



Doña Ana County Master Gardener Monthly Magazine

- Doña Ana & Luna Counties
- U.S. Department of Agriculture
- NMSU College of Agricultural, Consumer and Environmental Sciences

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Beginning our **8th Year** of Providing
 Gardening-Related Information & News

• **JANUARY 2017** •

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PLANT-OF-THE-MONTH

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OSAGE-ORANGE SHRUB/TREE

(*Maclura pomifera*)

Growing into a large shrub or small tree, the Osage-Orange can reach up to 40-50 feet high with deeply furrowed bark and thorny branches. The species is *dioecious*—each individual tree is either male or female. Small green flowers appear on female trees in May or June, maturing into large fruits that ripen and begin to fall to the ground in September and October. Leaves are 2 to 5 inches long and 0.75 to 2.5 inches wide and have entire margins. Leaf blades are dark green, smooth and waxy above; paler green with a few hairs beneath. A short, thick thorn grows from the twig where the leaf emerges. The color turns translucent yellow in the fall.

The trunk of Osage-Orange is usually short and divides into several prominent limbs with upward arching branches. The root system is diffuse and covers large areas with its lateral spread.

Osage-Orange belongs to the *Moraceae*, or Mulberry family. The botanical name, *Maclura pomifera*, comes from William Maclure (1763–1840) an early American geologist; and *pomifera* which means “fruit-bearing” for the large fruits that it produces on the female trees.

Article Continues on Page 2

Master Gardener Hotline Contact Data

(November 29, 2016 through December 29, 2016)

# Total Contacts	6	Geographic Area	Subject of Inquiry
# Total Issues Addressed	17	Las Cruces	4 Animals 0 Irrigation 3
Ethnicity of Contacts		Chaparral	1 Disease 1 Lawns 1
Hispanic Females	0	No information	1 Fertilizer 1 Shrubs 1
Hispanic Males	1		Flowers 0 Soil 0
Non-Hispanic Females	2		General Info 1 Trees 3
Non-Hispanic Males	3		Herbicides 0 Veggies 1
Asian Female or Male			Insecticides 2 Weeds 0
Black/African Male			Insects 1 Misc.* 2

(*pruning schedule for lantana (1), bulb planting schedule (1), nematodes as insecticide (1))

Osage-Orange—Continued From Front Page

The Osage-Orange is also sometimes called 'hedge apple' or simply 'hedge', a reference to both its fruit and its qualities as a tenacious property marker. *Although part of the Mulberry family rather than a citrus, its aromatic fruit, when ripe, emits an odor reminiscent of orange peel.*

HISTORY Long before Europeans set foot on the American continent, native tribes were using the wood of the Osage-Orange for archery bows and handles. Highly sought after as a barter item, the bows were traded widely, being used by tribes as far away as the Shawnee of Ohio and the Blackfoot of Montana.

The French found the Osage Indians making bows from the wood and called it Bois d'Arc (meaning wood of the bow).

Early explorers and frontiersmen quickly adopted use of the wood, finding it ideal for wagon wheels and cattle yokes, as well as mine support timbers, posts and many other uses where decay resistance was important. Soon the settlers began planting the trees as windbreaks, and as living fences to mark their property boundaries.

After Lewis and Clark encountered an Osage-Orange specimen on their great expedition westward, they sent slips of the tree back to the nation's capital. In a letter to President Thomas Jefferson, Meriwether Lewis remarked on the natives' "extravagant account of the exquisite odor of this fruit when it has obtained maturity."

Osage-Orange was first cultivated in the south in the early 1800's. It was brought north by Professor Jonathan Turner, a biology teacher at Illinois College, and promoted as a living fence by John Wright, editor of *The Prairie Farmer*. By 1847 Turner was convinced that Osage-Orange was the best fencing material available. He described it as "horse high, bull strong and pig tight" and it functioned as a "hedge" fence long before the invention of barbed wire.



By the 1850's Osage-Orange hedges made the fencing of entire farms possible. When pruned as a hedge, thorny Osage-Orange forms a barrier impenetrable to both humans and livestock. Even after the invention of barbed wire eliminated the need for such plantings, the tree's wood continued to prove useful. Its other applications included fence posts and railroad ties, because its density made it impervious to decay or termites.

