University of Arizona Yavapai County Cooperative Extension

Yavapai Gardens

Master Gardener Newsletter October-November 2018

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Onions

by Nora Graf

Onions have always been pretty care-free plants in my garden but they have their share of problems like everything else. Here are some you might encounter. Most of this information came from the University of California, UC IPM website, http://ipm.ucanr.edu/index.html

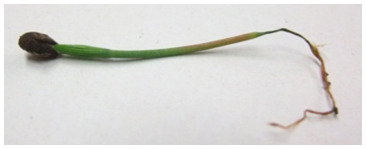
Thrips—for their tiny size, are great spreaders of diseases in a variety of plants. In onions they feed on the leaves. The leaves turn white causing damage to the plant by reducing photosynthesis and its ability to produce food for the growing bulb. The earlier in the growing season the problem starts the more impact it will have on the bulb. Management of your garden is the best defense. Don't let volunteer onions stay around, remove them. Thrips can be washed away with overhead irrigation. It won't get rid of them but might help lower the population. There are pesticides that will help control thrips but they are notoriously good hiders in leaves making them hard to reach. A moderate spray pressure is needed and large amounts of pesticides. Spray only if you detect a problem.

Onion Root Maggots—These maggots are the larva of a small gray fly, smaller than a house fly. They lay eggs on the surface of the soil near germinating plants. Hatched larvae are creamy white and legless, about .4 inches long. They feed on growing seedlings and the developing bulb. The damage they do can increase the problem of rotting bulbs that are being stored. Undecomposed organic matter can attract the flies. The most damage occurs in early spring plants when the soil is still cool.

Downy Mildew (Peronospora destructor)—Downy Mildew can be found on many allium species including onions, garlic, chives and shallots. Sporangia *(your word of the day)* is an enclosure in which spores are formed. It can be a single cell or multicellular. All plants, fungi, and many other lineages form sporangia at some point in their life cycle and can be brought into the garden via air currents or the

pathogen can over-winter in debris from diseased foliage or in the bulbs themselves. Spores prefer cooler temperatures (43° to 80°F) and moisture so you would most likely see this during our winter rains. It also prefers low light. Prevention and control are easy for home gardens. Make sure you have a good-draining soil and good air circulation. If you have had problems in the past, plant the onions less densely next time.

Iris Yellow Spot Virus—This virus was first reported in Yuma in 2003. The virus is carried by onion thrips *(Thrips tabaci)*. The list of host plants for this virus is quite extensive and include some common garden plants: iris, petunias, dandelions and many others. Symptoms show up as yellow to straw-colored spots or lesions on the leaves. The leaves and scapes appear dull in the early stages and the lesions are irregular and diamond-shaped. The leaves die back as the lesions enlarge and grow together. The lesions can completely girdle the scape and cause lodging (the bending over in the scapes). Since the disease is brought in by thrips it is hard to control. The severity of the problem is dependent on the number of thrips feeding on the plants. In gardens just make sure you water correctly and have good soil fertility as healthier plants seem to show fewer symptoms. The virus can overwinter in volunteers in the fields and in alternative hosts. A simple control is to remove all onions growing in an infested field.



Seedling damping-off—You may be familiar with this already if you have spent any time starting seeds. It occurs when seedlings rot right at the soil line or slightly below. The seedling wilts and falls over.

Fusarium basal rot—The pathogen *Fusarium oxysporum* causes the disease. It appears in localized areas in fields where previous problems occured or can be brought in by contaminated sets and transplants. Symptoms are a general wilting and yellow to tan dieback of the leaf tips from mid to late in the growing season. The foliage will die over several weeks. The fungus enters the roots or bottom of the bulb through wounds, pink rot infections or other infections and moves into the bulb scales. The roots may rot off or the basal plate (where the roots form) can turn gray to brown and white to pink fungal growth may be seen between and on the scales. The vascular system may plug up causing the foliage to wilt and die. A progressive decay continues and the bulb will often have secondary bacteria and maggots that feed on infected tissue.

Pink Root infection—Is caused by *Phoma terrestris* and can appear early in the season but more commonly is seen in nearly mature plants. The leaves may die back and become covered with a secondary fungus. (A secondary fungus is not the primary cause of the disease but takes advantage once the infection begins.) The plant produces undersized bulbs.

