



Master Gardener Newsletter

- New Mexico State University
- Cooperative Extension Service
- U.S. Department of Agriculture
- College of Agricultural, Consumer & Environmental Sciences

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Plant-of-the-Month

| <u>Contents:</u> | <u>Page</u> |
|---|-------------|
| • Plant-of-the-Month <u>Next Month: Afghan Pines</u> | 1-4 |
| • Summer Lettuce | 5 |
| • Seeing Spots in Your Garden? | 6-7 |
| • Black Widows & Other Widows | 8 |
| • Scorpions | 8 |
| • Mourning Doves | 9-10 & 21 |
| • Farmers' Markets Sprout Up | 11 |
| • Veggie Gardening Is Still Hot | 11 |
| • Community Gardening Reports | 12 |
| • <u>Lunch & Learn</u> Presentation | 13 |
| • MVSP Events in June | 13 |
| • New Master Gardener Profile | 13 |
| • 3 Great New Gardening Books | 14 |
| • <u>June Honey-Do List</u> | 15-16 |
| • <u>Weed Watch: Roundup</u> ®-- Resistant Pigweed | 17-18 |
| • <u>Your Own Personal Gardener</u> Website | 18 |
| • <u>Veggies A-Z</u> (Broccoli) | 19-21 |
| • MG Matters | 22-23 |
| • <u>June</u> MG Birthdays | 23 |
| • Thanks for the Goodies | 23 |
| • MG Seed/Plant Exchange | 23 |
| • Hotline Assignments (As of 5/28/10) | 24 |



YUCCAS

The genus *Yucca* is a remarkable group of flowering plants native to the New World. This genus includes 49 species and 24 subspecies, most can be found in the southwestern U.S. and Mexico. Although yuccas are often associated with arid desert regions, some species are native to the southeastern U.S. and the Caribbean islands. Yuccas are plants that, depending on the authority, are usually placed in the lily family (*Liliaceae*) or the agave family (*Agavaceae*).

Yuccas are an important genus in terms of ornamental landscaping usage as well as of an economic importance in some areas of their range.

Yucca plants include perennial shrubs and trees of which there are dozens of beautiful cultivars notable for their rosettes of evergreen, tough, sword-shaped leaves and large terminal panicles of white or whitish flowers.

In addition to being ornamental plants in gardens, many yuccas bear edible parts, including fruits, seeds, flowers, flowering stems, and more rarely roots. Dried yucca has a low ignition temperature, making it desirable for use in starting fires via friction. The "yucca flower" is the state flower of NM. **Distribution.** The natural distribution range of yuccas covers a vast area of North and Central America: from Baja California in the west, northwards into the U.S., through the drier central states as far north as Alberta in Canada and moving east along the Gulf of Mexico, and then north again, through the Atlantic coastal and inland neighboring states. To the south, the genus is represented throughout Mexico and extends into Guatemala. Yuccas have adapted to a vast range of climatic and ecological conditions. They can be found in rocky deserts and badlands, in prairies and grassland, in mountainous regions, in light woodland, in coastal sands and even in subtropical and semi-temperate zones, although these are nearly always arid to semi-arid.

Characteristics of the Yucca Species. The yucca is an agave-like plant that, in general, has more cold tolerance than most agaves, though there are some cold-intolerant species. These are arid-loving, rosette-shaped flowering plants that consist of primarily lanceolate leaf blades with very sharp leaf tips. Some agaves and yuccas are hard to tell apart, although agave and yucca flowers look very different. Most yuccas are stemmed plants, but quite a few are not. Most yuccas flower repeatedly, but a few are monocarpic (flower once, and then die) like most of the agaves. The flowers of yuccas are generally large and showy, are white or pale yellow (some exceptions) and are pollinated by moths that are only attracted to yucca flowers (See page 3).

Yuccas have a number of uses, including food (human and feedstock), sewing and basket weaving, a shampoo and soap ingredient, a natural dye, and for a number of medicinal uses. —**Trunkless Yucca Species** This species features trunkless shrubs with rosettes of stiff, sword-shaped leaves arising at ground level, or they are tree-like with distinct trunks and limbs. Examples of the rosette forms include the Spanish bayonet (*Y. baccata*) and chaparral or Our Lord's Candle yucca (*Y. whipplei*). (Photos on page 4)

Characteristics include: 1) found throughout the southwest, in Landscape Zones 1-7, 2) depending on the species, usually 1-3 ft tall, 3) leaves are evergreen and sword-like, and 4) they flower in spring through summer in clusters of white flowers on tall stalks. "All these trunkless yuccas have great landscape merit and make great companion plants for agaves, chollas, and prickly pears". (G.O. Miller)

Deadline for submitting articles and information for the July 2010 newsletter is Friday, June 25th.

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Yuccas—Continued from Front Page

—Tree Yucca Species Tree-like forms include the Joshua tree, *Y. brevifolia*,—(photo shown on page 3) of the California and Arizona desert region, and the tree yucca or Datillo, *Y. valida*, endemic to southern Baja California.

Characteristics include: 1) found throughout the southwest and Mexico, in Landscape Zones 1-6, 2) depending on the species, height varies from 3-20 ft tall, 3) leaves are evergreen and sword-like, and 4) plants flower in spring through summer in clusters of white flowers on tall stalks.

“Two tree yuccas make premier landscape specimens for home and commercial designs. The Soaptree yucca, *Y. elata*, (photo shown on page 3) reaches 8-12 ft. tall and has symmetrical rosettes of narrow leaves that crown the trunks and branches”. (G.O. Miller) This yucca is dominant in the desert areas of southwestern New Mexico in elevations from 1,500 to 6,000 ft.

The second very popular yucca is the blue yucca, *Y. rigida*, which is a native of northern Mexico and is found at elevations from 3,000 to 5,500 ft. “Its single trunk is crowned with a compact rosette of stiff, 3 ft. long bluish leaves. It’s cold hardy to 5°F. (G.O. Miller) If you plant either of these yuccas in your landscape, make sure to make it the focal point.

Representative Members of the Yucca Family. Generally, yuccas of the southwest fall into one of two groups, the broad-leaf yuccas, with mature leaves that measure roughly two inches in width, and the narrow-leaf yuccas, with mature leaves that measure well under one inch in width. Some of these better known species include the broad-leaf Banana and Torrey Yuccas and the narrow-leaf Our-Lord’s-Candle and Soaptree yuccas and, of course, the Joshua Tree Yucca (Photos shown on page4).

The Banana Yucca is found in the Sonoran, Mojave and Chihuahuan Deserts. Its 30” long leaves typically occur in an open cluster atop abbreviated stems. It has a fibrous and highly branched radiating root system. Its flower stalk reaches as high as 40”, bearing fleshy white flowers with a red or purple tinge. It produces a green, fleshy, banana-shaped fruit, hence its common name.

The Torrey Yucca or Spanish Bayonet, a signature plant of the Chihuahuan Desert, closely resembles the Banana Yucca, with both having similar leaves and radiating root systems. The Torrey Yucca, however, has a rising and shaggy skirted stem that may reach 15 ft or more high. It produces creamy white flower clusters and fleshy fruits on a stalk that sometimes extends for several feet above the leaf rosette.

Our-Lord’s-Candle, native to the western Sonoran Desert, has a decorative “dense basal rosette of gray-green, rigid, spine-tipped leaves” that spans about 2 ft. It has a branched radiating root system. It produces, on a single 10-to 15-ft stalk, a dense cluster of purple-tinged, cream-colored, bell-shaped flowers and a juicy, tender but seed-filled fruit. Its blossoms almost seem to glow in the soft light of dawn or sunset, giving the plant its name. Unlike other yuccas, Our-Lord’s-Candle dies once it has bloomed.

The Soaptree Yucca, among the most common of the Chihuahuan and Sonoran Desert yuccas, has pale green leaves with whitish margins. As it grows and matures, it often develops a branching, shaggy stem perhaps 15 ft in height. It has both a radiating root system and a taproot. Each stem branch produces a cluster of cream-colored bell-shaped flowers and brown woody seed capsules that tip a flower stalk several feet in length.

The Joshua Tree Yucca is primarily found in the Mojave Desert. Its leaves measure about 5”-12” length, becoming “sword-like” as they mature. The mature Joshua tree has two sets of root systems, one stores any surplus water and it also develops bulbs. The bulbs are buried 10 to 30 ft under the soil. Sometimes they reach up to 4 ft in circumference and weigh up to 40 lbs. The other set is a shallow root system; the shallow roots only reach down to a couple of feet.” The Joshua tree blooms annually, provided it receives enough rain. *Article Continued on Page 3*



Soaptree Yucca leaves with whitish margins.

FACTS

Yuccas (scientific & common names) found in area deserts:

CHIHUAHUAN Desert Yucca Species

- Y. baccata* (Banana Yucca, Datil)
- Y. elata* (Soaptree Yucca, Palmella)
- Y. faxoniana* (Spanish Bayonet)

MOJAVE Desert Yucca Species

- Y. baccata* (Banana Yucca, Datil)
- Y. brevifolia* (Joshua Tree)
- Y. schidigera* (Mojave Yucca)

SONORAN Desert Yucca Species

- Y. aloifolia* (Spanish Bayonet)
- Y. baccata* (Banana Yucca, Datil)
- Y. brevifolia* (Joshua Tree)
- Y. elata* (Soaptree Yucca, Palmella)
- Y. rigida* (Blue Yucca)
- Y. whipplei* (Our Lord’s Candle)
- Y. valida* (Datillo)

SOURCES:

- Introduction to Yuccas (June 2009), Geoff Stein, Website: davesgarden.com
- Landscaping with Native Plants of the Southwest (2007), George Oxford Miller, Voyageur Press
- New Mexico Gardner’s Guide, Revised Edition (2001), Judith Phillips, Cool Springs Press
- Problems and Pests of Agaves, Aloe, Cactus & Yucca (Oct. 2008), Jack Kelly & Mary Olson, University of Arizona Cooperative Extension, Pub. AZ-1399
- The Desert Food Chain-Part 4: The Yuccas, Jay W. Sharp, Website: desertusa.com
- The Yucca and Its Moth: Pollination That Depends On A Small Moth; Website: <http://waynesword.palomar.edu/www0902a.htm>
- Yucca, Website: <http://en.wikipedia.org/wiki/Yucca>
- Yucca Species, Lady Bird Johnson Wildflower Center, University of Texas @ Austin, Website: www.wildflower.org/plants

Also see:

- Cactus, Agaves, Yucca and Ocotillo (April 2009), Jack Kelly & Rob Grumbles, University of Arizona Cooperative Extension, Pub. AZ 1225

(Research and compilation of sources for this article provided by Ann Shine-Ring, Certified Master Gardener.)

Yuccas—Continued from Page 2



Y. elata

Y. rigida

Y. brevifolia

Upon flowering, the Joshua tree's light cream or ivory-colored waxy blossoms emit a musty odor similar to that of a toadstool. Its blossoms open only at night and then only partially. This plant that may live for centuries, received its name from Mormon pioneers who thought the plant looked like the Biblical prophet, his arms raised, beckoning them across the desert wilderness to the "promised land".

