ARIZONA COOPERATIVE EXTENSION Pinal County

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Benefits of Keeping a Garden Journal

Do you keep a garden journal?

For many people, a journal is an excellent way to both enjoy the garden year round and to record and keep track of favorite garden experiences. Garden journals also make for great leisure reading. That they can help you correctly manage and care for your garden is an extra plus.

A garden journal can take many forms. It can be simply a brief listing of specific plants and their performance during the growing season, or it can be an in-depth history of the lives of people enjoying the simple pleasures of gardening. Filled with photos and drawings and notes of feelings and insights, a journal can be a book of fond memories just as much as it is a record of life emerging from the soil.

A journal takes on the personality of the author, and its benefits are as numerous and as varied as the reasons that it is kept. If you think a garden journal is for you, here are a few ideas to get you started.

First, think of your garden journal as a tool, a very important tool to help you maintain a productive garden. If you are an avid gardener, you may have so many plants that it becomes easy to forget when you last fertilized your rose or watered your citrus tree. A journal will help you remember what task you performed for each plant and when. Many dead or dying trees and shrubs would probably be alive and well today if we could have just remembered when we last gave them water.

The content of the garden journal should include the important basic information of planting dates and the dates the plants emerged from the soil. The time between planting and germination is always a difficult time for young plants and is affected by temperature, rainfall, and light intensity. Each year many of us try to get an earlier start in our gardens to avoid the problems of heat and insects later on. By recording planting and germination dates, we can keep track of how well our plants do in the early season. That information will tell us whether we can squeeze the calendar a little more or whether we should wait for warmer temperatures.

The same goes for harvest. We should record not only how well the plants do during the growing season, but we should also note the quality and quantity of the harvest at the end of the season. This information, recorded in the journal, will be available for you to ponder the next time you select a planting date.
If you are into flowers, blooming periods are important information to collect. Many people are trying to ensure a colorful garden for a party or family gathering. Information related to peak blooming times, tied to the planting calendar, will help you remember from year to year what worked best.

Many of us like to experiment with different varieties. As we get older, our "forgetters" seem to get better. Soon, if we do not write it down, we can't remember the varieties we have tried in the past. Then, we either begin to duplicate ourselves, or we forget how well a particular variety performed in the garden. A journal will help capture this important information.

Do not forget to record the costs of plants and supplies. How better way to build a good budget for that next garden than by keeping track of the actual costs of keeping the garden productive and healthy?

In the interest of good plant health, it is important to remember what plants went into which part of the garden in a given season. Crop rotation has been an important cultural tool since the early years of agriculture. Because rotation helps prevent the build-up of disease pathogens and insects, recording plant locations each year will help us decide where specific plants should be placed in the garden.

Into the journal should also go details of all garden tasks that you do. When you perform a specific operation, such as feeding, watering, spraying, and pruning, write it down for future reference.

Styles of record keeping can range from nearly clinical listings of plant names and bloom dates to sentimental narratives chronicling both facts and feelings. The contents of garden notebooks and journals could vary from harvest recipes to weather data and from equipment warranties to vegetable taste-test results.

A three-ring binder with a washable cover and an inside pocket to hold pens and pencils is a great choice for recording garden information. The ring binder gives flexibility to add pages as needed and to slip in clippings and other useful information.

Some people divide the notebooks by month using plastic-covered index tabs on dividers. Behind each divider they place a page from a store-bought calendar. You can either fill in the daily calendar squares with "to do" lists gleaned from magazines and Cooperative Extension garden columns, ahem, or you can keep track of the day's achievements, such as when a particular garden bed or tree was watered.

Although this much information may be sufficient for some, others may want to follow the calendar leaves with lined paper for making detailed notes on garden activities and impressions, such as successful plant combinations, weather patterns, including their effect on the plants, and reminders to move plants or allow more time for certain garden tasks.

Another useful addition to the notebook is a reference section organized alphabetically to keep track of books and tools. In clear plastic inserts, you may want to slip seed packets, plant tags, articles, and instructions.

You may decide that you want to design your own data forms. You might, for example, assemble a form that records a plant's common and botanical names, characteristics and use, size, bloom season, cultural requirements, and pests and diseases. It all depends upon your needs and interests.

As you personalize your journal, you may want to write in it daily or you may decide to write only when important information presents itself. For example, you may decide to walk through your garden on the last day of the month and make notes that will be important to you.