The most common symptom is seen on the roots. They turn pink or yellowish brown, then shrivel and die but persist as red, purple or dark brown remnants. Any new roots will soon die also.

Stem and Bulb Nematodes—Stem and bulb nematodes feed on the cells in all parts of the plant. Seedlings are stunted and have swollen areas along the cotyledons. Leaves develop yellowish-brown spots and can become short and thickened with stem swelling. The stem scales become light gray and soft. Bulbs may become malformed. Foul odors may occur because of secondary infections. Infections usually happen by planting already infested sets. They move about on water films but can survive extreme droughts by rehydrating only when conditions improve. Symptoms show as oval patches of stunted and thin plant stems.

Root-knot nematodes—These live in the roots of the host. There are about four species that will affect onions and garlic. They are easily identifiable because they form knobs or galls on the roots. Plants may show stunting and yellowing that resembles water and nutrient deficiencies.

They are frequently introduced into the soil by already infected plants. Crop rotation using non-host plants and leaving the fields fallow for extended periods reduce populations.

Stubby Root Nematode—This species feeds on host roots. Plants are stunted and turn yellow, sometimes killing the plants. The roots develop stubby branches often in clusters. It only feeds externally and doesn't enter the plant. Flooding fields and then drying can help decrease populations of nematodes along with rotations of plants that are resistant.

Lesion Nematode—Spend a large proportion of their life in the roots feeding on plant cells. If conditions become unsuitable they will leave the host to search for food. The nematodes feed on the root tips, which damages the growing root tissues. Roots remain very short and restricts the amount of nutrients and water the plant can take up is restricted.

Nematodes are difficult to control since they have many different hosts. You can grow non-host plants for at least three years to reduce nematode problems. Do not move infested soil around into other beds.

Aster Yellow—Aster Yellow is a phytoplasma disease. Phytoplasma are obligate bacterial parasites of plant phloem tissue that have insect vectors. (Obligate means they need suitable hosts} The plants turn yellow with green streaks at the base and the leaves flatten, sometimes twisting and intertwining. Over time the entire leaf will yellow. Flowers may be distorted and elongated and sometimes the plant will form small bulbs instead of seeds. The disease is transmitted by the aster leafhopper, *Marosteles quadrilineatus.* The parasites can overwinter in adult leafhoppers, different grains, some weeds and ornamentals. Cleaning up the garden can help in controlling this problem.

Non-infectious problems

Bulb splitting occurs at the basal plate, the point where the roots and the bulb meet. Multiple bulbs may appear at the split plate. This is caused by uneven watering and then drying of the soil. It is most common in soils that are over-irrigated. The splits provide an opportunity for secondary infections and microorganisms that can cause bulb decay. The solution is easy— improve your watering practices.

My Personal Rant

by Nora Graf

Disclaimer: Cooperative Extension knows nothing about this and is not responsible for my opinions.

What have we come to as humans? We have a wondrous collection of plants that live around us, that we grow in our gardens. Flowers in every color, even leaves with colors. So what the h---- are those abominations that you can find in stores. Artificially colored to the extreme. It started a long time ago when flower growers discovered they could color flowers by adding dye to the water. I can still remember seeing my first dyed blue carnation. Even as a youngster I thought it was pretty weird looking. Now they just paint them. Apparently, though, they were good sellers because the trend continues today. Electric blue orchids can be found everywhere. Orchids are some of the most amazing and varied plants out there. Why are we dyeing them? What is it about that awful blue color! It didn't stop there. Now poinsettia have glitter on them and are painted. Blue poinsettias, aarrrghhhh. Really, someone needs to blindfold me when Christmas comes!! Besides where do you think the glitter ends up? It's plastic and some poor creature might eat it or it goes into the water where fish and birds may feast upon it.

The latest incarnation is painted succulents. You do realize that it's a surface color and is only temporary don't you? Yes, there is the electric blue but there pinks and yellows, whites and turquoise colored ones. Red and purple and green. I want to know who thought of painting a green plant, green. Who is that!!!???

Now I have probably stepped on someone's toes. There have to be people buying these things, otherwise there wouldn't be people making them. I didn't mean to offend but sometimes you just have to call out the horrible mistakes we make.

