



High on the Desert Cochise County Master Gardener Newsletter

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

Rain Lilies—Zephyrantes

The first time I saw these little flowers was at the beautiful desert Hummingbird Garden at Kartchner Caverns. The flowers of rain lilies remind me of white Crocuses. Blossoms are pure white with bright yellow stamens. Flowers close on shady days and at night. The leaves are thin—grass- or onion-like. Zephyrantes is taken from the Greek word Zephros, the god of the west wind. The word anthos means flower. As the west wind brings rain the plant flowers after heavy rainstorms in summer. No amount of watering can make it flower.

This plant is amazing! It can grow in desert soil and appear only with the monsoon. It can take a good garden soil and grow its grass-like foliage happily in the midst of your rose garden. And, hard to believe it can grow in a water garden where it is evergreen, however it will only bloom with the rains.

Rain lilies are native to Argentina and are now naturalized over much of the

world. They are easy to grow from seeds. It will take a few years for the plants to produce flowers. They grow quickly into blooming size and it is easier to divide the offset bulbs and plant them.

There are several species available. The most common from Argentina is *Zephyrantes candida*, a pink variety *Z. grandeflora*, which I grow in my rose garden. There is a yellow variety, *Z. refugiensis*, and a Mexican variety, *Z. labuffarosea*, with light pink flowers. I grow *Z. candida* in my pond where its grass-like foliage has interest all winter long. The newest version is a hybrid, *Z. x Prarie Sunset*, with flowers that fade from apricot to pink. This plant likes more irrigation and stays evergreen all year. I have not come across this one yet. I think it is really worth i to try one or two of these species in whatever condition you can provide.

Angel Rutherford, Master Gardener

Inside this issue:

Perennials in Garden	2
Cuttings 'N' Clippings	2
Watering Needs	3
The Virtual Gardener	3
October Reminders	3
Agent's Observations	5
Breaking the Code	6

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Perennials in Your Garden

Perennials are plants that survive winter outdoors to produce new growth and flowers in the summer. Since they are not dug up and replanted each year, proper flower bed preparation is a must.

Most perennials only bloom for two to three weeks, so specific bloom dates are a must. And because of the permanence of perennials, it pays to give advance consideration to where to plant them and which ones to use. You'll do some shifting and adjusting as you see your plants develop, but you'll want to keep this to a minimum. Make sure you select healthy plants at the nursery, know what the plant does, how it grows, how large it gets, and what it needs.

It would be a large mistake to place emphasis entirely on perennial flowers. There is so much beauty in the textures and subtle colors of foliage—one should take a close look at hosta clumps in various colors of blue-green, green, red, white, and gold. Whether you use just a few perennials in bold masses among shrubs or under trees, mix them with annuals, or specialize in the many varieties of one particular kind.

You will find that perennials provide dependable beauty year after year, and the more you know about perennial gardening, the more you will learn to like it.

The Cooperative Extension Offices have two bulletins

available that will help you learn about perennials: *Perennial Flower Guide for Southern Arizona* and *Annual and Perennial Flower Gardens Above 4,000 Feet*. Call either office for free copies.

Barry R. Bishop, former Cochise County Master Gardener—Reprinted from the October 1995 Cochise County Master Gardener Newsletter

* The Bisbee Farmer's Market in Vista Park in the Warren Section of Bisbee continues on Saturdays from 8:00 a.m. to noon. Items available at the market include farm products, plants, home crafts, nature crafts, food products, yard and garden art. For more information or if you would like to be a vendor call the Market Manager, Valerie McCaffrey at 432-7066 or e-mail:

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* An open house and tour will be held on Sunday, October 12 from Noon until 5:00 p.m. at the eco-friendly Cochise Stronghold Bed and Breakfast located near Sunsites/Pearce, AZ. Visit www.cochisestrongholdbb.com and go to "Area" for a map that can easily be downloaded and printed. The map together with the address, 2126 W. Windancer Trail, (off Forest Service Road #84, just 4 miles before the Cochise Stronghold campground) will get you to the bed and breakfast. Approximate travel time from Sierra Vista is 1 hour. For more details call (520)826-4141 or e-mail njyates@vtc.net

Cuttings 'N' Clippings

* The next meeting of Cochise County Master Gardeners Association (CCMGA) is 5:00 p.m. November 6, 2003 at the University of Arizona South campus.

