



# A Garden Runs Through It

July 2021

Whether it's a vegetable garden, houseplants or a landscape...

UCCE Master Gardener Program, Colusa County  
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## Upcoming events

[Click here to read our blog.](#)



### July

**Arbuckle Farmers Market**  
Downtown Arbuckle  
Every Wednesday  
4—7 pm

**Tomato Tasting and other Garden Goodies**  
July 31, 9 am  
499 Marguerite, Williams  
Education Village

### August and beyond

**Williams Flea Market**  
550 8th St., Williams

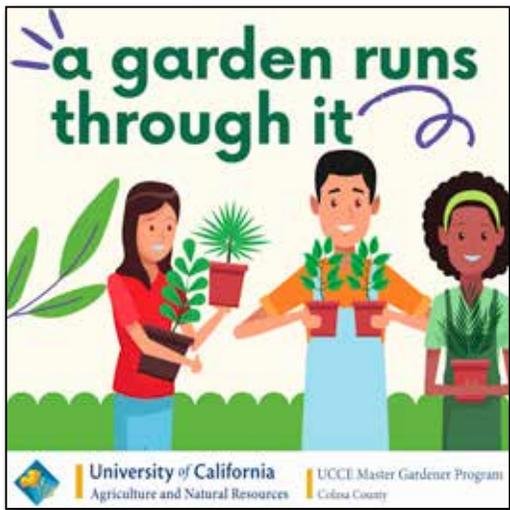
August 6,  
September 3,  
October 1

9 to noon

## Advice to Grow by ... Ask Us!

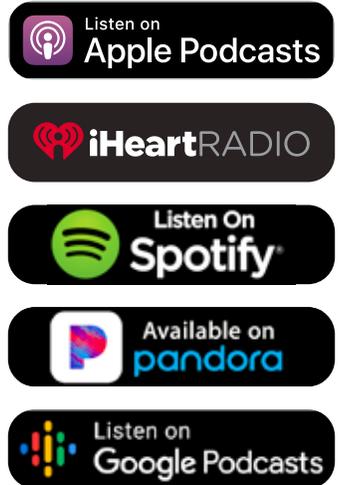


# Listen to our podcast



Available on these apps

Search on the apps "RadioColusa.com" or "The Backpage"



Listen Online: [theplantmasters.com](http://theplantmasters.com)

## THIS EPISODE:



**July 2021 - 06.26.2021**

In this episode of 'A Garden Runs Through It', the UC Master Gardeners of Colusa County, Gerry Hernandez, Bonnie Rose, and Pam Niehues discuss the demonstration garden, tomatoes, basil, their gardens, and much more.

## PREVIOUS EPISODES:



**Lavender, and more - 05.28.2021**

UC Master Gardeners of Colusa County, Gerry Hernandez, and Sandy Camp discuss their gardens, lavender, and much more.



**Let's buzz around - 04.30.2021**

UC Master Gardeners of Colusa County, Gerry Hernandez, and Amber Vinchesi-Vahl discuss native and solitary bees, their biology, and habitats. They give great tips on how to attract bees to your garden.

"A Garden Runs Through It" podcast is produced in partnership with:



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Agriculture and Natural Resources

UCCE Master Gardener Program  
Colusa County

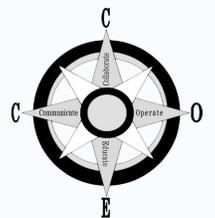


UC MASTER GARDENER PROGRAM  
OF COLUSA COUNTY

# TOMATO TASTING & OTHER GARDEN GOODIES

**Saturday, July 31 at 9am**

**Farm to School  
Demonstration Garden  
Education Village  
499 Margurite St.  
Williams, CA**

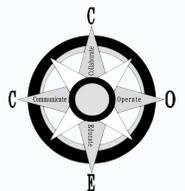


PROGRAMA DE JARDINEROS MAESTROS  
DE LA UC DEL CONDADO DE COLUSA

# DEGUSTACIÓN DE TOMATES Y OTRAS GOLOSINAS DE JARDÍN

Sábado, 31 de julio a las 9am

Jardín comunitario del  
Programa de “Farm to School”  
Education Village  
499 Margurite St.  
en Williams, CA



## Ornamental Plant of the Month

### Drought and your Garden

This article also appears in the Williams Pioneer Review

#### Drought and your Garden – Fruit and Vegetables

Water conservation for the entire household, inside and out, is always good practice; it saves money and one of the planet's most precious natural resources. Water conservation is even more important in years with little rainfall. California is possibly facing its driest year on record. Water restrictions may be coming.