Survival Abilities. Collectively, the desert species of yucca are all able to survive under harsh conditions, because of these distinctive characteristics:

- ❖ Sharply pointed succulent (or, water-storing) leaves bear grayish- or bluish-green waxy skins that both reflect the heat of the desert sun and restrict the loss of stored water. The rosette leaf arrangements and the often channeled upper leaf surfaces function as conduits for funneling water from rains, snowmelt and dew into the plant stem and root system.
- ❖ Most yuccas guard themselves with armaments of leaves, not spines, that resemble sabers. Like the cacti, the evergreen yuccas serve up tasty meals to various animals in spite of the threatening botanical weaponry.
- ❖ Yucca stems have a "vascular" structure, or scattered bundles of specialized tissues that store and conduct water. Some species, such as the Soap-tree Yucca (Sonoran and Chihuahuan Deserts) and the Torrey Yucca (Chihuahuan Desert) have stems, sometimes shaggy with skirts of dead leaves, that can range from several inches to 10-15 ft in height and have stems that grow taller very rapidly – as much as several inches per year – to keep the leaf rosettes from being engulfed by the marching dunes.
- ❖ Some species have both shallow radial root systems and deep tap roots. The radial roots intercept rainwater as it soaks into the upper soil layers. The taproots reach for the deeper water in the lower soil layers, and they have fleshy tissues for storing and conducting water. Typically, the yuccas produce a dense bouquet of creamy white flowers, sometimes with a reddish or purplish tinge, on a single stalk in the spring and early summer, attracting a specialized pollinating moth species, and they follow with an equally dense cluster of fleshy green edible fruits during the summer, attracting animals.
- ❖ Like cacti, yuccas minimize the evaporation of water from their tissues by opening their stomata (leaf pores) during the coolness of night (rather than during the heat of the day) to take in the carbon dioxide required for photosynthesis. They open their stomata as darkness falls. They effectively inhale the carbon dioxide through the night. They put it in short-term storage by combining it, biochemically, with an organic acid. They close their stomata as darkness gives way to sunlight. They free their store of carbon dioxide internally. Fueled by solar energy, they begin the process of photosynthesis, which they continue through the day.

The Yucca Moth. What truly sets the yucca genus apart from other flowering plants is its unique method of pollination. Yuccas have a very specialized, mutualistic pollination system, being pollinated by the yucca moth (*Tegeticula maculata*) shown below.



This insect purposefully transfers the pollen from the stamens of one plant to the stigma of another, and at the same time lays an egg in the flower; the moth larva then feeds on some of the developing seeds. Like fig wasps and acacia ants, the relationship is mutually beneficial to both partners, and is vital for the survival of both plant and insect. In fact, yuccas cultivated in the Old World, where yucca moths are absent, will not produce seeds unless they are hand pollinated.

Each spring, male and female yucca moths emerge from their subterranean cocoons. They crawl to the surface and fly to nearby yucca plants. During this moth emergence period, male and female moths mate. At this time the yucca plants have developed erect flower stalks and the flowers open one-by-one into a magnificent inflorescence. At maturity, yucca pollen grains adhere into sticky masses called *pollinia*, two inside each chamber of the anther. Unlike most other flowering plants, the pollen is not dispersed as individual grains. The pregnant female yucca moth collects up to a dozen *pollinia* within the yucca flower and forms them into a golden mass. She uses a pair of long, curved, prehensile appendages in the mouth region (called maxillary palpi) to collect, form and carry the pollen ball. In order for pollination to occur, masses of pollen must be forced down into this central stigmatic depression. Herein lies the adaptive advantage and marvelous genetic programming of a little moth that is absolutely vital for the survival and perpetuation of yucca plants.

By late fall, dark brown yucca seed capsules split open between the seams of the carpels, releasing hundreds of black seeds. The pinkish moth larva remains inside its little feeding cavity of fused seeds within the capsule until the first autumn rains. Then it emerges from the capsule and drops to the ground. Upon reaching the ground the larva burrows into the soil and constructs a silken cocoon covered with grains of sand. The cocoon may be spherical or elongate. The larva remains in its cocoon during the winter months until spring rains and warming temperatures presumably stimulate pupation and the emergence of an adult moth. Cocoons observed in captivity did not contain a pupa until shortly before the emergence of a moth in spring. It is imperative that the adult moths emerge when yucca plants are once again in bloom so that this remarkable cycle between a moth and a plant can be renewed.

Article Continued on Page 4

Yuccas—Continued from Page 3



Food for the Desert. Yuccas serve as food for insects, reptiles, birds and mammal thus filling an important niche in the desert food chain, they also answer needs for housing, tools and raw materials.

During the flowering and fruiting season, yuccas provide all types of food for desert residents. Their leaves attract black-tail jackrabbits, desert cottontail rabbits, woodrats and packrats. The stems draw various insects. The roots provide food for pocket gophers. The blooms, fruits and seeds attract arthropods, song birds, game birds and rodents. The flower stalks may become food for antelope, mule deer and elk. Dead yuccas feed termites.

Yuccas also offer accommodations for wildlife. The Soap-tree Yucca provides nesting for the Cactus Wren, the Scott's Oriole, flickers, the Swainson's Hawk, the Aplomado Falcon and others. It offers temporary perches for many birds. The Joshua tree's stem gives shelter to the Desert Night Lizard, one of the world's smallest reptiles.

For Native Americans, yuccas not only served as an important food source, they also furnished fibers for making clothing, basketry, mats, cordage, netting, cradles brushes, bindings, bowstrings and gaming pieces. Leaves were made into a pollice for treating sore eyes; leaf points, awls for sewing leathers and fabrics and piercing ears; leaf fibers, brushes for combing hair and painting ceramics; leaf juice (mixed with a powder made from scorpions, red ants, centipedes and jimson weed), a potion for poisoning arrow points; fresh roots, a detergent for washing bodies, clothing, fresh hides and scalps; dead roots, a fuel for firing pottery; dead and dried flower stalks, tools for making fires; long flower stalks, lances for fighting enemies; fresh flower stalks, construction material for building lodge walls; and the emulsion, a medicine for treating insect and snake bites.

In fact, yuccas held such an important role in the diets (as well as the economies) of Native Americans that these plants became embedded in their folk histories, ceremony and tradition.

Weather Conditions. Without exception yuccas are full sun plants (some survive in shadier locales, but would probably prefer full sun). Some yuccas excel in humid climates, but most prefer a dry climate. Although some yuccas are not cold tolerant, some species can tolerate USDA zones as low as minus 30°F.

PROPAGATION.

Description: Yuccas germinate promptly from fresh seed held over winter. Seeds germinate best in 60-70°F. Yuccas may be grown from rhizomes, stem cuttings, or by digging offsets from the side of established plants.

Seed Collection: Gather capsules as they begin to dry but before they split. Allow to dry, then crush to remove seeds. Over winter, keep seeds in moist sand in the refrigerator. For longer storage periods, keep in sealed, refrigerated containers.

Seed Treatment: No treatment is necessary, but germination may be improved by soaking seeds in water for 2 days before planting.

GROWING CONDITIONS.

Water Use: Low

Light Requirement: Sun

Soil Moisture: Dry

Soil Description: Dry, stony soils.

Comments: The yucca moth is the only pollinator of this species. Because it is absent in a planned landscape, the yucca will not produce seeds from the flowers. Hand pollination is possible, but seeds are also available from commercial sources. Since the plants die after fruiting, be sure to plant seeds several years in a row.

BENEFIT.

Ornamental Use: Blooms ornamental, showy, accent tree or shrub

Wildlife Use: Nectar-moths, Seeds-Small mammals, Browse.

Food Use: Cattle relish the young flower stalks, and chopped trunks and leaves serve as emergency food during droughts. Indians ate the flower buds, flowers, and young flower stalks of this and other yuccas, either raw or boiled.

Other Use: Soapy material in the roots and trunks of this abundant species has been used as a soap substitute. The leaves are a source of coarse fiber and were used by Native Americans in making baskets.

Conspicuous Flowers: Yes Interesting Foliage: Yes

Attracts: Butterflies

Larval Host: Yucca giant butterfly.

Yucca Pests. Two-spotted mites (*Tetranychus urticae*) attack certain species of Yucca (e.g. *Yucca gloriosa*, *Y. aloifolia*, and *Y. recurvata*). They are difficult to see, but under a microscope, two-spotted mites are about 0.02" long and are red, pink, or yellow-green in color with two dark spots on their body. They have eight legs and no wings or antennae. The mites leave a telltale speckling of the foliage that eventually turns tan or gray. With severe infestations, fine webbing is also present on the undersides of leaves. When mite infestations get out of control, the plant will slowly die.

Two-spotted mites can be controlled by maintaining high humidity around the plant using periodic misting or washing. Washing also will remove mite webbing and help reduce mite populations. Chemical control includes products known as acaricides. Always check and carefully follow the label instructions.

SUMMARY. The yucca is a plant that seems to dominate our deserts and is not always seen as an ornamental species. But many yuccas are beautiful plants and definitely worthy of your consideration when planning your landscape. Some of the smaller species can make attractive outdoor pots and planters. ■



Y. baccata



Y. torreyi



Y. whipplei



Summer Lettuce

Information provided by Darrol Shillingburg, Doña Ana County Extension Master Gardener

Now is the time to switch the varieties of lettuce you are growing to those that will remain sweet through the heat of summer. Here are a few varieties that I have experimented with and found to be dependable.

VARIETIES

- | | |
|-----------|---|
| Jericho | An open headed romaine developed in Israel that remains sweet at temperatures in the low 100's, is slow to bolt and remains sweet while bolting, until the flowers open. It is also very cold tolerant. |
| Matchless | A true bibb lettuce that remains sweet and soft in summer and grows vigorously in our alkaline soil. |
| Red Sails | A loose leaf lettuce with beautiful color – does not tolerate drought well, but remains soft if given adequate water. |
| Nevada | A Batavia type that seems slower growing than other varieties, but has excellent flavor and texture. |

Craquerelle du Midi A romaine that grows vigorously and is fairly drought tolerant.

CULTIVATION

Growing good lettuce in summer requires a little different approach to cultivation than during gentler times.

Germination – Lettuce seed will go dormant at about 80° F, and since it requires light to germinate getting it started in summer can be challenging. The cues to germinate are moisture and a cool temperature, which can be met by placing the seed on a moist paper towel and holding it bagged for 2-3 days. After cueing, the seed cannot return to “dormancy” and can be sown in warm soils with good germination. I have had good results in summer by starting lettuce in six packs. For a continuous supply of high quality lettuce, start seeds every two weeks.

Transplanting – It is best to transplant them young, when they have 3-4 true leaves, and provide afternoon shade until they establish a vigorous root system. Mulching helps keep the soil cooler and more evenly moist.

Growing – Adequate water is essential to maintain table quality. Lettuce that is water or nutrient stressed will be tough and bitter. Afternoon shade and some wind protection make it easier to grow high quality lettuce. When the lettuce starts to mature, cut the entire plant a couple of inches above the soil – for a “cut and come” second harvest or just below the soil to make room for new transplants.

Harvesting – I have had excellent results by carefully picking the outer (larger) leaves rather than waiting for the entire plant to reach maturity or using the “cut and come” method.

SOURCES

- [The Cooks Garden](#) – Carries all varieties, except Jericho, along with others and a “Summer Lettuce” Mixture.
[Seeds of Change](#) – Carries Jericho

SEEING SPOTS?

What they mean, where they come from and how to get rid of them.

By Elizabeth Russell in *Backyard Living*, May 2008

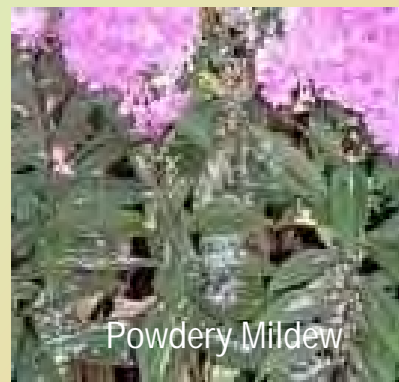


Insects, like these aphids may have you seeing spots!

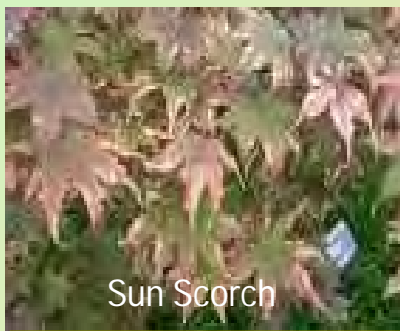
Almost every gardener has encountered them—blemishes on leaves that seem to appear out of nowhere. Large, small, yellow, black or white, these spots are typically cause for concern. But, there's good news. They're easy to treat and even easier to prevent. With some know-how, you can get these common leaf spots off of your plants and out of your garden for good!