* Saturday, November 1 from 9:00—10:30 a.m. a free *Water Wise* Workshop will be held at the University of Arizona South called *The Honey-Do's of Leaks and Toilets* by Ace Hardware.

* Carr House is holding its final Sunday program at the Carr House Visitor Information Center located approximately 2 3/4 miles up Carr Canyon Road (from Hwy 92 South of Sierra Vista turn right on Carr Canyon Road at the Mesquite Tree Restaurant) on October 5at. 1:30 p.m. The program is *Common Grasses of Carr Canyon* with Dr. Sharon Biedenbender, rangeland management specialist, Sierra Vista Ranger District, Coronado National Forest.

**All my life I
have tried to
pluck a thistle
and plant a
flower wherever
the flower
would grow in
thought and
mind.**

-Abraham Lincoln

Watering Needs of Established Plants

Plant roots need both air and water to survive. Most problems related to irrigation scheduling involve over-irrigation of the more drought-tolerant plants. Too much water will deprive the roots of air and can rot your plant. Drought-tolerant plants may be found growing in all types of soils, from sand to clay. Sandy soils do not hold moisture well and drain quickly. Clay soils hold water tightly for long periods of time and can cause the most problems with over-watering. Watering needs to be much less frequent in clay soils to allow for drying time that these plants need between irrigation intervals.

Below is a guideline for watering established plants (one year for small plants, two years for large shrubs, and three years for trees) for the period of **October through December**. Water at the outer edge of the plant's canopy and to the depth indicated. Depending on emitter output and root depth, watering times are typically one or more hours. It is important to check plants to see how they perform with this schedule and modify it according to the plant's needs. Don't forget to put mulch, rock or bark, three inches deep on top of the soil to hold moisture

	<u>Water every</u>	<u>To a depth of</u>
Desert-adapted trees:	14-30 days	24-36 inches
High-water-use trees:	7-12 days	24-36 inches
Desert-adapted shrubs:	14-30 days	18-24 inches
High-water-use shrubs:	10-14 days	18-24 inches
Desert-adapted ground cover:	14-30 days	8-12 inches
High-water-use ground cover:	10-14 days	8-12 inches

For more information on water and plants call the Water Wise Program at 458-8278, Ext. 2139 or visit www.ag.arizona.edu/cochise/waterwise.

Cado Daily
Water Wise Program Coordinator

The Virtual Gardener— WUCOLS (Oct 03)

Lately I've been working with Cado Daily of the Cooperative Extension Water Wise program to develop a system for quantifying the amount of water required to sustain a landscape. Cado pointed me to a 1994 study done by the Cooperative Extension of the University of California titled *Water Use Classification of Landscape Species* (WUCOLS) that is available as an Adobe Acrobat (pdf) document on-line at <http://www.wateright.org/site2/publications/wucolsb.pdf>. (An updated 2000 version which I have not yet had the opportunity to study is at <http://www.owue.water.ca.gov/docs/wucols00.pdf>). The study is so useful I thought I would share it with you this month.