Most vegetable crops require one inch or more of water each week during the growing season – this equals  $\frac{3}{4}$  of a gallon of water per plant. The challenge for home gardeners is to learn to be as water efficient as possible.

Here are some tips.

Care for your most valuable plantings first. This usually means fruit trees, perennials and shrubs. Water your trees deeply but infrequently. Push a rod into the ground near a tree. The rod will go into the soil 2-3 feet if it is adequately irrigated. If it is less than 2 feet then the tree needs water.

Water when needed. Check the soil moisture with your finger or moisture meter. Irrigate when it is dry 2 – 4 inches deep. We tend to over fertilize, so fertilize less. Control the weeds as they compete with edibles for water. Remember to mulch around your fruit and vegetables. Mulch 3-4 inches deep. This will reduce your water needs by 50%. Mulch reduces evaporation, moderates soil temperature and suppresses weeds.

Repair leaks in your irrigation system. One leak can waste gallons of water. Irrigate in the deeply and less frequently and in the morning. It's best to use a timer when irrigating.

Submitted by Gerry Hernandez



# Ornamental Plant of the Month

## Drought and your Garden

This article also appears in the Williams Pioneer Review

### Drought and Your Garden – Tips

Tips for saving water in the home landscape.

- First prioritize your plants. Determine which plants are most susceptible to water stress. High on the list should be plants that are valuable in terms of replacement cost, prominence in the garden and enjoyment. High priority plants are trees and shrubs. Large, mature trees and shrubs can be left alone unless the drought is severe and the trees begin to wilt. Medium priority plants include perennials, fruit trees, small fruits and vegetables. Low priority plants include annual flowers and herbs, ornamental grasses and turf.
- Irrigate early in the day. Less water loss occurs from evaporation and wind drift because temperatures are cooler and there is less wind early in the day.
- The type of soil in your landscape largely determines how often you should water. Clay soils hold more water than sandier ones and can go longer between watering. Most of our local soils are clay and/or compacted for housing.
- Apply 2 to 4 inches of mulch around plants to keep weeds down, conserve soil moisture and temperature. Mulch minimizes water evaporation from the soil surface, reducing the need to irrigate.
- Control the weeds. Weeds use precious water that should be saved for your garden plants.
- When possible, add organic matter (compost) to your soil. This will improve the water-holding capacity during dry weather.
- Fertilizing stimulates plant growth which increases water needs. Don't fertilize.
- Avoid runoff by cycling irrigations. Let sprinklers run 10 minutes then shut it off for 10 minutes, allowing the ground to absorb the water. Then irrigate another 10 minutes. Remember concrete will not grow no matter how much you water it.
- Use a broom or leaf blower to clean the driveways, sidewalks and steps. Using a hose to clean can waste hundreds of gallons of water.
- When buying new plants, select low water users adapted to our climate. All plants require regular watering to become established, including California native.

Submitted by Gerry Hernandez

## Ornamental Plant of the Month

### Agapanthus

common name “Lily of the Nile”

The Agapanthus, commonly referred to as the Lily-of-the-Nile or the African lily plant, is an herbaceous perennial from the Amaryllidaceae family that is hardy in USDA Zones 7 to 11. This South African native beauty displays large masses of striking blue or white flowers atop a tall and slender stalk. Agapanthus plants reach up to 4 feet (1 m.) at maturity and bloom from June through August.

Agapanthus planting is best done during the fall or winter in warm climates. Agapanthus makes a lovely back border or focal plant due to its height, beautiful trumpet-shaped flowers, and leaf texture. For a dramatic effect, plant a large grouping throughout a sunny garden spot. Agapanthus flowers can also be used in container plantings in cooler regions. Growing Agapanthus requires a sunny to partly shady location and regular water.

