



Master Gardener Newsletter

- Doña Ana County Cooperative Extension Service
- U.S. Department of Agriculture
- NMSU College of Agricultural, Consumer & Environmental Sciences

Doña Ana County Extension Office
 530 North Church Street
 Las Cruces, NM 88001
 Phone: (575) 525-6649 Fax: (575) 525-6652
 Editor: Ann Shine-Ring, Certified Master Gardener

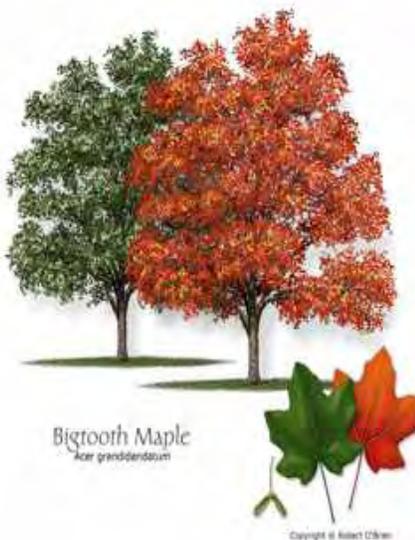
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◀ October 2010 ▶

Volume 11, Issue #10

Plant-of-the-Month

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BIGTOOTH MAPLE

RESEARCH AT NEW MEXICO STATE UNIVERSITY

By Rolston St. Hilaire
 Plant and Environmental Sciences
 New Mexico State University

In 2001, my research program initiated research on bigtooth maples (*Acer grandidentatum* Nutt.). We wanted to answer a few research questions about the propagation, physiology, and environmental stress tolerance of bigtooth maples.

Answers to those questions would provide clues about the suitability of bigtooth maples for southwestern landscapes. The purpose of this newsletter article is to provide a summary of the progress we have made in answering those questions.

Further details on experimental protocols are included in our original published works.

Bigtooth maple leaves look similar to those of sugar maples and for that reason taxonomists have speculated that the bigtooth maple is a western form of sugar maple. Most contemporary authors consider the bigtooth maple as a separate species. My initial work on the genetics of bigtooth maple clearly shows that the plant is distinct from the sugar maples. Bigtooth maples exist as multi-stemmed shrubs or single-trunk trees as tall as 35 feet. Leaves of bigtooth maple are divided into three to five lobes. Dark green summer leaves can turn into a dazzling spectacle of yellow, orange, or scarlet red in the fall. Bigtooth maple fall foliage color will rival that of sugar maples.

Article Continued on Page 2

August 2010 Hotline Client Data

| # Total Contacts | 31 | Subject of Inquiry | |
|------------------------|----|--------------------|----|
| # Telephone Calls | 31 | Animals | 0 |
| # Issues Addressed | 65 | Disease | 5 |
| | | House Plants | 0 |
| | | Insects | 12 |
| <u>Geographic Area</u> | | Lawns | 5 |
| Anthony | 1 | Shrubs | 9 |
| Chaparral | 1 | Soil | 0 |
| Deming | 3 | Trees | 12 |
| Doña Ana | 1 | Vegetables | 0 |
| El Paso | 0 | Water | 10 |
| La Mesa | 1 | Weeds | 5 |
| Las Cruces | 24 | Misc. | 7 |
| Mesilla Park | 0 | | |

Sept. 2010 Hotline Client Data

| # Total Contacts | 49 | Subject of Inquiry | |
|------------------------|----|--------------------|----|
| # Telephone Calls | 49 | Animals | 0 |
| # Issues Addressed | 63 | Disease | 3 |
| | | House Plants | 0 |
| | | Insects | 7 |
| <u>Geographic Area</u> | | Lawns | 5 |
| Anthony | 0 | Shrubs | 16 |
| Chaparral | 0 | Soil | 0 |
| Deming | 0 | Trees | 22 |
| Doña Ana | 0 | Vegetables | 0 |
| El Paso | 1 | Water | 2 |
| La Mesa | 0 | Weeds | 5 |
| Las Cruces | 47 | Misc. | 3 |
| Mesquite | 1 | | |

Thank you to MGs Janie Elliott, Joan Lane & Valice Raffi for compiling the above data.

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Bigtooth Maple (NMSU Research)—Continued from Front Page

The plant is treasured for its wood, sap, and wildlife value. Bigtooth maple has a contiguous range of distribution that includes the central portion of Utah, southeastern Idaho, southwestern Wyoming, Arizona, New Mexico, southwestern Texas, and northern Mexico. Bigtooth maple is indigenous to North America.

Propagation—Bigtooth maples do not produce seeds reliably. This implies that propagators cannot use seeds as a reliable propagation strategy. Furthermore, conventional clonal propagation methods for bigtooth maple such as rooting stem cuttings, grafting, or layering have either failed or produced mixed outcomes. For example, only 0.8% of stem cuttings rooted when treated with rooting hormones. So, we wanted to find out whether propagation techniques, such as micropropagation (tissue culture) could be used to propagate bigtooth maples.

To do so, we obtained samaras (seeds) from trees in Arizona, New Mexico, Texas, and Utah in Fall 2001. Samaras were cold-stratified and then germinated in a mixture of one part peatmoss and one part perlite in February 2002. In June 2003, we excised double-node explants (four axillary buds) from a selected number of seedlings. We sterilized the seedlings using a procedure we developed in our laboratory. Once the seedlings were sterilized, they were placed on Driver Kuniyuki Walnut (DKW) tissue culture containing cytokinin and allowed to proliferate shoots for six months. About three shoots per double node explants sprouted on DKW. This initial work allowed us to establish a tissue culture germplasm of bigtooth maples. For further work, we selected small shoots or microshoots, as they are commonly called, from the tissue germplasm.

Having successfully found a way to produce microshoots, we turned our attention to finding a way to generate roots on those microshoots. We stuck microshoots into DKW tissue culture media that had indole acetic acid. After 15 days, we pulled those shoots from the tissue culture media, dipped them into talc containing indole butyric acid, and stuck them into a rooting mixture of one part peatmoss and one part perlite (the same growing mixture used for germination). We are pleased to report that up to 16% of the microshoots rooted. Furthermore, we successfully grew those rooted cuttings in the greenhouse. While this rooting percentage is not high, our micropropagation protocol is a significant improvement over other clonal propagation methods and provides a reliable way to obtain a selected number of clones of bigtooth maples. As far as we are aware, our laboratory was the first to show that bigtooth maples can be micropropagated.



Article Continued on Page 3



BIGTOOTH MAPLE FACTS

Acer grandidentatum Nutt also known as Sabinal Maple, Canyon Maple, Southwestern Bigtooth Maple
Aceraceae Family (Maple)

- Plant Habit/Use: Small to medium size tree
- Height: 20 to 35-40 feet
- Width: 10 to 20 feet spread
- Landscape Zones: USDA Hardiness Zones 3-7
- Cold Tolerance: Cold hardy to -20°F
- Heat Tolerance: High
- Exposure: Sun or partial sun; intermediate shade tolerance
- Water Requirements: Dought-tolerant; 16 inches/year min.
- Pests/Disease: Relatively free of serious insect and disease problems unless stressed by extreme heat or drought
- Deer Resistance: High
- Flower Color: Yellow
- Foliage/Leaves: Leaves are simple, alternate, deciduous and have golden yellow to red fall color; leaves can be 3 to 5 lobes and sometimes, both are found on the same tree.
- Fruit Characteristics: Two-winged samara, green or slightly reddish with a brown wing
- Soil Requirements: Alkaline adaptable (pH range 5.5-7.5); likes growing in limestone soils but adaptable to wide range of other soils.
- Elevation: Native from 4,000 to 8,500 feet
- Roots: Extensive; grows shallowly along steams
- Bark: Dark brown to gray with narrow fissures and flat ridges that form plate-like scales.
- Cautions: For best leaf color displays, be sure to purchase trees that come from your area.



Bigtooth Maple (NMSU Research)—Continued from Page 2

Environmental Stress Tolerance: Bigtooth maples grow naturally in diverse environmental conditions of arid and semi-arid regions. This suggests that the plant might thrive in managed landscapes. So, we tested bigtooth maples for resilience to drought, an environmental stress that commonly occurs in arid and semi-arid landscapes.

In one experiment, we studied physiological, growth and developmental traits of bigtooth maple plants from 15 trees native to Arizona, New Mexico, Texas, and Utah. Trees were grown in pots in the greenhouse and were either well watered or exposed to drought and irrigated in cycles based on how much water was lost from the plants. Although plants used a variety of mechanisms to cope with drought, a large change in how plants allocate biomass to either root or shoot, was not a common drought adaptation mechanism. We discovered that plants from some areas in the Guadalupe Mountains of Texas, the Lost Maples Natural Area in Texas, and Dripping Springs State Park in New Mexico had good resilience to drought. Plants native to Arizona did not perform well.

In another experiment, we tested the performance of bigtooth maples to drought in a field environment. This time, we only selected plants from Texas, New Mexico, and Utah. We found that plants from New Mexico and Texas effectively endured drought. Landscape personnel wishing to grow bigtooth maples in New Mexico should consider getting plants from selected areas in New Mexico and Texas.

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**BIGTOOTH MAPLE:****From A Master Gardener Perspective**

Judith Phillips states that, "Most maples find New Mexico a hard place to live. Our hot, dry air and strongly alkaline soils are far from the cool, humid forests with soils rich in organic matter that are their native venue. Our native bigtooth maple is my first choice for New Mexico gardens because, although it grows shallowly rooted along streams, it is native from a relatively low 4,000 feet to heights of about 8,500 feet, roots extensively, and is better adapted to alkaline soil. Bigtooth maple's dark-green leaves have five bluntly toothed lobes that turn a range of yellow, gold, orange, rose and scarlet in autumn."

Natural Characteristics: *Acer grandidentatum* Nutt. (Bigtooth Maple) is a species of maple native to interior western North America, occurring in scattered populations throughout the West down to northern Mexico. It is closely related to *Acer saccharum* (Sugar Maple), and is treated as a subspecies of it by some botanists, as *Acer saccharum* subsp. *grandidentatum* (Nutt.)

Bigtooth maple is a native of moist, mountainous sites from southeastern Idaho, throughout Utah, western Colorado, portions of Arizona and New Mexico, and scattered locations in northern Mexico, southwestern Texas, and western Oklahoma. It is especially common in Utah's Wasatch Mountains, where it grows at elevations from 4,500 to 7,500 feet. It tends to grow on lower slopes and canyon bottoms in the mountains in association with Douglas fir and junipers, but below aspen and subalpine fir.

Though bigtooth maple grows best on moist sites with good soils, it can do well on poorer soils and drier sites, making it a good candidate for many landscape situations. It is moderately shade tolerant and tolerant of fairly alkaline (high pH) soils. It is quite cold tolerant. It may have some problem, however, with fluctuating winter temperatures if planted at lower elevations.

The bigtooth maple is generally described as a perennial tree or shrub. It is native to the U.S. and has its most active growth period in the spring and summer. Its leaves are not retained year to year and it has a short life span relative to most other plant species and a moderate growth rate. It has a crown shape that is oval to round which may be genetically determined and also caused by environmental factors.

Article Continued on Page 4

Bigtooth Maple: MG Perspective—Cont. from Page 3

The leaves of bigtooth maple look much like sugar maple leaves, with three to five lobes and a dark green color. Fall color is spectacular, varying from yellow to orange to red and lasting quite a while. This fall color variation may be partly genetically controlled and partly dependent on environmental conditions. It is wind-firm and strong-wooded and should stand-up well to storms. Its general toughness and durability make it a fairly long-lived tree. The tree reproduces in the wild by wind-carried seeds contained in winged samaras.