The WUCOLS study attempts to apply the same methodology used to estimate the water needs of agricultural plants to estimate the needs of landscape plants. To do this, committees of landscape professionals representing both the commercial and academic communities were formed in each of six California climate zones and asked to come to consensus on the water needs for their zone (high, moderate, low, very low) of over 1200 species of landscape plants. Of course species that do not grow in a particular climate zone were not rated. Since one of the climate zones used in the study is a High
(Continued on page 4)



October Reminders

- ◆ Be ready for the first frost
- ◆ Thin the seedlings
- ◆ Overseed lawns
- ◆ Plant spring bulbs
- ◆ Divide perennials
- ◆ Don't let weeds go to seed
- ◆ Still time to plant cool season veggies

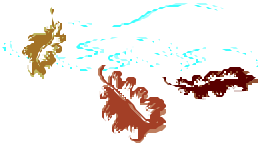
Robert E. Call

Robert E. Call
Extension Agent, Horticulture

Carolyn Gruenhagen
Editor

(Continued from page 3)

Desert zone, the results (542 rated plants) are directly applicable to us in Cochise County. The following list shows a few of the trees listed for the High Desert and their water requirements.



Latin Name	Common Name	Water Use
Acacia constricta	Acacia, Whitethorn	Low
Chitalpa tashkentensis	Chitalpa	Low
Cupressus arizonica	Cypress, Arizona	Low
Parkinsonia aculeata	Palo Verde, Mexican	Low
Pinus halepensis	Pine, Aleppo	Low
Quercus texana	Oak, Texas Red	Low
Chilopsis linearis	Desert Willow	Moderate
Fraxinus velutina	Ash, Arizona	Moderate
Pinus eldarica	Pine, Eldarica	Moderate
Prosopis chilensis	Mesquite, Chilean	Moderate
Quercus virginiana	Oak, Southern Live	Moderate
Sophora secundiflora	Texas Mountain Laurel	Moderate
Washingtonia robusta	Palm, Mexican Fan	Moderate
Platanus wrightii	Sycamore, Arizona	High
Populus alba	Poplar	High

Water Use Classification of Selected High Desert Trees

By itself, this list is interesting perhaps but not too useful. It gains utility when the water use categories are given a quantitative interpretation. The study translates these categories into actual water use using reference evapotranspiration (ET₀).

Evapotranspiration (ET) is the process by which plants draw water from the soil and pass it back to the atmosphere. Scientists use the rate of ET (measured in inches per day) for a cool season grass as a reference and call it ET₀. The WUCOLS study equates the water use categories into percentages of ET₀ as shown below.

Water Use Category	Percent of ET ₀
High	70-90
Moderate	40-60
Low	10-30
Very Low	Less than 10

To figure out the water needs of a plant in inches of water you need to look up its water use category and multiply the percentage factor for that category by ET₀. Reference evapotranspiration rates for various locations around the state are published on the Web by AZMET (<http://ag.arizona.edu/azmet/azdata.htm>). The only information for Cochise County is at a place called Bonita which lies north of Willcox.

Let's calculate the water needs of a Whitethorn acacia, an Eldarica pine, and an Arizona Sycamore for practice. We'll use an ET₀ value of 0.2 inches per day, which is about average for Sierra Vista in September and a percentage midway between the high and low values shown above. The values for the three trees are:

Whitethorn acacia: .2 X .2 = .04" per day
 Eldarica pine: .5 X .2 = .10" per day
 Arizona sycamore: .8 X .2 = .16" per day

To translate this into gallons per day, we need to multiply inches per day by the area (in square inches) over which the water will be applied and divide by 231 (the number of cubic inches in a gallon). The area over which the water will be applied is the area of the root zone, which we will approximate by the area covered by the canopy of the tree. For simplicity we will consider each of the trees to have a canopy diameter of 10 feet. This translates into a canopy area of 11,310 square inches. The number of gallons needed by each of the three trees is:

Whitethorn acacia: .04 X 11310/231 = 1.9 gallons per day
 Eldarica pine: .10 X 11310/231 = 4.9 gallons per day
 Arizona sycamore: .16 X 11310/231 = 7.8 gallons per day

The full WUCOLS methodology takes into account additional factors for microclimate, planting density, and the efficiency of water application when calculating water requirements. I urge you to look at the entire WUCOLS study to see how these factors are included in the calculations.

