

High on the Desert Cochise County Master Gardener Newsletter

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The University of Arizona and U.S. Department of Agriculture Cooperating

The Virtual Gardener—Root Camp Revisited

In 2004 I wrote a series of four articles on roots for the Master Gardener Newsletter—Root Camp I, II, III, IV. In one of those articles—Root Camp II (<http://ag.arizona.edu/cochise/mg/pdf/Jul04.pdf>) I described the process of examining the roots of trees and shrubs before you purchase a plant. Although this time of year is not the best time to plant trees and shrubs in the High Desert (fall is better), this is the time that many people choose to plant them, and so I thought a review and update on root inspection procedures for containerized trees and shrubs might be in order.

Most seed plants are divided into three main parts: top, middle, and bottom—better known as leaves, stem, and roots respectively. Each part has a separate function. Leaves photosynthesize to produce energy for plant growth; stems support the leaves and connect them with the roots; and roots furnish water and minerals to the plant as well as anchoring it to the ground.

When you install a plant, the objective is to get the roots to grow out of the planting hole as soon as possible and spread widely and deeply to provide the plant with water and nutrients and anchor it firmly in place.

A healthy plant must have healthy roots. Unfortunately the leaves and stem of a plant in a container may look healthy even when there are problems with the roots. And since the roots are (usually) inside the container, you have to do a little work to examine them. This means removing the container.

But even before you look at the roots hidden inside the container, you can learn some important facts by examining the outside of the container. Here are some of the things to watch out for:

- 4 Roots that have split the container or caused it to bulge.
- 4 Roots that have grown out of the bottom of the container and into the ground.

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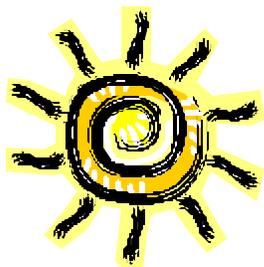
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4 Large-diameter (over 1/5 the diameter of the trunk) roots that have grown out of the drain holes at the bottom of the container. Also look for stubs of large roots that were previously growing out of the drain holes and have been cut off by the nurseryman.

4 Surface roots that are kinked or circling.

4 Plants that have been planted too deeply in the container. The first root growing from the trunk should be no deeper than a couple of inches below the surface. (By the way, when you plant your new shrub or tree, make sure the top of the root ball is at or even slightly above the surface of the ground. It should never be lower.)



June Reminders

- ◆ Check tree ties
- ◆ Remove stakes if new tree can stand alone
- ◆ Mulch trees & shrubs
- ◆ Remove faded flowers & fertilize roses
- ◆ Stake tomato plants & watch for curly top—remove diseased plants
- ◆ Prevent blossom end rot on peppers, melons, squash, and tomatoes by even watering and mulching
- ◆ Water! Water! Water!

4 Plants that wiggle in the container. If you push on the plant, the trunk should bend but the plant should be rigid in the container.

4 Weeds growing in the planting medium. You get enough weeds for free; don't pay for them!

After the external inspection is complete, you should carefully remove the container from the root ball and look at the root ball itself. If you see any of the following conditions, pick another plant:

4 Circling or kinked roots. If the roots have begun circling inside the container, they will continue to circle inside the planting hole when the plant is installed. Sometimes you can correct this condition by pruning off the circling roots but it's not a sure bet.

4 Black roots. This indicates roots that have been killed by heat, freezing, drowning, or some other cause. This is not a good thing.

4 Crumbling root ball. This indicates an immature plant that is not ready to be installed in the ground.

4 Hard-packed root ball. A plant with this condition is root-bound and its roots will probably never escape from the planting hole.

4 Grubs. Like weeds, you get enough of these and other wildlife for free, so you don't need to buy them.

If you're interested in reading more about selecting plants in a nursery check out this site from the Clemson University Extension Center:

<http://www.clemson.edu/extension/hgic/plants/landscape/trees/hgic1004.html>

Until next time, happy surfing.