POWDERY MILDEW ▶

Symptoms: White spots or splotches on leaves and stems.
Cause: A fungus
Susceptible Plants: Fruit trees, lilac, phlox, roses, African violet, begonias and other ornamentals.
Remedy: Prevent problems by growing resistant cultivars. Remove leaf litter from garden, and give plants adequate space and sunlight. As a last resort, use a fungicide. Read and follow label directions carefully.



Powdery Mildew

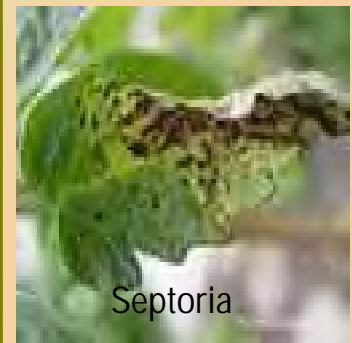


Sun Scorch

TIP ▲: Sun scorch differs from other spots because it appears as large brown blotches surrounded by yellow that appear toward the tip of a leaf. To resolve the problem, simply move the plant to a shadier location in the garden, and make sure that it gets enough water during dry spells.

SEPTORIA ▶

Symptoms: Tan or light brown spots with dark brown borders. Cause: A fungus
Susceptible Plants: Common on tomatoes, but also found on other plants.
Remedy: Remove leaf litter and tomato plants at end of the growing season; increase air circulation around infected plants and try rotating tomatoes to a new spot in garden; plants usually produce despite the infection. If problem is severe and persistent, use a fungicide labeled for vegetables.



Septoria



Rust

◀ RUST

Symptoms: Orange-yellow spots on leaves, followed by orange, fuzzy-looking spots on underside of leaves
Cause: A fungus
Susceptible Plants: Many plants, including those in the cypress and rose family, such as crab apple, apple, hawthorn, hollyhock, pear and rose.
Remedy: Select resistant varieties. Some rust fungi need two host plants to complete.

Seeing Spots—Continued from Page 6



Ladybugs love to eat aphids & spider mites!

How to Prevent Fungi & Bacteria Spots

- ☐ Allow plenty of air circulation around your plants, helping leaves and stems to stay dry. This may require spacing out your plants or thinning out their branches with a bit of pruning.
- ☐ If possible, water just the soil around your plants rather than the plants themselves.
- ☐ Remove infected leaves and stems from the garden. Do not compost them—throw them away in a sealed plastic garbage bag.
- ☐ Clean up leaf debris in the garden, especially at the end of the growing season. Fungi and bacteria often take up residence in the fallen leaves and fruit around your plants.
- ☐ Disinfect your pruning shears after each cut, or at least before moving on to another plant. Try using a solution that's one part bleach to 10 parts water.
Terrific Idea: Try using disinfectant wipes—they are easier to use and you will be less likely to spill the bleach solution on yourself!!! (A. Shine-Ring)

SPIDER MITES ▶:

Symptoms: Speckled leaves with tiny yellow or white spots; fine webbing on leaves.
 Cause: Tiny arachnids, a spider relative.
 Susceptible Plants: A wide array of indoor and outdoor plants.
 Remedy: Spray plants with a forceful stream of water (be sure to reach the underside of leaves; spray plant with insecticidal soap.

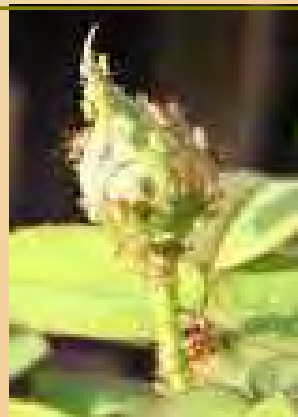


◀ BLACK SPOT:

Symptoms: Irregularly shaped black spots on leaves and/or raised purple blotches on stem; if severe enough, leaves will turn yellow and drop.
 Cause: A fungus
 Susceptible Plants: Roses
 Remedy: Remove infected leaves and stems from plant; clear leaf litter from garden, increase air circulation around infected plants and keep leaves dry; spray plant with fungicide for black spot; buy black-spot resistant roses.

APHIDS ▶:

Symptoms: Bronzing or speckling of foliage.
 Cause: Small insects that are green, white, yellow or brown.
 Susceptible Plants: A wide array of indoor and outdoor plants, especially roses.
 Remedy: Spray plant with a forceful stream of water, making sure to reach buds and tips of leaves; spray plant with insecticidal soap.



—Black Widow and Other Widow Spiders—

University of California at Davis, October 2009 (UC 74149)

Author: R.S. Vetter



Black Widow Spider



Brown Widow Spider

Vetter discusses the two species of widow spiders—the Western Black Widow and the Brown Widow. Both are in the genus *Latrodectus* and have similar body shapes, reclusive habits, and haphazardly constructed cobwebs. The native species of Black Widow is widespread and poses the greatest threat to humans in the Western U.S.

The author discusses the habitat range of these Widows, provides information on how to identify these spiders, their life cycle and habits, medical aspects of their bites, and chemical control.

This research article is part of the MG Hotline library and can also be found at Link:

www.ipm.ucdavis.edu/PMG/PESTNOTES/pn74149.html

Also, see an excellent overview on the Black Widow spider at the DesertUSA website Link:

http://www.desertusa.com/july97/du_bwindow.html

In addition, a fact sheet on the Black Widow Spider Entomology is also available in the MG Hotline Library. It was produced by the Ohio State University Extension and was written by William F. Lyon. It can be found in the Blue Binder #1 in the Pests Section.

—Scorpions—

University of Arizona Cooperative Extension, AZ-1223

Authors: D.H. Gouge et al



The authors discuss this venomous arthropod (class of *arachnida*) and its importance and benefit to many ecosystems. The scorpion is one of the oldest known terrestrial arthropods. There are 1,400 recognized species of scorpions throughout the world. The article covers topics such as 1) range and habitat, 2) description, 3) behavior, 4) life cycle, 5) scorpion venom, 6) scorpions found in Arizona, 7) management, 8) backlighting or fluoresce under ultra-violet light, and 9) other scorpion-like creatures. The article also addresses Tips for Professionals.

This research article is part of the MG Hotline library and can also be found at

Link: <http://ag.arizona.edu/pubs/insects/az1223/>

Also, see an excellent overview on scorpions at the DesertUSA website

Link: www.desertusa.com/oct96/du_scorpion.html

In addition, the MG Hotline Library has an article entitled "Little Devils" by Laurence Wiland (1995). He discusses scorpion anatomy and important facts about scorpions. This article can be located in Blue Binder #1 in the Pests Section.



SAVE THE SPIDERS

By Barry Murray

The author states that because our culture is so "anti-bug", people forget how beneficial spiders are. Spiders kill many other pests that invade our homes and gardens. Murray states that there are 1,000 varieties of spiders, "...despite their bad reputation, most spiders aren't dangerous and are harmless to humans."

However, Murray mentions that there are a notable few deadly spiders—black widows and brown recluse spiders are among them. This is why it is important that we be able to identify the harmful varieties of spiders.

Murray lists a number of more holistic methods for keeping the spider populations down in your home:

REDUCE SPIDERS IN YOUR HOME

- ☼ Keep your house free of other pests that provide food for spiders.
- ☼ Dust often to destroy spider webs and eggs. Disrupting the web will keep spiders on the move.
- ☼ Turn off unnecessary outdoor lights at night. They attract numerous flying bugs and encourage spiders to build webs in eaves and around garages.
- ☼ Remove foliage that harbors spiders from the outside walls of the house.
- ☼ Clean up outdoor woodpiles, trash, bricks, and weeds that provide shelter for spiders.
- ☼ Seal cracks on the outside of your home as well as closing up other possible entryways, including screening windows and keeping the screens in repair.

(An excerpt from "Save the Spiders: Sympathizers Not Necessarily Crazy" in the Las Cruces Bulletin, May 7, 2010)

☞ MOURNING DOVES ☜



The Mourning Dove, *Zenaida macroura*, is a member of the dove family, *Columbidae*. It is also called the Western Turtle Dove or the American Mourning Dove or Rain Dove, and was formerly known as the Carolina Pigeon or Carolina Turtledove. It is one of the most abundant and widespread of all North American birds. It is also the leading game bird, with up to 70 million birds shot annually in the U.S., both for sport and for meat.

Mourning Doves are one of several species in the Pigeon Family that reside in the American Southwest. All five subspecies of the Mourning Dove look similar and are not easily distinguishable. The White-winged dove, *Zenaida asiatica*, is a close relative that also occurs in the Southwest, but the bird's white wing patches contrast with darker wing feathers, and easily define this species.

This species is generally monogamous, with two squabs (young) per brood--one pair may produce up to six broods a year. Both male and female incubate and care for the young. Mourning Doves eat almost exclusively seeds, but the young are fed crop milk by their parents.

Sounds. The "mourning" part of the Mourning Dove's name comes from its call. This species' call is a distinctive, plaintive "cooOoo-woo-woo-woooo", uttered by males to attract a mate. Other sounds include a nest call by paired males to attract their mates to the nest sites, a greeting call by males upon rejoining their mates, and an alarm call by either male or female when threatened. In flight, the wings make a fluttery whistling sound that is hard to hear. The bird is a strong flier, capable of speeds up to 55 mph.

Range. The Mourning Dove has a large range of nearly 6.8 million square miles. This species is resident throughout the Greater Antilles, most of Mexico, the Continental United States, and southern Canada. Much of the Canadian prairies see these birds in summer only, and southern Central America sees them in winter only. The species is a vagrant in northern Canada, Alaska, and South America. In 1963, the Mourning Dove was introduced to Hawaii, and in 1998 there was still a small population in North Kona. The Mourning Dove also appeared on Socorro Island, off the Western coast of Mexico, in 1988, sixteen years after the Socorro Dove was extirpated from that island. It is also noted or introduced as far as Pakistan in the east.

Habitat. The Mourning Dove occupies a wide variety of open and semi-open habitats, such as urban areas, farms, prairie, grassland, and lightly wooded areas. It avoids swamps and thick forest. The species has adapted well to areas altered by humans. It commonly nests in trees in cities or near farmsteads.

Migration. Most Mourning Doves migrate along flyways over land. A few Mourning Doves have been seen flying over the Gulf of Mexico, but this is exceptional. Spring migration north runs from March to May. Fall migration south runs from September to November, with immature doves moving first, followed by adult females and then by adult males. Migration is usually during the day, in flocks, and at low altitudes.

Characteristics. The Mourning Dove is a medium-sized, slender dove approximately 12" in length. On the average, they weigh 4-6 ounces. Their elliptical wings are broad, and the head is rounded. Its tail is long and tapered. Mourning Doves have perching feet, with three toes forward and one reversed. The legs are short and reddish colored. The beak is short and dark, usually a brown-black hue.



The Dove's plumage is generally light gray-brown and lighter and pinkish below. Its wings have black spotting, and the outer tail feathers are white, contrasting with the black inners. Below the eye is a distinctive crescent-shaped area of dark feathers. The eyes are dark, with light skin surrounding them. The adult male has bright purple-pink patches on the neck sides, with light pink coloring reaching the breast. The crown of the adult male is a distinctly bluish-grey color. Females are similar in appearance, but with more brown coloring overall. The iridescent feather patches on the neck above the shoulders are nearly absent, but can be quite vivid on males. Juvenile birds have a scaly appearance, and are generally darker.

Wing Speed. Mourning Doves fly fast on powerful wingbeats, sometimes making sudden ascents, descents, and dodges, their pointed tails stretching behind them. During lift-off, the wings produce a distinctive whistling sound and the birds flap vigorously to become airborne. In flight, they alternate between flapping and gliding and their rapid wingbeats and long tail enable them to navigate in tight places. But for all their speed and agility, Mourning Doves still fall prey to hawks and falcons and hunters in season.