Mulching is helpful to retain moisture with new plants set about 1 to 2 inches (2.5-5 cm.) apart. While it is very tolerant to a wide variety of soil conditions, they do enjoy some rich compost or organic matter added during your agapanthus planting. The Agapanthus plant is easy to care for in warmer regions. Once planted, this beautiful plant requires very little upkeep.

Agapanthus plants are not reliably hardy below United States Department of Agriculture zone 8. In protected sites, they might survive the winter, but a little special Agapanthus care and feeding are necessary in the spring to start them off right. Avoid fertilizing Agapanthus plants with high nitrogen fertilizers in spring, which will force new leafy growth at the expense of flowering. The best Agapanthus fertilizers will be fairly balanced, such as 10-10-10 or 5-5-5, or slightly higher in phosphorus than nitrogen. Agapanthus grown outdoors may die back in winter. Spread a heavy mulch around the root zone to protect the plant from the cold. In cooler zones, dig up the bulbs and pot up the plant to grow indoors during winter. Plants outside that are dormant do not need fertilizer until they begin to sprout anew. Indoor plants can be fertilized just as any houseplant with light dilutions of food from February until you move the plant outdoors. Outside plants should be fertilized with a mild dilution of food in early spring and again two months later. Suspend any fertilizer to either potted or in-ground plants by August.



Submitted by Cynthia White

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## Edible Plant of the Month

### It is Edible, it's Beautiful, it's Amaranth!

I had the first taste of this beautiful plant at a County Fair exhibit in Booneville during the annual Apple Fair held in September. Of course, this was a few years ago, giving Covid madness shutting everything down. I was so taken aback at these beauties entered in the annual plant show. I have done a little more research and yes, they will grow in our area. The grain can be harvested and eaten in soups, stews, or porridge, with a nutty type of flavor. The leaves can also be eaten in salads, or as a leafy vegetable, many saying it tastes much like spinach. It is also such a showstopper and can be used as a feature or background plant in any flower garden.



Amaranth is native to North and Central American and is usually planted from seed as soon as the last frost has passed in the spring. One can also start seeds indoors 8 weeks prior.

If you wish to harvest the plants for seeds, it will take about 12 weeks for the plants to reach full maturity. Leaves can be harvested within a few weeks of outdoor planting. These plants will grow 2-5' tall, and 1-2' wide, they need full sun to partial shade and grow best in moist but well drained soil. Amaranth does not need any fertilizer and will become "leggy" if given too much. Do not overwater. Loves-likes-bleeding (to the left) is one of the more popular amaranths grown in gardens.



When harvesting the plant's leaves, make sure to leave the crown intact, as well as some leaves around the top, so the plant can continue to grow. You can also cut the whole plant off at ground level when it is between 1 and 2' tall. It is possible it will resprout for another harvest. To harvest the seeds, pick stalks and let dry completely in a darkened area. Place a plastic bag over the seed stalk and shake, the seeds should come right off.

Amaranth comes in a variety of colors from red, to green, orange, hot pink, and everything in between. Most amaranth seed are available at any reputable online seed company, while some specialize in only amaranth. This is another of my favorites, "dreadlocks". There are so many to choose from! If you decide to plant these in your garden next year, please share your pics. I will share mine as well.



Submitted by Annelie Lauwerijssen

## Recipe of the Month

### Easy Crispy Chicken

This one gives you several options to use what you have on hand...

#### For the Chicken:

2 large chicken breasts, boneless, skinless, about 1 1/2 pounds

Lay each on the counter and cut across, opening them like a book, and make each into 2 thin cutlets

**OR** slice across the breasts into 1/2" thick pieces

**OR** you could do this with chicken tenders

#### For the Coating:

1 egg white

1/4 cup sour cream **OR** ranch dressing **OR** Greek yogurt

2 teaspoons Dijon mustard (or yellow mustard, if you must)

1/2 teaspoon each salt and pepper

#### Optional: Other flavorings...

1 teaspoon hot sauce (or more!)