Male Flowers of the Bigtooth Maple

Flowers/Inflorescence: The small yellow flowers are found in clusters appearing with leaves in April and May. Bigtooth maple usually only flowers every 2-3 years. The greenish or rose-colored dangling male and female fruit will eventually become winged seeds.

Fruits/Seeds: Fruits are typical double samaras (a type of fruit in which a flattened wing of fibrous, papery tissue develops from the ovary wall characteristic of maples). Two seeds are attached together at one end with extended wings projecting from opposite ends.

Leaves: The leaves arise from the twigs in opposing pairs. The general shape of the leaf is nearly round, about 4 inches in diameter with several blunt teeth around the edges. The leaf is characterized by 3, sometimes 5, lobes that fan out from the point of attachment to the leaf stalk.

Stems: Young twigs are slender, bright red to greenish-brown, and smooth. Older twigs are gray. Buds are reddish-colored and grow in clusters. Bark is thin with shallow furrows and grayish flat-topped ridges. The wood is hard, heavy, and light brown.



Bigtooth Maple Seeds



Uses and Management: Bigtooth maple is a good ground cover tree, providing shade in canyon bottoms for livestock and recreation areas. It is a fair source of food for browsing wildlife and domestic livestock. The seeds, buds, and flowers provide food for numerous species of birds and small mammals. Because this tree is closely related to the sugar maple of the northeastern U.S., it can and has been used as a source of sugar and syrup.

Landscape Uses: This is a very good tree that should be used much more in landscapes. It is tolerant of our soil and climatic conditions, and even appears to withstand some drought when planted in the valleys. Fall color is usually very good. Tree shape can be shrubby or tree-like and size can be small to medium. It is occasionally planted as an ornamental tree, valued for its drought tolerance and ability to grow in rocky landscapes.

Currently the most commonly planted maples in landscapes in the interior West are Norway maple (*Acer platanoides*) and silver maple (*Acer saccharinum*). Both trees can be good choices in the correct location, but both have their problems. Norway maple is becoming over-planted in some areas, northern Utah in particular. Silver maple grows very fast and can quickly overwhelm a landscape. It also turns yellow due to low iron or manganese availability in high pH soil. Bigtooth maple can be planted to add variation in our landscapes and will not have many of the problems of other non-native maples.

Bigtooth maple's tolerance of moderate drought, high soil pH, and cold mean that it is usable in most landscape situations in our area. It is likely to do best and grow fastest with plenty of moisture and good soil, but it also should do fine on drier sites and rockier soils. It requires full sun or partial shade for good growth.

Bigtooth maple can be effectively used as a solitary specimen tree or in a dense mass planting. Single trees grow tall and straight with a form like a Norway or sugar maple. When used in clumps or masses its form will depend on pruning. It can be developed into an effective, natural-looking hedge with occasional pruning and periodic cutting-back.

Its medium size makes the bigtooth maple a good tree for small- or large-scale residential landscapes, parks or other open areas, and street plantings where the parking strip width is at least four feet (six feet is better). If it gets enough water expect it to get as big or bigger than it does in native situations, though it shouldn't get much taller than 40 to 50 ft with a 20 to 30 ft crown spread. The growth rate of bigtooth maple on a good site will be adequate but not fast.

As interest in native plant species and low-input, reduced maintenance landscapes grows in the West, trees like the bigtooth maple will get more attention. With its toughness and better adaptability relative to non-native maples, bigtooth maple has great landscape potential. Using such species, in combination with species that are non-native but well-adapted, will result in more sustainable landscapes. And, we will create landscapes with a true western feel.

Article Continued on Page 5

Bigtooth Maple—From A MG Perspective...Continued from Page 4

Planting: Bigtooth maples should be, "... planted in early fall so that their roots can be established while the weather is cool. Since these trees prefer temperate microclimates, they grow best in afternoon shade on north-eastern exposures in storm drainage basins or other low-lying areas where it stays moist." (J. Phillips)

Further, Phillips states that when planting these trees, 1) we should loosen the soil extensively so that new roots have an easier time breaking ground, and 2) mulch the tree with 4" of compost or pecan shells to keep soil cool and moist.

Water Requirements: Medium low; water natives to a depth of 30' weekly when temperatures are above 90°F and every two weeks when temps are between 75°F and 90°F and monthly during cool weather.

Fertilization: Apply a slow-release fertilizer and granular iron and sulfur fertilizer each spring to support healthy growth and to prevent chlorosis

Care & Pruning: Judith Phillips suggests that we, "... wait until the tree has developed a thick woody trunk, a substantial leaf canopy before beginning to thin branches, and even then, removing only a few branches at a time to enhance the bigtooth maple's naturally beautiful form."

Pests/Diseases: The bigtooth maple is relatively free of serious insect and disease problems. However, native maples are susceptible to insect pests and diseases if they become stressed by drought or extreme heat. The bigtooth maple should not be planted on hot south or west exposures or where heat can be reflected from walls and paving (Phillips).

Spider mites may strip the tree's foliage but they can be easily controlled by washing dust off leaves. Do not use broad spectrum pesticides on this tree as they will kill ladybugs and lacewings that eat the spider mites. ■

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

**—PLANTING LANDSCAPE TREES—**

By Gary W. Hickman and Pavel Svihra

UC Davis, Agriculture & Natural Resources, Pub. 8046

The authors state that a landscape tree's future performance depends greatly on how it is planted. Factors include, 1) survival after initial transplanting, 2) rate of growth and establishment, and 3) root development that can be improved by proper planting techniques. Other important factors to consider are, 1) size and shape of the planting hole, and 2) adding soil amendments or fertilizer, pruning, staking, mulching and watering.

Hickman & Svihra cover the following topics in this Resource Guide:

- Planting hole preparation
- Fertilizing
- Pruning
- Staking
- Competition from Turf and Weeds
- Watering

This Resource Guide is available in the MG Hotline Library and can also be downloaded at

Link: <http://ucanr.org/freepubs/docs/8046.pdf>

Another excellent resource on tree planting is available through the Utah State University Cooperative Extension. Planting Landscape Trees was written by Margaret Shao and Michael Kuhns. This very informative guide covers the following topics:

- Planting Season
- Tree Types (balled and burlapped, container/potted, bareroot, and tree-spaded)
- Planting the Tree
 - ...digging the hole
 - ...placing the tree
 - ...removing packing materials
 - ...backfilling
 - ...planting with poor drainage/compaction
- Follow-up Maintenance
 - ...Fertilizing and Soil Amendments
 - ...Mulching
 - ...Staking
 - ...Trunk Protection
 - ...Pruning
 - ...Weed Control

You can download this Guide from Link:

http://extension.usu.edu/forestry/Reading/Assets/PDFDocs/NR_FF/NRFF017.pdf



—PRUNING DECIDUOUS SHADE TREES—

By Elizabeth Davison, Dept. of Plant Sciences
University of Arizona Cooperative Extension, Pub. AZ1139

"Trees in the wild are never pruned, yet they often have long healthy lives. In a natural setting, their branches develop a balance and form typical of the species. It is when trees are brought into an urban situation that correct pruning becomes so important. Pruning is both a skill and an art."

Davidson asks us to identify our purpose for pruning a tree citing that pruning always causes a wound and always results in some response from the tree such as, 1) loss of foliage and ability to create food from sunlight, 2) creating potential entry points for decay organisms, 3) producing an increase in sprouting, 4) reducing the tree's vigor, and 5) increasing a tree's susceptibility to insect problems.

Davidson covers the following topics in this Resource Guide:

- Why prune a tree?
 - ...Promote tree health
 - ...Reduce hazards to people
 - ...Train a young tree
 - ...Increase or decrease tree flowers/fruit
- When to prune a deciduous tree
 - ...Better done when tree is young
 - ...Better done during tree's dormancy—when all foliage has dropped (usually mid-December through late January)
- Equipment Needed for Pruning
 - ...Pruning saw
 - ...Pruning loppers
 - ...Pruning shears (best for branches less than 1/2 inch)
- Proper Technique (figures shown where/how to prune)
- Pruning/Training Young Trees (first 3 years on site)
 - ...Pruning your tree at planting time
 - ...Young tree health and structure
- Pruning Older Trees (longer than 3 years on site)
 - ...Form and Health of tree (branch angles and large scaffold branches)
 - ...Reduction of Height and Width
- Pruning To Increase Flowering & Fruiting
- Pruning of Ruining ("Even if one limb is removed from a tree, there should be a reason for doing so." However, through careful selective pruning for any valid reason will produce a healthy, beautiful tree that will enhance your landscape.

This Resource Guide is available in the MG Hotline Library and can also be downloaded at

Link: <http://cals.arizona.edu/pubs/garden/az1139.pdf>



—WHY TOPPING HURTS TREES—

International Society of Arboriculture Brochure, 2003

"Topping is perhaps the most harmful tree pruning practice known. Yet despite more than 25 years of literature and seminars explaining its harmful effects, topping remains a common practice. This brochure explains why topping is not an acceptable pruning technique and offers some better alternatives."

Topics covered include:

■ What is Topping?

"Topping is the indiscriminate cutting of tree branches to stubs or lateral branches that are not large enough to assume the terminal role. Other names for topping include "heading," "tipping," "hat-racking," and "rounding over. The most common reason given for topping is to reduce the size of a tree. Often homeowners feel that their trees have become too large for their property. People fear that tall trees may pose a hazard. Topping, however, is not a viable method of height reduction and certainly does not reduce the hazard. In fact, topping will make a tree more hazardous in the long term."

■ Topping Stresses Trees

Topping often removes 50-100% of the leaf-bearing crown of a tree. Since the leaves are the food factories of a tree, this can temporarily starve a tree. The severity of the pruning triggers a sort of survival mechanism. The tree activates latent buds forcing the rapid growth of multiple shoots below each cut. The tree needs to put out a new crop of leaves as soon as possible. If a tree does not have the stored energy reserves to do this, it will be seriously weakened and may die.

A stressed tree is more vulnerable to insect and disease infestations. Large, open pruning wounds expose the sapwood and heartwood to attacks. The tree may lack sufficient energy to chemically defend the wounds against invasion, and some insects are actually attracted to the chemical signals trees release.

- Topping Causes Decay
- Topping Can Lead to Sunburn
- Topping Creates Hazards
- Topping Makes Trees Ugly
- Topping Is Expensive
- Alternatives To Topping
- Hiring an Arborist

This brochure is available in the MG Hotline Library and can also be downloaded at

Link: <http://www.lvsnag.org/pdf/WhyToppingHurtsTrees.pdf>



—WATERING TREES & SHRUBS—

Simple Techniques For Efficient Landscape Watering

University of Arizona Cooperative Extension, Pub. AZ1298

“Plants don’t waste water—people do! How much water do trees and shrubs really need? How often should they be watered? Where should it be applied? Most people over water plants. Over-watering can damage or even kill plants, leaving you with high water bills.”