Breeding Season. Courtship begins with a noisy flight by the male, followed by a graceful, circular glide with outstretched wings and head down. After landing, the male will approach the female with a puffed out breast, bobbing head, and loud calls. Mated pairs will often preen each other's feathers.

The unusual part of their breeding cycle is that the birds feed outside of the nesting territory, which the male vigorously defends.

Article Continued on Page 10

Mourning Doves—Continued from Page 9

Breeding Season-Continued



The nests are built by the female with twigs delivered by the male, and are constructed in trees, beneath shrubs or on the ground. Sometimes, they can be found in shrubs, vines, or on artificial constructs like buildings, or hanging flower pots. When there is no suitable elevated object, Mourning Doves will nest on the ground.

The clutch size is almost always two eggs. Occasionally, however, a female will lay her eggs in the nest of another pair, leading to three or four eggs in the nest. The eggs are small and white. Both sexes incubate, the male from morning to afternoon, and the female the rest of the day and at night. Mourning Doves are devoted parents; nests are very rarely left unattended by the adults. When flushed from the nest, an incubating parent may perform a nest-distraction display, or a broken-wing display, fluttering on the ground as if injured, then flying away when the predator approaches it.

Incubation takes two weeks. Mourning Doves are strongly altricial, with the young, called squabs, being helpless at hatching and covered with down.

Unlike other songbirds that raise their young on insects or seeds, Mourning Doves produce a protein and fat-rich liquid, or pigeon milk, from the lining of their crop. The crop is a thin-walled, sac-like chamber at the bottom of the throat. Both parents produce and regurgitate this "crop milk" into the hungry nestlings' mouths. Both parents feed the squabs this unusual diet of "pigeon's milk" for the first 3–4 days of life. Thereafter, the pigeon's milk is gradually augmented by seeds. Fledging takes place in about 11–15 days, before the squabs are fully grown but after they are capable of digesting adult food. They stay nearby to be fed by their father for up to two weeks after fledging. The female will begin to incubate her next clutch even before the first brood matures.

Seeds and waste grains comprise the majority of the fledglings' and adults' diet; however, some insects are also taken. Doves also ingest grit to help grind up the seeds.

Mourning Doves are prolific breeders. In warmer areas, these birds may raise up to six broods in a season. This fast breeding is essential because mortality is high. Each year, mortality can reach 58% a year for adults and 69% for the young.

The Mourning Dove is monogamous and forms strong pair bonds. Pairs typically reconvene in the same area the following breeding season, and sometimes may remain together throughout the winter. However, lone doves will find new partners if necessary.

Diet. Mourning Doves eat almost exclusively seeds, which make up more than 99% of their diet. Rarely, they will eat snails or insects. Mourning Doves generally eat enough to fill their crops and then fly away to digest while resting. They often swallow grit such as fine gravel or sand to assist with digestion. The species usually forages on the ground, walking but not hopping. At bird feeders, Mourning Doves are attracted to one of the largest ranges of seed types of any North American bird, with a preference for corn, millet, safflower, and sunflower seeds. Mourning Doves do not dig or scratch for seeds, instead eating what is readily visible. They will sometimes perch on plants and eat from there.

Mourning Doves show a preference for the seeds of certain species of plant over others. Foods taken in preference to others include pine nuts, sweetgum seeds, and the seeds of pokeberry, amaranth, canary grass, corn, sesame, and wheat. When their favorite foods are absent, Mourning Doves will eat the seeds of other plants, including buckwheat, rye, goosegrass and smartweed.



Behavior. Like other *Columbids*, the Mourning Dove drinks by suction, without lifting or tilting its head. It often gathers at drinking spots around dawn and dusk. Mourning doves sunbathe or rainbathe by lying on the ground or on a flat tree limb, leaning over, stretching one wing, and keeping this posture for up to twenty minutes. These birds can also bathe in shallow pools or birdbaths. Dustbathing is common as well.

Outside the breeding season, Mourning Doves roost communally in dense deciduous trees or in conifers. During sleep, the head rests between the shoulders, close to the body; it is not tucked under the shoulder feathers as in many other species. During the winter in Canada, roosting flights to the roosts in the evening, and out of the roosts in the morning, are delayed on colder days.



Article Continued on Page 21

Farmers' Markets Sprout Up Across Region

By Diana M. Alba dalba@lcsun-news.com

Excerpt from article in Las Cruces Sun News, May 4, 2010

At least two new farmers markets cropped up in 2008 -- at Mountain View Cooperative grocery store and in the Village of Doña Ana -- while others sprung up in Deming, La Union and the Village of Doña Ana in 2009, according to the New Mexico Farmers' Marketing Association, which emphasizes the produce aspect of such events.

"Farmers markets are becoming increasingly popular because people want to eat healthier and support their local farmers," she said.

On the Rise. New Mexico saw a spike in the number of new farmers' markets in recent years, said Denise Miller, director of the New Mexico Farmers' Marketing Association. In all, 39 farmers markets existed in 2004, a figure that rose to 58 in 2009.

Movements to support the local economy, purchase fresher produce and buy "green" are some of the factors behind the jump, Miller said.

"There's just a rising increase across the country in local food, everybody from Michelle Obama and her White House garden to farmers markets across the country have been really booming," she said. "Seed sales last year were reported to be up about 30%, so people are trying their hands at growing their own food."

The Las Cruces Farmers & Crafts Market has seen more vendors who are growing produce in their backyards, said Eric Montgomery, economic development program coordinator for the city of Las Cruces.

"There's a big push toward nutritional values," he said. "A lot of people want to know where their food is coming from. It's an opportunity for consumers to meet the farmers that are growing their food."

Part of the interest from growers, Montgomery said, stems from trying to earn extra income, while another part may be driven by the sense of accomplishment some people feel. It also helps that -- in New Mexico at least -- farmers don't have to charge sales tax when selling directly to the public, he said.

Nationally, the number of farmers' markets increased from 3,706 in 2004 to 5,274 in 2009, according to the U.S. Department of Agriculture.

Some Local Farmers' Markets

Ardivino's Desert Crossing Farmers' Market

Season: May 29 to mid-October

Hours: 7:30 a.m. to noon Saturdays

Location: 1 Ardivino Drive, Sunland Park

• Robert Ardivino (575) 589-0653

• Fruits, vegetables, crafts, candles, jewelry available.

Chaparral Farmers' Market

Season: First weekend after July 4 through late October

Hours: 9 a.m. to noon Saturdays; 1:30 to 4 p.m. Sunday

Location: 704 State Line Road, Chaparral (corner of County Line Road and State Line Road)

• Sherry Blake, organizer - (575) 824-4220

• Produce from Chaparral-area growers available.

Doña Ana Farmers' Market

Season: June 13 through end of the growing season

Hours: 8:30 a.m. to noon Sundays

Location: in the plaza near Our Lady of Purification Church, Cristo Rey Street, Village of Doña Ana

• Roseanne Camuez (575) 532-8270

• Offers fresh produce.

For more information, see this Website:

NM Farmers' Marketing Association: <http://farmersmarketsnm.org>

Veggie Gardening is Still Hot!

According to a survey conducted by the Garden Writers Association Foundation, 7.7 million American households grew a vegetable garden for the first time in 2009. The total number of U.S. vegetable gardening households was 41 million. When asked if they planned to continue their garden for 2010:

--37% of households planned to increase their edible gardens

--29% reported they planned to plant about the same as in 2009

--1% reported they would plant less this year.

The survey found the main reason for increasing or maintaining an edible garden in 2010 was to supplement household food supply.

Source: *Garden Cuttings*, Schultz Communications
(Excerpt from *Enchantment Newsletter*, May 1, 2010)

Area Farmers' Markets-Continued

Mesilla Mercado (Location: Mesilla Plaza)

Season: Year-round

Hours: 11 a.m. to 4 p.m. Fridays; 12 to 5 p.m. Sundays

• Nicholas Eckert, community development director for the town of Mesilla - (575) 524-3262, ext. 104

• Fresh produce can be sold, but vendors at the time mostly sell hand-made arts and crafts.

The Outlet Shoppes at El Paso Farmer's Market

Season: May 2 through July 25

Hours: 8 a.m. to noon Sundays

Location: The Outlet Shoppes at El Paso, Canutillo

• (915) 877-3208

• Arts, crafts and produce available.

Las Cruces Farmers' & Crafts Market

Season: Year-round

Hours: 8 a.m. to noon Wed. & Saturdays (March- Nov.)

• 9 a.m. to 1:30 p.m. Wednesdays and Saturdays (Dec-Jan-Feb)

Location: Las Cruces downtown mall

• Eric Montgomery, city of Las Cruces - (575) 541-2288

• Arts, crafts and produce available.

Las Cruces: Mountain View Farmers' Market

Season: Now through late summer

Hours: 10 a.m. to 2 p.m. Sundays

Location: North side of Idaho Crossings parking lot,

1300 El Paseo Road, Las Cruces

• (575) 523-0436

• Fresh, local produce available.

Silver City Farmer's Market

Season: May 8 through start of November

Hours: 8:30 a.m. to noon Saturday

Location: 7th Street and Bullard, along the ditch, Silver

Info: Rick Bohart, President, Silver City Farmers' Market Board - (575) 313-4224

• Sells only produce and agriculture goods, including fruits, vegetables, meats, jellies and baked goods; must be grown or made in Grant, Luna, Catron or Hidalgo counties.



Community & School Gardens Report

By Darrol Shillingburg, Certified Doña Ana County Master Gardener

TO ALL FELLOW MASTER GARDENERS:

In an attempt to inform you about Master Gardener involvement in community and school gardening projects, I will be including a monthly report in our MG newsletter instead of the spontaneous meeting reports. If you have questions and/or comments, we can address those during meeting report times or by email if you prefer. You can contact me at darrols@earthlink.net and thank you for your continuing interest.

Community Gardening

Jardín de Esperanza had their plant giveaway event April 25th with Master Gardeners providing variety by donating the remaining plants from the plant sale. We delivered plants to Jardín ready for the Sunday event. The plant giveaway event was well attended by the Mesquite community.

New Heights Community Garden in the north valley had their major funding grant rejected but they were awarded a smaller grant for \$500. That funding along with personal contributions by participating members of the faith-based community will enable them to begin on a smaller scale than originally planned. I provided them with revised recommendations on soil amendments best suited for starting immediately. They have some fencing and plenty of enthusiasm. They still need knowledge-based support during the “learning to garden” phase of development.

School Gardening

The Community Support Committee for school gardening has completed its needs assessment for Conlee and Hermosa Heights Elementary as well as for Lynn and Sierra Middle Schools. At their last meeting (5/19/10), the Committee designated a volunteer (individual or group) to support each school during summer and to assist with fall gardening programs. Extension staff and Master Gardeners are the summer support group for Hermosa Heights Elementary and Sierra Middle Schools. The Committee also identified resource persons for technical and logistic assistance. Again, Extension staff and Master Gardeners are assisting with those needs. The Committee also identified a curriculum team that consists of Las Cruces Public School Teachers, NMSU educators and staff, community volunteers and Extension staff.

Hermosa Heights Elementary School Garden Project

The low-pressure drip irrigation system has been installed and is now functional. Our thanks to the Rio Grande Basin Initiative for \$2,500 in grant funding for equipment purchase and installation. In addition, thanks to Christine Chavez (Master Gardener Intern) for managing contracting, scheduling and other fire suppression duties. The installation included a solar powered timer/controller to help ensure gardening success during summer break when most teachers are on vacation. The irrigation system will allow Hermosa Heights to sustain their current garden and expand in the future.

The second graders planted a Pizza Garden with tomatoes, sweet peppers, jalapenos, Serranos and basil, oregano and chives. I was there for two hours with 20 second graders teaching plant selection, growth patterns and proper transplanting techniques—challenging subjects for young minds and hands. The summer school class provides garden care with the second graders making pizza in the fall when tomatoes and peppers are available. They had also planned to plant two Three Sisters Beds, but ran out of time.

