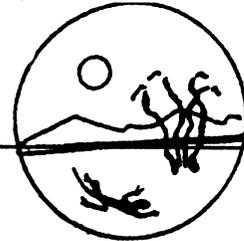


High on the Desert

Cochise County Master Gardener

Newsletter



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

Plant Basics: Bare-roots

This month marks the arrival of bare-root plants. Many plants are available to include fruit and shade trees, roses, grapes, and cane fruits.

Why buy bare-root? One reason is that it is cost effective. Savings can be up to 70% buying bare-root over container plants. Another is the ease of planting. The hole can be back-filled with soil that is dug out and the roots will grow in one soil structure instead of container soil that is light and airy unlike the native soil the roots will eventually encounter which are usually tight and clayey. Water penetration will be more uniform watering one soil structure than two or more compositions.

When buying bare-root the nursery will have the plants "heeled" in some type of loose, moist material such as sand or sawdust. Check the roots, they

should be fresh and plump. Have the roots bagged or wrapped for the trip home.

If you are not going to plant for at least three days, plants should be placed in moist sand/sawdust. If planting within three days it is a good idea to soak the roots in water (you can add a root stimulator to the water) before planting. A bucket, garbage can, or a bathtub will work.

Dig the hole large enough to accommodate the roots. Trim any broken roots and place the plant into the hole ensuring that, if it is a grafted plant, the graft bud sits above the soil level. Backfill with soil, make a ridge of soil around the hole to form a watering basin, and apply water.

Some literature says to prune/thin the tree branches back by one-third to compensate for the root mass being small, some instruct not to prune/thin at all. I have done both and seen no difference. After the first watering, check the soil every few days with a soil probe and water

when the top three inches are dry.

Bare-root plants are dormant and do not require lots of water as this could promote the roots to rot. Pick up the watering when the weather becomes warm and the plants start to leaf out. And be patient—some bare-root plants are slow to leaf out. The wait will be worth it—Enjoy!

*Cheri Melton
Master Gardener/Staff Writer*

High on the Desert

The Fifth Annual High Desert Gardening & Landscaping Conference, February 12-14, 1998, registration form is included in this newsletter. Don't forget—register right away!



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THE VIRTUAL GARDENER-

How Much Water is Enough?

Although watering outside plants is probably not high on your priority list at this time of the year—especially after our recent precipitation—I want to return to our discussion of plants and water this month. Specifically, I would like to discuss how to know when you have applied enough water to your plants.

As I discussed in earlier articles, water is stored in the spaces between soil particles. As water falls on the soil and soaks in, it progressively fills the spaces between the particles. Gravity pulls some of the water deeper into the soil but some is so tightly held by the soil particles that it does not move downward. When gravity has removed all the water it can, the soil is said to be at field capacity. Plants can pull more water out of the soil than gravity but some still remains attached to the soil particles after the plants have taken what they can. When plants have removed all the water they can, the soil is said to be at the wilt point. The water content of the soil between field capacity and the wilt point is called *available water*.

The amount of available water depends on the type of soil. Sand particles in sandy soils do not hold on to water molecules very tightly. This allows more water to be drained away by gravity leaving less available water for plants. Conversely, clay particles hold water molecules more tightly than sand particles, but some molecules are held so tightly that plants cannot remove them. This means that although there is more total water in clayey soils at field capacity,

there is less available water for plants. Loamy soils, have the best water properties. They can hold a lot of water against the pull of gravity, but the water is not held so tightly that plants cannot remove it.

Available water can leave the soil in two ways. It can be evaporated directly from the soil surface, or it can be taken up by plants and moved to the leaves where it is *transpired* and evaporated to keep the plant cool. The combination of evaporation and transpiration from the leaves is called *evapotranspiration*. After the available water is removed from the soil, plants begin to wilt. At first, the wilting is only apparent during the hottest part of the day but plants recover overnight. As the soil moisture level drops, plants stay permanently wilted and will ultimately die if not given additional water.

The frequency with which you must water is determined by the type of soil you have, the amount of precipitation that has fallen, the temperature, the relative humidity, the wind, and the number of plants you have. One way you can tell when it is time to water is to watch your plants. When they begin to show signs of wilting, it is evident that they are losing water through evapotranspiration faster than they can take it up from the soil. Another way is to use a soil probe.