2 teaspoons lemon zest

Whisk these together in a shallow bowl

Place the meat in the mixture and coat evenly



Continue to the next page...

## Recipe of the Month

Recipe continued...

### For the Crumbs:

1 sleeve Ritz crackers **OR** other cheese flavored cracker, like Cheese-its  
(about 2+ cups crushed)

1 cup shredded sharp cheddar cheese **OR** Parmesan **OR** Asiago **OR** pepper jack

1/2 teaspoon garlic powder

1/2 teaspoon onion powder

### Optional: Other flavorings...

1 tablespoon dried herb of your choice - parsley, thyme, basil, tarragon, Italian seasoning

In a wide, shallow dish, crush the crackers with your hands and toss with cheese and seasonings

### To Assemble and Cook:

Preheat your oven to 425 degrees

Lay a heatproof rack inside a sheet pan

Spray the rack with non-stick spray

Lay the cutlets in the cracker mixture, pressing to adhere lots of crumbs to the coating

Lay coated cutlets on the rack, not touching each other

Bake 10-15 minutes until crispy and chicken is no longer pink

Let the cutlets sit a couple minutes once done so coating stays on!

Serve with a big green salad and maybe mac and cheese or macaroni salad.

You could also turn these into crispy chicken sandwiches...

Toast some buns or rolls, dress with mayo, more cheese of course,  
and top the chicken with lettuce and sliced tomatoes.

Submitted by Penny Walgenbach

# Seasonal IPM Checklist

The list below reflects possible landscape activities to do during the selected month(s) in your region. You can use the checklist as a guide for IPM activities in your own landscape or provide it to your clients.

## July

- Abiotic Disorders - Prevent or manage damage, such as that caused by aeration deficit, herbicide, salinity, soil pH, sunburn, wind, and too much or little water.
- [American plum borer](#) - Check for frass and gum on lower branch crotches and graft unions of young trees such as almond, mountain ash, olive, sycamore, and stone fruit.
- [Ants](#) - Manage around landscape and building foundations, such as using insecticide baits and trunk barriers.
- [Aphids](#) - On small plants, spray a strong stream of water or apply insecticidal oils and soaps. Look for and conserve [natural enemies](#) such as predaceous bugs, lacewings, lady beetles, and syrphids.
- [Asian citrus psyllid](#) - Look for it and if found where not known to occur report it and other new or [exotic pests](#) to your local county agricultural commissioner.
- [Bacterial blast, blight, and canker](#) - Inspect apple, citrus and especially *Prunus* spp. (e.g., stone fruit). Remove entire affected branches in the summer, making cuts several inches away in healthy wood.
- [Carpenter bees](#) - Paint or varnish and seal wood in which they nest. If intolerable, treat tunnels during fall or early spring.
- [Carpenterworm](#) - Protect trees from injury and provide proper cultural care, especially appropriate irrigation.
- [Citrus](#) - Monitor for damage and pests such as leafminer.
- [Clean up](#) mummies and old fruit and nuts in and under trees to avoid harboring pests.
- [Clearwing moths](#) - Look for signs of boring in ash, birch, pine, poplar, and willow; less often in oak, sycamore, and stone fruits.
- [Coast redwood dieback](#) - Check for drought-stress related maladies such as abiotic disorders, bark beetles, fungal diseases, and spider mites. [Deep water trees](#) and apply mulch.
- [Codling moth](#) of apple and pear - Bag fruit. Promptly remove infested and dropped fruit. Apply insecticides only if precisely timed.
- [Compost](#) - Turn and keep it moist.
- Cover fruit trees and grapes with netting to [exclude birds](#) and other [vertebrate pests](#).
- Cypress, or Seridium, [canker](#) - Prune dying branches at least 6 inches below any apparent cankers. Irrigate appropriately. Replace severely affected trees.
- Deter [borers](#) - Deep water trees adapted to summer rainfall e.g., fruit and nut trees. Protect trunks and roots from injury and avoid pruning, except for hazardous trees and certain pests and plants that warrant summer pruning. [Paint trunk and scaffolds with white](#) interior latex paint diluted with an equal amount of water.
- [Eutypa dieback](#) - Prune apricot and cherry.
- [Fire blight](#) - Look for oozing and dead limbs on pome plants such as apple, crabapple, pear, and pyracantha. If a problem in the past, apply blossom sprays to prevent new infections.