Milkweeds for Monarchs

by Laurie Cameron

The mission of the Arizona Milkweeds for Monarchs project is to use citizen volunteer gardeners to assess the suitability of a range of region-appropriate milkweeds in home gardens and determine their utilization by monarch butterflies in mid and high elevations in Arizona.

In Prescott and the Verde Valley, there are two objectives of citizen scientists participating in the project. The first is site testing and the second is seed orchard hosting.

Volunteers for site testing receive various species of milkweed seedlings to plant in their gardens. The goal is to analyze if the plants are doing well and if they are attracting monarchs. Volunteers are asked to report specific details about their site, e.g. type of soil, elevation, type of irrigation, and how well each plant is doing in terms of the height, how healthy they seem, evidence of flowering, presence of pest insects and monarchs, when eggs were deposited and when caterpillars first appear. This year we have 13 volunteers in the Verde Valley area and 9 in the Prescott area. These volunteers received twelve seedlings of five species collected in different parts of our region.

Volunteers for the orchard sites receive eight seedlings of one particular species with the goal of collecting seeds from the flowering plant. Like the volunteers for the testing sites, they are asked to report the same information on growing conditions and plant health. In addition, they collect seeds. Since the viability of different species is not well known, there is a possibility that the plants won't flower, particularly in the first year. For the orchard sites we have 12 volunteers in the Verde Valley area and 4 in the Prescott area.

This is the third year since the project's inception. Mike Wagner, the lead for this project, provided me with a wealth of information about how the project is working. His

first observation is that the volunteers are as varied, if not more so, than the species being tested. They have a range of gardening skills in addition to different gardening philosophies: organic, utilitarian, "Buddhist view." Finally, they either love or hate computers. The instructions are on the website and the data are meant to be submitted via email on schedule, but this doesn't always happen.

What the project needs is a (dare I say?) paid field manager who would oversee the logistics as well as visit volunteer sites. Unfortunately, the project has no budget. It raises revenues through the sale of plants and seeds, which is not nearly enough to pay a field manager. They are currently looking for donor support and have submitted a proposal for a grant.

The project is somewhat a case of the blind leading the blind because we know so little about milkweeds and monarch butterflies in our region of the country. I have been a volunteer for two years now and I am learning how little we know about monarch migratory patterns, their preference for different species of milkweeds, which species of milkweeds will thrive in our region and under what conditions.

One last question I asked Mike is “why milkweeds?” We know that the population of monarchs has declined dramatically in the Midwest, but what about here in Northern Arizona? His answer was that there are no historical data for monarch butterflies for this region. Moreover, whatever the situation was in the past is mute, because the environment is changing so rapidly that we can't really try to replicate the past. Finally, he noted that we tend to talk about milkweeds and monarchs in the same breath, meaning the focus of this and other projects is to find milkweed species that monarchs will use. That said, even if we find or propagate milkweed species that grow happily in our environment but monarchs don't like them, well, as gardeners, we can also grow them for their own esthetic value.

Meet A Master Gardener—Phyllis Jiacalone

By Linda Guy

No one is a stranger when friendly Phyllis Jiacalone is on duty in the horticultural corner of the Prescott V.A. Her husband is a veteran and in 2014 Phyllis volunteered to care for the rose beds on the campus. She devotes two mornings every week to an old collection of 55 roses by the greenhouse whose history remains a mystery. Her renewal and care of the roses around the flagpole have greatly enhanced this setting for outdoor ceremonies. She is passionate about teaching vets and volunteers the joys of gardening.

Everything comes up roses for Phyllis! She has been a Consulting Rosarian (the only one in Yavapai County) with the American Rose Society since 2012. In four years, she will achieve Master Rosarian status. Her favorite public plot is the Rose Garden at Mesa Community College, where she has volunteered since 2002. Over 9,000 roses of over 300 varieties are tended by the Mesa-East Valley Rose Society, Phyllis is a membe), local Master Gardeners and other volunteers. The "Veteran's Garden" section has a special place in her heart. Its 1,000 roses were planted after 9-11, and include such varieties as Silver Star, Bronze Star, Memorial Day and America. Her all-time favorite is Veterans' Honor. She still helps with at least four major events at MCC each year, and makes herself available for teaching whenever the rose society needs her.