A soil probe is simply a metal rod you can push into the ground. A screwdriver will do in a pinch, but something longer is needed to check soil moisture at greater depths—24 to 30 inches is a good length. To check soil moisture conditions, you push (or attempt to

push) the probe into the ground to the root depth of your plants. If it pushes in easily, there is probably enough moisture in the soil for your plants. If it is difficult or impossible to push into the ground, it's time to water. After watering, you can use the soil probe to check whether the moisture has reached root depths.

To find out more about watering your plants try this Web site: <http://www.zianet.com/lascrucesbulletin/archive/03.13.97.water.htm>.

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

- ◆ The Cochise County Master Gardeners Association has made water probes available for sale. Please call the Cooperative Extension office (458-8278, Ext. 141 in Sierra Vista) for information.
- ◆ You could save up to 27% more water by taking showers instead of baths (if the shower discharge is less than three gallons per minute the duration is less than eight minutes). Try this experiment—plug the bathtub drain while taking a shower and when you are finished compare the water level to the water you use for a bath. Make a habit of using less water.
- ◆ The next Cochise County Master Gardeners Association monthly meeting will be held January 7, 1998 at 5:00 pm. Please call the Cooperative Extension office or 458-0272 for the location.

Fun Facts to Know and Tell!

- On average, trees with a surface mulch (3.5 inches deep) had 53% greater increase in trunk area than did those trees without a surface mulch.
- Organic amendments in the backfill do not improve and may reduce shoot and root growth. A shallow, wide hole with unamended backfill and a surface mulch is an acceptable, if not superior, planting standard for trees and shrubs.
- Root growth is often limited as much by the lack of oxygen as the lack of water. In compacted urban soils oxygen deprivation is a serious limitation.

Source: Barba, J., E. Davidson, and J. Tipton, *Effects of Planting Practices on Tree Performance, Turfgrass and Ornamental Research Summary*, The University of Arizona College of Agriculture, 1997.

- About using oleander and eucalyptus in the compost pile: "There was no apparent phytotoxic effect of either eucalyptus or oleander compost. These results suggest that whatever phytotoxic compounds that may be present in eucalyptus or oleander were destroyed by composting...based on the results of these tests, yard waste compost derived from eucalyptus or oleander should be a suitable component of container medium."

Source: E. Davidson and J. Tipton, *Evaluation of Arizona Yard Waste Compost as a Container Growing Medium*, Turfgrass and Ornamental Research Summary, The University of Arizona College of Agriculture, 1997.

A Book Review

The Book of Outdoor Gardening,
by the editors of Smith and
Hawken

This is a very good basic gardening book. It has excellent, though occasionally abbreviated, treatment on many subjects. The section on individual plant species is generous with clear color pictures of each. The most outstanding feature of the book is the high quality of the illustrations. They are well drawn and very detailed so that the lack of photographs in many sections is hardly noticeable. The drawings are plentiful and provide the perspective to understand the more complex processes and the subtleties of the subjects at hand.

Treatment of soil, nutrition, and basic botany are excellent. There is a good section on integrated pest management. (These first sections are so good, and the copyright date is late enough, that I suspect the sections were taken from the Arizona Master Gardener's Manual.)

The treatment of plant propagation is one of the best and most understandable I have seen. The illustrations on layering and cuttings are quite good. In this section, and throughout the book, there are species specific tables to help the gardener—such as which species are best propagated through soft wood cutting, which by hardwood cuttings, which by air layering, and which by simple layering.

There is a wonderful chapter on simple, yet necessary, tools for different gardening tasks, with tips on quality, methods of manufacturing, and maintenance. How many of you know the difference between a warren hoe and a stalham hoe? Not only does this section divulge this and more, it reads beautifully, with insight into the use and function of each of the tools described.

My sense of the book is that it is permeated with tips on living in harmony with your garden. One of my favorite charts in the section on weeding is called "If You Can't Beat 'em, Eat 'em." It lists about a dozen common weeds and which of their parts are edible. The table on mulches names a number of common agricultural and home garden by-products which may be used as mulch and gives a good description of advantages and disadvantages of each.

There is a good garden care calendar in the section on winterizing your garden. Tables on when to prune what plants, and how, are very easy to understand. The sections on pruning, dead heading, pinching, snipping, and disbudding provide insight into simple yet subtle aspects that can help the gardener develop the art of their garden, as well as the science.