NATIVE RANGE At one time, the Osage-Orange tree grew solely in one distinct area of North America -- the Red River Valley of southern Oklahoma and northern Texas. Named for the Osage tribes of that region, the tree's range has extended far beyond its original home within the span of only a few hundred years. It has, in fact, become one of the most widely and successfully distributed species in the entire U.S.

Today, Osage-Orange can be found naturalized across most of the eastern U.S. and into the Great Plains states. Some populations exist even farther west, where they were planted along settlement trails by pioneers making their way across the Western frontier.

Osage-Orange has been planted as a hedge in all 48 conterminous States and in southeastern Canada. The commercial range includes most of the country east of the Rocky Mountains, south of the Platte River and the Great Lakes, excluding the Appalachian Mountains.



USES: Osage-Orange produces no saw timber, pulpwood, or utility poles, but it has been planted in greater numbers than almost any other tree species in North America. It made agricultural settlement of the prairies possible (though not profitable), led directly to the invention of barbed wire, and then provided most of the posts for the wire that fenced the West.

Osage-Orange heartwood is the most decay-resistant of all North American timbers and is immune to termites. The outer layer of sapwood is very thin; consequently, even small-diameter stems give long service as stakes and posts. About 3 million posts were sold annually in Kansas during the early 1970's. The branch wood was used by the Osage Indians for making bows and is still recommended by some archers today.



Additionally, Osage-Orange bark was used for leather tanning and cloth dye (yarn shown above). During WWI, when chemical dyes were in short supply, Osage-Orange provided the coloring agent for the G.I.'s drab khaki uniforms. In addition, its heartwood, bark, and roots contain many extractives of actual and potential value in food processing, pesticide manufacturing, as well as dye making.

Osage-Orange is also used in landscape design, being picturesque rather than beautiful, and possessing strong form, texture, and character. Recently, Osage-Orange has been studied for the chemical properties it contains that may be of economic importance. Oil extracted from the seeds has been tested for its potential as biodiesel. The *isoflavone pomiferin* has been studied for its antioxidant activity. Osage-Orange has also had *proteolytic* enzymes recently discovered in its fruit.

Article Continues on Page 3

Osage-Orange—Continued From Page 2

PLANTING & MANAGEMENT Osage-Orange is easy to plant and establish from seed. Fruit should be collected in the fall and allowed to naturally decay for several months. Seeds can be extracted from the fruit by maceration in water and floating screening off the pulp.



Osage-Orange averages about 200 to 300 seeds per fruit. Cleaned seed per pound averages about 14,000. Since Osage-Orange has a slight dormancy problem it may require a short pre-chill to initiate germination. A 30 to 45 day stratification at 40°F is usually sufficient to break dormancy and allow seed germination. Seeds extracted from fruit that has fermented over winter in a cold state do not need stratification in the spring.

Seeds (shown above) may be drilled in rows 8 to 12 inches apart, or in bands 3 to 4 inches wide. They should be covered with ¼ to ½ inches of soil. Fall-seeded beds should be mulched while spring-seeded beds do not need to be mulched.



FRUIT The round, dense, wrinkled-looking fruits (shown above) are yellowish-green on the outside. Inside, they are filled with stringy flesh, white seeds and sticky white juice (see above). Measuring 6 inches in diameter, the large balls become quite noticeable in autumn, persisting on the stems even after the tree's bright yellow autumn leaves have fallen.

Inedible to humans and little eaten by animals except for squirrels, the fruit of the Osage-Orange has long had a reputation as a natural pest repellent. Studies have shown that although the fruits do contain compounds that repel insects, they are in too low a concentration to be useful. If you're collecting the fruit for fall decoration, it's a good idea to wear gloves, since the milky juice of the stems and fruit can irritate the skin.

INVASIVE POTENTIAL Osage-Orange has the potential to invade areas abused by poor management and the overgrazing of pasture and range land. This plant may become weedy or invasive in some regions or habitats and may displace desirable vegetation if not properly managed.

