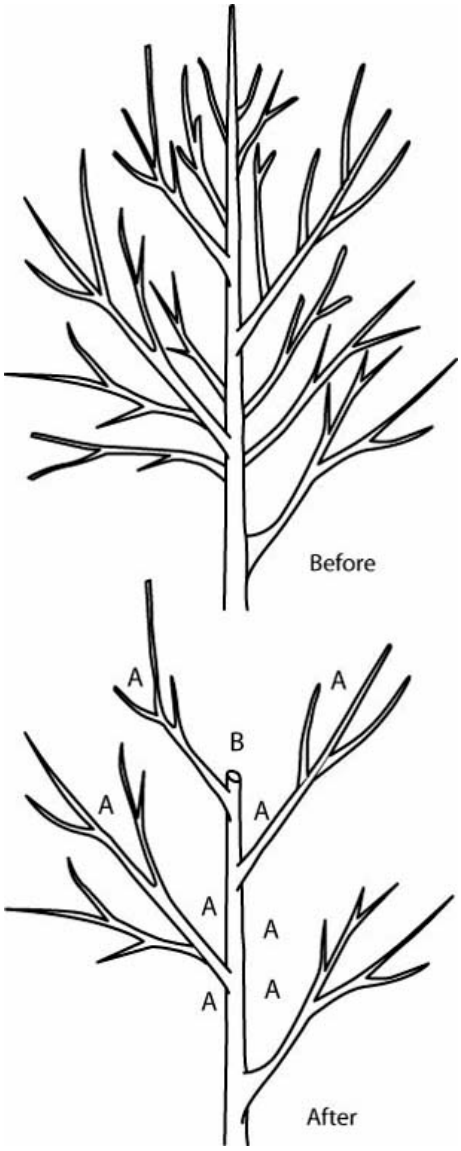
Tool Sharpening And Cleaning

Keep tools sharp so that your cuts will be clean and you will not risk tearing the bark or otherwise wounding tree wood. For hand pruning shears and loppers, first clean the blades by spraying with a foaming product such as a bathroom cleaner, then wipe them. You may need to use steel wool if the blades are rusty. Next, hone the bevel edge with a sharpening tool such as a sharpening stone or carbide blade. Hold the tool at an angle and move the stone in a circular motion. A little of the metal is removed and the blade is sharpened. Finally, use a lubricant to oil the mechanism. Finish off by spreading the oil around the blades to prevent rust. Sharpening saw blades is a bit more complicated and you may choose to buy a new blade and scabbard. If you want to sharpen the saw blade, ask a tree nursery person or a knowledgeable friend to show you how, or watch an online video.

For an occasional deep cleaning, especially after removing diseased limbs, soak the tool in a solution of 10% bleach and 90% water for half an hour. Then rinse and wipe your tools, finishing with an application of oil. For routine disinfection, spray the tool with 70% alcohol or a household disinfectant between cuts. Note that a bleach and water solution loses its effectiveness after several hours so, after using, dispose of it in a household drain. **For everyday use, bleach is not recommended.** It is corrosive to humans, clothing, and plants. There are better home disinfectants that do not have a chlorine base.

A deciduous fruit tree's life is generally 12 to 20 years; with citrus it is not unusual for a tree to reach 40 to 50 or more years. You can ensure that a healthy tree reaches its maturity and your investment is returned by following proper sharpening and cleaning protocol.

Pruning is not a difficult science to master if you follow the rules highlighted. It is clear that it is beneficial in so many ways. Your tree will thank you and you will be happy because you get to enjoy the fruits of your labor!



Thinning removes a branch (A) or cuts to a larger one (B) to increase sunlight penetration and air circulation.