Phyllis grew up playing in the dirt and growing things. Her farming family moved from Kansas to Chandler, Arizona when she was four and she remained in the East Valley until her move to Prescott about 5 years ago to marry John (JJ) who lives here. At the time, she had over 100 roses at her Gilbert home. Knowing that the new owner would not quite share her level of passion, Phyllis offered to relieve the new resident of some of the plants. The couple now resides south of Willow Lake, along with fully half of Phyllis's roses from the Valley.

Her yards also include a "handful" of vegetables, some fruit trees, lilacs, butterfly bushes (Buddleia) and a lot of milkweed (Asclepias). Phyllis has recently become active in the local monarch project, and has been learning how to tag these beautiful butterflies from Cathy Palm-Gessner whose husband Bob is a Master Gardener. Other gardening activities include the MGA Speakers Bureau, OLLI classes at Yavapai Community College, speaking at most of the garden clubs and leading hands-on classes in rose pruning. It's no wonder that she is closing on her 250 Volunteer Hour pin from the MGA. Phyllis simply loves to speak and always starts from the assumption that the audience members are potential new friends.

When Phyllis married JJ, she also married into the Yavapai County Jeep Posse Search and Rescue team, a part of the Yavapai County Sheriff's Department. This unit is considered a first-responder for evacuating homes due to fire or flood, snow rescue and locating missing persons.

Phyllis is an alumna of the 2013 MG class, which she joined to understand the plants, weather and growing seasons that were so different at Prescott's mile-high elevation. By embracing service to her new community, she has made many good friends. Phyllis, we're so very glad that you're here.

Author's note: The V.A. horticultural area is always looking for volunteers. There is also a special fund for private donations to support activities in the greenhouse, orchard, vegetable and rose gardens. Contact Roberta Pelayo, MG and coordinator for VA greenhouse volunteers, for more information: phone or text 209-409-1896 or email rvpbooky@frontiernet.net

