



High on the Desert Cochise County Master Gardener Newsletter

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

LUNAR GARDENING—Exploring the Moon’s Phases

The moon waxes (increases) and wanes (decreases) over a period of about twenty-eight days. This cycle from New Moon to New Moon is called the lunation cycle and is divided into four parts commonly called quarters or phases. In the northern hemisphere the moon can be seen going through the phases from right to left and in the southern hemisphere from left to right.

The first and second quarter are also known as the Light of the Moon. It is when the moon is growing in light and is increasing in energy (waxing). It does not refer to anytime the moon is plainly visible.

The first quarter/phase begins at New Moon. Many calendars will show it as a blackened moon (dead moon) indicating that there is no moonlight to be seen on the first night since the moon lies between the earth and the sun. The New Moon is waxing and is a time for new beginnings that favor personal growth and in the garden it is time for germination. The Earth begins to breathe in.

The second quarter/phase starts about seven-plus days after the New Moon and ends with the Full Moon. The sun and moon are ninety degrees apart. Calendars usually show this period as a half-darkened half moon facing left. The waxing powers of the moon are especially strong at this time – more births come into this world during this phase.

The third and fourth quarters are also known as the Dark of the Moon. The moon is declining in light and energy and decreases in size (waning). It does not refer to anytime the moon is not visible.

The third quarter/phase begins at Full Moon—the moon has covered half of its journey around the Earth. This is when the sun and moon are opposite and sunlight shines fully on the moon. Calendars often indicate this day as white full moon. The Full Moon stands for illumination, completion and unrest. Medical herbs gathered under a Full Moon have great powers; police stations brace for a rise in crimes and accidents;

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and if you are female and sleep within the moonlight the force of the moon will rule the menstrual cycle during this phase. Farther into the waning cycle it becomes a time for fruition, fulfillment and maturity.

The fourth quarter/phase begins halfway (about twenty-one days into the lunation cycle) between the Full Moon and next New Moon. The sun and moon are again at ninety degrees apart and the waning powers of the moon are especially weak. Calendars will show this as a white half moon facing right. This phase is a time of reorganization, reflection and riddling oneself of unnecessary things in order to make room for the coming New Moon.

As the moon journeys through its lunation cycle it passes through the twelve constellations of the zodiac. Depending on the sign, the moon form of expression is said to be strong or weak – and we'll talk about that next time.

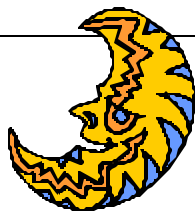
August lunar planting calendar

Mon 1st 5:52 am - Wed 3rd 6:10 pm ~ 4th qtr Cancer ~ plant perennials flowers, shrubs, & trees; prune; irrigate; fertilize (organic)

Wed 3rd 6:10 pm - Thu 4th 8:05 pm (New Moon) ~ 4th qtr Leo ~ cultivate; destroy weeds & pests; harvest fruits & root crops; trim/prune to retard growth

Mon 8th 7:08 pm - Thu 11th 5:35 am ~ 1st qtr Libra ~ plant annuals for beauty & fragrance, trim/prune to increase plant growth

Thu 11th 5:35 am - Fri 12th 7:38 pm ~ 1st qtr Scorpio ~ irrigate; begin planting of cool season veggies: lettuce, broccoli, cabbage, cauliflower, collards, spinach, brussel sprouts, chard, kale,



kohlrabi; trim/prune to increase plant growth

Fri 12th 7:38 pm - Sat 13th 12:47 pm ~ 2nd qtr Scorpio ~ irrigate; begin planting of cool season veggies: chards, kale, kohlrabi, peas, onion seed; trim/prune to increase plant growth

Sat 13th 12:47 pm - Mon 15th 4:13 pm ~ 2nd qtr Sagittarius ~ plant leeks & shallots

Fri 19th 10:53 am - 3:52 pm (Full Moon) ~ 3rd qtr Aquarius ~ cultivate; destroy weeds & pests; harvest fruits & root crops; trim/prune to retard growth

Fri 19th 3:52 pm Sun 21st 4:01 pm ~ 3rd qtr Pisces ~ plant beets, carrots, radish, perennials flowers, shrubs, & trees; prune; irrigate; fertilize (organic)

Sun 21st 4:01 pm - Tue 23rd 6:58 pm ~ 3rd qtr Aries ~ cultivate; destroy weeds & pests; harvest fruits & root crops; trim/prune to retard growth