References:

- Ingels, Chuck. *The Home Orchard* part one. https://www.youtube.com/watch?v=LcB10xujAIU Note: Pruning is covered around minute 36.
- *Why Have a Backyard Orchard?* UCANR. The California Backyard Orchard. 2018. http://homeorchard.ucanr.edu/
- *Pruning & Training*. UCANR. The California Backyard Orchard. 2018. http://homeorchard.ucanr.edu/The_Big_Picture/Pruning_&_Training/
- Skinner, Anne. *Maintenance of Your Garden Hand Tools*. Master Gardener Newspaper Volunteer Program Tulare/Kings Counties. March 19, 2016. https://ucanr.edu/datastoreFiles/268-723.pdf

Insect Quiz: How do Bugs Survive the Winter?

by Bonnie Bradt, Nevada County Master Gardener

As the cooler temperatures of winter descend upon us, we cozy up in front of the fireplace, or under our blankets at night, and are grateful for our nice warm homes. We may give a thought to the squirrels cavorting around our yards, or the birds who are still active on winter days, and fill the bird feeders. But I'll bet few of us give a thought to the six legged creatures who have to find ways to survive the cold months of the North American winters. Let's see who knows these answers.

1 One of the handiest means of avoiding the worst of winter's weather is "migration." Name the most famous migratory insect in the Western Hemisphere. Name two other famous migratory insects from the many that use this method to escape the cold.

2 Even worse than the danger to insects from cold temperatures is the danger from FREEZING. Some insects, especially those who live in regions of the planet that are exposed to rigorous and continual sub-freezing conditions, have actually developed a chemical means to prevent their bodies from freezing. They can actually survive becoming bugsicles. Do you know how?

3 Dragonflies, Mayflies and Stoneflies have a method in common for avoiding freezing winter conditions. And they remain active, as nymphs, all winter long, feeding and growing and emerge as adults in the spring. Where do they spend the winter?

4 What "colonial" or social insect is able, by the formation of clusters or "balls" of many insects together, to achieve warmth in their surroundings by vibrating their wing muscles as a group.

5 Insects that are inactive during the winter months undergo a state in which their growth, development, and activities are suspended temporarily, with a metabolic rate that is just high enough to keep them alive. This dormant condition is termed _____.

6 What famous little beneficial insect practices communal hibernation by stacking one on top of another on stumps and under rocks to share heat and buffer themselves against winter temperatures, often in Nevada County forest locations?

7 Galls, the growths commonly found on oak trees (and other plants) in many areas of the country, are locations for what type of insect to overwinter? HINT: this type of insect is what caused the formation of the gall to begin with.

8 Female long horned grasshoppers attempt to protect their eggs, which are the life stage that overwinters in this species, by placing them where?

9 What is the most common source of nourishment for overwintering bees in the wild, since there is very little in the way of blooming flowers for them to visit?

10 How might the study of our little bugsicles and their ways of avoiding the damage caused by the formation of ice crystals in their bodies benefit the health of humankind?

Answers on page 7

Find Plants Native to Your Area in Calscape Plant Data Base

By Peggy Beltramo,
Placer County Master Gardener

Calscape.org is the plant finder search engine built by the California Native Plant Society to help gardeners choose California native plants that will thrive in their local landscapes. As stated on the website, "Our goal at Calscape is to help Californians restore nature and save water one garden at a time. We do this by showing people which plants are really native to any location in the state, helping them figure out which ones they want, and where to buy them and how to grow them."

The website is easy to navigate: go to https://calscape.org/. Simply type your zip code into the address search box, press search, and voila! There are the plants that are native to your specific area.

It can be intimidating to have hundreds of plants pop up; however, results are divided into 20 different categories: trees, shrubs, low water, shade, etc. There is also an Advanced Search button in the top right corner of the page that will allow you to sort the entire list by a different set of parameters, including ease of care, water usage, bloom

Continued on next page

Helleborus argutifolius, Corsican Hellebore

by Jan Birdsall, Placer County Master Gardener

Are you looking for a winter bloomer and a sure-fire rodent, rabbit and deer resistant plant to grow? Choose *Helleborus argutifolius* (Corsican hellebore).