ROOT ROT ISSUES The most important disease of Osage-Orange is **Texas root rot** caused by *Phymatotrichum omnivorum*. A six-year study of shelterbelt plantings in Texas and Oklahoma revealed a 6.8 percent loss of seedlings of Osage-Orange to Texas root rot. A result of this study was that Osage-Orange was not recommended for use on any soil type in the root rot belt. ■

**OSAGE-ORANGE FACTS**

- Family:** Moraceae (Mulberry)
Category: Perennial **Type:** Tree/Shrub
Other Names: Hedge apple, horse-apple, hedge, bodark, Bois d'Arc yellow wood, mock-orange, and bow-wood.
- Native Range:** At one time, it grew solely in one distinct area of North America -- the Red River Valley of southern Oklahoma and northern Texas. Named for the Osage tribes of that region, the tree's range has extended far beyond its original home within the span of only a few hundred years. It has, in fact, become one of the most widely and successfully distributed species in the entire U.S.
- Height:** To over 40 feet **Spacing:** 30-40 feet
Hardiness: In Zones 9a-b, to 20°F -25°F
Sun Exposure: Sun to partial shade
Water: Water regularly; do not overwater
Bloom Time: Mid-summer **Bloom Color:** Pale Green
Foliage: Deciduous; shiny/glossy-textured
Foliage Color: Blue-green; chartreuse/yellow
Growth Period: Grow outdoors year-round
Soil pH: 6.6 to 7.5 (neutral)
Danger: Parts of plant are poisonous if ingested; plant has spines or sharp edges; use extreme caution when handling
- Propagation:** Woody stem cuttings; from seed; and direct sow after last frost
- Seed Collecting:** Unblemished fruit must be significantly overripe before harvesting seed; clean and dry seeds; wear gloves to protect hands when handling seeds

REFERENCES FOR OSAGE-ORANGE

- (The) Health Benefits of the Osage Tree**, by Dr. Edward Group on the 'Global Healing Center website' at link: <http://www.globalhealingcenter.com/natural-health/health-benefits-of-the-osage-tree/>
- (The) Osage Orange Tree: Useful and Historically Significant** on 'Mother Earth News' at link: <http://www.motherearthnews.com/organic-gardening/osage-orange-tree-zmaz85zsie>
- Osage Orange Plant Fact Sheet**, 'USDA NRCS' at link: https://plants.usda.gov/factsheet/pdf/fs_mapo.pdf
- Osage Orange, an American Original** by Gwen Bruno, on 'Dave's Garden.com', Sept. 29, 2016 at link: <http://davesgarden.com/guides/articles/printstory.php?rid=4413&bn=%2Farticles%2Fview%2F4413>
- Osage Orange, Bois d'arc, Bodock Tree, Horse Apple, Hedge Apple, Maclura pomifera** on 'Dave'sGarden.com' at link: <http://davesgarden.com/guides/pf/print.php?pid=54097>
- Osage-Orange** (*Maclura pomifera* (Raf.) Schneid.) by J.D. Burton at link: https://www.na.fs.fed.us/pubs/silvics_manual/Volume_2/maclura/pomifera.htm

WATER-WISE PLANTS



Aeonium (Aeonium species)

Sources: *Aeonium* in 'Water-Wise Plants for the SW' by N. Sterman, M. Irish, J. Phillips and J. Lamp'l, Cool Springs Press, 2007.

And *NM Gardener's Guide*, by J. Phillips, Cool Springs Press, 2004

Zones: 9-11

Form: Some low, spreading clumps of rosettes, some tall-stemmed rosettes

Growth & Mature Size: Fairly fast-growing evergreen succulent to 1½ to 4 feet x 1 to 3 feet.

Uses: Midground, accent, water-wise perennial gardens, borders, rock and succulent garden

Soil: Prefers well-drained soils

Pests: None

Description: Gardeners are often challenged to keep their gardens interesting between bloom seasons. One approach is to incorporate evergreens with interesting leaf colors and textures. Aeoniums are just those plants.

Aeoniums form rosettes of spoon-shaped leaves that, at first glance, look like big succulent flowers. Some Aeoniums have bright green leaves; some are a deep burgundy, almost black. Then there are Aeoniums with leaves of all shades and variations in between. In summer, Aeoniums form stalks of tiny yellow flowers that are nice, but less impressive than their leafy rosettes. Most Aeoniums multiply by making side roots (pups), many forming broad colonies.

Cultivation:

- Aeoniums go into suspended animation in summer, so water sparingly or your plants will rot.
- The rains that arrive during their winter growing season should take care of their water needs, but water occasionally during a dry winter.
- No fertilizer is needed.
- Groom plants to remove dead leaves and spent flower stalks.
- There is no need to prune, but you can remove branches to shape.