Tue 23rd 6:58 pm - Fri 26th 1:43 am ~ 3rd qtr Taurus ~ plant potatoes, onion sets, radish; trim/prune to retard growth

Fri 26th 1:43 am - Sun 28th 11:57 am ~ 3rd & 4th qtr Gemini ~ cultivate; destroy weeds & pests; harvest fruits & root crops; trim/prune to retard growth

Sun 28th 11:57 am - Wed 31st 12:14 am ~ 4th qtr Cancer ~ plant perennials flowers, shrubs, & trees; prune; irrigate; fertilize (organic)

Want more info? A lunar planting guide for vegetables, fruits, berries and ornamentals can be found at www.outb.com/users/planthoe/lunargardening.htm

Cheri Melton, Master Gardener

Xeriscape— Why Bother?

By now you've probably heard of the word **Xeriscape** (pronounced zeer- ih- scape). It is a type of low water use landscaping installed all over the United States. People who live in areas you wouldn't normally think would need low water use landscaping do in fact need to observe conserving water practices.

But why bother? Because landscapes can be very thirsty and landscape water is one of the first things that gets restricted in times of drought. The traditional residential yard with large turf areas, shade trees, ornamental flower beds, and a vegetable garden can account for up to 50% of a home's water bill. Xeriscaped yards can cut that water usage by 20% to 80% without sacrificing aesthetics and landscape usage. The need to conserve water in our small corner of the state is clear as we

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August Reminders

- ◆ Keep pulling the weeds
- ◆ Fertilize
- ◆ Prolong annuals
- ◆ Plan your spring wildflower garden
- ◆ Watch for nutrient deficiencies (see *The Virtual Gardener* and *The Agent's Observations* this month), sunburn, salt-burn, over-watering, and insects
- ◆ Plant cool-season flowers and veggies

• Important Notice! •

Attached to the newsletter again this month is a sign-up sheet to update our mailing list. The newsletter is about to become an "e-newsletter" so be sure to include your e-mail address if you have one. When the newsletter has been posted you will receive an e-mail with a link to the newsletter in the Master Gardener Web Site. If you do not have an e-mail address, the newsletter will continue to be mailed to you. We expect to save hundreds of dollars each month on postage. If you haven't done so yet, please return the sign-up sheet as soon as possible to continue receiving the newsletter.

We appreciate all of our readers and hope to have you continue with us.

In a Desert Garden

Sphaeralcea - Globe Mallow

The first globe mallow in my yard just arrived. One day it started growing on one side of my pond. As I never pull a plant before I am sure what exactly it is, I have a nice stand of orange globe mallow in my yard as it has seeded itself to other parts of my garden. Where it came from? Who knows. The birds could have dropped the seeds or they were dormant in the soil and woke up one day. This species *Sphaeralcea incana* - orange globe mallow is a native of Arizona and has green leaves and bright orange flowers with an upright growth to three feet. I am always thankful for a plant that can make it in my heavy clay soil without much attention and not too much additional water. The plants of this family resemble miniature Hollyhocks. They grow deep taproots that make it hard to dig up. As they grow easily from seed, this is the way to propagate. There are other varieties in different colors and I have planted them all over my yard. *S.ambigua* - apricot mallow, another Arizona native, has gray-green leaves and the flowers can be orange, pink, and even white. *S.coccinia* - prairie mallow can be found in Arizona as well as all over the West. This is a spreading plant with olive green

leaves and orange to red flowers.

All of these species can endure our hot and dry summers and that is when they produce the best. It is easy to over-water these plants and lots of water causes weedy growth and rust, a fungal disease.

There are really no bug problems. However in some years you will see a mass of metallic green or red beetles with a black stripe on the plants. These beetles are actually very attractive with their metallic bodies. The beetles themselves are no threat to the plant as they gather there to mate. It is the larvae that will feed on the foliage. The egg mass is bright orange and can be removed before the larvae develops. I have never intervened and found the damage not that great. As I never use any pesticides in my yard, usually predatory insects move in and devourer the larvae. Overall these plants are the most enduring and neglected in my yard. All they need is a little pruning in late winter to prevent the plants from getting too woody. The plants are available at several of the area's nurseries.

Angel Rutherford, Master Gardener

A Pond Building & Advanced Pond Maintenance class is scheduled at Cochise College for August 20. For information call 515-5492.

Cuttings 'N' Clippings

* The next CCMGA meeting is 5:00 p.m. Thursday, August 4, 2005 at the University of Arizona South campus, Room B160 in the new building. The guest speaker will be Henry Haros of Naturescape Garden Arts. His topic is *Artistic Design of Seasonal Color in pots*.