Corsican hellebores are low maintenance and long blooming. They prefer well-drained, alkaline, and fertile rich soil in dappled shade with some morning sun, but can tolerate dry shade. They thrive under deciduous, high branched trees or along north or east sides of walls. Leaves originate from underground stems (rhizomes) and can form clumps that extend two to three feet wide and tall, either erect or sprawling. If happy in its location, it can become almost shrub-like. The two inch nodding flowers on leafy stems are pale-green with sharply toothed gray/blue-green foliage. This foliage adds sculptural interest to your garden year-round. It grows in USDA zones 6-9 and is the best hellebore choice for this area as a result of its ability to tolerate more heat and take more direct sun than other species. Some recommended varieties are 'Janet Starnes' or 'Pacific Frost'.

Once established, Corsican hellebores can be deep watered one to two times a month, especially if soil is supplemented with organic compost. Fertilize in spring and September prior to its winter blooming. In summer, remove old flower stalks and any dead leaves. All parts of hellebores are poisonous and should be handled with care. They have very few pest problems, aphids being the worst. Hellebores hate to be disturbed and will retaliate by not blooming for up to several years afterward. However, they can be propagated by careful division, seed, or by retrieving seedlings around the plant, which will not be true to the parent. During the doldrums of winter, you will find this hellebore a pick-me-up!

References:

- Walther, David. *Plant Hellebores for Winter and Spring Color*. UCANR The Real Dirt Blog. January 12, 2014. https://ucanr.edu/blogs/blogcore/postdetail.cfm?postnum=12569
- Pelikan, Ellyn. *Helleborus*. UC Master Gardener Program of Sonoma County n.d. http://sonomamg.ucanr.edu/Plant_of_the_Month/Hellebores/
- Phillips, Norm. *Hellebores: New Plant on the Block*. September 07, 2006. ucanr.edu/sites/uc_master_gardeners/files/139287.pdf

Continued from previous page

season, color, and even availability. Simply click the boxes of the attributes you are interested in, press "Search," and the list is winnowed for you.

From the resulting list of plants, you can click on a particular plant to go to its informational page. Read about it, and if you want to keep the information, choose "Add to my plant list" at the top of the page. You can create multiple lists to sort for different spots in you yard, or whatever other needs (or wants!) you have.

Spend some time exploring this website. There is a lot of information to be found and sorted. If you just want the information page for a particular plant, you can type the name of the plant into the "Search by Name" bar to go directly to that plant's home page. This comes in handy if you want to see what a plant looks like, or where it is happiest, when you are reading your favorite plant literature.

California has a broad diversity of environments; not all plants native to the state will grow in our region. Mimulus aurantiacus, bush monkeyflower, above, is native to our counties, and will thrive from Nevada City to Roseville.

California Native Plant Society
Calscape
Restore Nature One Garden at a Time

BotLat Corner

Find Out What Those Weird Plant Names Mean

by Peggy Beltramo,
Placer County Master Gardener

This column was suggested by a friend who loves binomial nomenclature as much as I do. She suggested 'tongue twisters' as a theme and mentioned these two. (Thank you Lani!)

Thymus pseudolanuginosus is commonly called wooly thyme (pictured at bottom right). It makes an excellent ground cover. The genus *Thymus* is the Greek word for thyme, while the specific epithet may sound somewhat familiar. The first part of the word, *pseudo-*, means 'false' (Do you recognize pseudonym—false name?); while the second part, *-lanuginosus*, from the Latin '*lano,*' specifies 'wooly.' So for this plant, the common name is an exact translation of its BotLat name, except that wool from a plant is fake wool.

On the other hand, the second plant, *Chlorogalum pomeridianum* (bottom left photo), is commonly called soap root or soap plant, which refers to its uses. This California native plant was important to the Native Americans who used it for soap, among other uses. The genus name, *Chlorogalum*, means 'green milk,' referring to the green sap when a leaf is broken (*chloro* = green; *gala* = milk). The specific epithet is a contraction of 'post meridian,' which you may recognize as the Latin phrase that we abbreviate 'p.m.' when we write hours after ('post') the middle ('meridian') of the day. This refers to the time when the flowers of the soap plant open—late in the day.