The only down-side to the book is that it does not concentrate on low-water use species. Although many of the species mentioned are native, they are not necessarily native to the arid Southwest. If I had found this book two years ago, there would be at least five fewer gardening books on my shelf, and these pages would be very tattered by now.

Gretchen Kent
MG Trainee

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Carolyn Gruenhagen
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Virginia Westphal



Robert E. Call,
Extension Agent, Horticulture

Water Wise

Arizonans have long known that water is our most precious natural resource. Area residents presently enjoy a reliable, relatively inexpensive supply of high quality water. However, water use has begun to exceed water recharge in some areas of the county, generating concern about depleting water resources. To ensure adequate water supplies for the future, all of us need to be more water wise.

Cado Daily, Water Conservation Educator with the Water Wise program shares with us one of the questions she has received from a local caller. Residents are encouraged to call Cado at The University of Arizona Cooperative Extension Office (458-8278, Ext. 141) for advice on water conservation and landscape design. Free on-site consultations are available.

Question: I've heard that with a low-flow shower head I can save 40 gallons of water if say, I take a 10 minute shower. How do I know if I have a low-flow shower head?

Answer: If you own a newer home (built after 1990) and no one has tinkered with the plumbing, then you'll have a low-flow shower head as well as low-flow sink faucets and toilets (1.6 gal/flush). Older homes may have the 7 GPM (gallons per minute) shower heads. If you have a low flow shower head, you may also see 2.5 GPM written on it. If all of this fails to tell you your GPM, then do a simple test with a bucket. Turn on your shower full force and put the bucket under it (make sure to catch all the spray!) for 15 seconds. Measure the amount of water in the bucket and multiply that amount by 4. That will tell you your GPM, or if you can't hold the bucket up for

15 seconds, you have the "Niagara Falls" type shower head! All the shower heads, sink faucets, and toilets now sold conform to the National Standard of 2.5 GPM for showers, faucets, and 1.6 GP flush for toilets. If you have a "Niagara Falls" type shower head, go find yourself another kind and choose any type (massage, dial-a-spray, etc.) that tickles your fancy!

Tip: Some shower heads include (or you can easily screw on) a "shut-off" valve. With a flick of a finger you can temporarily shut off the water flow while soaping up, and then flick it back to full flow with the temperature staying the same! Stores also carry a "shut-off" valve for sinks—great for teeth brushing, shaving, washing vegetables...

Seventy-five percent of your in-home water use occurs in the bathroom. The following practices can save you up to 20,000 gallons per year:

- ✓ Check your toilet for leaks (put food coloring in the tank)
- ✓ Place a plastic bottle(s) in your toilet tank or install a low-flow toilet
- ✓ Take shorter, 5-minute showers
- ✓ Install a low-flow shower head or a plastic insert flow restrictor
- ✓ Don't let the water run unnecessarily while brushing your teeth, washing your hands, shaving, or soaping up in the shower.

The Water Wise program is provided courtesy of the Cochise County, City of Sierra Vista, Arizona Water Company, Bella Vista Water Company, Pueblo Del Sol Water Company and Sulphur Springs Valley Electric Cooperative in conjunction with The University of Arizona Cooperative Extension.

What is a Master Gardener?

An individual who completes the Master Gardener Course, specializing in gardening in the high desert, and the volunteer requirements, qualifies to become a Master Gardener. The Master Gardener Program promotes food production, landscaping with native plants and environmental stewardship.

Master Gardeners help the Cooperative Extension in fulfilling the education outreach mission by staffing plant question phone lines, giving talks to local groups, introducing children to gardening, presenting information and garden and trade shows, organizing educational programs and conferences, writing articles for the newsletter.

Being a Master Gardener volunteer is fun, informative, interesting, and rewarding. For more information call the Cooperative Extension office in Sierra Vista or Willcox. A new class will be conducted in the spring of 1998.



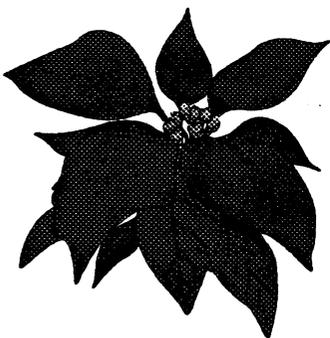
The Agent's Observations

Q

Now that the holidays are over what should I do to keep my poinsettia blooming and growing throughout the year?