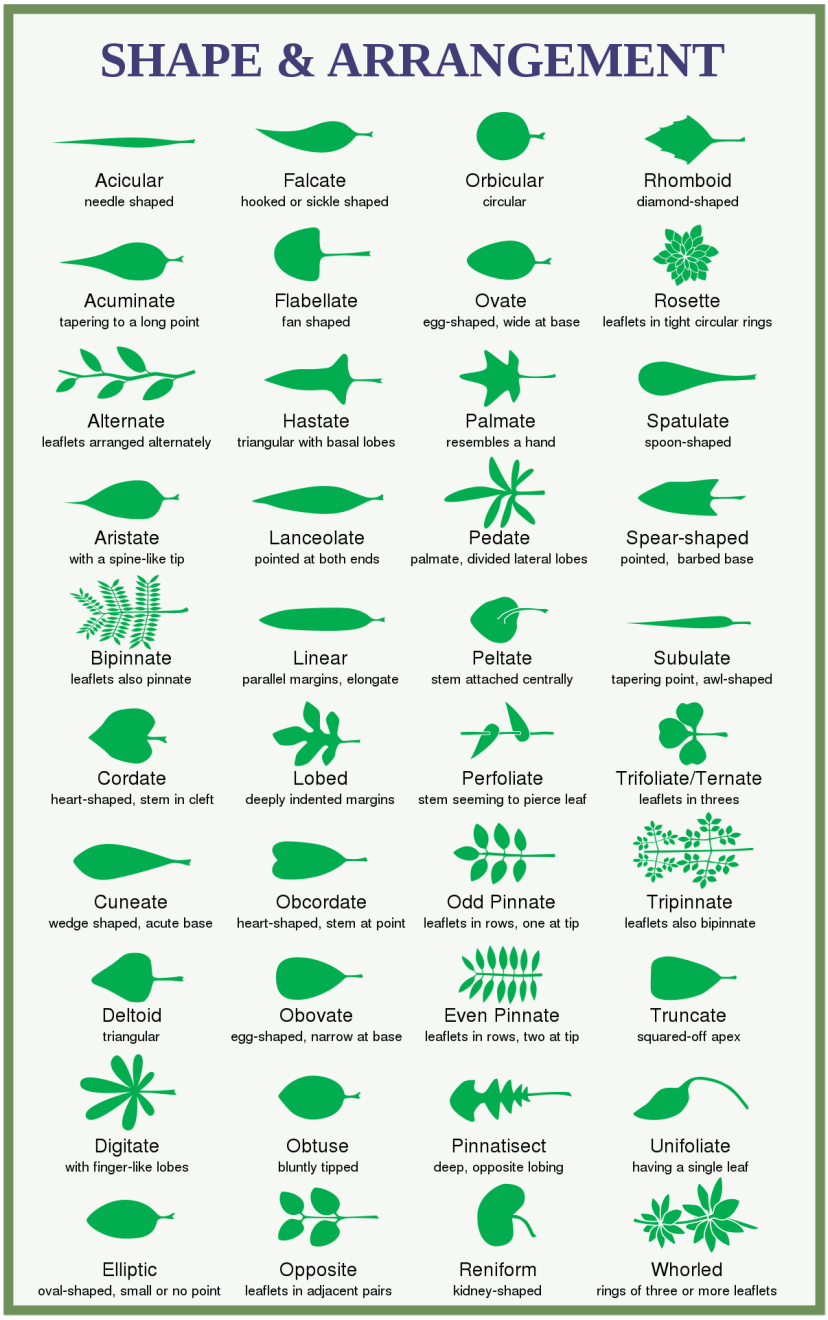
Identifying Plants

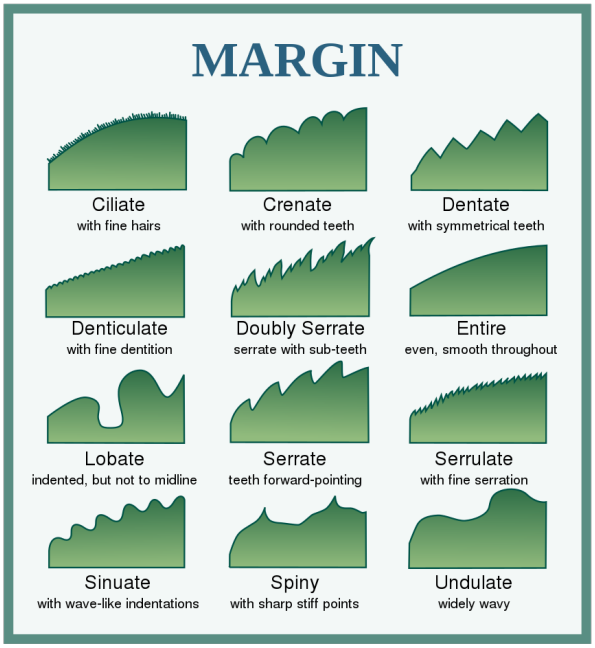
by Nora Graf

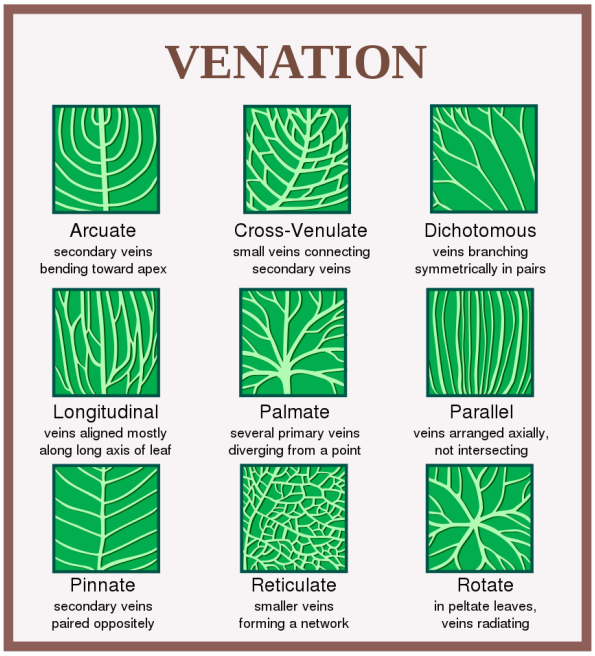
One of the most difficult tasks we are asked to do as Master Gardeners is identify plants and insects. I am no expert on either task but know the steps to take to try and figure out what things are. One of those steps is understanding the terminology so when you read a description you know what is being discussed. The terminology can be daunting but the internet makes life easier, just look it up. I found this great example of leaf terminolgy online. Now it will be easy to figure out what a flabellate leaf looks like.