Learning to water efficiently and effectively is easy. This brochure provides some basic guidelines on how to properly water trees and shrubs. Topics include:

- Where Should I Water?
- How Should I Water?
- How Much Should I Water?
- How Often Should I Water?
- Signs Of Under- and Over-Watering

Under-Watering

- ...Soil is dry
- ...Older leaves turn yellow or brown and may even drop off
- ...Leaves are wilted and/or curled

Over-Watering

- ...Soil is constantly damp
- ...Young leaves become light green or yellow
- ...Young shoots are wilted
- ...Leaves are green yet brittle
- ...Algae and mushrooms are growing

■ Tips For Efficient Watering

- ...Control weeds. Do not lay black or clear plastic over the soil.
- ...Use mulch or landscaping fabric instead to allow water and air to circulate in the root zone.
- ...Avoid sprinkling tree and shrub leaves with water. Salts in the water can damage the foliage.
- ...If trees or shrubs are planted in turf, water them separately at the drip line.
- ...If you water by hand, install a faucet timer and use a soaker hose.
- ...Once or twice a year water three times longer than normal to help leach salts out of the root zone.
- ...Expand the watering area as the plants grow.
- ...Prevent runoff by retaining water in a basin around the plant or water at a slower rate
- ...Watering in the early morning will be most efficient because of less wind and heat.
- ...Use rainwater when possible.

This brochure is available in the MG Hotline Library and can also be downloaded at

Link: <http://ag.arizona.edu/pubs/water/az1298/>



Eupatorium Greggii, Boothill™

(Strongly recommended for attracting butterflies to your yard)

Description: *Eupatorium greggii Boothill™* (Trademark by Mountain States Wholesale Nursery) is a small, herbaceous perennial growing to about 2 ft tall and 2-3 ft wide. Its stems can either be strong and upright, or weak and trailing along the ground, depending on growing conditions. Its light green, fine-textured leaves resemble those of *Verbena pulchella*. Fuzzy lavender-blue flowers occur in tight clusters at ends of branches in the late spring, summer and fall. They are excellent for attracting butterflies. This plant has rhizomes (underground stems), so even if it burns back to the ground or is pruned back severely, it recovers readily.

Outstanding Features: The fine-textured green foliage and showy lavender-blue flowers of this versatile perennial make it a most attractive addition to the southwestern palette. As an added bonus, it is a butterfly magnet when in bloom!

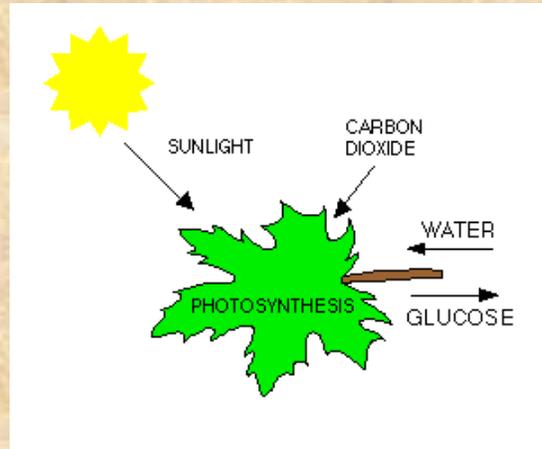
Culture/Maintenance: This plant is root hardy to at least 0°F, although foliage will burn back in the mid-20's F. Ideally, this plant should be placed where it receives afternoon shade. If planted in full sun it will require ample supplemental water to look good, especially in summer. It's a very fast grower, reaching 2 ft tall and 2 ft wide in 1 or 2 years from a 1-gallon container. This plant should be cut back nearly to the ground in late winter or early spring to remove any frost damaged foliage, and to encourage bushiness.

Identification: *Eupatorium greggii Boothill™* is very easily distinguished from any other *Eupatorium* species by its combination of highly divided leaves and lavender-blue flowers. The flowers of this species are very similar to those of *Ageratum corymbosum Butterfly Blue™*, but plants are readily separated by the divided leaves of the *Eupatorium*.

Landscape Application: *Eupatorium greggii Boothill™* is an ideal perennial for providing color under desert trees. Some suggested shade trees: *Acacia smallii*, *Acacia stenophylla*, *Cercidium praecox*, *Cercidium* hybrid 'Desert Museum', and *Prosopis* species. While filtered shade is ideal, too much shade will reduce flowering, and cause plants to be leggy. The lavender flowers of this plant look great in combination with *Gaura lindheimeri*, *Penstemon* species, and *Salvia* species.

Precautions: No information is available on the rabbit resistance of *Eupatorium greggii Boothill™*. Be sure to provide plants with some morning sun and afternoon shade. This proper balance will encourage ample flower production, while reducing the amount of supplemental water required. ■

This article suggested by Janice Servais & Juliet Williams,
Certified Master Gardeners



—WHY LEAVES CHANGE COLOR IN THE FALL—

Link: <http://www.sciencemadesimple.com/leaves.html> (Copyright © 1995, 2010 by Science Made Simple, Inc.)

Leaves are nature's food factories. Plants take water from the ground through their roots. They take a gas called carbon dioxide from the air. Plants use sunlight to turn water and carbon dioxide into oxygen and glucose. Oxygen is a gas in the air that we need to breathe. Glucose is a kind of sugar. Plants use glucose as food for energy and as a building block for growing. The way plants turn water and carbon dioxide into oxygen and sugar is called *photosynthesis*. That means "putting together with light." A chemical called chlorophyll helps make photosynthesis happen. Chlorophyll is what gives plants their green color.

As summer ends and autumn comes, the days get shorter and shorter. This is how the trees "know" to begin getting ready for winter.

During winter, there is not enough light or water for photosynthesis. The trees will rest, and live off the food they stored during the summer. They begin to shut down their food-making factories. The green chlorophyll disappears from the leaves. As the bright green fades away, we begin to see yellow and orange colors. Small amounts of these colors have been in the leaves all along. We just can't see them in the summer, because they are covered up by the green chlorophyll.

The bright reds and purples we see in leaves are made mostly in the fall. In some trees, like maples, glucose is trapped in the leaves after photosynthesis stops. Sunlight and the cool nights of autumn cause the leaves turn this glucose into a red color. The brown color of trees like oaks is made from wastes left in the leaves.

It is the combination of all these things that make the beautiful fall foliage colors we enjoy each year.

WHY DO LEAVES CHANGE COLOR IN THE FALL?

Plants make their own food. They take water from the ground through their roots. They take a gas called carbon dioxide from the air. They turn water and carbon dioxide into food and oxygen. Oxygen is a gas in the air that we need to breathe.

Plants make their food using sunlight and something called chlorophyll. Chlorophyll gives leaves their green color.

Winter days are short and dry. Many plants stop making food in the fall. The chlorophyll goes away. Then we can see orange and yellow colors. These colors were in the leaves all summer, but the green covered them up.

Some leaves turn red. This color is made in the fall, from food trapped in the leaves. Brown colors are also made in the fall. They come from wastes left in the leaves.

HOW PLANTS PREPARE FOR WINTER

All summer, with the long hours of sunlight and a good supply of liquid water, plants are busy making and storing food, and growing. But what about wintertime? The days are much shorter, and water is hard to get. Plants have found many different ways to get through the harsh days of winter.

Some plants, including many garden flowers, are called "annuals," which means they complete their life cycle in one growing season. They die when winter comes, but their seeds remain, ready to sprout again in the spring. "Perennials" live for more than two years. This category includes trees and shrubs, as well as herbaceous plants with soft, fleshy stems. When winter comes, the woody parts of trees and shrubs can survive the cold. The above ground parts of herbaceous plants (leaves, stalks) will die off, but underground parts (roots, bulbs) will remain alive. In the winter, plants rest and live off stored food until spring.

As plants grow, they shed older leaves and grow new ones. This is important because the leaves become damaged over time by insects, disease and weather. The shedding and replacement continues all the time. In addition, deciduous trees, like maples, oaks and elms, shed all their leaves in the fall in preparation for winter.

"Evergreens" keep most of their leaves during the winter. They have special leaves, resistant to cold and moisture loss. Some, like pine and fir trees, have long thin needles. Others, like holly, have broad leaves with tough, waxy surfaces. On very cold, dry days, these leaves sometimes curl up to reduce their exposed surface. Evergreens may continue to photosynthesize during the winter as long as they get enough water, but the reactions occur more slowly at colder temperatures.

During summer days, leaves make more glucose than the plant needs for energy and growth. The excess is turned into starch and stored until needed. As the daylight gets shorter in the autumn, plants begin to shut down their food production.

Article Continues on Page 9

Why Leaves Change Color, Continued From Page 8

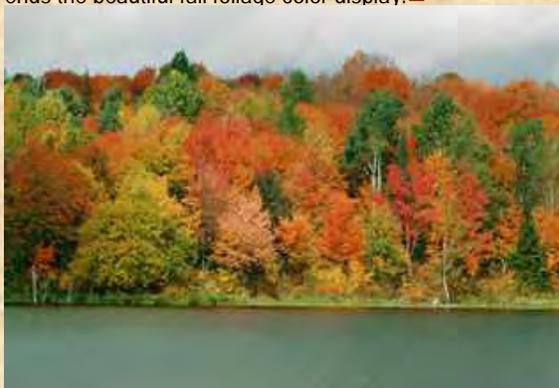
Many changes occur in the leaves of deciduous trees before they finally fall from the branch. The leaf has actually been preparing for autumn since it started to grow in the spring. At the base of each leaf is a special layer of cells called the "abscission" or separation layer. During summer small tubes which pass through this layer carry water into the leaf, and food back to the tree. In the fall, the cells of the abscission layer begin to swell and form a cork-like material, reducing and finally cutting off flow between leaf and tree. Glucose and waste products are trapped in the leaf. Without fresh water to renew it, chlorophyll begins to disappear.

The bright red and purple fall foliage colors come from *anthocyanin* pigments. These are potent antioxidants common in many plants; for example, beets, red apples, purple grapes (and red wine), and flowers like violets and hyacinths. In some leaves, like maple leaves, these pigments are formed in the autumn from trapped glucose. Why would a plant use energy to make these red pigments, when the leaves will soon fall off? Some scientists think that the *anthocyanins* help the trees keep their leaves a bit longer. The pigments protect the leaves from the sun, and lower their freezing point, giving some frost protection. The leaves remain on the tree longer, and more of the sugars, nitrogen and other valuable substances can be removed before the leaves fall. Another possible reason has been proposed: when the leaves decay, the *anthocyanins* seep into the ground and prevent other plant species from growing in the spring.

Brown fall foliage colors come from tannin, a bitter waste product. Other colors, which have been there all along, become visible when the chlorophyll disappears. The orange colors come from *carotene* and the yellows from *xanthophyll*. They are common pigments, also found in flowers, and foods like carrots, bananas and egg yolks. We do not know their exact role in leaves, but scientists think they may be involved somehow in photosynthesis. Different combinations of these pigments give us a wide range of colors each fall.

As the bottom cells in the separation layer form a seal between leaf and tree, the cells in the top of the separation layer begin to disintegrate. They form a tear-line, and eventually the leaf is blown away or simply falls from the tree.

One more important question remains. What causes the most spectacular display? The best place in the world for viewing fall colors is probably the Eastern United States. This is because of the climate there, and the wide variety of deciduous trees. The brightest colors are seen when late summer is dry, and autumn has bright sunny days and cool (low 40'sF) nights. Then trees make a lot of *anthocyanin* pigments. A fall with cloudy days and warm nights brings drab colors. And an early frost quickly ends the beautiful fall foliage color display. ■



BRANIGAN MEMORIAL LIBRARY "LUNCH & LEARN" PRESENTATION

Date: Thursday, October 21

Time: 12:00-1:00 p.m.

Place: Branigan Memorial Library
Location: Roadrunner Meeting Room

Speaker: Jeff Anderson, Agriculture & Horticulture
Agent, Doña Ana Cooperative Extension



Topic: TREES FOR ALL SEASONS

Synopsis: Learn about trees that are perfect for your yard and how to avoid problems and pitfalls that often frustrate homeowners.

This presentation has been approved for one-hour of education credit for all MGs attending.