Gary A. Gruenhagen, Master Gardener
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Cuttings 'N' Clippings

* The next CCMGA meeting is 5:00 p.m. Thursday, **June 4** at the University of Arizona South Campus Public Meeting Room. This will be the Annual Business Meeting with the election of officers and approval of the 2009—2010 Budget. Also taking place will be the graduation/potluck celebration of the latest Master Gardener Class.

* The next free Water Wise lecture will be **June 6**, 9:00—11:00 a.m. in the Public Meeting Room of the University of Arizona South titled *Sensational Succulents!* Spring in the desert is a tough time to plant most plants because of the heat and dry winds. But succulents love it! Satisfy your planting urge with beautiful succulent plants suited to the Southwest regions. Come learn about the wide variety of succulents you can plant in your garden. Plants will be for sale.

* Thanks to the Master Gardener docents, home owners, and the public for making the May 3 Xeriscape (Low Water Landscape) Self Guided Tour a huge success! The next Xeriscape tour will be **September 6**. On **July 11**, 8:30 a.m.—Noon a Water Wise Rainwater Harvesting Tour will be held. Watch for details in this newsletter for both of these exciting tours.

* Cochise County Master Gardeners Association proudly made a \$1,000 donation to the Southern Arizona Veterans' Memorial Cemetery Foundation. Trees and other plants were purchased and planted surrounding the Historical Memorial Cemetery located within the Southern Arizona Veterans Cemetery.



Douglas Farmers Market

A Sunday morning farmers market will open in downtown Douglas starting May 31 in the charming Raul Castro 10th Street Park with its tall trees, stage, fountain, and seating. The historic Phelps Dodge Building on G Avenue next to the Gadsden Hotel is the high wind and rain location. Look for 15 to 20 vendors bringing lots of fresh produce, apple cider, eggs, honey, pickles, jams, gourds, goat's milk soap, native and drought tolerant plants, vegetable and herb starts, and fair-trade coffee beans in Arabica, Robusta and decaf.

The celebration on opening day includes a ribbon cutting by the Mayor at 10:00 a.m. followed by old-fashioned fiddle music by the Simmons Family Band, a solar cooking demonstration with solar ovens and solar cookbooks for sale, free blood pressure and blood sugar checks, and a raffle of a basket brimming with fresh produce from La Buena Vida Farm. Great food for breakfast and lunch will be offered by El Mitote with fresh fruit juices, smoothies, and fruit salads, Mexican food including fish tacos and lots of homemade cakes, cookies, breads, pies, and pastries.

The Douglas Farmers Market is an agriculturally based farmers market so hand crafts must be made from local agricultural or garden products. The market is co-sponsored by the City of Douglas, Southeast Arizona Medical Center, the Douglas Area Food Bank, Douglas Chamber of Commerce, Douglas High School FFA, the Cochise

County Health Department, and Baja Arizona Sustainable Agriculture. For a vendor application and more information contact Lea Dodge at 520.805.0086 or email: leadodge@msn.com.

Valerie McCaffrey, Sierra Vista Farmers Market Manager

Other Farmers Markets:

- ◆ Sierra Vista's Farmers Market is held Thursdays from Noon to 4:00 p.m. on the NW corner of Carmichael and Wilcox.
- ◆ Bisbee's Farmers Market is held Saturdays from 8:00 a.m. to Noon in Vista Park in Warren.

Learn to Identify Plants

A 6-week course entitled *Learn to Identify Plants* will be taught by Cecile Lumer, Ph.D. The class will meet Friday mornings, 10:00 a.m.—Noon from August 14-September 19 at Cochise College. The cost is \$130 and will go to support the Cochise County Herbarium. Enrollment is limited to 20 people. A \$25 deposit will reserve a place in the class.