Ongoing needs at Hermosa Heights include structural and fertility improvements to the soil. I have processed a soil sample of the raised bed compost medium and will share the results and remedies next month. Compacted soil below about 6 inches in the in-ground planting beds prevents many food crops from reaching full growth potential. We also need to have a soil test completed for those beds. Advising, mentoring and teaching students are ongoing needs and opportunities for Master Gardeners to support the school gardening program.

Developments Elsewhere in New Mexico

In Albuquerque, the *Growing Gardens Team*, a volunteer school gardening support group, recently published their survey of APS garden projects and teachers. The report provides an insightful look into the areas of support needed to grow and sustain school gardens. The executive summary is a short read that I highly recommend to anyone interested in current directions in New Mexico. The entire 30 page report “Growing the Outdoor Classroom – A Report on School Gardens in Albuquerque Public Schools” is very insightful and worth a read. The report (large PDF file) is available on-line at:

<http://www.apshealthandwellness.com/users/department/Data/Blurbs/important/ggtreport3-25-10final%5B2%5D.pdf?20100529165127>

BRANIGAN MEMORIAL LIBRARY "LUNCH & LEARN" PRESENTATION

Date: Thursday, June 17
 Time: 12:00-1:00 p.m.
 Place: Branigan Memorial Library,
 upstairs in the Terrace Gallery
 Speaker: Sylvia Hacker
 Topic: "Forgotten Pollinators"
 Synopsis: Learn about the VIP's—Very
 Important Pollinators—of the plant world that
 are too often overlooked or forgotten.
 Conservation methods and pollinator gardens
 will also be discussed.
 (Jeff Anderson has approved a one-hour
 education credit for attending this
 presentation.)

*Information provided by
 Sylvia Hacker, Certified Master Gardener*



Mesilla Valley Bosque State Park

Website:

<http://www.emnrd.state.nm.us/PRD/mesillavalley.htm>

June Events of Interest

Saturday, June 19 (10:00 am)

COMPOSTING IN YOUR BACKYARD

Join Bill Lindeman, NMSU Professor of Soil Microbiology and Environmental Science, and learn the benefits of compost. Mr. Lindeman will share tips on successfully creating your own compost pile.

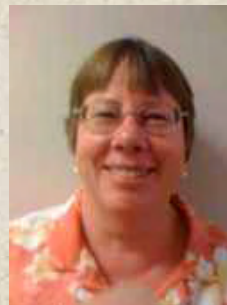
Saturday, June 26 (10:00 am)

FORGOTTEN POLLINATORS

Join Sylvia Hacker, Dona Ana County Master Gardener volunteer, and learn that honeybees aren't the only pollinator. Learn why the "forgotten pollinators" are so important and what you can do in your garden to conserve them.

*Information provided by
 Sylvia Hacker, Certified Master Gardener*

New Master Gardener: Sylvia Hacker



Sylvia Hacker is a double graduate of the Master Gardener Program. In 2004 she completed the Program while living in Virginia. After moving back to Las Cruces in May 2009, Sylvia enrolled in last year's class in order to refresh her gardening skills for a much different climate.

Sylvia is a Las Cruces native but has lived in many places in the United States. With that experience has come the knowledge of gardening in many different kinds of soil.

Sylvia has lived on Albuquerque's west side, in Los Lunas, and Belen. Each community had a different soil type. Vicksburg, Mississippi provided loamy clay that Sylvia describes as the best soil she ever had but it also had a few negatives, including fire ants, heat and humidity. She calls the soil in Chesapeake, Virginia "gumbo clay" and says they also had more mosquitoes than in Minnesota.

Sylvia's current Las Cruces home is in the Elks Club area. She prefers plants that attract native insects. "I think insects are awesome! Also, I'm a native plant aficionado and I like plants that have texture or are 'structural'." "My daughter says I tend to get too many plants of that ilk. She makes me buy "roundy-moundy" plants from time to time, I have to admit that I can overdo the "sticky-uppy" ones. I'm not much of a "green thumb with flowers" gardener."

The Master Gardener Program was Sylvia's entry into volunteering with the County's Cooperative Extension Service. Sylvia grew up in the 4-H program here and was anxious to find a way to be of service. Now she is participating in the Las Cruces Public Library's Lunch and Learn Program and hopes other Master Gardeners will also provide gardening-related presentations for the community.

When not involved with her garden, Sylvia enjoys public speaking, backyard birding, and playing with concrete. She makes "hypertufa" planters (i.e., faux millstones) and stuff like that but also has a few handcrafts she enjoys that don't involve cement. She is also an avid fan of Middle Eastern food.

Sylvia and her husband Bill met when they were students at NMSU. Their daughter Sarah is now a Horticulture major there. "You could call us a blended household," Sylvia says. "Sarah and I are MAC people and Bill is a PC user. Our family is also the personal staff of three cats—an 18 yr. old, a 14 yr. old and a 9 month old—who let us live in their house. We don't have TV/cable and haven't for years and years. We read a lot and are movie buffs."

One thing Sylvia especially enjoys about being back in Las Cruces is the smell of the desert after the rain. ■

Written by Ann Palormo, Certified Master Gardener

GREAT NEW GARDENING BOOKS

What's Wrong With My Plant? And How Do I Fix It?

A Visual Guide to Easy Diagnosis & Organic Remedies
By David Deardorff & Kathryn Wadsworth (Timber Press 2009)



Whether your garden is a few herbs on a windowsill, a raised-bed veggie plot, an elaborate backyard border or containers on a balcony, this guide is highly recommended reading. If you can see your plant's problem—you can fix it! All solutions are 100% organic and more than 400 plant maladies are addressed. The illustrated flow charts make diagnosis a snap.

Source: Horticulture Magazine, June 2010

The Pruning Book (Completely Revised & Updated)

By Lee Reich (Taunton Press, 2010)

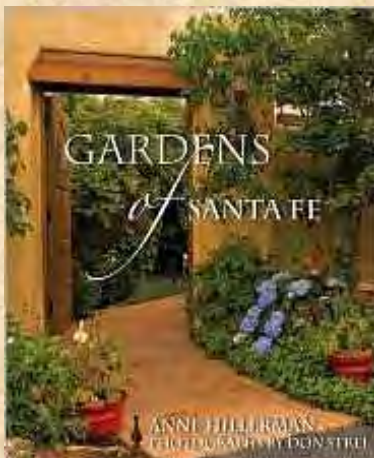
It sounds simple enough, but pruning can confound even the most competent gardeners. This updated edition explains the do's and don'ts of cutting back everything from humble houseplants to exotics. You'll learn how to make the right cut every time. There are more than 250 photographs and 135 drawings to illustrate the techniques. Reich holds a doctorate in horticulture and has done extensive research on the subject, enabling him to make pruning easily understood by all.

Source: Horticulture Magazine, June 2010



GARDENS OF SANTA FE

By Anne Hillerman (Gibbs Smith, 2010)



Even if you don't live in Santa Fe but like working in the dirt, you'll enjoy this exquisitely rendered new book that is actually a wish book filled with photos of formal and informal gardens. It offers plenty of ideas for creating distinctive front and backyards.

Without the benefit of lush, fertile soil, making a go of planting anything in New Mexico is a challenge. The author interviewed 50 gardeners and reports how they all used piles of compost, earthworms, hills of smelly manure, etc. Their tips can be applied to any garden anywhere.

Chapters include recreating old gardens, being water-wise, and installing playful garden décor. In the patios and courtyards chapter, snippets of wild places are interspersed with planned and detailed areas.

Unfortunately, the book's print is very small, which will make for difficult reading for some. However, this book will give you an opportunity to peek into other people's gardens and learn how to be successful with the miserable soil we have to contend with in New Mexico.

Source: Enchantment Newsletter, May 2010

Dixie's Honey-Do List for June



Many of our suggested garden tasks is information coming directly from [Month-by-Month Gardening in the Desert Southwest](#) by Mary Irish (2002). We wanted you to know that this is an outstanding gardening resource book.

GENERAL: June is typically our hottest month so a word about “transpirational” wilting may be in order. A plant may wilt even when soil moisture levels are high. Water is lost through the transpiration stream faster than the roots can take it up. If a plant wilts before noon, then water it promptly. If it wilts after noon, wait and check it the next morning. Be sure to check your sprinkler heads and drip emitters to make sure they are functioning properly. Also remember to mulch, mulch, mulch!

ORNAMENTALS

- Heat-tolerant plants such as Madagascar periwinkle, portulaca, marigold, penstemon, and four o'clock may be planted now.
- Watch plants carefully, and water deeply when temperatures are very high. All bulbs prefer infrequent deep soaks that wet the soil to 6" as opposed to light frequent watering. Be especially careful not to overhead-water iris—this encourages rotting.
- Although your summer bulb blooms may be past their prime, be patient and let the foliage die down naturally. This supplies the root system with starch reserves that fuel next year's show.
- Start seeds of fall flowering annuals now for transplant later.
- Remove spent flowers from annuals and perennials. Also remove spent flower stalks from iris.
- Continue pinching back chrysanthemums and lantana.
- Do not fertilize this month. Do not prune plants except to remove spent flowering stalks or seedpods.



FRUITS, NUTS, CITRUS & SHADE TREES



- Fruit trees should be bearing about now. Wait until the fruit color is good before picking. If ripe fruit falls to the ground, scoop it up within a day or two and it should be fine.
- It's time for the second fertilization of fruit trees 2 years and older. Use 1/10 pound of nitrogen per one inch of trunk diameter.
- Continue with cover sprays to pome (i.e., fleshy) fruits and zinc sprays for pecans.
- Protect grapes from birds and bugs by putting a paper bag (lunch sack) over clusters and tie it shut.
- Plant palms during the summer months. If you haven't already, fertilize established palms this month. Use a product formulated specifically for palms.
- Deep water trees once a month. Fruit trees will suffer from heat stress easily if they become drought-stressed.
- Citrus can still be planted in the warmest areas, but be careful to protect the bark from sunburn.
- Be on the look out for pecan nut casebearer on nutlets, web worms in shade trees, and bagworms and spider mites on evergreens. A strong jet of water may dislodge mites.
- Do not prune fruit trees this month. As always, maintain orchard sanitation.
- Watch palo verde and other thin-barked desert trees for symptoms of sunburn. These symptoms include: cracking, yellowing, and splitting of the bark, particularly if the tree is located on the south or west side of your yard.

For additional information check out these MG Hotline Library resources:

Establishing Fruit Trees in the Home Orchard (NMSU Guide H-316) Fruit Species & Varieties for Home Orchards (NMSU Guide H-310)
Establishing Shade & Fruit Trees (NMSU Guide H-420) Minor Small Fruit Crops in NM (NMSU Guide H-326)

VEGETABLES, FRUIT AND HERBS

- Maintain an even moisture supply to tomatoes. This may help reduce fruit cracking and blossom-end rot.
- Tomatoes that are shaded will continue to ripen fruit, but most do not set new fruit because of the high temperatures. Be sure to shade tomatoes and peppers to prevent sunscald and pest damage.
- Water herbs twice a week to maintain moisture to 10-12" deep. Water vegetables daily, and if they wilt by the end of the day, provide shade or lengthen their watering time.
- Keep ripening fruit off the ground to reduce disease and insect pressure.
- Pinch back basil to keep it from flowering.
- Cabbage, Brussel sprouts, and cauliflower may be planted later in the month.
- There is still time to plant corn and squash.
- Harvest bulk onions as tops turn brown.