Shared Spaces

- Aeonium are the mainstay of many succulent gardens. You can also use them in combination with other water-wise plants.
- Use 'Sunburst' to light up deep green 'Cape Rush'.
- Plant burgundy 'Zwartkopf' next to bright green-leaved Jerusalem Sage, Red-Hot Poker, and drought-tolerant sages.
- Insert stems of Aeonium into cracks in stonewalls or plant them in containers. They look especially good in aged terracotta.



'Sunburst'



'Zwartkopf'



'Blushing Beauty'



'Cyclops'

Other Species and Cultivars:

- One of the most beautiful Aeoniums, 'Sunburst', has pale yellow leaves striped in green and edged in pink.
- *A. arboreum*, 'Zwartkopf' grows 3 to 4 feet tall with nearly black rosettes.
- 'Blushing Beauty' leaves are green with red blushing.
- 'Cyclops' is a 4 to 5 foot tall stem topped by a single rosette of deep burgundy and green leaves.
- '*A. undulatum*' forms a low colony of 8-inch bright green rosettes.
- 'Dinner Plate Aeonium' (*A. tabuliforme*) forms rosettes only 2 inches tall that spread up to 18 inches in diameter, hence the name. This most striking Aeonium is best grown in a wide container. ■



'Dinner Plate' Aeonium

TROPICAL PLANTS of INTEREST



Kukui Tree (Candlenut Tree)

(Aleurites moluccana (L.) Willd.

The Kukui tree was designated as the official state tree of Hawaii in 1959. Its blossom is also the official Island flower of Moloka'i. The Kukui is also called the Candlenut tree because the nut of the Kukui was used for candles by early settlers. This species is not native to Hawaii, originating in Polynesia. It was apparently introduced by the early Hawaiians for the large nut-like elliptical, hard, oily seeds, for which many uses have been found.

The Kukui is recognized from a distance by its silvery green or grayish foliage. This large spreading tree (shown above) is common in moist lowland mountain forests throughout the Hawaiian Islands. Its large long-stalked leaves are mostly three- or five-lobed and have five or seven main veins from base.

PLANT FACTS

- Large evergreen forest tree to 80 feet tall and 3 feet in trunk diameter, sometimes larger, with broad spreading or irregular crown.
- Bark is gray brown, smoothish with many thin fissures. Inner bark with dark red outer layer and brown within, tasteless, with thin whitish slightly bitter sap or latex.
- Twigs stout, greenish when young, becoming brown. Young leaves, young twigs, and flowering branches are densely covered with tiny whitish or rusty brown star-shaped and scaly hairs, which produce the distinctive gray color of foliage.
- The wood is white, lightweight, soft, and of fine to coarse texture, the fine-textured type having the appearance of holly (Ilex) wood. It is usually colored by blue stain fungi before conversion to lumber and is not resistant to decay or insects.
- Flower clusters are terminal, much forked, hairy, long and broad, bearing many white flowers about 3/8 inch long, mostly male and few female toward base (monoecious).
 - Male flowers many, consisting of rounded hairy calyx 1/8 inch long, splitting into two or three lobes, corolla of five white petals 5/16 inch long, and 15–20 stamens.
 - Female flowers few, composed of calyx, corolla, and pistil with hairy round two-celled two-ovuled ovary and two styles each two-forked.
- Stone fruits rounded, greenish to brown, 1.5 to 2 inches in diameter, borne singly on stout stalks, leathery and slightly fleshy, not splitting open. Seeds 1–2, elliptical, about 1 inch long, with hard, rough black shell.

HISTORY

- The wood is not currently utilized but was used by the early Hawaiians for lightweight canoes and fishnet floats.
- Because of its low durability, Kukui is an excellent host for the edible bracket fungus *pepeiao akua* (*Auricularia polytricha*). During the 1800s, Chinese immigrants developed an industry of growing *pepeiao* on felled Kukui logs for local consumption and shipment to China. A large amount of Kukui was destroyed to support this industry.
- Kukui was made the official tree of the State of Hawaii in 1959 because of its many uses by ancient Hawaiians for light, fuel, medicine, dye, and ornament, as well as the distinctive beauty of its light-green foliage, which embellishes many of the slopes the Hawaiian mountains.
- Hawaiians had many uses for the big seeds, which are borne in large quantities—as many as 75–100 pounds annually—by a large tree. The seed shells, black when mature and white earlier, were made into leis and now into costume jewelry and curios (shown below).