For more information call Cecile Lumer at 432-4294, email: cecilelumer@gmail.com, or Joyce in the Sierra Vista Cooperative Extension office at 458-8278 Ext. 2141

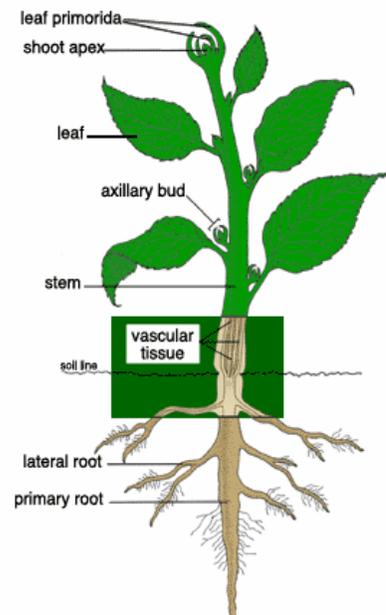


Figure 1. Principal Parts of a Vascular Plant



Robert E. Call

Robert E. Call
Extension Agent, Horticulture

Carolyn Gruenhagen
Editor

False Agaves

I was tricked and by Mother Nature herself. In April I saw a plant in Texas that looked like a skinny agave. I was tickled to find an agave that I hadn't seen before. When I did some research, I found that it wasn't an agave at all, but a *Hechtia texensis*, a member of the *Bromeliaceae* (Pineapple) family. Folks in Texas call it a False Agave. This is a rare plant in the United States. It's found only in the Big Bend area of the Lone Star state. My husband and I saw one growing along a trail above the Rio Grande in Big Bend National Park. Fortunately, it is common in Northeast Mexico and not at all endangered.

Hechtias resemble agaves because these semi-succulent plants form a basal rosette of spear-shaped leaves. Each has teeth along the leaf edge. The web site for the Centennial Museum and Chihuahuan Desert Garden at the University of El Paso reports that this plant can grow up to 20" in diameter. Like agaves, it puts up a flowering stalk that can reach six feet tall. It blooms from February until May. With some careful nurturing, it can survive in a less temperate climate than found in southern Texas, but it must be placed in a pot and protected from cold winter weather. I purchased a hechtia at the Chihuahua Desert Research Institute in Ft. Davis, Texas. It is in a pot in my courtyard garden. So far, it seems very happy. But it will have to come indoors in the fall and rest until spring. Then we will see if I can fool this hechtia into thinking it is still at home near the Rio Grande.

Terrie Gent. Master Gardener



Hechtia texensis

San Pedro House Spring Festival

Around 200 people attended the Spring Festival on Saturday, May 9 at the San Pedro House. The Friends of the San Pedro have been hosting this event for at least ten years; the last four have been in conjunction with International Migratory Bird Day. This year the Cochise County Master Gardeners Association was invited to participate. The invitation was in part due to cooperative efforts between the two groups at designing, planting, and maintaining a community Xeriscape garden at the San Pedro House. Master Gardener Jan Groth gave a presentation and also arranged with Desert Trees of Tucson for plants to sell.



The setting for the talk was under the shade of a large cottonwood tree. The plants for the sale were displayed behind the presentation table making it convenient for Jan to walk around, grab a few plants and take them to the table for discussion. Cado Daily, Water Wise Educator, had her information table nearby.

Jan is in her element when talking about plants. Attendees learned about the importance and value of using desert adapted plants in this area and also picked up valuable bits of information and advice. She started her presentation by demonstrating possible plant combinations for the landscape. She picked up three plants that were for sale, placed them on the table, and talked about the characteristics of each plant and why this particular grouping "worked." The trio displayed were a blue yucca with yellow leaf margins; the margins were emphasized by yellow flowers of the damianita (*Chrysactinia mexicana*); and a trailing purple verbena just popped all the colors out. After discussing several plant combinations she talked about the value of placing small plants in tree wells—the tree and plants get watered at the same time. She demonstrated nectar plants for hummingbirds (basically those with tubular flowers) and butterflies (basically those with flat flowers). As her program came to an end most every sale plant had been discussed—subjects ranged from planting, watering, deadheading, pruning, berries, acorns, flowers, prickles, pups, etc.

Following the talk both Jan and Cado answered questions and assisted customers in picking out plants. Cado explained proper wa-

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The Agent's Observations

Q What is happening to my tomato plants? The bottom leaves are brown and curling up and some have black spots and holes in them. This started close to the ground and about one third of the plant is affected. We water with a garden hose and they are getting plenty of moisture.