When it comes time to begin a new year, simply add extra pages to the monthly sections. If you are more ambitious, you can file each month's entries in a separate notebook or in a file cabinet file labeled by month.

Keeping a good garden journal through the months and the years will, at the very least, help you make sound decisions in the garden. If you have kept track of family events, such as garden parties, a wedding, new garden renovations, and new pets, you will have at your fingertips a set of memories that will last a lifetime.

IN THIS ISSUE:

Pyracantha

Pyracantha is a popular evergreen shrub that grows well throughout the desert areas of the Southwest; and, if color is important, this one just may have a place in your landscape.

As a landscape shrub, Pyracantha offers many advantages. First, and perhaps foremost, its bright, red berries and attractive foliage add color and texture to any landscape. The red berries framed against bright green leaves provide a festive look throughout the winter holiday seasons.

The fruit color will differ in shades of red by variety, and each variety has its own fruiting season. Variety also dictates berry size and persistence. Birds love the berries, and a bush set just outside a picture window should provide spectacular bird watching opportunities throughout the winter season.

Pyracantha also comes in many shapes and sizes. If these characteristics are important to a specific landscape design, one of the many varieties available will be sure to fill any niche. Among the choices are varieties that grow upright to provide a hedge or foundation plant. Other varieties trail and sprawl to cover or hide unsightly areas or give a less formal look. Pyracantha can also be trained against walls or fences as espaliers.

Other benefits include Pyracantha's ability to take full sun and its tolerance of heavy trimming. Because it can take frequent shaving without damage, it is a favorite for formal or sculptured landscapes.

As popular as this plant is, however, it is not without its problems. Most of these can be resolved with good care. Some people find its prickly nature objectionable. As a member of the Rose family, nearly all varieties are well armed with stiff thorns. Indeed, one of its common names is firethorn. However, Pyracantha is not any more, and often less, thorned than other popular desert-adapted species, such as cacti, agave, and most of the native tree species.

A more serious problem is leaf browning. While this does not sound like a major problem, the underlying causes of this problem can be quite devastating to the plant.

The first symptoms of poor plant health in Pyracantha are small leaves, sparse foliage, and stunted growth. Actual leaf browning starts at the leaf tips and progresses backward towards the petioles or leaf stems. Older leaves are affected first because plants give priority to the needs of the new growth at the terminals or branch tips. A common symptom is noticeably chlorotic terminals, that is, the leaves on the tips of branches change from dark green to pale green or even yellow in color. Dessication of foliage and sunburning of bark then follow. Occasionally, flat-headed wood borers will invade this dead or dying wood, leaving behind their characteristic oval-shaped holes. These borers, however, are not the primary cause of the big, overall problem.

The primary cause of Pyracantha leaf browning is restricted rooting. Most plants that show browning simply, for one reason or another, have not been able to push enough roots out into the soil beyond the confines of the original planting hole. Sometimes this can be traced to caliche, compacted soils, improperly irrigated soils, or just not digging the planting hole wide enough. In some cases, root binding is partially or totally responsible for leaf browning. Intertwined, tangled, or constricting roots literally choke off the function of their neighbors. Because individual branches are often supplied by specific roots, certain sections to the plant typically weaken and die back. Restricted rooting can often be minimized by following good cultural practices.

First, and foremost, it is essential to follow proper planting procedures. Be sure to dig the new hole wide enough so that the plant not only fits into the ground, but also so that new, tender roots will have soft soil into which to grow. Make sure that a narrow hole or chimney at the bottom of the planting hole penetrates down through any hard soil layers to ensure proper drainage. Improper drainage will guarantee a build-up of salt and excess water, both of which can harm tender roots. While planting, be sure that good contact exists between the root ball, the planting mixture, and the

edge of the hole. Sometimes air pockets will form during the planting process that will prevent water movement during irrigation. Since roots will not grow into dry soil, small root zones can occur.

Second, make sure that the plants that you purchase are not root bound in their pots. Root binding is rarely solved by moving the plant from the pot to its final location. It is always best to begin with top quality stock.

Third, avoid overwatering, look for sodium build-up and try to minimize traffic around the plant to avoid soil compaction.