Dixie's Honey-Do List for June-Continued

VEGETABLES, FRUIT AND HERBS—Continued

For additional information check out these MG Hotline Library resources:

Home Vegetable Gardening in New Mexico (NMSU Circ. 457)

Tomatoes-English & Spanish (Blue Binder #2, Veg. Section)

Vegetable Garden Basics (Blue Binder #2, Veg. Section)

Ten Steps to a Successful Vegetable Garden (AZ-1435)

Veg. Varieties of NM Backyard/Market Gardens (NMSU Circ. 572)

Why Don't My Tomatoes Set Fruit? (Blue Binder #2, Veg. Section)



LAWNS/GRASSES

- Seed head formation in Bermuda turf may be due to a nitrogen deficiency. Give warm season grasses a shot of nitrogen now.
- Do not fertilize cool season grasses now.
- Raise mower height, especially for cool season grasses, to allow deeper rooting and to provide extra shade for the plant crown.
- To keep the blades in working order on your manual lawn mower, rub them with unscented body oil.
- Do not mow when your grass is wet. This will dull the blade and gunk up the mower.
- Grub worm damage may develop this month. Watch for adult May or June beetles flying around porch lights. Treat the lawn in late June or early July.

For additional information check out these MG Hotline Library resource articles:

Bermuda Grass Spring Seeding (NMSU Guide H-506)

Care of Established Turf Grass (#2 Blue Binder, [Plants](#) Section)

Fertilizing Your Lawn (NMSU Guide H-503)

Mowing Your Lawn (NMSU Guide H-505)

Turf Grasses For New Mexico (NMSU Guide H-508)

Watering Your Lawn (NMSU Guide H-504)

ROSES

- Watch for symptoms of heat stress: 1) plants with leaves that turn brown and fall off, 2) have flowers that are small or misshapen and with bleached-out colors, and 3) have dying limbs or canes that crack or split may be suffering from too much sun and heat.
- Keep your roses deeply watered, mulch heavily and do provide afternoon shade.
- Many roses will lose leaves during the heat of summer, but if you maintain a steady watering schedule, they will recover once the temperatures cool down.
- Continue to regularly wash off roses to keep the dust down and to control spider mites, aphids, and powdery mildew. Aphids can easily be removed by hand, a strong jet of water or soapy water spray but spray **early** in the day as you may burn the leaves when the sun is out.



For additional information check out these MG Hotline Library resources:

Fertilization Guide for Roses (Handout)

Growing Roses (NMSU Guide H-165)

Rose Calendar for Las Cruces & El Paso (Handout)

Roses in the Garden & Landscape: Cultural Practices and Weeding (UC-7465)

Roses in the Garden & Landscape: Insect, Mite Pests & Beneficials (UC-7466)

Roses: Diseases and Abiotic Disorders (UC-7463)

CACTI & SUCCULENTS



- Water large cactus, yuccas, ocotillos, and desert spoon at least once a month. Be sure to water deeply, to a depth of at least 3 feet and in a large radius around the plant.
- Water all other warm-season succulents at least every 3 weeks to a depth of 2-3 feet, depending on the size of the plant, and in a wide radius around the plant.
- Do not overwater desert-adapted plants. Acacia, dalea, lavender, rosemary and salvia do not like wet feet.
- Prune only if necessary this month. Old blooming stalks from hesperaloe, agaves, or yuccas may be pruned any time they are dry and blooming has been completed.
- Do not fertilize succulents planted in the ground. You can fertilize container-grown plants with a water-soluble fertilizer once this month. Use only low-nitrogen formulas for succulents, especially agaves and cactus.

For additional information check out these MG Hotline Library resources:

Bird of Paradise Bushes (#2 Blue Binder, [Plants](#) Section)

Cacti, Agaves, Yucca and Ocotillo (AZ-1225)

Care of Desert-Adapted Plants (AZ-1048)

Controlling Cholla Cactus (NMSU Guide B-804)

Problems & Pests of Agaves, Aloe, Cactus & Yucca (AZ-1399)



WEED WATCH: ROUNDUP-RESISTANT WEEDS

Farmers Cope With Roundup-Resistant Weeds

By William Neuman reporting from Dyersburg, Tenn., and Andrew Pollack from Los Angeles
Published in the New York Times, May 3, 2010

DYERSBURG, Tenn. — For 15 years, Eddie Anderson, a farmer, has been a strict adherent of no-till agriculture, an environmentally friendly technique that all but eliminates plowing to curb erosion and the harmful runoff of fertilizers and pesticides—but not this year.

On a recent afternoon here, Mr. Anderson watched as tractors crisscrossed a rolling field—plowing and mixing herbicides into the soil to kill weeds where soybeans will soon be planted. Just as the heavy use of antibiotics contributed to the rise of drug-resistant supergerms, American farmers' near-ubiquitous use of the weedkiller Roundup® has led to the rapid growth of tenacious new superweeds.

To fight them, Mr. Anderson and farmers throughout the East, Midwest and South are being forced to spray fields with more toxic herbicides, pull weeds by hand and return to more labor-intensive methods like regular plowing. "We're back to where we were 20 years ago," said Mr. Anderson, who will plow about one-third of his 3,000 acres of soybean fields this spring, more than he has in years. "We're trying to find out what works."

Farm experts say that such efforts could lead to higher food prices, lower crop yields, rising farm costs and more pollution of land and water. "It is the single largest threat to production agriculture that we have ever seen," said Andrew Wargo III, the president of the Arkansas Association of Conservation Districts.

The first resistant species to pose a serious threat to agriculture was spotted in a Delaware soybean field in 2000. Since then, the problem has spread, with 10 resistant species in at least 22 states infesting millions of acres, predominantly soybeans, cotton and corn.

The superweeds could temper American agriculture's enthusiasm for some genetically modified crops. Soybeans, corn and cotton that are engineered to survive spraying with Roundup have become standard in American fields. However, if Roundup doesn't kill the weeds, farmers have little incentive to spend the extra money for the special seeds.

Roundup®—originally made by Monsanto but now also sold by others under the generic name "glyphosate"—has been little short of a miracle chemical for farmers. It kills a broad spectrum of weeds, is easy and safe to work with, and breaks down quickly, reducing its environmental impact.

Sales took off in the late 1990s, after Monsanto created its brand of Roundup® Ready crops that were genetically modified to tolerate the chemical, allowing farmers to spray their fields to kill the weeds while leaving the crop unharmed. Today, Roundup® Ready crops account for about 90% of the soybeans and 70% of the corn and cotton grown in the United States.

But farmers sprayed so much Roundup® that weeds quickly evolved to survive it. "What we're talking about here is Darwinian evolution in fast-forward," Mike Owen, a weed scientist at Iowa State University, said. Now, Roundup®-resistant weeds like horseweed and giant ragweed are forcing farmers to go back to more expensive techniques that they had long ago abandoned.



Palmer Amaranth or Palmer Pigweed

Mr. Anderson, the farmer, is wrestling with a particularly tenacious species of glyphosate-resistant pest called Palmer amaranth, or pigweed, whose resistant form began seriously infesting farms in western Tennessee only last year. Pigweed can grow three inches a day and reach seven feet or more, choking out crops; it is so sturdy that it can damage harvesting equipment. In an attempt to kill the pest before it becomes that big, Mr. Anderson and his neighbors are plowing their fields and mixing herbicides into the soil.

That threatens to reverse one of the agricultural advances bolstered by the Roundup® revolution: minimum-till farming. By combining Roundup® and Roundup® Ready crops, farmers did not have to plow under the weeds to control them. That reduced erosion, the runoff of chemicals into waterways and the use of fuel for tractors. *Article Continued on page 18*

Roundup-Resistant Weeds—Continued from Page 17

If frequent plowing becomes necessary again, “that is certainly a major concern for our environment,” Ken Smith, a weed scientist at the University of Arkansas, said. In addition, some critics of genetically engineered crops say that the use of extra herbicides, including some old ones that are less environmentally tolerable than Roundup®, belies the claims made by the biotechnology industry that its crops would be better for the environment.

“The biotech industry is taking us into a more pesticide-dependent agriculture when they’ve always promised, and we need to be going in, the opposite direction,” said Bill Freese, a science policy analyst for the Center for Food Safety in Washington.

So far, weed scientists estimate that the total amount of United States farmland afflicted by Roundup®-resistant weeds is relatively small—seven million to 10 million acres, according to Ian Heap, director of the International Survey of Herbicide Resistant Weeds, which is financed by the agricultural chemical industry. There are roughly 170 million acres planted with corn, soybeans and cotton, the crops most affected. Roundup®-resistant weeds are also found in several other countries, including Australia, China and Brazil, according to the survey.

Monsanto, which once argued that resistance would not become a major problem, now cautions against exaggerating its impact. “It’s a serious issue, but it’s manageable,” said Rick Cole, who manages weed resistance issues in the United States for the Company.

Of course, Monsanto stands to lose a lot of business if farmers use less Roundup® and Roundup® Ready seeds. “You’re having to add another product with the Roundup® to kill your weeds,” said Steve Doster, a corn and soybean farmer in Barnum, Iowa. “So then why are we buying the Roundup® Ready product?”

Monsanto argues that Roundup® still controls hundreds of weeds. But the Company is concerned enough about the problem that it is taking the extraordinary step of subsidizing cotton farmers’ purchases of competing herbicides to supplement Roundup®.

Monsanto and other agricultural biotech companies are also developing genetically engineered crops resistant to other herbicides. Bayer is already selling cotton and soybeans resistant to *glufosinate*, another weedkiller. Monsanto’s newest corn is tolerant of both *glyphosate* and *glufosinate*, and the Company is developing crops resistant to *dicamba*, an older pesticide. Syngenta is developing soybeans tolerant of its Callisto product. And Dow Chemical is developing corn and soybeans resistant to 2,4-D, a component of Agent Orange, the defoliant used in the Vietnam War.

Still, scientists and farmers say that *glyphosate* is a once-in-a-century discovery, and steps need to be taken to preserve its effectiveness. *Glyphosate* “is as important for reliable global food production as penicillin is for battling disease,” Stephen B. Powles, an Australian weed expert, wrote in a commentary in January in *The Proceedings of the National Academy of Sciences*.

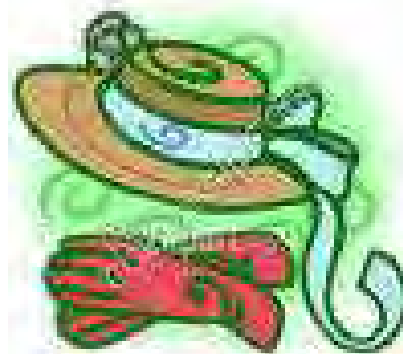
The National Research Council, which advises the federal government on scientific matters, sounded its own warning last month, saying that the emergence of resistant weeds jeopardized the substantial benefits that genetically engineered crops were providing to farmers and the environment.

Weed scientists are urging farmers to alternate *glyphosate* with other herbicides. But the price of *glyphosate* has been falling as competition increases from generic versions, encouraging farmers to keep relying on it.

Something needs to be done, said Louie Perry Jr., a cotton grower whose great-great-grandfather started his farm in Moultrie, Georgia in 1830.

Georgia has been one of the states hit hardest by Roundup®-resistant pigweed, and Mr. Perry said the pest could pose as big a threat to cotton farming in the South as the beetle that devastated the industry in the early 20th century. “If we don’t whip this thing, it’s going to be like the boll weevil did to cotton,” said Mr. Perry, who is also chairman of the Georgia Cotton Commission. “It will take it away.” ■

Article Contributed by Bonnie Eisenberg, Certified Master Gardener

Gardening123: Personal Gardener

<http://www.gardening123.com/YPG/gardenjournal.asp?YPG=1&LM=5>

This is a website full of great resources for any gardener. Check it out!