Information provided by
Sylvia Hacker, Certified Master Gardener



Everyone enjoyed last month's Lunch & Learn presentation on Veggies on the Ritz (how to create innovative and autumn decorations).

Shown below are NMSU Instructor, Sabine Green, and the members of the NMSU Floral Club. Many thanks for their great presentation!





Community & School Gardens Report

—September 2010—

By Darrol Shillingburg, Certified MG, and Christine Chavez, MG Intern

The Las Cruces Master Gardener group is interesting for a variety of reasons. The community may perceive the group as a volunteer source for community events but as I meet and work with more of you on a one-to-one basis I find that the group holds a tremendous amount of ability, knowledge and talent. Being a part of community events in the way of volunteering has its own set of benefits but I would like to tap more into the individual talents that all of you hold. There are teachers, scientists, writers, and organizers in our midst and I can't help but emphasize that the School Garden Committee could use your help. Working with children and teachers involves great patience and commitment but without our help they may face an unsuccessful attempt at gardening which may lead to reduced funding and, more importantly, interest. I encourage more of you to get involved so that we can share with others the love of gardening that all of us possess. There will be more to come in way of specific involvement and committee development but please feel free to offer comments or communicate interest at chrchavez@las-cruces.org.

COMMUNITY GARDENING:

Fairlight Community Gardens – The Garden's paid coordinator (Eric Luther) has left that position for his own farming business. The Garden has arranged for a volunteer part-time coordinator to organize volunteer workdays and oversee the garden. The Garden now needs advise on planting, growing and managing a large communal/community garden space. I am scheduled to meet with the Community of Hope Director next month to further explore their needs and possible relationships with Master Gardeners. If you have ideas about how we can assist them, please email me at darrols@earthlink.net.

New Heights Community Garden – A north-valley faith-based group – has installed their raised beds and is continuing to acquire compost and manure to increase soil fertility. They have yet to begin planting.

Communities That Garden – I did a *Second Season Plus* garden talk for the Deming Garden Club in September. It was a well-attended and attentive group with 35 members listening and ready with questions. The "plus" part was about my recent and ongoing experiments with olla irrigation and continuously fed porous capsule subsurface systems.

SCHOOL GARDENING:

The School Garden Partnership Group met at City Hall on September 23, with LC Public Schools, the City of Las Cruces, NMSU, Extension, Master Gardeners and participating citizens attending. The meeting was held at 4:30pm this time which allowed for more teachers to attend.

Funding has become a focused topic for the group. Leanne DeMouche of NMSU and Aaron Sharratt are working together to work on the grant application process with support from the group. A grant with the USDA Food and Nutrition Program was being pursued however the grant administration capabilities of the group are limited at this time. The group is now looking at a partnership with FoodCorps or another national organization as a way to obtain funding.

The School Garden Partnership Program Group will continue meeting monthly with additional projects carried out by subcommittees. This is an open community group that would welcome and appreciate your participation. Meeting times vary so let us know if you wish to participate in the group or in any of the committee work.

COMMUNITY SUPPORT: Mountain View Market is now supporting school gardening programs with Mo Valko from the Market joining the School Garden Partnership Program group with a particular interest in "Garden to Cafeteria" programs.

Respectfully,

Christine Chavez, MG Intern
School Garden Project Coordinator

Darrol Shillingburg, Certified Master Gardener
Community Garden Project Coordinator

Source: Garden Gate Magazine, October 2010

TIPS FOR GROWING TERRIFIC TULIPS



Botrytis causes spotted, yellowed or shriveled leaves. Destroy the leaves and bulbs of infected plants right away.



Plant large tulips 8 to 10 in. deep, including 2 to 3 in. of mulch.

Purchasing When you're looking for bulbs in fall, choose unblemished ones that feel heavy. I've had really good experiences with the mail-order companies I shared on p. 18. If you mail-order bulbs that don't live up to your expectations, check into the return and refund policy. Store bulbs until planting time in a dry area that's cool (50 to 70 degrees F). Keep them away from fruits and vegetables, which give off ethylene gas that can cause the bulbs to not flower.



***BUY**
Healthy bulbs look smooth and feel firm. It's OK if they're missing their papery tunics.



BEWARE
Do you see a blue-gray mold on the surface? Try wiping it off. If you can, it's fine to plant. If not, don't choose it.



PASS
Round or irregular-shaped discolored spots could be fusarium, a fungal disease. Leave this bulb behind.

Planting Plant bulbs in fall in well-drained soil that's rich in organic matter, usually just after your first frost. (Plant pre-chilled bulbs in zones 8 and 9 in November or December.) Site them where they'll get full sun in spring, and the soil will be relatively dry in summer.

PLANTING DEPTH Dig holes 4 to 6 in. deep and apart for small tulips, 8 to 10 in. deep and apart for large tulips. (If you mulch, remember that you can count the mulch as part of the bulb's planting depth.)

To plant just a few bulbs, a trowel or hand-held bulb planter is fine. If you have lots to plant, a long-handled bulb planter or bulb auger will make the work go more quickly. Water immediately and, if the weather is dry, water weekly until the ground freezes.

MULCHING Wait to mulch your bulbs until after the ground freezes (or weather is consistently cold in the South), then spread 2 to 3 in. of pine needles or chopped bark. If you have voles, wait until very early spring before you mulch to discourage them from nesting. It will help conserve moisture in the soil and discourage weeds that will compete with the bulbs.



What's A Bulb?

By International Flower Bulb Center on Gardening123.com

A flower bulb is really an underground storehouse and flower factory. Within the bulb is just about everything the plant will need to sprout and flower at the appropriate time. Split a bulb in half and you will see this clearly. In the basal center portion of the bulb are the leaves cradling a baby bud. (In many species, this bud already has the appearance of a flower while still in the bulb!) Surrounding the bud is a white, meaty substance called the scales. In true bulbs, it is these scales which contain all the food the bulb will need to flower and thrive. Anchoring the scales and the floral stalk which holds the bud is the basal plate. This plate at the bottom of the bulb also holds the roots of the plant. The entire bulb package is protected by a thin outer skin called the tunic. All this remarkable organism needs from humans is to be placed in the ground at the appropriate season of the year, given a liberal drink of water and then left alone. The bulb does the rest!

The Difference Between Bulbs, Corms, Tubers, Roots

Technically speaking, many popular "bulb" flowers are not produced from true bulbs at all. Crocuses and gladioli, for example, are really corms, while such favorites as dahlias and begonias are really tubers.

The differences between bulbs and corms are slight, and indeed the two look very similar. The main distinguishing trait is the method of storing food. In corms, most of the food is stored in an enlarged basal plate rather than the meaty scales, which in corms are much smaller. Corms generally tend to be flatter in shape than round, true bulbs. Tubers and roots are easily distinguished from bulbs and corms. They have no protective tunic and are really just enlarged stem tissue. They come in a variety of shapes, from cylindrical, to flat, to just about any combination you can imagine. Many come in clusters.

Generally, however, you are safe using the term "bulb." Bulb has commonly come to mean any plant that has an underground food storage capacity. Spring-Flowering Bulbs Are Hardy; Summer-Flowering Are Tender

Bulbs fall generally into two groups: spring-flowering (which are planted in the fall) and summer-flowering (which are planted in the spring). A more accurate grouping, however, divides bulbs into hardy and tender varieties. As a rule, spring-flowering bulbs are hardy bulbs.

Article Continued on Page 14

Dixie's Honey-Do List for October



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: We have about one more month of frost-free gardening. Our average first freeze date is November 6. Get busy! Remember, "Do not prune in October!"

ORNAMENTALS

- Continue planting spring blooming bulbs such as crocus, anemone, and oxalis. (All native annuals and non-natives grow well in rocky soils or with a fine gravel mulch. The small rocks hold the tiny seedlings in place protecting them from both harsh winds and fast-moving water. After planting spread fine gravel mulch over your flower bed to a depth of .5 to 1".)
- As a general rule, plant bulbs to a depth of 3 times their diameter. Be prepared to reduce watering to your planted bulbs as temperatures cool this month. Water to a depth of 6 inches for all growing bulbs.
- Plant cool season annuals such as pansies, sweet pea, and flowering kale.
- Sow seeds of wildflowers including California poppy, toadflax, and larkspur. Keep seedbed moist through germination to the five true leaf stage. Then reduce watering as tolerated.
- Cool season perennials and hardy natives such as gaura, penstemon, and salvia may be planted now.
- Begin seeding Iceland and Shirley poppies.
- Groom, repot, and prepare to bring patio plants in for the winter.
- If you are leaving tender plants in the ground for winter, then mulch them heavily.
- For large tender container plants, get blankets or other coverings ready.



FRUITS, NUTS, CITRUS & SHADE TREES



- Plant low growing junipers.
- Continue planting winter hardy trees and shrubs but wait to plant species such as Red Bird of Paradise, true palo verde, eucalyptus, and oleander.
- Reduce irrigation frequency to established non-fruit bearing trees and shrubs.
- Do not prune citrus this month except to take off suckers from below the graft. Many growers recommend that you pull these suckers off rather than cut them.
- Continue to irrigate pecans.
- Continue root pruning proposed transplants.
- Spray fruit trees with a dormant oil containing a copper fungicide after 75% of the leaves have fallen.
- Continue with good orchard sanitation practices.

VEGETABLES, FRUIT AND HERBS

- Plant onions, garlic, and rapidly maturing crops such as radishes now.
- Plant seeds of coriander, parsley, and dill now.
- Plant cool season vegetables and herbs.
- Chives, Mexican tarragon, oregano, oregano, rosemary, thyme, and winter savory may go in now.
- A good way to propagate woody perennial herbs such as rosemary and oregano is by layering. Take a low growing stem, press it gently to the soil surface, and secure it to the ground with a hairpin. Cover the hairpin with soil; keep it moist and undisturbed for about a month. After a month, check gently for root growth. After roots develop, sever new plant from parent stem.
- Reduce irrigation frequency to grapes in preparation for winter.



Dixie's Honey-Do List for October—Continued



LAWNS / TURF / ORNAMENTAL GRASSES

- Finish pre-emergent application to established turf.
- Finish seeding cool-season grasses. Two weeks after overseeding, feed the lawn with a lawn-starter formula or a blend that is about 16-20-0 to stimulate the roots and get growth going. After this treatment, fertilize monthly with a product that has a 3-1-2 NPK ratio or a product specifically rated for winter gardens.
- Fertilize cool season grasses and continue irrigation and mowing. Fertilize St. Augustine and Zoysia for the last time this year.
- Stop fertilizing warm season species and reduce irrigation frequency as winter dormancy nears.
- If you are through mowing for the year, winterize the lawn mower but wait until after spring "scalping" to tune it up.

ROSES

- Allow roses to adjust to dropping temperatures and prepare for cold weather by reducing the frequency of watering and discontinuing fertilizing.
- Reduce irrigation frequency and discontinue fertilization to roses.
- Mulch the root zone heavily with 6-8 inches of light mulch such as straw, leaves or pine needles. Be sure to also protect the bud union with mulch.
- Continue deadheading roses regularly. Remove any dead or diseased canes.
- Be sure to keep the area around rose plants clean of debris and fallen leaves, particularly if powdery mildew has been a problem.
- When yellow leaves occur only on the lower part of the rose bush, this is the natural die-off of old leaves. If yellow leaves appear to spread upward on the plant, this usually indicates over-watering or poor drainage.