- After roasting and shelling, the oil seeds were strung on a piece of coconut midvein for torches or candles, as the English name indicates. Oil pressed from the seeds was burned in stone lamps and, mixed with soot, used as paint. It has been extracted commercially for use as a drying oil in paints and varnishes, and for medicines. Long ago, as many as 10,000 gallons of oil were exported annually, but the high cost of labor, even in early times, made the industry unprofitable.
- The oil cake served as fertilizer and as cattle food. The raw seeds are reported to be toxic or purgative and should be eaten only in moderation. However, roasting or cooking apparently reduces the danger.
 - The Hawaiians ate the roasted kernels with seaweed (limu) and salt as a condiment called 'inamona, which tastes somewhat like peanuts.
 - The whitish sap or latex, like a gum or resin, served as a folk remedy and was painted on tapa or bark cloth to make it more durable and waterproof.

DISTRIBUTION

Native to Malaysia, Polynesia, Malay Peninsula, Philippines and South Seas Islands; now widely distributed in tropics. Naturalized or cultivated in Malagasy, Sri Lanka, southern India, Bangladesh, Brazil, West Indies, and Gulf Coast of United States

Kukui is common as a wild tree in moist lowland forests from sea level to 2,200 feet altitude throughout the Hawaiian Islands. Also planted as a shade and ornamental tree, Kukui along with Koa, was one of the first trees planted widely by the Division of Forestry as watershed cover. The extensive stands in the gullies of the Honolulu Watershed Forest Reserve resulted from those plantings begun in 1904. The Division of Forestry records the planting of 16,000 Kukui throughout the islands.

Article Continues on Page 6

Kukui Tree – Continued From Page 5**Kukui Flower****CURRENT USES:**

- Kukui seed yields 57% to 80% of inedible, semi-drying oil, liquid at ordinary temperatures, solidifying at -15°C , containing *oleostearic acid*. This oil which is quicker drying than linseed oil, is used as a wood preservative, for varnishes and paint oil, as an illuminant, for soap making, waterproofing paper, rubber substitutes and insulating material.
- This oil is painted on bottoms of small crafts to protect against marine borers. Tung oil, applied to cotton bolls, stops boll weevils from eating them. Also prevents feeding by striped cucumber beetle.
- Seeds are moderately poisonous and press cake is used as fertilizer.
- Kernels when roasted and cooked are considered edible; may be strung as candlenuts.

FOLK MEDICINE

- Kukui bark was used on tumors in Japan.
- The oil is purgative and sometimes used like castor oil. Kernels are laxative stimulant, and sudorific.
- The irritant oil is rubbed on the scalp as a hair stimulant.
- In Sumatra, pounded seeds, burned with charcoal, are applied around the navel for those affected with constipation.
- In Malaya, the pulped kernel enters poultices for headache, fevers, ulcers, and swollen joints.
- In Java, the bark is used for bloody diarrhea or dysentery. Bark juice with coconut milk is used for sprue (a disease of small intestine).
- Malaysians apply boiled leaves to the temples for headache and to the pubes for gonorrhea. ■

KUKUI/CANDLENUT TREE REFERENCES

50 State Guide – eRD at link: <http://www.ereferencedesk.com/support/>

Common Forest Trees of Hawaii (Native and Introduced) This information is from Agriculture Handbook no. 679 by Elbert L. Little Jr. and Roger G. Skolmen, published by the Forest Service, U.S. Dept. of Agriculture, in 1989. Link: http://www.ctahr.hawaii.edu/forestry/trees/CommonTreesHI/CFT_Aleuries_moluccana.pdf

Kukui, Hawaii State Tree at link:

<http://www.statesymbolsusa.org/symbol-official-item/hawaii/state-tree/kukui>

Tropical Trees of Hawaii, Dorothy & Bob Hargreaves, 1964, Hargreaves Publishing

**GARDENER'S GUIDE TO FROST**

Source: National Gardening Association

Author: By Eliot Tozer, June 23, 2008

*** Do Consider Dew**

The dew point is the temperature at which the air is totally saturated with moisture. Television and radio meteorologists may state the dew point temperature during routine forecasts.

The more moisture the air contains, the higher the temperature will be when the moisture starts to condense as dew, producing heat. And, obviously, the higher the temperature, the less chance of frost. For example, a dew point of 43°F almost certainly means no frost that night.

Interestingly enough, frost is more likely to form on a dry evening when the air temperature is a warmish 50°F and the dew point is a low 33°F than when the air temperature is a cooler 43°F and the dew point is 41°F .