# Seasonal IPM Checklist

- [Green fruit beetle](#) in fig and stone fruits - Plant varieties that mature early or late in the season, avoid varieties that mature midseason.
- [Irrigation](#) - Adjust watering schedules according to the weather and plants' changing need for water. Check systems for leaks and broken emitters and perform maintenance as needed. Consider upgrading the irrigation system to improve its water efficiency.
- [Leaffooted bug](#) - Look for feeding on fruit and nuts such as almonds, pistachios, and pomegranates.
- [Mosquitoes](#) - Eliminate standing water e.g., in gutters, drain pipes, and flowerpots. Place *Bacillus thuringiensis* subspecies *israelensis* in birdbaths and ponds to selectively kill mosquito larvae.
- [Mulch](#) - Apply organic mulch where thin or soil is bare beneath trees and shrubs.
- Oak [gall wasps](#) - Usually do no serious harm to oaks. Control is very difficult.
- [Olive knot](#) and [oleander gall, or knot](#) - Prune off galled branches if intolerable.
- [Powdery mildew](#) - Check for signs of disease on apple, crape myrtle, grape, rose, and stone fruits.
- [Redhumped caterpillars](#) - Monitor trees such as liquidambar, redbud, stone fruits, and walnut. Cut off shoots infested with groups of young caterpillars. Apply *Bacillus thuringiensis* or spinosad.
- [Root rot](#) - Favored by excessive water and poor drainage. Avoid overirrigation and waterlogged soil.
- [Rose pests](#) - Manage or take preventive actions for powdery mildew.
- [Spider mites](#) - Irrigate adequately, mist leaf undersides daily, reduce dustiness, spray horticultural oil.
- [Weeds](#) - Manage weeds using nonchemical methods such as [cultivation](#), handweeding, or mowing.
- [Yellowjackets](#) - Place out and maintain lure traps or water traps. Trapping is most effective during late winter to early spring.

# Ground Squirrels

**Ground squirrels injure many types of plants, harbor diseases harmful to humans, and damage landscapes with their burrowing.**

Although similar in appearance to tree squirrels, ground squirrels will always retreat to a burrow when frightened, while tree squirrels will climb a tree or other tall structure and never use a burrow. Traps, baits, and burrow fumigants will effectively manage ground squirrels in landscapes and gardens.



California ground squirrel.

M Dimson, UCE

## Identification and behavior:

- Brownish-gray fur.
- Body is 9- to 11-inches long, not including a 5- to 9-inch tail that isn't as bushy as a tree squirrel's.
- Live in colonies in a burrow system where they sleep, rest, rear young, store food, and avoid danger.
- Active during the day, mainly midmorning through late afternoon, especially on warm, sunny days.
- Breed once a year, averaging 7 to 8 per litter. When 6 months old, young squirrels resemble adults.

## Ground squirrels cause damage by:

- Eating food-bearing and ornamental plants.
- Gnawing on plastic sprinklers and irrigation lines.
- Girdling young trees.
- Burrowing, which causes trip hazards and damages landscapes and structures.



Ground squirrel damage to avocado.

N Quinn, UCIPM

## How do you manage ground squirrels?

- Remove brush piles and debris that ground squirrels can use as cover.
- Destroy old burrows by deep ripping them to a depth of at least 20 inches.
- Use kill traps (such as box or Conibear traps) only when there is no chance of catching a pet or other wildlife.
- Live-catch traps are not often recommended, because they present the problem of animal disposal.
- Place traps on the ground near squirrel burrows or runways. Bait traps with walnuts, almonds, oats, barley, or melon rinds. Trap between February and October.



Conibear trap set at the base of a structure to trap California ground squirrels.

N Quinn, UCIPM

## What about pesticides?

- In spring, fumigate by placing gas cartridges in burrows. In dry conditions, gas cartridges can be a fire hazard. Don't use near buildings.
- Place anticoagulant baits in secure, tamper-resistant bait stations and provide sufficient product for repeated feedings. Squirrels must eat the bait multiple times over several days. Always follow label instructions for use. Take care not to poison pets or other wildlife.