So there you have it, two BotLat names that trip lightly off your tongue. One is nine syllables long, the other is ten syllables. Practice saying them in the mirror, so you can impress your friends at the next garden club meeting.

How Do Bugs Survive the Winter? Insect Quiz Answers

1 The most famous migrator is the magnificent monarch butterfly. Other famous migrators include the grasshoppers and locusts, ladybeetles and dragonflies.

2 Some insects have developed the ability to use chemical pathways in their bodies to increase the levels of certain chemicals (like glycerol for example) to act as antifreeze agents, to prevent or retard the development of ice crystals in the bodies of the insects.

3 These insects spend the winter months deep under the surface of lakes and other bodies of water, far beneath the ice where the water does not freeze.

4 Honeybees generate warmth by vibrating their wing muscles as a group.

5 Diapause is the period of suspended development.

6 Ladybeetles hibernate communally. Inexperienced people who want to make money from the sale of the beneficial ladybeetles will locate winter aggregation sites and literally scoop the sleepy insects, by the thousands, into containers. They are then separated into smaller sale containers and sold to unsuspecting gardeners. The first thing the ladybeetles will do upon waking up in the garden is to migrate away, wasting your money.

7 Galls are formed, in most cases, by gall wasps. But they can also be formed by aphids, midges and even flies.

8 Female long horned grasshoppers will try to bury their eggs in the ground by tunneling as deep into the soil as possible and depositing their eggs down there, where temperatures hopefully will remain above freezing and will resist large temperature swings.

9 The nutrition source for overwintering wild bees is their own honey.

10 A long standing challenge in human organ preservation has been precisely the problem that these insects have solved—how tissues can be frozen for a long time and then thawed out successfully. Research teams are now exploring how to apply insights from the animal world to the operating room.

Seed Needs: Breaking Dormancy Indoors

Article and photos by Annette Wyrick, Placer County Master Gardener

Seed Germination

While gardeners are less busy in winter, some choose to indulge in planning for spring gardening. If you want to grow plant varieties that are unavailable at a nursery, you must start with seeds. Once seeds are obtained, what are the growth conditions required to turn the seeds into plants?

For a seed to break dormancy, it must be physiologically ready and the right environmental conditions must be present. Water, oxygen, temperature, and light are key environmental factors that affect germination. Seeds are planted in growing medium, so this is where the right conditions must exist. Water will need to be supplied to the growing medium so that it is not too saturated or too dry. An embryo that dries out will die. Seeds need oxygen during germination, so the growing medium must be loose and aerated. Using garden soil will reduce or inhibit germination because it will be heavy and not drain well. The soil temperature required for germination varies for each plant. There will be a minimum, maximum, and optimal temperature range. Providing the optimal soil temperature will improve the germination percentage and rate. Increasing the germination rate tends to decrease disease. Light requirements for germination also vary for each plant. Some plants need light, others need darkness, and others are indifferent. Seed packets will contain additional information such as planting depth, spacing, days to germinate, and days to mature. Directions on when to plant may be divided into two sections: when to sow outside and when to start inside. Some plants do not transplant well and should be directly sown in the ground.

Indoor Sowing

Start with sterile medium and containers. Sterile seed starting mix may be purchased. Containers should be soaked in a solution of one part chlorine bleach to nine parts water for 30 minutes, then rinsed in water and dried. Press uniformly damp medium firmly into the container leaving a level surface. Plant seed according to depth indicated on the packet. Make sure that the seed has good contact with the medium on all sides. Very small seed may be placed on top of the medium. Watering with a fine mist will help the seed have good contact with the soil. After sowing, water the growing medium by placing the container in a tray filled with water. Let the water soak from the bottom up, until the top of the medium becomes moist. Remove the container and let it drain.

Follow the directions on the packet for the soil temperature requirement. Soil temperature may be regulated with a heating mat placed under the container. A sunny window or grow light may be used if light is required for germination. If using a grow light, place it directly above the soil. As the seedlings grow, keep the light located just above the seedlings. Poor lighting conditions will lead to leggy growth. Repeat the soaking and draining as necessary to keep the medium moist.