CACTI & SUCCULENTS

- At the end of October, begin encouraging Christmas cactus to rebloom. Put plants in a cool location at night—55°F to 65°F is ideal. Be sure to keep plant completely in the dark for 12-14 hours. Water regularly, but let the plant dry out between watering. Flower buds will form in 4-6 weeks.
 - For Christmas bloom, give poinsettias and Christmas cactus 14 hours of uninterrupted darkness per day. The Christmas cactus requires cool nights between 55 and 65°F.
 - Do not prune warm season succulents this month. You can remove spent flowers anytime.
 - You can remove pups from agaves and replant them this month.
 - Do not remove yucca offsets during cool weather.
 - Any container grown winter-growing succulents can be fertilized monthly starting this month. Use a soluble fertilizer at 1/4 to 1/2 the recommended strength for houseplants. Do not fertilize plants that are planted in the ground this month.
 - If cochineal scale is still a problem on cacti, hose them off with a strong jet of water.
- Plant hardy cactus and succulents this month.

PESTS

It is always important to correctly identify any insect you suspect may have caused damage to your plants. If you do not know what the insect is, collect one in a plastic bag or small jar and take it to the Doña Ana County Cooperative Extension Office located at 530 N. Church in Las Cruces (located just north of the Main Post Office downtown.)

MISCELLANEOUS

- Reduce your overall watering to help plants harden-off for winter; be sure to adjust your irrigation clock/timer for less frequent watering.

What's A Bulb? Continued from Page 11

These bulbs are planted in the fall, generally before the first frost, and can survive (and indeed require for sprouting) the cold winter months. Many hardy bulbs, such as daffodils, perennialize well and can be left in the ground to flower year after year.

Most summer-flowering bulbs are tender bulbs. These bulbs cannot survive harsh winter conditions and must be planted in spring after the last frost of the season. To enjoy these bulbs year after year, they must be dug up in fall and stored indoors over the winter. A notable exception is the lily. Many summer-flowering lily varieties are quite hardy and can be planted in either fall or spring.

Bulb flowers are among the most popular and best loved in the world. Spring-flowering bulbs such as tulips, crocuses, hyacinths, daffodils, and irises are universal symbols of spring. Their lush and colorful flowers are the first to bring life back to a barren winter landscape.

Summer-flowering bulbs such as dahlias, begonias and anemones bring variety, texture, unique color and long flowering times to summer gardens.

Planted with care and planning, bulbs can keep a garden alive with color from the last snows of winter through the first frosts of fall.

**TIPS FOR BULB PLANTERS**

- #1 Flower bulbs make the most striking display if you plant them in large groups. A large clump of them attracts more attention than if you plant a few here and a few there. Moreover, planting them in fancifully shaped plots provides a more natural appearance than plantings having rigid round contours.
- #2 When ornamental or terracotta pots are exposed to freezing temperatures over a long period of time, they can crack. Cold causes the earth in the pot to expand, thus cracking it. If you would like to have bulbs in containers on your balcony, deck or patio, put them into a plastic pot first. Then lower this container into the ornamental pot. The space between the two pots will then act as extra insulation, and the pot will not crack so easily.
- #3 First, lay out the bulbs that you want to plant on top of the spots where you want to have them. Indicate (with little sticks, for example) where you have already planted the bulbs; this keeps you from digging up a spot where bulbs are already locate.
- #4 It is handy to place a plant marker that gives the name of the bulbs at the location where you plant them. There are currently decorative markers made from wood, galvanized steel and terracotta.
- #5 If the wind has blown a plentiful supply of leaves onto your lawn during the autumn, you can sweep the leaves over the spot where you have just planted your bulbs. They will reward you for giving them an extra "bedding." ■



Choosing Less Palatable Bulbs (Keeping Critters From Eating Your Bulbs)

By Kim Hilgers Source: Gardening123.com

We've all experienced the frustration of planting tulips in the fall with anticipation of spring blooms only to find that they have become fodder for furry fiends. Crocus and lillies are often disturbed or eaten as well. There are various methods to prevent animals from digging or eating spring bulbs, but you can save some effort by selecting bulbs that are less palatable. While we would like to claim that the following bulbs are rabbit, deer or rodent-proof, the unpredictability of such wildlife forces us to say they are simply your best bets.

Daffodils (*Narcissus* spp.) are an old favorite that are long-lived and naturalize well in the landscape. They come in several flower shapes and color combinations of yellow, white, orange and pink. Daffodils range from 4 to 24 inches in height. Most bloom in early spring, prefer partial to full sun and are cold-hardy in USDA Hardiness Zones 3-9. As with all bulbs, be sure to allow the foliage to die back or yellow naturally before removing as they need time to replenish energy reserves in the bulbs.

Snowdrops (*Galanthus nivalis*) are 4 to 6" tall plants with white, nodding flowers in late winter to early spring. They can be found in single or double flower forms and do well in partial to full shade in Zones 3-9. The bulbs are small, so plant them in groups of a dozen or more.

Winter Aconite (*Eranthis hyemalis*) makes a cheerful addition to the late winter/early spring landscape with its bright yellow, buttercup-like blooms. The flowers sit atop a collar of green leaves on 2 to 4" tall plants. They are great for mass plantings in partial shade in zones 4-9. Because they are one of the first bulbs to bloom, their foliage dies back quickly.

Snowflakes (*Leucojum vernalis*) are very similar in flower form to snowdrops, but bloom a little later from early to mid-spring and are a bit larger at 6 to 12 inches tall. They prefer partial to full sun and are hardy in Zones 4-8. Both snowflakes and snowdrops naturalize well in the landscape and work well under deciduous trees and shrubs.

Glory-of-the-Snow (*Chionodoxa lucilliae*) is also very early to bloom as the name suggests. It is a dainty plant only 4 to 6 inches tall with upward-facing, star-shaped flowers. The blooms are most often bright blue, but can also be white or pink. They do best in full sun in Zones 3-9.

Article Continued on Page 15

Source: Garden Gate Magazine, Oct. 2010



Place bulbs in cage and refill hole with soil.

Secure the top of the cage with twist ties or wire.

Protecting To hungry critters, all parts of tulips are tasty. Here are some tips to discourage pests from chipmunks to deer.

FALL To keep your bulbs safe from digging pests, such as chipmunks and voles, make round cages from 1/2-in. hardware cloth. The diameter depends on how many bulbs you want to plant. One that's a foot across will hold five medium-sized bulbs. Dig the hole, put in the cage and arrange the bulbs in it. Refill with soil. Cover the top of the cage with a hardware cloth lid, securing it with wire or zip ties and refill the rest of the way with soil.

Another way to thwart diggers like squirrels and chipmunks is to lay a piece of chicken wire over the soil after you plant.

Or, an even easier tip is to spray the bulbs with a rabbit or deer repellent, such as Liquid Fence® or RO-PEL®, before you plant them. Doing this gives the bulbs a nasty smell and taste to marauding critters.

SPRING To protect the new foliage from nibblers like rabbits and deer, give the leaves a bitter taste by spraying them with the same repellent you used on the bulbs. The spray washes off, so repeat after

each rain. You may need to switch to other repellents (like the homemade one at right) every few weeks, as the critters grow used to the taste.

***Homemade pest repellent**

- 1 tsp. cayenne pepper
- 1/2 tsp. Ivory® or other mild dish soap
- 1 qt. warm water

Provide nutrients Scratch a bulb fertilizer with an analysis of 9-9-6 or 5-10-12 into the top few inches of soil after planting. In spring, topdress with compost or sprinkle on a little granular 10-10-10 just as perennials start to emerge.

After the flowers finish, leave the foliage on the plant until it starts to turn yellow, to help the bulb make its own food for next year.

PHOTOS: © Betty Strauch (top right); © Tim Arnold/istockphoto.com (middle left)

Choosing Less Palatable Bulbs—Continued from Page 14

Siberian Squill (*Scilla siberica*) grows 4 to 6 inches tall with nodding blue flowers in early spring. It is another small but colorful bulb that naturalizes well and looks stunning in large masses. Plant them in full sun to part shade in Zones 2-7.

Grape Hyacinths (shown below) (*Muscari armeniacum*) produce dense clusters of urn-shaped, purple to blue flowers that resemble clusters of grapes. The flowers also come in pink and white and a double form. The flower spikes are 6 to 8" tall and bloom in mid-spring. These vigorous bulbs prefer full sun and are hardy in Zones 2-9. Once established, the grass-like foliage may appear in fall as well as alongside the blooms in spring.



Hyacinths (shown above) (*Hyacinthus orientalis*) are available in a spectacular range of colors including white, pink, red, blue, purple, peach, and yellow. Clusters of highly fragrant tubular flowers are borne on 8 to 12 stems in mid-spring. They do well in full to part sun. While the bulbs are hardy to Zone 4, flower performance declines rapidly. It is recommended that they be replanted every 2 to 3 years.

Fritillaries (*Fritillaria* spp.) vary greatly by species in size, form, color, bloom time and cold hardiness. They can be 12 inch tall like the spring blooming guinea-hen flower (*Fritillaria meleagris*) with unique purple checkered blooms, or 2 to 3 feet tall like the crown imperial (*Fritillaria imperialis*). Crown imperial blooms in early summer with nodding clusters of orange or yellow flowers topped with a crown of green leaves. The unpleasant musky odor of the bulbs and blooms keeps away both humans and animals. So admire these from afar. Most fritillaries do well in full sun to part shade.

Ornamental Onions (*Allium* spp.) bloom in late spring to early summer depending on the species or variety. They range in height from 6" to 4 ft and come in purple, pink, white and yellow. Flower forms can vary as well but typically consist of round clusters of star-shaped flowers atop tall stems like the popular Giant Allium (*A. giganteum*) or Stars of Persia (*A. christophii*). Most prefer full sun and are hardy in Zones 4-10.

With fall quickly approaching, now is the time to purchase spring-blooming bulbs. Many of these bulbs can be found at your local garden center or ordered through specialty catalogs, many of which offer online sales as well. ■



See sure to read, [Outwitting Backyard Creatures: Bulbs & Plants They Hate!](#) Pages 19-20



STORING & PRESERVING YOUR FALL HARVEST

If you are still reaping the benefits of your fall vegetable garden, you might want a tip or two on how to store those great squashes, leafy greens and root veggies. Here are some simple tips:

Storage Tip: Wrap loosely in a plastic bag and store in the crisper drawer of the refrigerator

- ♦ Beets
- ♦ Broccoli
- ♦ Cauliflower
- ♦ Fennel
- ♦ Leeks
- ♦ Parsnips
- ♦ Radishes
- ♦ Rutabaga
- ♦ Scallions
- ♦ Squash
- ♦ Turnips
- ♦ Zucchini

Storage Tip: Place in a cool, dark dry space:

- ♦ Onions (white, red and Spanish varieties only)
- ♦ Potatoes

Storage Tip: Keep at room temperature:

- ♦ Unripe melons
- ♦ Tomatoes (refrigerating tomatoes saps the fruit of its flavor and texture)

Storage Tip: Place in a sealed plastic bag and store in the crisper drawer of your refrigerator:

- ♦ Brussels sprouts
- ♦ Cabbage
- ♦ Celery
- ♦ Cucumbers (keep cukes far away from tomatoes, apples and citrus fruits, as they give off ethylene gas which will spoil your cukes)
- ♦ Lettuce greens (if the greens are washed, wrap them in a damp paper towel and place in a plastic bag)
- ♦ Peppers and chilies
- ♦ Sweet onions

*Information provided by Jodi Richardson,
Master Gardener Intern*



Fall Chores for Diligent Gardeners

Fall is a great time of year for lawn care, tree and shrub planting, bulb planting, and overall cleanup. There are many chores we need to do to prepare our gardens for winter. Starting these chores early and performing them little by little will keep you from becoming overwhelmed, allowing you to finish way ahead of schedule with plenty of time to enjoy the crisp days of autumn. Take time in October to take care of these important items. Your time and energy will reward you many times over next spring.