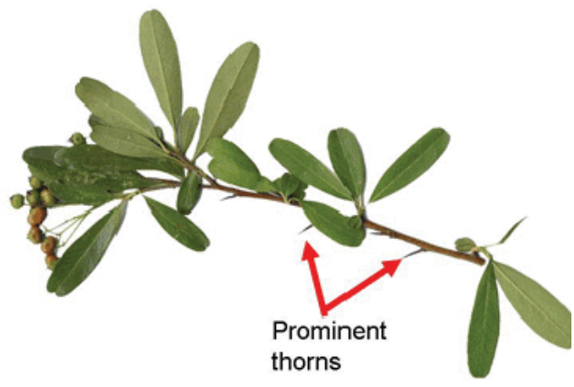
Another common problem with Pyracantha is spider mites. Feeding on the plant by these pinpoint-sized pests results in a russet browning on the upper surfaces of leaves. Such leaves, however, are normal size and there is no noticeable stunting of growth.

Spider mite infestations are most prevalent during early summer, so later tip growth will appear normal when compared with earlier growth. Unfortunately, by the time damage becomes visible, it is often too late for controls, so prevention becomes the best measure.

Watch for spider mite infestations by shaking a branch tip into the palm of the hand and watching for the "dust particles" to start moving. Be suspicious when dusty-appearing foliage shows fine, silvery webbing over the leaves. These are sure signs of spider mite feeding.

Solve spider mite problems early by promptly washing the mites off the leaves with a forceful, fine spray of water. Some over-the-counter pesticides often list spider mites on their labels, but most available home garden pesticides are rather weak in their ability to control spider mites.

Pyracantha, for many reasons, can be a good choice for desert landscapes and careful attention to detail will guarantee a vigorous, attractive plant.



Pyracantha spp. Firethorn

Mending Drip Irrigation Tubes

With the spring garden season only days away, now is the time to check your drip irrigation system to make sure all is working properly before you plant a single seed or set your first transplant into the ground.

March 15 is usually the time—if temperatures will allow it—when spring and summer vegetables and flowers should be planted into the garden. You work up the soil, plant the seeds, and then go to turn on the water. It is not a good feeling when you realize that emitters are plugged, lines are broken, or filters are clogged.

If you choose to plant first before you check the drip system, odds are that you will have plants in the soil and no way to deliver the water they need. You have to find the tools, get replacement parts, and read up on the right way to get the job done. It will save a lot of hassle, protect the health of your garden plants, and ease a lot of stress in your life if you will mend and repair the irrigation system first, before planting.

Damage to drip irrigation systems is not uncommon. Normal wear and tear, plus the possibility of accidental nicking or cutting, can all cause significant injury to plastic tubes and emitters. With plastic drip irrigation systems, though, repairs are usually simple.

First, locate the exact site of the problem. If the tubes are underground, a sure fire test for cuts or tears in the delivery system is to look for water soaked areas on the surface of the soil. Water escaping from a line under pressure will soak through to the soil surface and create a boggy area that is much more moist than other areas around it. Excavate the irrigation line by digging carefully down to the tube and search for a cut or slice. If you have an aboveground system, look for geysers spraying into the air.

Once you have found the exact site, you next have to decide how best to repair it. For simple slices or nicks, couplers are the best way to go. To save time traveling back and forth to the store for the correct parts, it is a good idea to plan the repair job first and then assemble a parts list. This is also the time to decide on what tools you will need. Hunt them all up and have them ready to hand before starting the project.

The one challenge for me is to make sure that I have the correct-sized parts on hand. It does no good to have a three-eighths coupler to fit a half-inch line. It just won't work. However, most drip tubing is of a uniform size, which makes it easy to find the right parts. It is always a good idea to double check everything before getting down on elbows and knees in the mud to do the actual repairs.

Once you have all the parts together, it is time to start the job. At the point where the damage has occurred, use a sharp knife or small hand saw to make a straight up and down cut through the tubing. Doing this will make sure that all of the fittings will match evenly and seal tightly. A cut that is uneven will leave a side with less plastic-to-plastic contact resulting in locations where leaks may occur.

Just about any plastic tubing can be easily repaired with either slide-on or slide-in couplings that join the two ends of the tube in a water-tight fitting. These couplings are available at any hardware or garden store that services drip irrigation systems.

The barb coupling has concentric ridges on the outside and around each end of the coupling. The barb coupling slides into the plastic tubing as far as the coupling will allow. The barbs grasp the inside of the tube to provide the necessary tight fit.