If the seedlings are grown in a flat, they will need to be transplanted after they develop their first set of true leaves. When the transplants have grown sufficiently, they need to be hardened off prior to planting in the garden. This means gradually exposing them to outdoor temperature and lighting conditions. After establishing plants in the garden, you can determine if the varieties you chose will be in your plans for next year.

References

- Pittenger, Dennis R. *California Master Gardener Handbook*. University of California Division of Agriculture and Natural Resources, 2015. pp. 112-118.

- **For more information, see these related articles from previous issues of *The Curious Gardener*:**
  Seed Packets: The Revealing Truth by Liz Rees. Winter 2009. http://pcmg.ucanr.org/files/171554.pdf
  Seed-Starting Supplies by Trish Grenfell. Winter 2007. http://pcmg.ucanr.org/files/171555.pdf

Try Something New: Kohlrabi

by Joan Goff, Placer County Master Gardener

What is green or purple, round, and above ground? Kohlrabi, a tasty vegetable we don't grow or eat enough. It reminds me of some kind of alien space ship with leaves. Sweeter than turnips, crisp and delicious, it is great in stews, roasted and even fresh. Kohlrabi is a *Brassica*, a relative of cabbage, broccoli and kale. It is very popular in Europe and probably was developed there. *Kohl* means cabbage in German and *rabi* means turnip. It grows as a knob above ground with leaves emerging from eyes on that round part. The knob is the part we eat.

Growing kohlrabi is easy. It wants the same conditions as broccoli or cabbage—a cool growing season. We are lucky to live in this climate where our winters are cool. Planted in the late summer or at the end of winter this vegetable will thrive in full sun with adequate water. It is best to harvest before it turns woody, when it gets too big and old.

As a relative of cabbage and brussel sprouts, some of the same pests can bother it. Aphids and cabbage worms are among the insects that love it. Handpicking and washing with a spray of water often controls these pests.

Planted six inches apart in rows one foot apart will provide enough space for these to grow. Transplants can be placed in the garden when they have four to six true leaves and a well developed root system. The kohlrabi knob stays above ground, unlike turnips that are nestled well into the soil. Harvest can begin when the stems are 1" around and continue as the plants grow. Harvest when the knobs are the size of a golf ball to avoid the problem of woody knobs.

Hotline FAQs

My apple tree has these ugly growths on the trunk. What are they, and should I do anything about them?

by Pauline Kuklis, Placer County Master Gardener

Those growths are called "crown galls," which are caused by a bacterial disease (*Agrobacterium tumefaciens*) that is spread from splashing water. This disease can affect many different types of trees, including apple trees. The bacteria are present in most soils, and will infect the tree through wounds in the bark (pruning wounds, bug or frost damage, etc.). While there is no cure, most mature trees can survive a moderate amount of the disease. However, crown gall can kill a young tree, so it is best to remove and discard it.

The best approach to prevent crown gall is by using the best horticultural practices.

- Ensure trees are healthy before planting, and plant in a proper location.
- Use drip irrigation rather than overhead watering, and ensure trees receive the proper amount of water.
- Avoid damaging the bark in any way.

Refer to this link for more detailed information about crown gall: http://ipm.ucanr.edu/PMG/GARDEN/PLANTS/DISEASES/crowngall.html

Crown galls on apple branch. Photo from Ohio State University Extension.

Clematis Care: Learning from My Mistakes

Article and photos by Trish Grenfell, Placer County Master Gardener

Robert Frost, Sir Walter Scott, Oscar Wilde, T.S. Eliot, and Sylvia Plath have all put pen to paper to portray the poetic beauty of the clematis vine. Since my aspirations had succumbed to the allures of a cottage garden, I had to plant clematis to enhance my curb appeal. With ample room in my mostly sunny Auburn courtyard, I purchased six different hybrid cultivars about five years ago to climb two large trellises. I liked the idea of blooms from different groups through spring and summer.