For those who live next to wildlands or other infested areas, ongoing management is necessary. Periodically check the area for signs of reinfestation, such as new burrows. Start management as soon as you notice new squirrels, since it is easier and less expensive to manage a small number of squirrels.

## What you do in your home and landscape affects our water and health.

- Minimize the use of pesticides that pollute our waterways and harm human health.
- Use nonchemical alternatives or less toxic pesticide products whenever possible.
- Read product labels carefully and follow instructions on proper use, storage, and disposal.

For more information about managing pests, visit [ipm.ucanr.edu](http://ipm.ucanr.edu) or your local University of California Cooperative Extension office.

# Gardening Guide

## UC Master Gardener Program of Colusa County

Zones 8 and 9

	July	August	September
<b>P L A N T I N G</b>	<ul style="list-style-type: none"> <li>You can still plant seeds of annuals: zinnias, marigolds, sunflowers and alyssum will grow and bloom this year.</li> </ul> 	<ul style="list-style-type: none"> <li>You can plant directly in the garden seeds of carrots, beets, lettuce, spinach and turnips. Indoors you can start seeds for broccoli, cabbage, kale, bunching onions, and radicchio.</li> </ul>	<ul style="list-style-type: none"> <li>You can still plant seeds of annuals: zinnias, marigolds, sunflowers and alyssum will grow and bloom this year.</li> </ul>
<b>M A I N T E N A N C E</b>	<ul style="list-style-type: none"> <li>Dig/divide bearded iris that have not been divided.</li> <li>You can dig/divide other bulbs after the foliage has died off.</li> <li>Deadhead blooming plants as they finish flowering to promote continuing bloom.</li> <li>Fertilize roses after each burst of blooms.</li> <li>Cut back lavender after flowering to promote a second bloom. You can prune by half to keep the plant in bounds.</li> </ul>	<ul style="list-style-type: none"> <li>Continue to weed. Be especially sure to get weeds before they flower and set seeds.</li> <li>Cut off spent flowers of perennials and annuals for continued bloom.</li> </ul>	<ul style="list-style-type: none"> <li>Be sure everything is well mulched for the heat of summer. Water before 10 am to avoid fungal infections and to minimize water loss to evaporation.</li> <li>Deadhead blooming plants as they finish flowering to promote continuing bloom.</li> <li>Cut back lavender after flowering to promote a second bloom.</li> </ul>
<b>P R E V E N T I O N</b>	<ul style="list-style-type: none"> <li>Be sure everything is well mulched for the heat of summer. Water before 10 am to avoid fungal infections and to minimize water loss to evaporation.</li> <li>If you have fruit trees, be sure to pick up dropped fruit to prevent brown rot from developing and leaving spores for future infection.</li> </ul>	<ul style="list-style-type: none"> <li>Water before 10 am to avoid fungal infections and to minimize water loss to evaporation.</li> <li>Check the mulch you have spread around and be sure it is thick enough to suppress weeds. (3 to 4 inches)</li> </ul>	<ul style="list-style-type: none"> <li>If you have fruit trees, be sure to pick up dropped fruit to prevent brown rot from developing and leaving spores for future infection.</li> </ul> 



# MASTER GARDENER PROGRAM

## THINKING SAFE AND GREEN



**AGRICULTURE AND NATURAL RESOURCES  
ENVIRONMENTAL HEALTH AND SAFETY**

**#18**

## **BITING AND STINGING INSECTS**

*Information given here is intended for use by program representatives, master gardeners, and those they train.*



species, fire ants, midges, scorpions, bees including Africanized honey bees, wasps, and hornets.

Information available from the National Institutes of Allergy and Infectious Diseases indicates more than 40 fatalities annually can be attributed to severe venom allergic reactions (called anaphylaxis) from insect bites or stings. Common California biting and stinging insects include ticks and chiggers, centipedes, mosquitoes, black, deer, and horse flies, spiders including black widow and brown

Aside from allergic reactions, biting and stinging insects cause nuisance bites and stings that can result in tissue swelling, infections of bite and sting sites, skin lesions, itching, dermatitis, and pain or burning sensations.