A compression coupler is different in that it slides over the top of the plastic tubing. Both compression and barb couplers take a little work to move them into the right position for a strong, water-tight fit.

Those who are experienced in making repairs generally agree that the compression coupler is the better way to go. Even though they are almost double in cost over the inside-the-tube barb couplers, they seem to have a better track record in avoiding future leaks from the repair site. This is probably due to the water pressure inside the tube. As pressure builds, the tube expands or swells in diameter slightly. For compression couplers, the increased pressure pushes the tube even tighter against the coupler and, thus, creates a tighter fit. On the other hand, the pressure tends to loosen the connection between the inside-the-tube barb couplers.

If the damage is in thicker-walled PVC pipe, slide-on PVC couplers will work for small breaks, but extensive damage may require the replacement of sections of pipe. Remember that PVC must be glued together with an adhesive designed for the purpose.

Damage to aboveground feeder lines or emitters are fairly easy to repair. Most systems are designed to add or remove emitters easily. Holes created for emitters or spaghetti tubing can be plugged by snapping in "goof plugs," attachments that are designed to correct mistakes in the assembly process.

Sometimes drip system filters will become plugged with precipitated salts or sand. Most filters can be removed and rinsed to ensure good service. If the screen inside the filter is damaged, now would be a good time to replace it.

It is also a good idea to flush out your system regularly to allow sand, algae, or other contaminants to flow out of the system. At the end of each line, there should be an access point to allow water pressure to push out any contaminants that might have accumulated inside. Either open the screw type plug that seals the end of the tube or, if the tube is simply bent over and held in place by a band or other means, untether the constricting bands and let the water flow out of the tube under pressure. A short flushing of the tubes by water under pressure can remove contaminants and help preserve the life of the system.

With a little know-how and some time, your labor-saving system can be back up and running just like new.

Growing Tomatoes In The Desert

If you haven't planted your tomatoes yet, you need to hurry it up.

The secret to producing good tomatoes in the desert is to get them planted early and expect to finish harvesting before the heat of summer sets in. Some of you die-hard tomato growers experienced that infamous empty feeling when you woke up recently to frost on the car windshield. As scarey as that was, it is simply part of the process of growing tomatoes in the desert.

Planting tomatoes early means putting out transplant sets in February, babying the plants through any late season frosts that might occur, and pushing the plants hard to get maximum production before the high temperatures arrive in June. Although frosts and freezes in February and early March can make for anxious moments, planting early is definitely the best way.

Tomatoes are simply not well adapted to the low deserts of Arizona. If they were, there would be a viable field-grown tomato industry in Arizona. Tomatoes do not do well in southern Arizona because of the high temperatures of summer, the alkalinity of the soil, and the bright sun that easily burns the tender fruit. If you want to produce a good eating tomato, you must contend with these obstacles.

Tomatoes set fruit only when night temperatures are above 55˚F and when daytime temperatures do not exceed 90˚F. Because of these temperature limitations, the total production season of a tomato plant is quite narrow, and the successful gardener must make good use of this time to get in a good crop.

The best way to plant tomatoes is to set out 6-inch transplants beginning in mid-February in the northern and central parts of the county and in mid-March in the southern and eastern parts of the county. The eastern and southern parts of the county are a little higher in elevation, and the resulting cooler temperatures delay the planting window.

Tomatoes can be successfully planted from seed, but seeding requires an additional six weeks to get the plants germinated and up to size. This means that seed must be placed either in the ground or in pots for transplants in January with adequate cold protection to ensure that the plants will be ready to produce fruit at the earliest possible time.

The short-season varieties that will produce fruit in less than 70 days are the best for our area. The Cherry-type varieties and Early Girl are good examples of short-season varieties. Columbia and Rosa are also good varieties, but these plants are extremely hard to find. Longer-season varieties are quite risky because of the looming hot weather waiting to sear late-developing fruit.

Another variety that seems to work well in our area is Celebrity. Many avid tomato gardeners like it for its quick growth, good fruit-setting capability, and flavorful fruit. The larger fruited varieties, such as Beefsteak and Better Boy, should probably be avoided because they seem to produce a lot of vines but little fruit. Now I know that there are some of you out there that absolutely love these varieties and can coax them into fruiting. All I am saying is that quite often, for many growers in our climate, they simply do not meet expectations.