Clematis plants include herbaceous and evergreen vines, as well as woody, deciduous varieties. They also differ greatly among species (16 in total with over 300 cultivars at the last count), with different flowering forms, colors, and blooming seasons, they bloom sometime between early spring and fall. And if you want flowers, you must adhere to your species' proper pruning protocol (one of three).

Clematis 'Nelly Moser' (top) and 'Duchess of Edinburgh' (bottom).

Error #1: I planted my young plants at the top of the root ball, not knowing the advantage of stripping bottom leaves of stem and planting part of the stem underground. According to the University of Illinois extension, "Place the crown of the plant at least two to four inches below the surface of the soil. This will help with the production of stems from dormant buds below the soil and also helps the plant recover if stems are injured by animals or mechanical means."

Error #2: That first year I got many beautiful large flowers but three fried because not only their heads were in the sun, but their feet got exposed also. The small plants that were shading the root area died back and I didn't notice. And I didn't have enough mulch applied to cool the soil and keep the area moist. I replaced the dead clematis with pretty nursery finds, not the varieties that died.

Error #3: I mistook brown leaves for clematis wilt, a fungus that actually kills the area attacked. Damage to the stems or lack of moisture at the roots will cause brown leaves, especially in the lower regions of the plant. Or the plant may have leaf spot or rust which require better air circulation and less water on the foliage. Just remove the leaves. Clematis wilt actually is identified by very dark brown to black spots on the leaves accompanied by stem cankers. Since my clematis leaves were not spotted and the stems were canker free, removal of the entire stem was not required. I pruned the plant's stem when all that was necessary was brown leaf removal.

Error #4: I committed the worst error possible with my clematis vines. With all the cutting back and replacing species and/or cultivars, I lost track of what was growing up my trellis. And why is this so important? Some vines won't flower if pruned indiscriminately. I look at the plants now and see some leaves larger, some greener, some a little thicker. I do not have the time to investigate the foliage. I pruned all vines down to about one foot in early spring. The solution is to watch what blooms and what does not. For clarity, here are brief descriptions of the **three pruning groups**.

1) **Spring bloomers which bloom on the previous year's shoots.** Prune Group 1 after they flower, removing dead or damaged stems and otherwise pruning for shape and space. If a vine I have does not bloom at all, it is likely a member of this group.

2) **Deciduous vines with large flowers that appear in late spring and early summer** on side shoots stemming from the previous year's growth. Prune in early spring before growth resumes. Cut off dead/damaged stems and trim the rest back to where you can see strong buds – or don't prune at all. I have 'Nellie Moser' and 'Duchess of Edinburgh' blooming now, but somewhat low to be easily seen. I pruned too low for this group.

3) **Midsummer to late autumn bloomers which bloom on current year's growth.** Prune clematis in early spring before growth resumes, cutting the previous year's growth back to a pair of strong buds about eight inches above ground level. I pruned correctly for this group and my fingers are crossed that I will see flowers from Group 3 this summer.

References

- *Clematis*. University of Illinois Extension - Gardener's Corner. Spring 2010. https://extension.illinois.edu/gardenerscorner/issue_05/spring_02_05.cfm
- Bosmans, Raymond. *A Quick Guide to Pruning Clematis*. University of Maryland Extension: Home & Garden Information Center. March 2011. https://extension.umd.edu/sites/extension.umd.edu/files/_images/programs/hgic/Publications/HG107_Pruning_%20Clematis.pdf
- Pataky, Nancy. *Clematis Wilt*. Home, Yard & Garden Pest Newsletter, University of Illinois Extension. July 2009. http://hyg.ipm.illinois.edu/article.php?id=95

Events Calendar

Nevada County Demo Garden
1036 W. Main St., Grass Valley (on NID Grounds)

Placer County Test Garden
11477 E. Ave., Auburn (Senior Garden, DeWitt Center)