A Your tomatoes have “early blight” (*Alternaria solani*). Potatoes are also susceptible to this disease. Plants infected with early blight develop black or brown spots, usually about 1/8 to 1/2 inches in diameter, on leaves and stems and later the fruit. Leaf spots are leathery and often have a concentric ring pattern. They usually appear on older leaves first, those nearest the ground. Spots on fruit are sunken, dry, and may also have a concentric pattern; frequently they occur near the calyx end of the fruit. Early blight occurs when tomatoes or potatoes are exposed to rain or hand watered from above. Severe damage can occur if condi-

tions remain cool and humid for several days after a rain. The early blight fungus survives in the soil on residue of infected tomatoes, potatoes, and nightshade family weeds. The fungus is spread by spores that are carried by the wind or splashed by water from the soil to leaves. Germination of spores and infection require free moisture. Disease development stops in dry, hot weather.

Control: Pick off the infected lower plant leaves so the spores cannot “ladder up” to other leaves. This practice can aid in decreasing the splashing of soil that contains early blight spores on to the foliage. Other treatments include growing plants on plastic or organic mulch and pruning off lower healthy leaves as the summer rains start. Treat with a fungicide when environmental conditions are favorable and at the first sign of the disease. Chlorothalonil, sold as Bravo or Daconil, or mancozeb, sold as Dithane, are fungicides that provide good control. A biological fungicide containing *Bacillus subtilis*, sold as Serenade Max, also provides control but may need to be applied on a weekly basis. **Remember when using any pesticide to read, understand and follow the label. It is the law!**

Source: The University of California IPM Website: www.ipm.ucdavis.edu/PMG/r783100311.html

Q Will you please identify these rose leaves? We have over twenty rose bushes in our garden and about 1/3 of them are giving us problems. They have small elongated leaves and are very vigorous. The roses we plant are an assortment of colors. The strange thing is that some of them are getting deep red, small roses from the bottom of the plants. This is happening on white, yellow, orange, and other colored roses. What can we do before this problem takes over all our roses?



L. scion R. Dr. Huey rootstock

A The red roses are most likely from the rootstock and should be removed. The leaves seem to be from the most common rootstock used for garden roses, Dr. Huey, a red rose. Dr. Huey is also a climbing rose which may explain its vigor. Many commercially grown roses are really two species. They are “put together” using a horticultural technique called budding. One is grown for its root system and the other rose is

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grown for its floral show and is called a “scion.” A bud of a rose with desirable flowers is joined to the root system of another using the “T-budding” technique. The rootstock imparts some very desirable characteristics for root growth that the scion might not produce. If the scion or floral part of the rose grows vigorously it keeps the rootstock under control. It stays as a root system and does not produce shoots or flowers. When the rootstock is no longer under the control of scion, shoots can grow from the rootstock and produce flowers. Usually flowers from the rootstock are not as desirable, but the flowers of Dr. Huey aren’t ugly. When planting roses you will see what we call a “dogleg,” where the scion was inserted into the rootstock. In older roses the dogleg may appear as a large “knot”



Jan Groth at San Pedro House

at the union of the scion and rootstock. Nothing should be allowed to grow from below the union or the union itself. All growth must come from the scion above the union or the rootstock rose will begin to take over the plant. The usual reason for the rootstock to begin growing is that the scion was pruned too close to the union. It is also possible that insect or disease damage could cause the scion to dieback significantly, thus releasing its hold on Dr. Huey. Remove all growth from the union and below. If there is not much of the scion rose left, dig out the plant and replace it.

*Robert E. Call
Extension Agent, Horticulture*

(San Pedro continued from page 4)

tering techniques and passed out literature. The profit from the sale will be used to purchase more plants for the SPH demonstration garden.

A special thanks to the folks that organized and ran the event: Laura Mackin, Ted Mouras, and Dutch Nagle (Friends of the San Pedro); Jeannie Duberstein (Sonoran Joint Venture); Jim Mahoney and Mark Rekszynski (Bureau of Land Management); and appreciation to Lori Kovash and Bret Galloway (Cochise County Master Gardeners) for helping with the plant sale.

Sarah Turan, Master Gardener