- ✦ Your Personal Gardener
 - Garden Journal
 - Garden Inventory
 - Planning List
 - What To Do This Month
 - Garden Layout
 - Article Bookmarks
- ✦ Online Garden Courses
 - Insect Control
 - Weed Control
 - Fungus Control
 - Problem Solver
- ✦ Garden Tools
 - Garden Calculator
 - Garden Calendar
 - Glossary
 - Events & Shows
- ✦ Garden Guide
 - Plant Categories
 - Special Interests
 - Plant A-Z List
- ✦ Online Forums & Seed Swap
- ✦ Online Shopping
- ✦ Grass Seed Finder
- ✦ Fertilizers
- ✦ Birdseed Finder
- ✦ Garden Articles
- ✦ Recipes

*This information provided by Dale Petzold,
Certified Master Gardener*

VEGGIES: A To Z

—**BROCCOLI**—

Broccoli (from the Italian plural of *broccolo*, referring to "the flowering top of a cabbage") is a plant of the mustard/cabbage family entitled *Brassicaceae* (formerly *Cruciferae*). It is classified in the Italica cultivar group of the species *Brassica oleracea*.

Broccoli has large flower heads, usually green in color, arranged in a tree-like fashion on branches sprouting from a thick, edible stalk. The mass of flower heads is surrounded by leaves. Broccoli most closely resembles cauliflower, which is a different cultivar group of the same species. Broccoli, like cauliflower, is grown for its edible, immature flower head. When the center head is removed, numerous small side shoots (heads) will form that also can be harvested for several weeks.

Broccoli is a cool-weather crop that does poorly in hot summer weather. It grows best when exposed to an average daily temperature of between 64-73°F.

Broccoli is more drought-tolerant than cauliflower, although good soil moisture is important for maximum production and quality. (Dickerson) Broccoli that matures in hot weather is usually not desirable. Heads will turn brown, and leaves will grow up between the florets. The heads may have a strong taste, tend to be smaller, go to flower sooner and the stem will turn woody. The best quality heads are produced when broccoli matures in the cool weather and shorter days of fall.

As the most popular member of the cabbage family, broccoli is always in high demand at the table. This cool-weather crop is best grown in spring or fall, and tastes sweetest when it matures in autumn, when nights turn chilly.

History. Broccoli evolved from a wild cabbage plant on the continent of Europe. Indications point to the vegetable's being known 2,000 years ago. Since the Roman Empire, broccoli has been considered a uniquely valuable food among Italians. Broccoli was first introduced to the U.S. by these immigrants, but did not become widely known until the 1920s.

Growing Broccoli Seeds and Seedlings. You will not need many plants as each plant will produce continuously over time, but do consider successive plantings as you don't want it all to mature at the same time. Even better is to grow different varieties so they mature at different times. As a rough guide, 8-10 plants are enough for the average family over a season. Allow 3-4 weeks between plantings to space the harvest over time.

Approximate Weeks to Harvest:

--Broccoli seeds will take 11-15 weeks, sometimes up to 20 weeks. Broccoli seeds sprout best when soil temperatures range between 60° - 70°F. It's better to sow your broccoli seeds in trays first and transplant later. The seeds are small and round, so they tend to roll away.

--Broccoli seedlings will take 8-12 weeks from transplant until harvest time, depending on the variety. Tiny new seedlings are gourmet breakfasts for slugs and snails, so get them established first where you will be able to keep an eye on them.

Prick out the less hardy plants as the broccoli seeds sprout. In about 5 weeks, once they are 3-4" high, or have at least 4 main or true developed leaves, they can be planted into your garden bed. Seedlings should be placed at least 18" apart for most varieties, and with the dwarf varieties, space 1 ft apart. Water well and don't let plants dry out completely.

Broccoli Types to Try. Home gardeners and commercial growers will need to choose between open-pollinated and hybrid varieties. Most prefer hybrids, for several reasons.

Hybrid broccoli varieties tend to be uniform in height, shape, head quality, production and maturity. Newer varieties are also more tolerant or resistant to diseases, hot weather, cold spring weather and soil deficiencies. The hybrids also tend to bolt later than traditional, open-pollinated varieties like Decicco, Calabrese and Waltham 29. However, open-pollinated varieties tend to produce more secondary shoots than hybrids, and produce them earlier in the growing season.

George Dickerson states that there are 8 varieties that have consistently performed well on demonstration trials conducted by the New Mexico Cooperative Extension Services. Please check MG Hotline Library publication 400-H-23 for more detail on these varieties.

Broccoli varieties are more about producing florets, sometimes making up a large head, sometimes more individual loose florets. On the other hand, cauliflower varieties form single large heads. Debates rage over whether certain plants are cauliflower, broccolini, or broccoli varieties. What's called something in one country is called another somewhere else.

--**Large-Headed Varieties** produce the familiar domed heads that are composed of numerous clustered florets. Many large-headed varieties produce smaller side shoots after the primary head is harvested. These are the popular garden broccolis, big heads of dark grey-green, tightly clustered florets. These varieties easily produce smaller side florets after the main head has been cut off.

--**Sprouting Varieties** grow into bushier plants that produce numerous small heads. These varieties are at their best when grown from fall to spring in mild winter climates. There are green and purple sprouting varieties. These are loose bushy types and can be picked for long periods. They prefer milder winters than other varieties.

--**Romanesco Varieties** produce elegantly swirled heads composed of symmetrically pointed spirals. These large plants need plenty of space, excellent soil and good growing conditions to do well. These are a large and beautiful broccoli variety, with an apple-green spiral head made up of smaller spirals. It's more like a cauliflower, but slightly looser and with a pointed head.

--**Broccoli raab** is grown for its immature flower buds, which have a stronger flavor than regular broccoli. Broccoli raab (closely related to turnips) is popular in Asian and Italian cooking. This is an old Italian variety which has immature flower buds on loose leafy stalks that is a fast growing broccoli that is spicy flavored. It's great for Italian and Asian stir fries.

Article Continued on Page 20

Broccoli—Continued from Page 19**Growing Broccoli.**

--**Soil Preparation** Try and rotate brassica crops, such as broccoli, with root or climbing crops each year or every 2-3 years. If you don't have the space, don't worry if you have to plant broccoli in the same area as last time as long as you did not have diseases, such as club root.

--**When to Plant Broccoli** Depending on your climate, sow seeds early to mid summer, which will take 4-6 weeks before ready for transplanting, or plant seedlings out no later than late summer. Broccoli needs to develop a good size with strong leaf growth before the cool weather sets in. If you get your broccoli growing early enough without suffering excessive heat, it will be ready for use in late autumn and winter.

For a summer harvest, start seeds indoors six weeks before your last spring frost, and set out hardened-off seedlings when they're about four weeks old. You can also seed broccoli directly into a nursery bed and transplant the seedlings to your garden.

For a fall harvest, start seeds indoors 12 to 14 weeks before your first fall frost, and set the seedlings out when they're four to six weeks old. Direct-sow broccoli raab starting eight weeks before your first fall frost.

--**How to Plant Broccoli** Broccoli is a heavy feeder, and plants take up nutrients best when the soil pH is between 6.0 and 7.0. Choose a sunny site with fertile, well-drained soil. Loosen the planting bed and mix in up to 1 inch of mature compost. Unless your soil is very fertile, also mix in a high-nitrogen organic fertilizer such as alfalfa meal or composted poultry manure. Water the bed thoroughly before setting out seedlings. Allow 18 to 20 inches between plants. Dwarf varieties can be planted 12 inches apart.

--Best Climate for Growing Broccoli

Broccoli will tolerate frosts of 20°F; it likes daytime temperatures around 50-70°F and no higher than 80°F, or it will bolt to seed.

Certain varieties of broccoli are better for warmer areas than others, so check what grows locally or ask your local Extension Service for the ideal plants for your garden. Basically, no matter when or how you grow broccoli, there's no getting around the fact that when it matures in the chillier months, it simply tastes the sweetest.

--Broccoli Growing Tips

Experiment with Planting Dates Striving for very early crops can backfire, as seedlings exposed to cold often "button," meaning they produce tiny heads. Start by trying spring and fall planting dates recommended by your neighbors or your local extension service.

--Broccoli Growing Tips—Continued

Grow Several Varieties to extend your harvest and to help buffer your crop from stressful weather. Varieties react differently to wet, dry, hot or cold periods.

If you have less-than-ideal soil, give plants extra nitrogen just as small heads begin to form. You can drench them with an organic mix-with-water fertilizer, mulch with well-rotted manure, or a dusting of any high-nitrogen organic fertilizer into the soil around the plants.

Ensure Good Drainage as broccoli plants dislike their roots in bad drainage, so if necessary, have your broccoli growing in wide mounds. They love lots of organic compost added the soil, and don't mind if it's even partially composted beforehand. Compost made with animal manure or some well-rotted chicken manure gives good levels of nitrogen which broccoli needs.

Nutrient Requirements For Broccoli Broccoli is a leafy green plant so growing it fast in fertile soil is a must. To really keep broccoli growing well and producing like well, particularly once the first signs of florets form, regular top ups every 3 or so weeks of organic fertilizer is important.

Compost tea, especially made with added chicken manure is excellent for growing broccoli. If you can get alfalfa meal, this is another useful nitrogenous fertilizer.

When growing broccoli, put down a layer of mulch such as straw, leaves etc, or a couple of inches of grass clippings. This will help keep the soil cool and moist which broccoli prefers.

Broccoli Pest Control. Dickerson states that, "...except for some minor viruses, broccoli growers in New Mexico have few disease problems, with the exception of Powdery Mildew which occurs in fields where broccoli has been grown extensively for years". Further, he states that growers should consider growing mildew-resistant or tolerant varieties of broccoli.

Insect control begins early in the growing season with the appearance of the flea beetle. Its impact on the crop is more severe on seedlings in those years that are cool and wet. Leaves will appear to have been, "blasted with fine birdshot."

As broccoli begins to mature, the cabbage looper can become a major problem. However, it can easily be controlled with applications of *carbaryl*, *permethrin* and *malathion*.

Dickerson also strongly encourages growers to consider bacterial control of pest by use of BT (*Bacillus thuringiensis*) on cabbage loopers and other caterpillars. Other insects can also be a problem (i.e., aphids, cucumber beetles, grasshoppers, cutworms and stink bugs).



Caterpillar of small cabbage white butterfly

Caterpillar of large cabbage white butterfly

Cabbage looper caterpillar

Article Continued on Page 21

Broccoli-Continued From Page 20



Harvesting and Storing Broccoli. Harvest broccoli heads when the florets around the edges of the head begin to show slight loosening, but when the beads in most of the crown are still tight. *You really only have less than a week of optimum opportunity to do this first broccoli harvest.* If you leave slicing off the heads too late, that is when the florets loosen and there are signs of yellow flowers forming, they will be coarser with a strong, but not such a nice flavor to eat.

Always cut the heads and florets off the stem with a sharp knife and on an angle so rainwater cannot collect and rot the remaining stem—this will keep water from pooling inside the cut stem and causing rot.

Leave the stems with the remaining leaves on, continue to water and new florets will sprout out from the leaf axils. Keep cutting these sweet delicacies off to eat and the plants will keep producing, often up to 2 more months.

When plants are spaced 18" apart, average yields are about 1 lb. of broccoli per foot of row. Three to four plants per person is sufficient for fresh summer eating, but you should triple that number if you want a freezer crop for winter.

Freezing: If you have gone overboard with growing broccoli and end up with more than you can use, cut them into bite sized florets and pieces of peeled stem and blanch them in boiling water for 3 minutes. Plunge into cold water—ice cold if possible, then freeze it for use later. Best used within 6 months.

Storing Broccoli: To store fresh broccoli, put in crisper in fridge or seal in plastic bag and keep in fridge. It tends to lose its crispness and freshness in the refrigerator after about 5 days, but will keep for up to 2 weeks.

Nutritional and Medicinal. Broccoli is a nutritional super food that will strengthen your immune system, help maintain strong bones, and help protect you from cancer and heart disease.

Broccoli is high in vitamins C, K, and A, as well as dietary fiber; it also contains multiple nutrients with potent anti-cancer properties, such as *diindolylmethane* and small amounts of selenium. A single serving provides more than 30 mg of Vitamin C and a half-cup provides 52 mg of Vitamin C. The *diindolylmethane* found in broccoli is a potent modulator of the innate immune response system with anti-viral, anti-bacterial and anti-cancer activity.