Symptoms of a severe venom allergic reaction include large areas of itching and hives, difficulty breathing, dizziness, excess sweating, nausea, swelling of the tongue or throat, and possibly a rapid decrease in blood pressure resulting in loss of consciousness.

The following precautions should be taken for preventing insect bites and stings:

- The best defense against biting and stinging insects is to not be bitten by one. Therefore, avoid conducting Master Gardener activities during peak biting or stinging insect activity times (usually early morning and evening hours) and in favorable biting or stinging insect habitat such as wetlands, along streams, lakes, or oceans, and moist shaded portions of wooded, brush-covered, or grassy areas. Also, avoid contact with insect nests, swarming insects, and ant mounds.
- Wear a long-sleeved shirt and long pants with boots when outdoors. Tucking your pants into your boots or socks helps prevent biting and stinging insect access to your skin.
- Use insect repellants containing compounds such as DEET (repels insects) on exposed skin and permethrin (kills many insects on contact) on clothing only.
- Closely look for insects or insect activity before placing your hands on objects such as rock outcrops or trees or picking up objects from the ground (i.e., rocks, plants, leaves, remote monitoring equipment, etc.)
- Thoroughly inspect the area where you intend to sit, particularly around stumps, logs, boulders, or rock outcrops.
- If you experience an insect bite or sting, wash the wound with soap and water, apply an antiseptic, and cover the wound with a band aid or clean dressing. Carefully remove stingers from skin by using tweezers and then clean and dress sting wounds.
- Never scratch an insect bite or sting.
- Promptly seek professional medical attention if you suspect you are experiencing severe venom allergic reaction symptoms.
- Let your Master Gardener colleagues and program coordinator know in advance if you are allergic to insect bites or stings so they can respond appropriately if you are bitten or stung.

## Master Gardener activities!



In today's fast paced, social media way of life, fake news has become normal.  
This includes fake gardening advice.  
UC Master Gardeners use cutting edge, research-based information to help you garden better.  
We are practical, connected and trusted.  
*Advice to Grow By ... Ask Us!*

Tomorrow's activities are created by today's dreamers—you can make sure that the UC Master Gardener Program of Colusa County is still working to help future generations through your support.

[Click here to support us.](#)

### Science Word of the Month

**Biological pest control (biocontrol)** - The action of parasites, predators, pathogens or competitors in reducing another organism's population density. For example, lady bugs.

If you attended one of your workshops, you will receive an email from [mgevaluation@ucanr.edu](mailto:mgevaluation@ucanr.edu). Your input gives us the tools we need to grow and improve our program. *Thank you!*

PRACTICAL | CONNECTED | TRUSTED



# Monocots and Dicots

Flowering plants are divided into two broad divisions—**monocots** and **dicots**. Monocots, such as the iris and the palm tree, have one **cotyledon** or seed leaf, fibrous roots, narrow leaves with parallel veins, and flowers whose petals occur in multiples of three. Dicots have two cotyledons or seed leaves, tap roots, leaves with branched veins, and petals which occur in multiples of four or five. A violet or a maple tree are both examples of dicots. Scientists use these two broad divisions, monocots and dicots, to classify flowering plants all over the world.

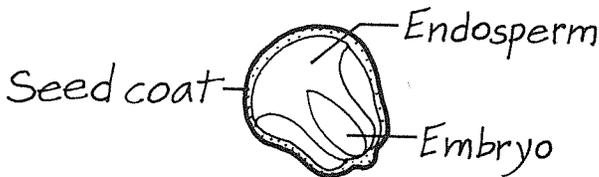
## Monocots and Dicots

(Technical Drawing/Collections)

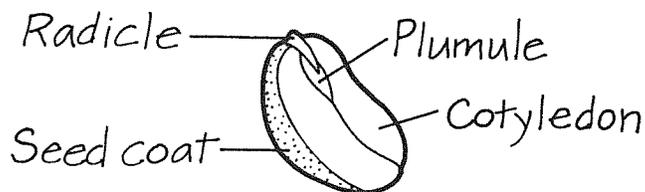
Give each student a peanut and a corn seed. Have students identify each as a monocot or dicot. The peanut is a dicot because it breaks into two cotyledons. The corn is a monocot—it has only one cotyledon and so will not split in half. Ask students to sketch their seeds and label the main parts. Encourage the students to bring in other seeds to create a seed display categorized by monocots and dicots.