Until next time...happy surfing

Gary A. Gruenhagen, Master Gardener
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The Agent's Observations

Q I planted some bedding plants last spring and they have grown just great. However, in the past two or three weeks they have started to wilt and die on one side of the plant and then progresses over the entire plant. Finally the whole plant dies. Do they have a disease? How should I treat them?

A Upon examination disease spots or cankers on the stems or leaves were not present. Also, no insect damage was found. Examination of the roots showed that they were soggy and spongy and the bark of the roots slipped off of the root cortex with a slight pull. The cause of the problem was overwatering. As temperatures decrease plant transpiration also decreases, thus less water is required.

Control: As fall temperatures cool decrease watering frequency. Water as needed. Push a soil probe or long handled screw driver to check soil moisture depth. Water only when the probe will not penetrate the top 3-4 inches of soil.

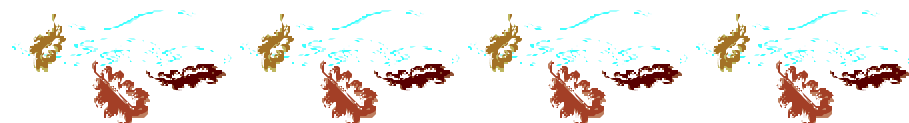
Q I have several fruit and shade trees that need to be pruned. Is now the time to prune these plants?

A **DO NOT PRUNE NOW!** Deciduous trees are preparing to go dormant in the high desert. Pruning is a dwarfing, stimulating and stressful event. Trees and shrubs are moving compounds from the leaves and branches for storage in their trunks and roots. If pruning is done now buds that are going dormant may be stimulated and begin to grow. If this occurs energy and other resources that are normally stored to survive winter and facilitate the "spring push" of rapid growth may be exhausted. Many of the stored resources are used before new leaves emerge in the spring before photosynthesis can begin anew. Even evergreens growing activity in the winter slows and in some cases stops. Stimulating new growth is just the opposite of what plants need to survive the winter season.

Prune most fruit and shade trees just before bud swell occurs in late winter or early spring, between January and April. With many flowering ornamental plants pruning recommendations are after flowering occurs. If you have questions on a specific plants' pruning requirements contact the Extension Office in Sierra Vista or Willcox.

Q I have termite damage on some wood that supports my Arizona room. There is also some damage on the door jam coming into my home. Someone told me that I would need to have my house tented and fumigated by a pest control company. I called a company and they said it would cost several thousand dollars. Is that the only way to control termites?

A Dark western drywood termite (*Incisitermes minor*) feed on cellulose found in dry wood. The colony has few individuals at first, does not grow rapidly and is never as large as subterranean termites. A tell-tell sign of their feeding activity is a pile of fecal pellets found below a "kick hole." These pellets are small and almost football shaped if viewed under magnification. Depending on the dry wood termites food source pellets can be light tan to dark brown in color. **Control:** Removing and replacing infected wood is an effective strategy. Exposing
(Continued on back page)



(The Agent's Observations continued from page 5)

the infected wood or drilling into it and spot treating with a termiticide may solve the problem. Tenting and fumigation **is not needed** in a high percentage of cases. For further information concerning drywood termites contact the Extension Office for a copy of *Drywood Termites*, Publication Number AZ1232. A copy may be downloaded from: <http://ag.arizona.edu/pubs/insects/az1232.pdf>

Robert E. Call
Extension Agent, Horticulture



Quick Tip

Keep a set of measuring cups and spoons near garden supplies to take the guesswork out of measuring insecticides, weed killers, or other chemicals.

Breaking the Code

Do you know what those tiny stickers on loose fruits and vegetables are for? Yes, they tell the store's computer database what the item is and how much it costs at the checkout. The price lookup code (PLU) also tells you how it was grown!

Conventionally grown produce carries a four-digit code. Organically grown items have a number 9 preceding that basic code. Genetically modified produce has a number 8.

-*Sunset* (July 2003)