*** Know Your Plants**

The plant itself determines the likelihood of frost damage. Immature plants still sporting new growth into the fall are most susceptible -- especially the new growth. Frost tolerance tends to be higher in plants with maroon or bronze leaves, because such leaves absorb and retain heat. Downy- or hairy-leaved plants also retain heat and reduce wind-drying of the leaves. Compact plants expose a smaller proportion of their leaves to cold and drying winds. By the same token, closely spaced plants protect each other.

*** What's a Gardener To Do?**

So you've checked the weather conditions and decide that, yes, Jack Frost is coming and that protecting your plants is worthwhile.

You'll want to do two things:

- First, cover your plants, both to retain as much soil heat and moisture as possible and to protect them against strong winds, which can hasten drying and cooling. Use almost anything to cover plants: newspapers, bushel baskets, plastic tarps, straw, or pine boughs. Spun-bonded fabric row covers will protect plants down to 30°F , polyethylene row covers to 28°F . Cover the whole plant before sunset to trap any remaining heat. Lightweight coverings such as row covers and newspaper should be anchored to prevent them from blowing away.
- Second, keep the soil moist by watering your plants the day the frost is predicted. Commercial fruit and vegetable growers even leave sprinklers on all night to cover plants with water. As the water freezes, it releases heat, protecting the plants, even though they're covered in ice. To prevent damage, the sprinklers need to run continuously as long as temperatures remain below freezing.

Article Continues on Page 7

Gardener's Guide To Frost—Continued From Page 6*** Feel the Breeze**

Wind also influences the likelihood of frost. In the absence of wind, the coldest air settles to the ground. The temperature at plant level may be freezing, even though at eye level it is above freezing. A gentle breeze, however, will prevent this settling, keep temperatures higher, and save your plants. Of course, if the wind is below freezing, you'll probably have fried green tomatoes for tomorrow's supper.

*** Check the Moisture**

Just as clouds and gentle winds are your friends, so are humidity and moisture. When moisture condenses out of humid air, it releases heat. Not much heat, true, but perhaps enough to save the cleomes. If the air is dry, though, the moisture in the soil will evaporate. Evaporation requires heat, so this process removes warmth that could save your peppers.

*** Check Your Garden's Location**

This can have a tremendous influence on the likelihood that early frost could wipe out your garden while leaving your next-door neighbor's untouched. For example, as a general rule, temperature drops 3°F to 5°F with every 1,000-foot increase in altitude. The higher your garden, the colder the average air temperature and the more likely your plants will be hit by an early freeze. So gardening on a hilltop isn't a great idea, but neither is gardening at the lowest spot on your property. Since cold air is heavier than warm air, it tends to sink to the lowest area, causing frost damage. The best location for an annual garden is on a gentle south-facing slope that's well heated by late-afternoon sun but protected from blustery north winds. A garden surrounded by buildings or trees or one near a body of water is also less likely to be frosted.

It's late fall. The sky is blue, and the sun is bright. Then your local weather forecaster ruins everything with these chilling words: "Possible frost tonight." Once the initial panic subsides, reason sets in. Frost is a local event, and it's possible to predict with considerable certainty whether it will hit the plants in your garden. So relax, walk outside, and pay attention to these six signs to predict the likelihood of frost. Then, if necessary, spring into action.

*** Look Skyward**

Clear, calm skies and falling afternoon temperatures are usually the perfect conditions for frost. Frost (also called white or hoar frost) occurs when air temperatures dip below 32°F and ice crystals form on the plant leaves, injuring and sometimes killing tender plants. However, if temperatures are falling fast under clear, windy skies -- especially when the wind is out of the northwest -- it may indicate the approach of a mass of polar air and a hard freeze. A hard, or killing, frost is based on movements of large air masses. The result is below-freezing temperatures that generally kill all but the most cold-tolerant plants.

But if you see clouds in the sky -- especially if they are lowering and thickening -- you're in luck. Here's why. During the day, the sun's radiant heat warms the earth. After sunset, the heat radiates upward, lowering temperatures near the ground. However, if the night is overcast, the clouds act like a blanket, trapping heat and keeping air temperatures warm enough to prevent frost.