To beat the summer heat, it is important that tomato plants get off to a good start quickly. Proper soil preparation before planting and good nutrition and timely irrigation during the growing season will help build a productive vine in a short amount of time.

All tomatoes require good light in order to produce effectively, but they must be protected from the harsh, burning sunlight of summer. Many successful tomato gardeners plant their vines with an eastern exposure so that the plants get adequate sunlight during the less harsh morning hours while being protected from the intense heat of the afternoon. If you prefer to plant out in the open, rig a shade cloth of nursery fabric or burlap over the plants to protect both the vines and the fruit from afternoon heat. Stay away from planting beds next to a masonry wall with a western exposure. These areas almost always spell disaster for tomatoes.

Good soil preparation will encourage the development of the deep root system necessary to provide water and nutrients during the fruiting season. Our desert soils can easily become compacted making it difficult for plants to develop an adequate foundation for later growth. Loosen the soil by spading or tilling down to at least 12 inches, then work in 4 inches of composted manure to help keep the soil from compacting again after the next irrigation. Roots need not only water and nutrients, but also air. A compacted soil that limits the availability of these essentials will slow and stunt the development of tomato plants.

Soil fertility should be moderate. The new crop will need adequate nitrogen for growth, but too much can burn tender roots and slow development. It is best to work in ammonium phosphate fertilizer during final soil preparation and before planting. This will allow the plant to have adequate amounts of both nitrogen and phosphorus as it begins the season. Additional nitrogen can be added a little at a time during the growing season to ensure that the plant does not run short at critical times. Nitrogen is best added during irrigations so that the water will carry the nitrogen down into the root system.

Protect your young, tender plants from cold and frost damage by placing a tall cage made of construction wire around the plant and cover the cage with a clear plastic to give a greenhouse effect. The plastic should be loose enough to provide some air circulation but tight enough to prevent frosty air from touching the plant. During warm days, loosen the plastic or remove it so that the plants will not burn from too much heat. The plastic should only be in place long enough to prevent frost damage. Once the danger of frost has passed, it should be removed.

Other devices can be used to provide cold weather protection. There are a number of frost-related products sold in garden stores that will provide protection. Some people use plastic milk containers filled with water and placed next to the tender plants to provide early warmth and protection. During the day the sun heats the water inside the containers. The warm water, in turn, provides heat during the cold night time hours to protect the plant.

Proper irrigation is essential. Blossom-end rot on the fruit and fruit cracking are considered to be the result of growth spurts followed by growth checks, which are usually caused by heat and irregular irrigations. Ensure that the soil moisture is adequate during the entire growing season, but do not keep the soil too wet or root rot may occur. The decision to irrigate or not to irrigate is a critical step in the management of tomatoes.

The soil around tomato roots should remain moist, but not sloppy wet. The lush leaves and stems of the tomato require substantial amounts of water to support the process of transpiration, the life process that plants use to keep themselves cool. Because the roots are constantly picking up water, the supply needs to be replenished regularly.

The frequency and duration of irrigations are specifically dependent upon the type of soil in which the plant is growing. Sandy soils require more frequent irrigations, perhaps on a daily or every other day cycle, whereas clay soils may need to be irrigated only once a week.

To determine when to irrigate in your garden, dig down with a shovel or probe with a soil auger to a depth of about six inches and check the moisture levels in the soil. If the soil forms a tight ball and leaves a wet outline on your hand when you squeeze it, hold off irrigating until the ball of soil, while still cool to the touch, begins to crumble at the edges. The length of irrigation should be long enough to fill the entire root zone of the plant. Most tomato roots will be found in a band from ground level to about 18–24 inches. Each irrigation should send water to at least this depth. Check your moisture depth with a probe or shovel. A probe will slip easily into moist soil but stop abruptly when it reaches dry soil. Place your fingers at soil level before pulling out the probe and you will be able to measure the depth of your irrigation. Finally, manage the concentration of naturally occurring salts in the soil by watering deep enough to leach these water soluble chemicals down and out of the root zone.

Great tasting tomatoes can be produced in desert gardens, but only if the gardener works with the desert environment and not against it.

If you have questions, you can reach one of the Master Gardeners by telephoning (520) 836-5221, ext. 204. If you wish to receive this newsletter electronically, please email tellswor@ag.arizona.edu and use the keyword: *G&L* in the subject line. The author's email address is gibsonrd@ag.arizona.edu.

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