Broccoli also contains the compound *glucoraphanin*, which can be processed into an anti-cancer compound *sulforaphane*, though the benefits of broccoli are greatly reduced if the vegetable is boiled more than ten minutes. A high intake of broccoli has been found to reduce the risk of aggressive prostate cancer. Broccoli consumption has also been shown to be beneficial in the prevention of heart disease. ■

SOURCES:

- [Broccoli Growing Practices and Varieties for NM](#), George Dickerson, Pub. 400-H-23, Nov. 1994 (No longer in publication-copies available at the MG Hotline Library)
- [Mother Earth News](http://www.motherearthnews.com/Organic-Gardening/How-To-Grow-Broccoli.aspx) <http://www.motherearthnews.com/Organic-Gardening/How-To-Grow-Broccoli.aspx>
- [No Dig Vegetable Gardening](http://www.no-dig-vegetablegarden.com/broccoli-pests-and-diseases.html) <http://www.no-dig-vegetablegarden.com/broccoli-pests-and-diseases.html>
- [Wikipedia](http://en.wikipedia.org/wiki/Broccoli) <http://en.wikipedia.org/wiki/Broccoli>

Mourning Doves—Continued from Page 10

Conservation Status. The number of Mourning Doves is estimated to be approximately 475 million. The large population and its vast range explain why this bird is considered to be not at immediate risk. As a game bird, the Mourning Dove is well-managed, with up to 40-70 million shot by hunters each year.

Mourning Doves perch on telephone wires and forage for seeds on the ground; their flight is fast and bullet straight. Their soft, drawn-out calls sound like laments. When taking off, their wings make a sharp whistling or whinnying. Mourning Doves are the most frequently hunted species in North America.

Myth and Religion. The Mourning Dove holds a special place in mythology and folklore. It also symbolizes the Holy Spirit in Christianity and may be shown hovering over the Virgin Mary at the Annunciation. In Judaism, the dove was an alternate sacrifice if one could not afford lamb. In the Islamic faith, the prophet Mohammed spoke of the dove and how it was the spirit that gave him God's counsel. In Japan, the dove holds a different position, as a messenger of war. Many cultures see doves as a sign of peace.

In medieval Europe, a dove's first call of the year indicated good or bad luck. If the call came from above – prosperity and good luck would follow. If the call came from below, bad luck was near.

Backyards. Mourning doves rank second to dark-eyed juncos as the most commonly observed backyard bird. Primarily a ground feeder, doves will visit platform feeders. Their abundance and ability to adapt to urban settings makes them a welcome visitor to many residential areas, especially when the birds are singing their classic canyon call. ■

**SOURCES:**

- All About Birds—Cornell Lab of Ornithology http://www.allaboutbirds.org/guide/Mourning_Dove/id
- Desert USA <http://www.desertusa.com/mag07/nov07/mourningdove.html>
- Wikipedia http://en.wikipedia.org/wiki/Mourning_Dove

Master Gardener Matters

—Monthly Meeting, May 19, 2010—

WELCOME, INTRODUCTIONS & NEWS—Juliet Williams

Juliet announced that currently, we believe we will have funding from the County.

COMMITTEE/PROJECT REPORTS

MG Hotline—(Pam Crane) According to Pam, there is one space available for Interns in June, and more spaces will be available later in the summer.

Newsletter—(Ann Shine-Ring) Ann said that Yuccas will be our next Plant-of-the-Month. There will also be articles about Black Widow and other Widow spiders, and scorpions. Additional articles will feature, 1) Spots on Plants (what they mean, where they come from and how to get rid of them, 2) mourning doves, and 3) three new gardening-related book reviews. The Weed Watch column will discuss Round-Up Resistant Weeds, and the Veggies A-Z column will be on Broccoli. (We will also feature a repeat of Darrol's article on Summer Lettuce.)

Also, Ann had been asked to announce that the organic foods coop held at the Mountain View Market is seeking volunteers for Sundays from 10-2pm to provide general information on gardening and to market the Master Gardeners Program and Hotline. The MG contact person is Risi Thompson (Email: happygardener505@gmail.com or phone: 505-489-3853)

Spring Garden Expo (April 10-11)—We had a smaller turn out this year even though we did have good publicity. Next fall if we continue to participate in the Expo, we need to email the presenter schedule out to MG's as they did not receive a copy last time. In the future, we may need to re-evaluate this Expo approach to community outreach and education.

Farmer's Market & April 24 Plant Sale—(Dixie LaRock) Dixie announced that the MG Plant sale that had been rescheduled because we were rained out on April 17th, generated a profit of \$607.

4-H Horticulture—(Juliet Williams) Juliet asked for volunteers to help set up for the County 4-H horticulture contest on June 12, and also to help Jeff Anderson conduct the contest.

Lunch & Learn Presentation—(Sylvia Hacker) Sylvia announced that the topic this month is Orchids, and next month it will be "forgotten pollinators". Jeff Anderson has approved one hour of education credit for MG's to attend this presentation held at Branigan Library.

Other Announcements—

- It was announced that the UTEP plant sale still has many native plants available for sale at half price.
- Our educational program next month will be Curtis Smith who is coming from Albuquerque to give a presentation on water harvesting. Bring questions and suggestions for interactive discussion. If you plan on staying overtime, you may want to bring your lunch.
- Linda Frederickson announced that she is moving to Tularosa and will miss being in the MG Program where she has learned so much.
- Frank Connor reported he went to the flea market recently. Someone had 55 gallon plastic barrels for sale for \$7.00 and smaller ones for \$6.00. Many MG's were interested, so Frank agreed to purchase them and make them available to other MG's to purchase.
- Doug Brown asked for volunteers to give gardening presentations to Girl Scouts, aged 5-12 years, in Apodoca Park. *Note: This program was later cancelled by the Girl Scouts.*

Other Community Events—

Grow A Row for the Homeless—(Sylvia Hacker) Sylvia said that this Program is not yet happening. Richard Hiss announced that vegetable donations could be brought to the El Caldito Soup Kitchen located behind the Horse and Hound on Amador.

OLD / CONTINUING BUSINESS

Annual Tour of Gardens, May 15—(Bonnie Eisenberg) Bonnie thanked all MG's who participated. A comment was made that the tickets need to be redesigned to better show the map.

State Master Gardeners Conference, June 11-12 (Juliet Williams) Juliet asked people to share any photos they might have of MG activities to put into the Memory Scrapbook for our County's display table at the Conference. Sylvia loaned a 4-window digital photo frame for the presentation at the conference. Hope is putting the Scrapbook together. Please email any photos to her. Ann Shine-Ring is putting together a notebook of the past newsletters for the display table.

Juliet also asked if people could donate anything for the Conference's silent auction. Sylvia offered to donate a birdhouse. Someone suggested asking the Chile Pepper Institute to donate a gift basket. Sylvia agreed to contact the Institute about a donation.

Pat Anderson asked if anyone else will be going to the MG conference and would be interested in sharing a room. Ann Shine-Ring announced that the State Conference is sold out—170 people from around the state will be attending.

Sonoran Conference VIII – May 15-16, 2010 (Marcella Newman) Marcella, reported that the Conference which was sponsored by the Cactus and Succulents Society of Tucson had very good speakers and hands-on workshops. She stated that the event was very reasonable and a good value for the money. This event also had excellent plant sale of natives.

Trees That Please Open House—Arboretum Tomé, May 15, 2010—(Juliet Williams) Juliet mentioned that this nursery has a wonderful arboretum, and is a good place to visit and learn more about native trees.

Master Gardener Matters

—Monthly Meeting, May 19, 2010 (Continued)—

EDUCATIONAL PRESENTATION

CIVIC AND COMMUNITY GARDENS FIELD TRIP

- Landscape architect for Las Cruces, Linda Matthews, gave a short, guided tour of the plantings around the new City Hall. She explained the theme for the plantings, but unfortunately, she did not have the correct information on many of the plants. Master Gardeners might want to take on a project to identify the plants and do a map that could be made available to the public. Also weed pulling will be an ongoing issue that we could get involved in if there is interest.
- There is a large area around the Branigan Library that is just crying out for some kind of landscaping, but nothing is planned.
- The *Jardin de Esperanza* is still in need of considerable gardening work.

Snacks: Thanks to Katrin Sumpter, Dixie LaRock, and Pat Anderson for our meeting snacks. Next month, snacks will be provided by Dale Petzold, Laurie Davidson, and Linda Morgan.

Next MG Business Meeting – Wednesday, June 16, 2010

Bonnie and Juliet



JUNE MG BIRTHDAYS

| | |
|---------------------|---------|
| Darrol Shillingburg | June 3 |
| Bruce Begin | June 4 |
| Janice Servais | June 11 |
| Dale Petzold | June 11 |
| Jan Brydon | June 23 |
| Paul Hutchins | June 23 |
| Pat Anderson | June 23 |
| Carol Koenig | June 25 |

MANY THANKS FOR THE GOODIES

We appreciate your thoughtfulness

June Goodies

Dale Petzold

Laurie Davidson

Linda Morgan

July Goodies

Nancy DeLouise

Joan Lane

Susan McNeill



Seed/Plant Exchange Suggestion

Hope Movsesian, Certified Master Gardener, has suggested that we do a seed exchange at our monthly meetings. Anyone with seeds or extra plants to share is encouraged to bring them to our next monthly meeting.

(Hotline assignments listed were current as of 5/28/10)

Interns please notice that there are open spots for Interns in June & July

Please remember to be present on your assigned date for the Hotline. If another Master Gardener forgets, please give him or her a "reminder" call. We are always very busy this time of the year so we need to have full coverage on the Hotline. Thank you.

Master Gardener Hotline Assignments for June

- Tuesday, Jun. 1 Susan McNeill
 Jodi Richardson (I)
 _____ (I)
- Friday, Jun. 4 Alberta Morgan
 Mike Lee
 Charlotte Duttie (I)
- Tuesday, Jun. 8 Nancy DeLouise
 Hope Movsesian
 Maya Brewington (I)
- Friday, Jun. 11 Leigh Matthewson
 Dale Petzold
 Linden Ranel (I)
- Tuesday, Jun. 15 Hope Movsesian
 Jodi Richardson (I)
 Sylvia Hacker (I)
- Friday, Jun. 18 Paul Hutchins
 Pat Anderson
 Christine Chavez (I)
- Tuesday, Jun. 22 Leigh Matthewson
 Dick Hiss
 Jane Zimmer (I)
- Friday, Jun. 25 Dick Hiss
 Katrin Sumpter
 Linda Morgan (I)
- Tuesday, Jun. 29 Pam Crane
 Susan McNeill
 Linden Ranel (I)

Master Gardener Hotline Assignments for July

- Friday, July 2 Alberta Morgan
 David Hutchinson
 Sylvia Hacker (I)
- Tuesday, July 6 Leigh Matthewson
 Jodi Richardson (I)
 _____ (I)
- Friday, July 9 Marti Taylor
 Pat Anderson
 Linda Morgan (I)
- Tuesday, July 13 Bonnie Eisenberg
 Susan McNeill
 Holly Richardson (I)
- Friday, July 16 Dale Petzold
 Ann Palermo
 _____ (I)
- Tuesday, July 20 Leigh Matthewson
 Susan McNeill
 Jane Zimmer (I)
- Friday, July 23 Ann Palermo
 Joan Lane
 Sylvia Hacker (I)
- Tuesday, July 27 Larry Dickson
 Susan McNeill
 Holly Richardson (I)
- Friday, July 30 David Hutchinson
 Sylvia Hacker (I)
 _____ (I)

Next Monthly Meeting of the
Doña Ana County Master Gardeners

* * *

June 16 @ Cooperative Extension Office
9am-11am

Reminder: The date for our September monthly MG meeting has been rescheduled to Sept. 22nd