Lawn Care: Lawns could use preparing now for next spring.

Aerate and thatch if the soil is compacted. This will allow the soil to drain better and give the roots much needed oxygen. Seeding can be done as well as fertilizing. Seeding early in fall will give the new roots plenty of time to become established before winter.

Weed Control: Fall is also the best time to control hard-to-kill perennial weeds. Ground ivy, plantain and clover are actively growing and starting to enter their dormant season so they will take up herbicides better.

For hard-to-kill weeds such as ground ivy, you may need to apply the herbicide twice. Whenever applying a pesticide or herbicide, read the entire label for directions, restrictions, and all safety information.

Vegetable Garden Clean-Up: Remove diseased plants and till under healthy debris. Harvest any vegetables left on the plants. Green tomatoes can be put into brown paper bags (it also makes a great salsa) and stored in a cool, dry place and they will ripen slowly. Pull out all of your crops and clean up any fruit and vegetables that have fallen and also any leaves and stems. Debris that is left in the garden over the winter can cause diseases to enter the soil and re-appear the following spring.

If you have any aged manure or compost, work it into the soil. Fall tilling should be 'rough' to allow for maximum freezing exposure and soil insect kill. You can add manure and compost now as it gives these plenty of time to breakdown. Work the manure and compost in and leave the garden messy. This will expose any insects and weed seeds to the winter elements.

Plant Spring Bulbs & Flowerbed Clean-Up: Fall is also a great time to plant bulbs. Plant flowering bulbs of daffodils, tulips and crocus now for beautiful color come spring. Try broadcasting the bulbs and plant them where they lay. This is called "naturalizing".

Lift tender bulbs of gladiola, dahlia and tuberous begonia. Carefully dig the bulbs and leave the foliage on. Put the bulbs in an airy, protected area for a two to three week period. Foliage on gladiola and dahlia can be cut off with a sharp knife at this time. Cut at the point where the foliage emerges from the bulb. Begonia stems should be allowed to dry until they are brittle and can be broken off from the bulbs. *Article Continued on Page 17*

Fall Gardening Chores—Continued from Page 16**Plant Spring Bulbs & Flowerbed Cleanup (Cont.)**

Perennials that are overcrowded or are growing in a ring shape with the center portion missing, should be divided now. Find new spots in your garden or give them away to neighbors.

Prepare rose bushes for winter. Prune dead or damaged branches and cut off any old flowers. Using potting soil or mulch, mound the bush.

Remove and compost annuals. If you have tender bulbs such as dahlias, gladiolas, cannas or caladiums, dig them up for winter storage. Fall is the time to divide daylilies and peonies. Don't forget spring flowering bulbs such as tulips, daffodils, and crocus. Roses should be covered in November after frost and the chance of high daytime temperatures has passed. Other chores to do in the fall include bringing in house plants that have been outside all summer.

Most herbaceous perennials don't need to be cut back in the fall. They are known to re-seed, so make sure you deadhead the old flowers.

Houseplants: Any houseplants that were growing outside should be brought back inside. Gather them all and place them in a shady area. Look them over for any signs of insects and prune and repot any that may need it. Leave them in the shade a few days to get them used to low light conditions that will be similar to the conditions once they are back indoors. Browning leaves and leaf drop can happen in some species because of the change in light conditions and the lower humidity that is found in most homes.

Start a Compost Pile: This time of year there is ample material to start a compost pile. Fallen leaves, grass clippings, and garden debris can all be turned into compost—a rich, earthy-smelling organic substance that can be used next year.

Plant Trees & Shrubs: Due to the cooler temperatures, fall is a good time to plant trees and shrubs. The trees are entering their dormancy period so the chance of shock is reduced. Though many plants will shed their foliage, the roots remain active until soil temperatures reach 40 to 45 degrees F.

Fertilizing Plants: If you are going to fertilize your plants, do so after the first hard frost and after the plants have lost their leaves. At this time, fertilizer will not promote new growth.

Deep Watering: Deep fall watering is recommended especially for evergreens. Before the ground freezes, let water soak down into the upper 12 to 18" of the soil. This will greatly reduce the chance of severe winter desiccation.

Garden Maintenance: Drain and store garden hoses, clean flower pots, and clean and sharpen garden tools. Clean up all of your gardening tools. Have pruners, mower blades and shears sharpened now so they will be ready first thing come spring and you will beat the rush of those who waited.

Doing these tasks now will give you a head start and will reap wonderful results next spring. ■

Sources:

Fall Garden Chores on GardenGuides.com by Georgiana Marshen, on <http://www.gardenguides.com/937-fall-garden-chores.html>

Scheduling Fall Chores for Diligent Gardeners by Martha Smith, University of Illinois, Sept. 2, 2010 on <http://www.aces.uiuc.edu/news/stories/news5370.html>

MG Intern Profile: Jodi Richardson

She Works to Preserve A Family Gardening Legacy



Master Gardener Intern, Jodi Richardson, says she owes her love of gardening to her grandmother Margaret Thomas. Even when her grandmother relocated to Las Cruces from her home in northwest Arkansas at the age of 92, she was determined to continue her vegetable gardening.

According to Jodi, her grandmother tamed a plot on the East Mesa and grew enough tomatoes, eggplant, onions, squash, and melons for three families. She passed away in the fall of 2009 at the age of 96, leaving behind instructions for harvesting everything she had planted and tended the preceding spring and summer.

Although Jodi had been gardening for 20 years, her grandmother's legacy inspired her to enroll in the Master Gardener Program last year so she could learn more about successful vegetable gardening. Jodi says she especially enjoys working the hotline because that is where she finds she learns the most.

Jodi's favorite things to grow are flowers and herbs. She now lives northeast of Elks Road but previously lived in the Alameda district of Las Cruces. "Tending the soil to bring forth fruit and bloom can be an important component of nourishing the soul," she says. "I encourage everyone who will listen to at least have a pot of flowers to care for and enjoy."

In addition to her gardening passion, Jodi enjoys cooking and traveling. She is a Chiropractic Assistant having managed her husband's practice for the past 24 years.

MG Profile provided by Ann Palermo, Certified Master Gardener

Seed/Plant Exchange Suggestion

Hope Movsesian, Certified Master Gardener, has suggested that we do a seed exchange at our monthly meetings. Anyone with seeds, bulbs, or extra plants to share is encouraged to bring them to our next monthly meeting on Wednesday, Oct. 13th.

Weed Watch: Bull & Musk Thistle



Bull Thistle (*Cirsium vulgare*)

Description: Bull Thistle is a prickly wildflower that most people consider an annoying weed. It is also known as Bur Thistle, common Thistle or Spear Thistle. Its stems, branches, and leaves are covered with spikes and you should be careful when touching it. This plant, which is in the Sunflower family (*Asteraceae*), can grow in fields, gardens, and roadsides. Bull Thistle is an introduced plant, but is now common. Bull Thistle blooms from July to September.

Bull Thistles can reach six feet tall and have a short, fleshy taproot. Stems are very downy and have dark purple veins. Flower heads made up of dark purple flowers, are 1.5 to 2 inches wide. Its flowers mature in July and August with each flower capable of producing thousands of seeds! After the flower has finished blooming, the fruits produce "thistledown," small seeds with fluffy stuff on them. This type of seed is called an "achene." Achenes are transported by wind to new places so new Bull Thistles can grow.

The Bull Thistle is a biennial plant. In its first year it grows a rosette, a cluster of leaves near the ground. In the second year it grows flowers and fruits, spreading seeds before it dies.

Impact on Wildlife: Not toxic but, if baled in hay, livestock may eventually refuse to eat it. Bull Thistles are a good food source for many animals. Eastern Cottontails and White-tailed Deer eat the leaves and stems. This plant's flower nectar is consumed by hummingbirds, bees, and butterflies. Seeds are popular with many birds, such as American Goldfinches and Juncos, as well as mice and other small mammals. Hummingbirds and insects help pollinate Bull Thistles by accidentally gathering pollen from one plant, and delivering it to the next one they visit.

Key Characteristics:

- Prickles on the upper side of the leaf
- Pubescence (soft down covering or short hairs) on leaf's upper side
- Shaving brush appearance of the flower head

Distribution: Probably the least aggressive non-native thistle in NM. It is widely distributed throughout the higher elevations of the State.

Origin: Europe and Asia; introduced as a seed contaminant.

Management:

- Proper Identification is important as this plant can be confused with the endangered Sacramento Mountain Thistle.
- Mechanical removal should cut roots below soil surface and remove the stems before flowering.
- Herbicides are effective.
- DO NOT mow during/after flowering to prevent seed dispersal.
- DO NOT use fire—it creates favorable conditions for growth.



Musk Thistle (*Cardus nutans* L.)

Description: Musk Thistle is an herbaceous, biennial plant that can grow to 8 feet tall. It is also known as Nodding Thistle or Plumeless Thistle. This plant is a member of the Sunflower family (*Asteraceae*).

It is a biennial plant that can act as an annual. It has a thick taproot. Its rosette leaves are dark green with a light green midrib, spiny margin and deep lobes. Stem leaves extend beyond the stem, moving down, and give the appearance of a winged stem.

Flower heads are made up of a deep rose, violet, purple or white flowers are 1.5 to 3 inches in diameter and borne on stem tips, which often nod.

Impact on Wildlife: Unpalatable to wildlife and livestock.

Key Characteristics:

- Rosette of basal leaves up to 3-4 feet in diameter
- Large "power puff" flower head that droops or nods
- Lack of pubescence (soft down covering or short hairs) on leaves

Distribution: Musk Thistle has become a serious invader of open lands throughout the continental United States. Its flowering occurs from June to September. Musk thistle invades a variety of disturbed areas. Pastures are particularly at risk because musk thistle is unpalatable to livestock. Once established Musk Thistle can spread rapidly due to its high seed production (as much as 120,000 seed per plant).

Origin: Musk thistle is native to Western Europe and was accidentally introduced into the U.S. in the early 1900s.

Management:

- Mechanical removal should cut roots below soil surface and remove the stems before flowering.
- Herbicides are effective.
- Several biological controls exist but none are legal in NM.
- DO NOT use fire—it creates favorable conditions for growth.
- DO NOT mow during/after flowering to prevent seed dispersal; mow plants in late bud or early bloom to reduce seed production. ■

SOURCES:

Bull Thistle, http://www.fcps.edu/islandcreekes/ecology/bull_thistle.htm

Musk Thistle on Invasive.org, Center for Invasive Species & Ecosystem Health, Link:

<http://www.invasive.org/species/subject.cfm?sub=3011>

New Mexico's Invasive Weeds, by Richard D. Lee, NMSU 1999

Troublesome Weeds of New Mexico, by Mark Renz & Frank Sholedice, NMSU 2006



CHIHUAHUAN RAVEN (*Corvus cryptoleucus*)

The Chihuahuan Raven is a species of bird in the family Corvidae (Crows and Jays) that is native to the U.S. and Mexico. It was formerly known as the American White-Necked Raven, and has the proportions of a Common Raven with a heavy bill, but is about the same size as a Carrion Crow, or slightly larger (17–20 inches length) than the American Crow.

Relatively small raven, entirely metallic blue-black except for inconspicuous white neck feathers which are infrequently displayed. The plumage is all-black with a rich purple-blue gloss in good light. The nasal bristles extend farther down the top of the bill than in any other *Corvus* species to about two-thirds the length. The base of the neck feathers are white (seen only when ruffled in strong wind). The bill, legs and feet are black. Eyes are pale brown. Sexes are similar. Juveniles have dark brown eyes.