*** Scrutinize the Soil**

Your garden's soil type can affect the amount of moisture it holds and the plants' ability to withstand cold weather. Deep, loose, heavy, fertile soil releases more moisture into the surrounding air than thin, sandy, or nutrient-poor soil. The more humid the air, the higher the dew point and the less likely that frost will form on those plants. Heavily mulched plants are more likely to be frosted, since mulch prevents moisture and heat in the soil from escaping and warming the surrounding air. (Light-colored mulches such as hay or straw have the additional disadvantage of reflecting sunlight and heat during the day.)■

*This article was provided by
Dale Petzold, Certified Master Gardener*



Critters



Bulb Rot Disease

Avoiding & Solving Common Bulb Problems

National Gardening Association | June 2008

Follow these steps to prevent problems in your bulb patch.

- o Check bulbs before buying or planting: Make sure they're firm and free of corky lesions, mold, and soft spots. Plant in well-drained soil.
- o Plant in soil where disease hasn't been a problem.
- o Provide at least half a day of sun. Full sun is best in cool climates, but midday and afternoon shade are needed in hot climates.
- o Protect from pest animals.
- o Plant at correct **depth**.
- o Plant at correct **time**.
- o Mulch at proper time.
- o Buy the right varieties for your area's USDA Climate Zone.
- o Water after planting to jump-start root growth.
- o Fertilize at planting and during spring growth period.

Tools and Materials The table below lists seven of the most common problems associated with crocus, daffodil, hyacinth, and tulip bulbs, see text below for recommended solutions.

Problem	Bulbs affected	Possible cause
Buds, leaves, blossoms eaten	Crocus, tulip	Deer, squirrels, rabbits, chipmunks
Bulbs are being dug up	Crocus, daffodil, hyacinth, tulip	Squirrels, chipmunks, skunks
Bulbs seem to disappear from the ground	Crocus, tulip	Mice, voles, gophers, chipmunks
Growth starts even though cold winter weather is still expected	Crocus, daffodil, hyacinth, tulip	Unseasonably warm weather
Leaves appear, but plants don't bloom	Crocus, daffodil, hyacinth, tulip	Not enough chilling; leaves removed too soon the previous year; poor soil fertility; not enough sun; some tulips are short-lived
Blossom stalks are short	Daffodil, hyacinth, tulip	Not enough chilling; unseasonably warm winter and spring temperatures
Over the years, fewer plants and blossoms appear	Crocus, daffodil, hyacinth, tulip	Decline due to overcrowding, poor soil fertility, increasing shade

Bulbs, leaves, blossoms eaten.

- Plant daffodils instead; they are unpalatable to animals.
- To deter smaller animals, use commercial or homemade repellents or scare tactics (dog or cat hair spread around bulb bed; hot pepper spray, flash tape or aluminum pie tins on twine, plastic scare owls or hawks).
- If deer are the problem, try a commercial deer repellent, or grow bulbs under protective netting supported by metal hoops or a wooden frame.

Bulbs are being dug up.

- Squirrels and chipmunks love to feast on crocus and tulip bulbs. Skunks dig in search of insects and worms but may also be attracted to organic fertilizers such as bone meal, fish, or peanut meal.
- After planting, place hardware cloth, chicken wire, or other protective barrier over soil, and secure it in place. If skunks, cats, and dogs are troublesome, use well-decomposed organic amendments when planting.

Bulbs seem to disappear from the ground.

- If animals are the culprit, plant daffodils, which animals find inedible.
- To prevent pest animals from damaging bulbs, plant in an underground chicken wire cage. You can fashion your own, or purchase them ready-made.
- Dry soil hinders root growth, causing bulbs to die and decompose instead of growing. Water well after planting, and roots should begin growing.

Growth starts even though cold winter weather is still expected.

- If bulbs haven't blossomed, they should weather the winter fine. Any blossoms and buds that emerge may suffer cold damage.
- Next fall, mulch the bulb bed just after the ground freezes in cool climates, and as temperatures reach winter time levels in warm climates.

Leaves appear, but plants don't bloom.

- In warm climates, choose varieties with low chilling requirements, and chill bulbs before planting. Allow leaves to remain in place until they fade completely. To hide fading foliage, plant companion annuals. If you aren't sure of a variety's longevity, ask the supplier before buying.
- To improve soil fertility, fertilize at planting time. Each year in spring when plants are growing, spread an inch of compost, or feed with a low-nitrogen bulb fertilizer according to package directions. Bulbs need at least half a day of sun while the leaves are green (however, in warmest climates, afternoon shade is recommended).