* The free *Water Wise* program on Saturday, August 6 from 9:00 to Noon is *Desert Plants for Small Yards and Containers* presented by Jan Groth at the Arizona Folklore Preserve. For more information contact Cado Daily at the Cooperative Extension, Ext. 2139.

* A *Grass & Wildflower ID Walk* is scheduled for August 27, 8:00 a.m. until noon. For information contact Cado Daily.

Robert E. Call

Robert E. Call
Extension Agent, Horticulture

Carolyn Gruenhagen
Editor

The Virtual Gardener—Iron Chlorosis

A few months ago I wrote about nitrogen, potassium, and phosphorus. As you will recall, the percentage of each of these elements in a fertilizer by law must be listed on its container. The percentage of iron is not required to be listed, but iron is no less essential to plant health.

Our English name for iron comes from the Anglo-Saxon words *iren* or *isen*, but the chemical symbol, *Fe*, comes from its Latin name *ferrum*. Iron is the fourth most abundant element in the crust of the earth (after oxygen, silicon, and aluminum). As those of us who use iron or steel tools in the garden are well aware, iron has a strong affinity for oxygen. Our tools quickly develop a patina of the iron oxide we call rust if left out in the elements.

Iron is an essential element in the chemistry of life, both for plants and for animals. You only have to look at the color of a drop of blood when you cut your finger to be reminded of this. The red color comes from iron in the hemoglobin protein that makes up most of your red blood cells. The iron in hemoglobin grabs oxygen from the air you breath in and carries it to cells throughout your body. The role of iron in plants is no less vital.

Iron acts as a cofactor that assists enzymes in the plant to catalyze important chemical reactions that sustain life. Iron compounds play important roles in photosynthesis, the process that allows plants to use the energy of sunlight to build sugars. Iron-containing proteins

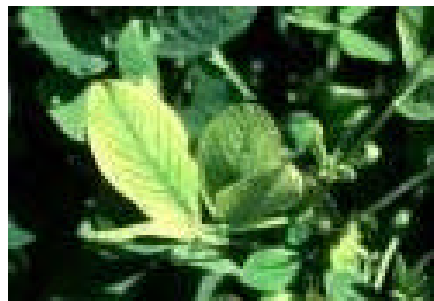
give plants the capability to burn sugars to produce the energy required for growth. And proteins containing iron make up an enzyme called *nitrogenase* that allows certain bacteria to fix atmospheric nitrogen.

So, if iron is so abundant, why don't plants have all the iron they need and then some? The answer lies in the affinity iron has for combining with other elements, especially oxygen. The red color of many of our rocks and soils is due to one of these iron oxides, the mineral *hematite* (Fe_2O_3).

Plants cannot directly absorb iron oxides or other iron compounds. The compounds must first be dissolved to liberate the iron in the form of charged particles called *ions*. These ions normally come in a couple of different flavors—a ferric ion (Fe^{+++}) and a ferrous ion (Fe^{++}). Unfortunately, ferric and ferrous ions are only stable under certain special soil conditions.

First, the soils need to be well aerated and preferably have a large amount of organic material actively being consumed by bacteria. As the bacteria digest the organic materials, they produce oxygen. This along with the air creates what chemists call an oxidizing environment. Iron ions are only stable in such environments. If these conditions are not met, the iron oxides tend not to dissolve. Second, the soils need to be acidic rather than alkaline. The iron oxides will not dissolve in alkaline soils, although some plants can assist in the dissolution process by producing acids around their roots that help to dissolve the iron oxides.

The conditions for producing iron ions are not common in High Desert soils. Our soils are alkaline rather than acidic; are often heavy with clay, highly compacted and poorly drained; and certainly are not rich in organic materials. Native plants have developed tricks for surviving in this hostile environment, but plants from more benign regions often suffer from a shortage of iron when grown in desert soils and develop a condition called *iron chlorosis*.



The word *chlorosis* comes from two Greek words, *chlor* meaning *green* and *osis* meaning *condition*. Anytime you see this word used in connection with plants, it means the plant has turned a yellow color. Plants suffering from iron chlorosis can be recognized by the unique pattern of leaf yellowing. The veins of younger leaves remain green while the areas between the veins turn yellow. Older leaves do not exhibit yellowing. This is because iron is not very mobile inside the plant and once in place in older leaves cannot be moved to the newer leaves.