### Corn

(inside view)



### Peanut



## Leaf Comparison

(Technical Illustration/Writing)

Have each student bring a small bag of leaves to school. Ask cooperative groups to categorize their leaves. Invite students to share how they decided on their sorting rules. Then share how scientists differentiate between monocot and dicot leaves using the chart on page 21.

Have students draw and label monocot and dicot leaves in their science journals. Then have students write a summary describing the physical differences of the leaves.



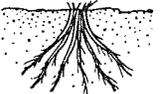
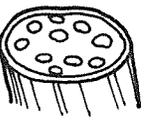
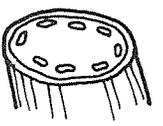
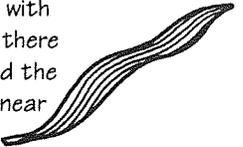
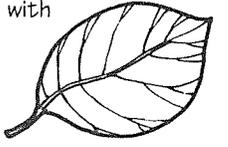
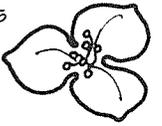
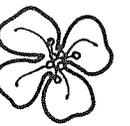
## Comparing Monocots and Dicots

(Classification/Research)

There are many identifying characteristics of monocot and dicot plants. Using the chart on page 21 for reference, invite students to record daily observations of plant life for two weeks. In their journal they record the name of the plant, sketch and label its main parts, and indicate the characteristics which make it a monocot or a dicot.

Name: \_\_\_\_\_

# Comparing Monocots and Dicots

	Monocots	Dicots
Seeds	one cotyledon or seed leaf 	two cotyledons or seed leaves 
Roots	branched, fibrous roots all of similar size 	long, slightly branched tap root that grows deep into the soil 
Stems	usually herbaceous stems with tissues randomly arranged throughout stem 	both woody and herbaceous stems with tissues arranged in a circular pattern 
Leaves	leaves are narrow with parallel veins and there is a sheath around the part of the stem near the leaf 	leaves are broad with branched veins 
Flowers	petals occur in multiples of three; sepals and petals are difficult to tell apart 	petals occur in multiples of four or five; petals and sepals are easily distinguished 

## Research:

Check the accuracy of this chart by examining several plants in your neighborhood or local nursery. Observe each plant carefully for the characteristics listed above. What were your findings? \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## Questions:

Do you think there are more monocots or dicots growing on Earth? Why?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

How might you research the answer to this question? \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_



7. Burgundy Rose (*Rosa centifolia parvifolia*)

## Garden Club of Colusa County activities

No meeting in June or July  
St. Stephens Church  
Colusa

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## Additional Links

- Integrated Pest Management [ipm.ucanr.edu](http://ipm.ucanr.edu)
- UC Davis Arboretum [arboretum.ucdavis.edu](http://arboretum.ucdavis.edu)
- Invasive Plants [www.cal-ipc.org](http://www.cal-ipc.org)
- Plant Right [www.plantright.org](http://www.plantright.org)
- Save Our Water [saveourwater.com](http://saveourwater.com)
- California Garden Web [cagardenweb.ucanr.edu](http://cagardenweb.ucanr.edu)
- McConnell Arboretum and Botanical Gardens [turtlebay.org](http://turtlebay.org)
- UCANR Colusa County [cecolusa.ucanr.edu](http://cecolusa.ucanr.edu)
- UC Master Gardener Program (statewide) [mg.ucanr.edu](http://mg.ucanr.edu)
- California Backyard Orchard [homeorchard.ucanr.edu](http://homeorchard.ucanr.edu)
- ANR publications [anrcatalog.ucanr.edu](http://anrcatalog.ucanr.edu)

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