When someone asks you to identify something try to get both flowers and leaves. Look at the plant carefully. Understand basic leaf shape and arrangement. Flower shapes are important. Compare pictures or written descriptions with the plant in front of you. If the description says the leaves have serrate leaves and your plant doesn't, move on. No matter how much you hope you have a match you will have to keep looking. Look at habitat requirements if the plant is only found in marshes and yours grows on western slopes, it is likely not your plant.

Identification is difficult even for experts. Take your time, many species can look similar. The most important thing though is not to jump to conclusions.







Congratulations

for completing your first 50 hours

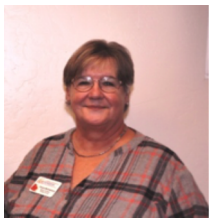
Carol Keefer — mentor: Jan Billiam
Tracy Wiederaenders — mentor: Nancy Deane
Char Terry — mentor: Leonard Filner
Chris Terry — mentor: Leonard Filner
Bill Adams — mentor: Michele Weston
Cindy Pitcher — mentor: Mary Barnes

MGA Recognition Picnic

October 13th, Red Rock State Park. Make reservation with Jane Harrington by Oct 3rd.

Fall into Gardening – Oct 20th

Day of Continuing Education for active Master Gardeners, will be held in Flagstaff. Registration must be received by Lisa Gerber at the Camp Verde Extension office by Oct 12th.
Registration information https://extension.arizona.edu/yavapai-fall-gardening



Tricia Steps In

Tricia Michelson has been appointed President Elect of the Master Gardeners Association. She replaces Marion Johnston who resigned due to medical issues. Marion expects full recovery.

2018 Newsletter Deadline Schedule

The newsletter comes out every two months. Please note the deadlines.

Publish Date	Deadline
Feb-Mar	Feb 1 — Articles Jan 5, announcements Jan 25
April-May	April 1 — Articles March 5, announcements Mar 25
June-July	June 1 — Articles May 5, announcements May 25
Aug-Sept	Aug 1 — Articles July 5, announcements July 25
Oct-Nov	Oct 1 — Articles Sept 5, announcements Sept 25
Dec-Jan	Dec 1 — Articles Nov 5, announcements Nov 25

From the Editor: Send or email articles to the address below. Email is preferred. Please see schedule for deadlines.
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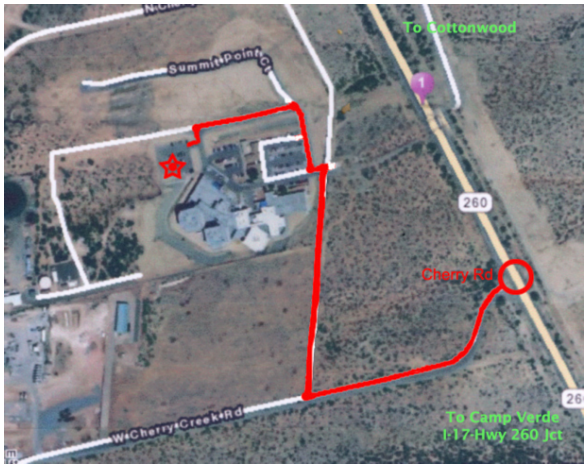
MG NEWSLETTER



Next Meetings

October 13 Recognition Picnic, Red Rock State Park, Sedona

October 20 “Fall into Gardening”, MG Continuing Education day, Flagstaff

November 14 Prescott, Sue Smith “Native Plants of Bear's Ears National Monument, Utah” (Election of Officers)

They have nearly completed the road construction on Hwy 260 between Cottonwood and Camp Verde. By the time of the Recognition Picnic travel on the highway should be much improved but they may still be working on sections of it. There are now lots of roundabouts. There is one to exit onto Cherry Road where our regular meetings take place. If you aren’t familiar with them just be careful.