So if you recognize that your plant has iron chlorosis, what do you do about it? First, apply iron to the plant. The best form is *chelated* (pronounced KEY-lated) iron which can be found in nurseries or

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other places that sell gardening supplies. Chelated iron can be absorbed through both the leaves and roots of the plants. Follow the directions on the container to apply it.

Second, improve the soil. Work some organic materials into the soil around your plants to loosen it up and encourage microorganisms to flourish. Make sure drainage is adequate. Saturated soils create a reducing environment, the opposite of the oxidizing environment needed. Common sense might also suggest adding sulfur or other acidifying agents to the soil to lower the pH, but in this case common sense is wrong. The amount of carbonate to be neutralized is so immense it would require tons of additives to have an impact.

If you would like to find out more about iron chlorosis, check out this article by Pima County Extension Agent, John Begeman. It appeared in the Home section of the Arizona Daily Star on July 10 and can be found on-line at: www.azstarnet.com/sn/begeman/82764.php.

Until next time, happy surfing!

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

Q I have hybrid tea roses growing in containers near the entrance to our home. The leaves are yellowing and have some dry areas in between the veins. Do the roses have a disease? If so how can I cure them?

A After examining a sample it was determined that the roses did not have a disease, but rather a nutrient deficiency. The plants are growing in containers filled with potting soil. Many potting soils, but not all, have slow release fertilizer in them. Over time the fertilizer is exhausted and plants begin to suffer. There are 18 nutrients needed for normal plant growth, similar to the human RDA (Recommended Daily Amounts) nutrition recommendations. If one nutrient is lacking then things start to go wrong in plants and humans. To help the rose situation purchase some slow release fertilizer at a nursery or big box store. Many of these products can be used for houseplants as well. Examine the fertilizer label and make sure the slow release "prills" contain at least eight to ten nutrients. Some slow release fertilizers will be effective for three to six months. Other formulations may last for a year. Of course longevity depends on plant species, watering schedule, and the soil environment. Read the

label and know what you are purchasing. Follow the label instructions for the amount of fertilizer to place in each container. Recommended amounts are based on container size and/or volume. Scratch the nutrient containing prills into the top inch or two of the soil and water. Nutrients will be released slowly over time and the roses will become healthy again.

Robert E. Call
Extension Agent, Horticulture

Audubon Magazine Needs Your Help: Creative Mulching

New York, NY, July 22, 2005 - Historic Ivory-billed Woodpecker habitat in Louisiana and Florida is being logged for—of all things—cypress mulch. Fortunately, there are better mulch alternatives for gardeners looking to cut their water use, control weeds, and insulate against temperature extremes. Leaves, pine straw, compost, even cocoa hulls make perfectly good mulch, and they're also environment friendly. If you use mulch that's both creative and easy on the environment, *Audubon Magazine* would like to hear from you. Please send an e-mail titled "mulch" to editor@audubon.org

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continue to mine our water resources. While we look for other ways to supply water, we can easily be a part of the solution. Generally, if you have a home built after 1990, you have all low water use fixtures. If your home was built before that, you can install low flow fixtures and put a plastic jug in your toilet tank to displace water. Being aware of water wasting habits and altering them is a painless way to save gallons.

In your yard, water conservation takes a little more effort at first. In the xeriscape landscape design the immediate area around your home can be landscaped with shade producing plants and plants that take moderate amounts of water, keeping your home cool and

saving you cooling costs. The outer areas become progressively less water intensive. What is appealing with this design, is its lazy approach to maintenance! Reduction or elimination of turf areas is the greatest water saving technique. Ask yourself, "Do I really need all that lawn? Does my family use it all? Do we want to spend our weekends mowing and fertilizing?" You may soon find that your turf area is more work than pleasure. Appropriately sized turfed areas may be very useful for families with children and pets. Placing turf on the hottest side of the home (south and west) can help cool the home by absorbing direct and reflected heat. Replacing turfed areas with low water use vegetation can contribute greatly to a reduction of water use, increase wildlife for restful enjoyment, and

add year-round color to your home.

Don't forget other xeriscape landscape techniques like water harvesting, mulching root zones, watering at the dripline, watering deeply and infrequently, and adding organic material to garden soil.

For more information on how to xeriscape, come to the free Water Wise/Master Gardener Xeriscape Tour, Saturday September 3 from 9:00 a.m. to 1:00 p.m. Several landscape yards will be open for this self-guided tour. Maps are available by calling the Cooperative Extension office at 458-8278 x 2141 or by email to

jwilliam@ag.arizona.edu.

Cado Daily
WaterWise Educator