Distribution and Habitat: The Chihuahuan Raven occurs in the Southwestern and Midwestern U.S., and northern Mexico, including southeastern Arizona, southern New Mexico, southeastern Colorado, western Kansas, western Oklahoma, and southern and western Texas.

Breeds from southern Arizona, southeastern Colorado, and western Kansas southward into Mexico. Spends winters in southern part of breeding range. Preferred habitats include arid grasslands, plains, and deserts.

Diet: Feeds on cultivated cereal grains, insects and many other invertebrates, small reptiles, carrion and scraps of human food, cactus fruits, eggs and nestlings.

Nesting: The nest is built in either trees, large shrubs or sometimes even in old buildings. There are usually 5-7 eggs laid relatively late in the year during May so as to take advantage of the insect food for their young in their more arid environment.

Interesting Facts:

- Unlike most crows, the Chihuahuan Raven frequently reuses nests in subsequent years.
- Some pairs may maintain two nests and use them in alternate years.
- Unpredictable and harsh environmental conditions typical of their breeding habitat may cause non-breeding individuals to choose to help breeding pairs some seasons.

Sources

Chihuahuan Raven, on Wikipedia, Link:

http://en.wikipedia.org/wiki/Chihuahuan_Raven

Chihuahuan Raven, by Gary Owen Dick on Whatbird.com Link:

http://identify.whatbird.com/obj/92/ /Chihuahuan_Raven.aspx



Outwitting Backyard Creatures: Bulbs & Plants They Hate!

By Toni Leland, MG, Ohio State University Sept. 2010

Gardeners have long battled (and lost many skirmishes) against marauding wildlife. Numerous home remedies are reputed to keep critters at bay, and an entire industry has created all sorts of commercial products that claim to repel animals and protect your prized plants. **But the best defense is a good offense: choose plants that aren't attractive to animals in the first place.** No plant is 100% wildlife-proof. If animals are hungry enough, they'll eat almost anything. But here's a long list of plants to consider if wildlife is a problem in your garden.

| | |
|-----------------------------------------------------------------|----------------|
| Abyssinian Gladiolus/Sword Lily— <i>Acidanthera murielae</i> | Zones 7 to 11 |
| Astilbe/False Spirea | Zones 4 to 9 |
| Autumn Crocus— <i>Colchicum</i> spp. | Zones 4 to 8 |
| Begonia | Zone 10 |
| Black-Eyed Susan— <i>Rudbeckia</i> | Zones 3 to 9 |
| Bleeding Hearts— <i>Dicentra</i> | Zones 3 to 9 |
| Bluebell or Hyacinth— <i>Hyacinthus</i> spp. | Zones 4 to 8 |
| Butterfly Plant— <i>Buddleia</i> | Zones 4 to 10 |
| Caladium | Zones 10 to 11 |
| Calla Lily | Zones 9 to 11 |
| Canna | Zones 7 to 11 |
| Climbing Lily— <i>Gloriosa rothschildiana</i> | Zones 7 to 11 |
| Common Snowdrop— <i>Galanthus nivalis</i> | Zones 3 to 8 |
| Coral Bells— <i>Heuchera</i> | Zones 4 to 8 |
| Crocsmia | Zones 5 to 8 |
| Crocus— <i>tommasinianus</i> | Zones 3 to 8 |
| Crownvetch— <i>Coronilla varia</i> | Zones 3 to 9 |
| Daffodil— <i>Narcissus</i> spp. | Zones 4 to 11 |
| Cone Flower— <i>Echinacea</i> | Zones 3 to 8 |
| Elephant Ears— <i>Colocasia</i> | Zones 8 to 10 |
| English Lavender— <i>Lavandula angustifolia</i> | Zones 6 to 9 |
| Foxglove— <i>Digitalis purpurea</i> | Zones 4 to 9 |
| Foxtail Lilies— <i>Eremurus</i> | Zones 4 to 8 |
| Fritillary— <i>Fritillaria</i> spp. | Zones 4 to 8 |
| Gayfeather— <i>Liatis</i> | Zones 3 to 9 |
| Gentian— <i>Gentiana makinoi</i> | Zones 6 to 8 |
| Glory of the Snow— <i>Chionodoxa</i> spp. | Zones 4 to 8 |
| Grape Hyacinth— <i>Muscari</i> spp. | Zones 4 to 9 |
| Hardy Cyclamen— <i>Cyclamen hederifolium</i> | Zones 5 to 9 |
| Hardy Fuchsia | Zones 8 to 10 |
| Hardy Geranium/Cranesbill | Zones 4 to 8 |

Article Continued on Page 20

Outwitting Backyard Creatures—Continued from Page 19



| | |
|--------------------------------------------------|---------------|
| Hardy Tall Phlox— <i>Phlox paniculata</i> | Zones 3 to 8 |
| Himalayan Lily— <i>Cardiocrinum giganteum</i> | Zones 7 to 10 |
| Honeysuckle— <i>Lonicera 'serotina'</i> | Zones 3 to 8 |
| Hydrangea | Zones 4 to 8 |
| Larkspur— <i>Delphinium</i> | Zones 3 to 9 |
| Louisiana Iris | Zones 4 to 10 |
| Ornamental Onion— <i>Allium spp.</i> | Zones 4 to 8 |
| Spring Star Flower— <i>Ipeion spp.</i> | Zones 4 to 9 |
| Peony— <i>Paeonia</i> | Zones 3 to 9 |
| Periwinkle— <i>Vinca minor</i> | Zones 4 to 9 |
| Prairie Mallow— <i>Sidalcea</i> | Zones 5 to 9 |
| Quamash— <i>Camassia spp</i> | Zones 4 to 8 |
| Rock Soapwort— <i>Saponaria ocymoides</i> | Zones 3 to 9 |
| Russian Sage— <i>Perovskia atriplicifolia</i> | Zones 5 to 9 |
| Sage— <i>Salvia</i> | Zones 4 to 9 |
| Sambucus nigra | Zones 4 to 9 |
| Sea Holly— <i>Eryngium</i> | Zones 5 to 8 |
| Sedum | Zones 4 to 8 |
| Shamrock or Sorrel— <i>Oxalis spp.</i> | Zones 7 to 10 |
| Siberian Iris— <i>Iris sibirica</i> | Zones 3 to 9 |
| Snowflake— <i>Leucojum spp.</i> | Zones 4 to 8 |
| Spanish Bluebell— <i>Hyacinthoides hispanica</i> | Zones 4 to 10 |
| Squill— <i>Scilla spp.</i> | Zones 4 to 10 |
| Star-of-Bethlehem— <i>Ornithogalum spp.</i> | Zones 5 to 8) |
| Summer Tulip— <i>Curcuma alismatifolia</i> | Zones 7 to 9 |
| Thymus praecox | Zones 3 to 8 |
| Tritoma— <i>Kniphofia</i> | Zones 6 to 9 |
| Trumpet Creeper— <i>Campsis</i> | Zones 6 to 10 |
| Verbascum | Zones 5 to 10 |
| Veronica | Zones 4 to 7 |
| Winter Aconite— <i>Eranthis spp.</i> | Zones 4 to 7 |

NOTE: Zones were taken from national nursery catalogs and various state extension fact sheets, and may differ slightly from other data resources, depending on plant variety.



**OCTOBER EVENTS:
MESILLA VALLEY STATE PARK**

Every Saturday at 8:15AM a Birding Tour is available, depending on the availability of a Volunteer Guide. Bring binoculars, water, closed-toed shoes and insect repellent.

Saturday, October 9

Prehistoric Trackways National Monument: The National Monument in your Backyard. BLM Park Ranger McKinney Briske will talk about the history of the discoveries, the significance of the fossils, why it was made a National Monument, and what the latest discoveries are. Talk starts at 10 AM in the classroom

Saturday, October 16

Dia del Rio. Please call the park for more information.

Saturday, October 23

Four Season Vegetable Gardening. Master Gardener Dee Davis will talk about gardening year-round. Talk starts at 10 AM in the classroom.

Saturday, October 30

Aquariums: Ecology in a Box. Naturalist Richard Quick will discuss how aquariums can be used as classroom teaching tools that make learning a variety of natural sciences fun. Talk starts at 10 AM in the classroom.

Winter Hours (Sept. 1 – March 31): Mon-Sun 8 AM – 5 PM

ADDRESS: 5000 Calle De Norte (physical address)

Phone: 575-523-4398 Fax: 575-523-0742

All Events are Free with a Valid Park Pass

Information provided by Sylvia Hacker, Certified Master Gardener

GARDEN EXPO A BIG SUCCESS!

From Ann Palermo, Certified Master Gardener

Thanks to each and every one who contributed to the success of our Fall Garden Expo. We had a wonderful turnout, including 20 individuals who sat in the back-to-back tree workshops for a total of two hours without a break (and even then several were reluctant to leave). A lot of NMSU professors would like to know your secrets, Larry Dickson, Frank Connor and Paul Delgado, for holding their undivided attention for that length of time. Although I know several people attended more than one workshop, our total attendance for the day was approximately 110 people.

Additionally there were several customers who stopped to ask questions or pick up literature and some who came specifically to the Q&A table with specimens or questions about issues in their gardens. The weather definitely contributed to the success of the day, especially the timely cloud that covered the sun for about two hours in the early afternoon.

Again, the team effort is what makes working with Master Gardeners such a pleasure. ■

VEGGIES: A To Z



GARLIC (*Allium sativum*)

Is it or is it not a vegetable? Depends on how you use it and what parts you eat. Well, I'll get to that later, but first some botanical points of interest.

Botanically it is in the onion family, but differs noticeably from onions and leeks. Swollen leaves form an onion bulb, so you can peel away the layers of an onion, but not garlic. Each garlic clove is actually a swollen auxiliary bud and the papery covering is the remains of the leaf that gave rise to the bud.

Onions make flowers and reproduce sexually; garlic does not. (Elephant garlic is an exception, but is actually more leek than garlic). So how did we get all these different varieties of garlic with only vegetative reproduction or cloning? Garlic does bloom, but instead of producing seeds, the bloom heads form little bulbils that you can eat or plant. When you plant bulbils the first year they will grow into "rounders" – bulbs without cloves. The second year they will grow into normal bulbs with cloves.

To create an interesting edible garlic vegetable, plant the bulbils close together and harvest the garlic plants before they begin to form scapes and blossom heads. Green garlic has a wonderful mild flavor that can be eaten as a vegetable or incorporated into stir-fried or soup dishes – very gourmet! The blossom stalks or scapes can also be harvested and eaten leaving the plant to put all its energy into growing larger bulbs – about 30% larger without the scapes and blossoms.

Planting, Growing and Harvesting:

October is the prime time to plant here, but you can plant as late as December and expect a reasonable harvest. Garlic bulbs should have time to sprout and put down a good root system before soil temperatures cool enough to halt growth. However, garlic needs a cold chill to form bulbs with multiple cloves – no cold chill and you get solid bulbs or "rounders". If you plant in the spring (not advisable here) – cold chill your garlic in the refrigerator (40F) for 40 days to get normal bulb growth.



Planting, Growing and Harvesting (Continued)

Soil needs to be rich in organic matter and well drained. You can add some slow release nitrogen fertilizer at planting time (soy bean meal) and can fertilize in early spring for larger bulbs, (fish emulsion or cotton seed meal) but do not fertilize after May 1st or when bulbs begin to form – promotes excess leaf growth at the expense of forming bulbs.

Garlic needs continuous soil moisture, but not a soggy soil. The equivalent of 1 inch of rain per week is recommended – except for two weeks prior to harvesting. So, when the foliage begins to brown, stop watering.