A

Poinsettia (*Euphorbia pulcherrima*) is a tropical plant that originated in Mexico. Members of the Euphorbia family produce white latex sap when tissue is damaged. Light requirements are bright but not direct sunlight. Dim light or darkness will shorten the plant's life. These plants should be watered when the soil surface feels dry to the touch. If a poinsettia is allowed to wilt its life span will be shortened. Watering should insure that the entire root ball is moistened. Poinsettias should not be allowed to sit in water because their roots are very prone to root rots. Ideal temperature should never exceed 72°F during the day or 65°F at night. Plants do well in high humidity environments. Low humidity



and temperatures over 75°F are detrimental to the plants. Beware of placing plants near heat vents, on top of televisions, or in areas that are drafty or have sudden

changes from hot to cold. Concentrations of 1/8 to 1/4 of recommended strength houseplant fertilizer applied at each watering will "spoon-feed" the plant and help maintain a healthy plant during the holidays. During the winter months with less sunlight and cooler indoor temperatures plant growth will be slowed, therefore the amount of fertilizer should be decreased as well.

After the colorful leaf bracts (we think of them as flowers) fall, place the plant in a cool room and let the soil stay nearly dry until spring. Repot the plant in new soil and cut back the stems to six inches above the pot rim. Then move to a sunny location, water well, and watch for new growth. Increase fertilizer concentration to 1/4 or 1/2 strength and apply at each watering. Pinching back terminal growth encourages branching and more blooms. Poinsettias are short-day plants; meaning that flowering is induced as day lengths shorten. To insure return holiday blooms keep in absolute darkness from sundown to sunup for 10 weeks beginning in October. If this is too much work, the old plant can be discarded and a new one purchased for the next holiday season.

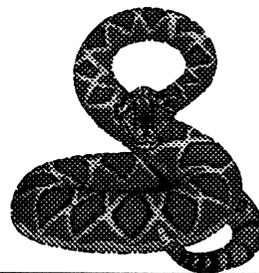
Rob Call
Extension Agent., Horticulture

1997 Phone Book Recycling



Arizona's phone book recycling program began in December and will run until mid-January 1998. Recycling containers are located in Sierra Vista at City Hall, Safeway, SHARC, SSVEC, and Wal-Mart and on Ft. Huachuca at the Commissary and PX.

Remember the program ends January 16, so please participate. For information call the Department of Public Works at 458-3315 in Sierra Vista or the Department of Public Works in your city for information about the phone book recycling program.



ARIZONA STATE SYMBOLS

Bird: cactus wren

Tree: palo verde

Flower: saguaro cactus blossom

Gemstone: Turquoise

Neckwear: Bola tie

Fossil: petrified wood

Mammal: ringtail

Reptile: AZ ridge-nosed rattlesnake

Fish: Apache trout

Amphibian: AZ treefrog

State songs: "Arizona March Song" and "Arizona"

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Pyracantha (aka "Firethorn")

Pyracantha coccinea

Call it a plant for all seasons, call it a landscaper's dream, call it what you may, the hardy pyracantha has many outstanding qualities.

Identified as a vigorous evergreen shrub, this versatile plant can be used as a hedge, a screen/barrier plant, a ground cover, or espaliers on walls and fences. It's estimated that it can grow from 6 to 20 feet in height and can spread approximately 10 feet.

Its dark green, glossy foliage is usually easily maintained (except

for perhaps severe winters). During spring and early summer, its branches cluster with lacy-white, sweet-smelling flowers, much to the delight of bees. Fall and winter seasons see this plant in a profusion of red, red-orange, or orange berries which birds readily devour (although some firethorn species may have fruit with less bird appeal). Birds utilize pyracantha as a habitat and also are attracted to its dense branches for year-around cover and protection.

Very drought resistant, pyracantha prefers dry soil and full sun, but will tolerate partial shade. This plant can be pruned at almost any time of the year. Several varieties are available.

Drawbacks? A few. Regular pruning is needed to keep

pyracantha under control. The name "firethorn" says much. Wear gloves when handling or pruning this plant; the thorns are sharp. There is a thornless variety available. Pyracantha is susceptible to fireblight, root rot, and scab.

When landscaping, note not to use this plant in a very small or densely planted area (or next to public walkways), as pyracantha needs SPACE in order to display its handsome and spectacular self.

Poisonous? No. A jelly tasting much like apple jelly can be made from pyracantha berries—the recipe is available from the Cooperative Extension Offices.

*Peggy Dierking
Master Gardener*