All events are free unless noted otherwise

January

January 19
10:00 am – noon
Fruit Tree Care
Roseville Utility Exploration Center
1501 Pleasant Grove Blvd., Roseville
Small fee; register at 916-746-1550

February

February 2
10:00 – noon
12 Month Vegetable Gardening
Grass Valley Elks Lodge
109 South School Street

February 2
10:00 am – 2:00 pm
Bird and Bug Bonanza
Roseville Utility Exploration Center
1501 Pleasant Grove Blvd., Roseville

February 9
10:00 am – noon
A Healthy Garden Begins with Soil
Roseville Utility Exploration Center
1501 Pleasant Grove Blvd., Roseville
Small fee; register at 916-746-1550

February 9
10:00 – noon
Orchids–How to Keep them Happy
Grass Valley Elks Lodge
109 South School Street

Nevada County events in green boxes

Placer County events in yellow boxes

February 16
10:00 – noon
Native Plant Propagation
Grass Valley Elks Lodge
109 South School Street

March

March 2
10:00 – noon
Bringing Native Plants Into Your Garden
Grass Valley Elks Lodge
109 South School Street

March 9
10:00 am – noon
Composting and Mulching
Roseville Utility Exploration Center
1501 Pleasant Grove Blvd., Roseville
Small fee; register at 916-746-1550

March 9
10:00 – noon
Totally Tomatoes
Grass Valley Elks Lodge
109 South School Street

March 16
10:00 – noon
Waterwise Gardening
Grass Valley Elks Lodge
109 South School Street

March 23
10:00 – noon
Functional Irrigation
Demo Garden, NID Grounds
1036 W. Main St., Grass Valley

Find Events on our Websites:
http://pcmg.ucanr.org/
http://ncmg.ucanr.org/

March 30
10:00 – noon
Firewise Landscaping
Demo Garden, NID Grounds
1036 W. Main St., Grass Valley

April

April 6
10:00 – noon
Work Smart Not Hard
Demo Garden, NID Grounds
1036 W. Main St., Grass Valley

April 13
Home & Garden Show Booth
Nevada County Fairgrounds

April 13
10:00 am - 3:00 pm
3rd Annual Garden Fair
Maidu Community Center
1550 Maidu Dr., Roseville

About Master Gardeners

Our mission as University of California Master Gardener volunteers is to extend research-based gardening and composting information to the public through various educational outreach methods. We strive to present accurate, impartial information to local gardeners so they have the knowledge to make informed gardening decisions in regard to plant choices, soil fertility, pest management, irrigation practices, and more.

The Master Gardener volunteer program was started in the early 1970s at the Washington State University. Farm Advisors became overwhelmed by all the incoming calls from home gardeners and homesteaders so they trained volunteers to answer these questions and the "Master Gardener Program" was born. The first University of California Master Gardener programs began in 1980 in Sacramento and Riverside counties. The Nevada County and Placer County Master Gardener Associations began soon thereafter in 1983.

35 Years of Serving Placer and Nevada Counties

Production Information

The Curious Gardener is published quarterly by the University of California Cooperative Extension Master Gardeners of Placer and Nevada Counties.

Kevin Marini, Editor
Community Education Specialist: Home Horticulture and Composting Education, Master Gardener Coordinator

Elaine Applebaum, Production
Placer County Master Gardener

Have a Gardening Question?

Call our Hotline

Placer County Residents
530.889.7388

Nevada County Residents
530.273.0919

Master Composter Rotline
530.889.7399

UC Cooperative Extension Placer County
11477 E Avenue
Auburn, CA 95603
530.889.7385 office
530.889.7397 fax
email: ceplacer@ucdavis.edu

UC Cooperative Extension Nevada County
255 So. Auburn Street
Grass Valley, CA 95945
530.273.4563 office
530.273.4769 fax
email: cenevada@ucdavis.edu

How to Subscribe

Online subscriptions are free to residents of Placer and Nevada Counties.
Log on to http://pcmg.ucanr.org/Curious_Gardener_Newsletter/ to sign up for your electronic delivery.