Harvest garlic when about half of the foliage is brown. Lift the bulbs out carefully. Washing the bulbs is only necessary if you have a heavy clay soil. Dry the bulbs in the shade overnight and clean of excess dirt before curing. Cure garlic in a single layer or weave into braids (soft necks only) for 10-14 days in the shade with good circulation. The bulbs will lose about 20% of their weight when fully cured. If you leave garlic in the ground too long, the cloves will separate in the bulbs making them hard to clean and reducing storage time.

Garlic has been a cultivated crop for at least 5,000 years and is rich in history and folklore. Much of the folklore and writings about garlic involve its use as a medicinal plant. Only in recent times, has it been cultivated and marketed as a vegetable as well as a culinary herb. At larger farmers markets both garlic scapes and green garlic are sold as high value vegetable crops, but locally you will need to grow your own.

References:

[Garlic Production in New Mexico](#) – NMSU Extension Publication
[Garlic – Organic Production](#) – ATTRA Publication
[Garlic Seed Foundation](#) - An informed collection of growers and eaters

Sources of Garlic Seed:

[Seeds of Change](#) – New Mexico
[Potato Garden](#) – Idaho (they specialize in potatoes, but produce and sell excellent garlic)

Good Gardening and Good Eating,

Darrol Shillingburg, Doña Ana Extension Master Gardener
 October 2010



MASTER GARDENER MATTERS

—Monthly Meeting, September 22, 2010—

- ▣ **WELCOME**—(Jeff Anderson) Our next MG monthly meeting will be held at the Branigan Library's Roadrunner Room on October 13. From now on, our MG Monthly Meetings will occur on the second Wednesday of each month and, because we needed a larger meeting room, we will now be meeting at the Branigan Library. Our speaker on October 13rd will be David Cristiani who will be talking about landscape architecture.

Many of you received a letter requesting a donation that was sent out to MGs, but use of our mailing list for this sort of purpose is not allowed.

In the past, we have discussed having a checkbook for MG-related purchases, but a decision has been made not to do this. We cannot have any external accounts that do not go through the University. There are many legal complications if all expenses are not accounted for. The University is currently reviewing our account. We may be able to have a petty cash account with Debbie Romig in the MG office, but this still has to be decided. Karim Martinez will be meeting with Charlie Siepel, the district manager, about this issue and they will issue a statement to the MGs. Much discussion followed.

- ▣ **COMMITTEE/PROJECT REPORTS**

MG Hotline—(Pam Crane) There are many openings in October and November. We need a broader participation of MGs on the hotline. Many people are not signing up.

Newsletter—(Ann Shine-Ring) Ann said the Plant-of-the-Month for October will be the Bigtooth Maple and there will also be general information on planting and pruning trees, planting spring bulbs and the Weed Watch column will feature Bull and Musk Thistle. Darrol's article on vegetables will feature garlic. Ann also announced that El Paso County recently voted not to fund their contribution of \$200,000 for their Cooperative Extension Program.

Farmer's Market—(Barb Sallach) We are set up for the next three months. We need one more person for October and there is lots of room to sign up for November and December.

Lunch & Learn Presentation—(Sylvia Hacker) Sylvia reported that the Sept. presentation featured the NMSU Floral team demonstrating floral arrangements you can make from local plant material (see page 9 in this newsletter). Next month, the presentation will be Trees for All Seasons presented by Jeff Anderson. The November Lunch & Learn presentation will feature Pumpkins and Winter Squash.

Reminder, these presentations are scheduled for every third Thursday in the Roadrunner Room at the Branigan Library.

Mentoring Program—(Sylvia Hacker) This Program is now off and running. One of the students from our new MG class, Jana Melvin, attended our meeting.

Fall Garden Expo—(Ann Palermo) The Fall Expo will be held on Saturday, Sept. 25. The LC Bulletin wrote a beautiful article about it.

Fall MG Plant Sale—(Dixie LaRock, Betty Tomlin & Barb Sallach) Our Plant Sale made over \$600 last week.

Other Announcements—Our MG brochure has been printed. Copies will be available for distribution at the Expo and State Fair.

Juliet announced that Alberta Morgan, Certified MG, is in the hospital in Arizona. She has had her gall bladder removed, and is still in very serious condition. Please email her or you can send her Get Well cards to her home address as we do not know the address of the hospital. Address: 16285 Coyote Road SE, Deming, NM 88030 Email: mitzisami@gmail.com

Update: Alberta informed the MG Office that she will be getting out of the hospital and is hoping to return home by Friday, Oct. 8

Please turn in all your volunteer hours by the end of September. MG Interns, you have until the end of the calendar year to complete your minimum of 50 hours, but we need as complete a count as possible at the end of September for our reports.

- ▣ **OLD / CONTINUING BUSINESS**

Green Infrastructure Conference (August 26)—There was a very impressive assortment of speakers, both local and national, and the event was well attended. Topics included, storm water, green roofs, river restoration, etc.. MGs helped a lot. Doug Brown mentioned that LCPS has just voted to spend a great deal of money on solar installations for the public schools.

Butterfly Flutterby (August 21)—(Juliet Williams & Janice Servais) They had a great time, and a new butterfly plant was introduced, called the Boothill™ flower. It is literally a butterfly magnet. (See page 7 in this newsletter for an article on this plant.) FYI, after our meeting, Enchanted Gardens sold out of its supply of this plant, but Jackye plans on ordering more.

Hatch Chile Festival (Sept. 4 & 5)—(Mary Thompson) Mary stated that Sylvia Hacker, Myles Munoz, Betty Tomlin and Don Brown worked with her at the Festival. They all had a good time, but the music was too loud.

Pecan Short Course (Sept 8 & 9) Lynn Mosley attended the course. There was a field trip to the Young Pecan Processing Center near the Mall. It was a very interesting event with 85 people attending. It will probably be repeated in three years. Dr. Richard Heerema and Jeff planned the Course. It went really well, had great presenters, and good information was provided.

International Chile Conference (Sept 12 & 13)—It went very well, Jeanine Castillo and Jeff helped plan the Conference. The Hatch tour was really fun, and there were also tours to Deming for green chile, and locally for red.

2012 New Mexico MG State Conference (Dale Petzold)—This event is still in the early stages of planning. Dale asked for your input on ideas and suggestions for presentation topics and presenters. Send your comments to him at Email: dlpetzold04.08@gmail.com

Snacks: Thanks to Mona Nelson, Joan Woodward, and David Hutchinson and all the salsa chefs for our delicious snacks at the meeting. Next month, Ina Goldberg, Mike Lee and Juliet Williams will be the goodie makers.

MASTER GARDENER MATTERS-Continued

—Monthly Meeting, September 22, 2010 Continued —

▣ **EDUCATIONAL PRESENTATION: REALLY CHILE** Dr. Paul Bosland, Presenter

Since our meeting was held at the Fabian Garcia Garden, Dr. Bosland told us about who Fabian Garcia was. Garcia was a student in the first class at NMSU. He introduced pecans to the Mesilla Valley and he also introduced sweet Grano onions (from Spain) to the area. In an effort to establish Chile as a commercial crop and develop a variety that would be attractive to “gringos”, Garcia bred three local Chile types from various parts of the state to develop the mild green chile we now grow. This Chile pepper was then taken to California by Emilio Ortega, who grew them in Anaheim, thus creating the Anaheim Chile now sold by his company.

- Anaheims are milder than the same varieties grown in NM because our weather puts stress on the plants and that causes them to get a little hotter. This can happen with any variety if it gets stressed.
- Red chiles without heat are now widely used for paprika and for red food coloring and have become a growing market here.
- Machine harvesting is coming in for jalapenos and red chile, but has not been perfected for green chile because they damage more easily.
- The Demonstration Garden was planted for the International Chile Conference and contains over 200 varieties. It is open to the public every day from 8-5.
- A question about heat. Do chiles get hotter when stored in the freezer? The answer is “yes,” because the veins, where the oil (and heat) reside, come into contact with the chile walls and the oil permeates the meat.
- A question about local varieties. In northern NM there are many local varieties, some of which go back many hundreds of years. But there no local varieties in southern NM.
- The wild Chiltepin, the original chile, is growing in the Demonstration Garden.
- Bhut Jolokia is being grown here in limited quantity. It doesn't really grow well here, has poor yield and is slow to mature, so it will probably not become a commercial crop. Seeds are available through the Chile Pepper Institute and seedlings are available in the spring at the Institute's sale.

We then moved out to the garden where Dr. Bosland talked about various types of Chiles and how and why they were bred. He also talked about how Scoville units are measured and the complexities of Chile heat, how and where it hits the tongue, how fast it hits and how long it lasts. Different cultures around the world prefer different heat profiles.

Next MG Business Meeting—Wednesday, October 13, 2010

Bonnie and Juliet



OCTOBER MG BIRTHDAYS

| | |
|-----------------|------------|
| Dee McNutt | October 1 |
| Alberta Morgan | October 1 |
| Juliet Williams | October 4 |
| Mary Thompson | October 14 |
| Myles Munoz | October 18 |

MANY THANKS FOR THE GOODIES
We appreciate your thoughtfulness

| | |
|------------------------|-------------------------|
| <u>October Goodies</u> | <u>November Goodies</u> |
| Ina Goldberg | Ann Shine-Ring |
| Juliet Williams | Linden Ranel |
| Mike Lee | Mary Thompson |

Deadline for submitting articles and information for the November 2010 MG newsletter will be Thursday, October 28th

Contact Info:
Ann Shine-Ring, Editor
asring@hughes.net
(575) 640-7177

(Hotline assignments listed were current as of 9/29/10)

MGs & Interns please notice that there are plenty of open spots in October & November

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. Thank you.

MG Hotline Assignments for October

Friday, Oct. 1 Dixie LaRock
 _____ (I)
 _____ (I)

Tuesday, Oct. 5 David Hutchinson
 Betty Tomlin
 Beth Paris (I)

Friday, Oct. 8 Dale Petzold
 _____ (I)
 _____ (I)

Tuesday, Oct. 12 Colette Bullock
 Jodi Richardson (I)
 Russ Boor (I)

Friday, Oct. 15 Ina Goldberg
 _____ (I)
 _____ (I)

Tuesday, Oct. 19 Betty Tomlin
 Sylvia Hacker (I)
 Beth Paris (I)

Friday, Oct. 22 David Hutchinson
 _____ (I)
 _____ (I)

Tuesday, Oct. 26 Mary Thompson
 Sylvia Hacker (I)
 Russ Boor (I)

Friday, Oct. 29 Doug Brown
 Nancy DeLouise
 _____ (I)

MG Hotline Assignments for November

Tuesday, November 2 Doug Brown
 Beth Paris (I)
 _____ (I)

Friday, November 5 Ina Goldberg (MG)
 _____ (I)
 _____ (I)

Tuesday, November 9 _____ (MG)
 Russ Boor (I)
 _____ (I)

Friday, November 12 _____ (MG)
 Linda Schukei (I)
 _____ (I)

Tuesday, November 16 _____ (MG)
 Beth Paris (I)
 _____ (I)

Friday, November 19 Tom Packard
 Linda Schukei (I)
 _____ (I)

Tuesday, November 23 _____ (MG)
 _____ (I)
 _____ (I)

Friday, November 26 Thanksgiving Holiday

Tuesday, November 30 _____ (MG)
 Beth Paris (I)
 _____ (I)

Next Monthly Meeting of the
 Doña Ana County Master Gardeners
 (We are now meeting on the 2nd Wednesday of every month)

* * *

Wednesday, October 13 @ Branigan Library
 Roadrunner Room, 2nd Floor
 9am-11am