Article Continues on Page 9

Common Bulb Problems (Continued From Page 7)



Most animals, find daffodils unpalatable

Blossom stalks are short.

- Plant bulbs in the coolest area of your garden.
- In cool climates, mulch after ground freezes.
- In warm climates, plant low-chill varieties and mulch when winter temperatures are reached.

TIPS

- If bulbs have become crowded and are competing, dig and divide them. Reduce competition from surrounding plants by weeding and mowing regularly.
- To increase soil fertility, in spring when plants are growing, spread an inch of compost or feed with a low-nitrogen bulb fertilizer according to package directions.
- If shade has increased, thin tree branches or surrounding plants to allow at least half a day of sun in spring while the bulb leaves are green (in warmest climates, afternoon shade is recommended).



Why Aren't My Bulbs Blooming?

Garden Gate | Jim Childs | April 2015

Spring bulbs are so easy to plant that we often take them for granted—that is, until something goes amiss. To help you have the best possible spring show. I've done a little trouble-shooting. Let's take a look at **six reasons your bulbs may not perform to their full potential.**

#1 MULTIPLICATION PROBLEM

Foliage comes up and looks fine, but flower buds are missing or few and far between.

...What's Causing the Problem? The original bulbs you planted have divided and multiplied so they're too young or weak to bloom.



#1 MULTIPLICATION PROBLEM (Continued)

...What Can You Do?

- Dig up the crowded clumps and replant the bulbs. Set small one (an inch or less in length) 2 to 3 inches deep.
- Plant the rest 4 to 6 inches deep. Mix granular bulb food, such as 9-9-6, into the soil as you plant. Be patient; it takes several years for bulbs to mature.



#2 BLASTED BUDS?

The foliage is healthy and there are lots of buds, but they just never swell and open.

...What's Causing the Problem? This is referred to as "bud blast". Sometimes warm weather, lack of moisture or dry winds cause the developing buds of late cultivars to abort. While it can occur with any bulb, late double-flowering daffodils, such as 'Golden Ducat' shown above seem to have the most problems.

...What Can You Do? Check your local Extension Office for cultivars that are recommended for your area. If you're experiencing a dry and warm spring, make sure to keep the soil moist.



#3 WIMPING OUT?

A few years ago, the flowers were gorgeous. Over time, they have fewer blooms and less foliage and produce incomplete flowers.

...What's Causing the Problem? Several issues could be at play.

- It may be a particular bulb variety isn't long-lived or suited to your climate.
- Also, few bulbs can tolerate heavy clay soil, and ones planted in shade don't get enough light to feed the bulb for next year's blooms.
- Lack of nutrient influences the quality of flowering, too.

...What Can You Do?

- First, make sure you plant so the bulb foliage will be in full sun.
- Feed with a bulb food when you plant and side dress with more when the foliage emerges.
- If feeding doesn't help, check with your Extension Agency or ask other gardeners for the best cultivars for your area.

Article Continues on Page 10

Common Bulb Problems (Continued From Page 9)



#4 BULB STALKERS?

One day your bulbs have lush foliage and fat buds. The next time you stroll by, they are gone—eaten by critters, such as the one shown above.

...What's Causing the Problem? Many critters look forward to spring flowers as much as you do—just for a difference reason.

- Deer gnaw off the top of the plant.
- Squirrels are mostly curious, snapping off flowers and letting them fall
- Rabbits eat leaves, stems and flowers or may just leave them lying around.
- Even birds searching for nesting material may 'pick' some of your flowers as they start to open.

...What Can You Do?

- Fencing that blocks the pest's path, both above and below ground, can be effective but may distract from the blooms.
- Repellants that have an offensive taste or odor are an alternative, such as granular or spray Repels-All®. Start applying it according to the package directions when you see the foliage poking through the ground, and continue using it until the flowers finish.



#5 MISSING BULBS?

You marked the spot after planting, but all you have is bare soil come spring.

...What's Causing the Problem? The bulb has probably been eaten by rodents—voles and mice are the biggest culprits. Moles don't eat bulbs, but their tunneling leaves access for rodents to follow behind.

...What Can You Do?

- Plant bulbs in "cages" made of hardware cloth so critters can't get to them.
- No animals eat daffodil bulbs, so plant more of those to ease your worries.



#6 BRAND NEW BULB PROBLEM?

Bulbs, especially daffodils, flower but they bloom later and smaller than they're supposed to.

...What's Causing the Problem?

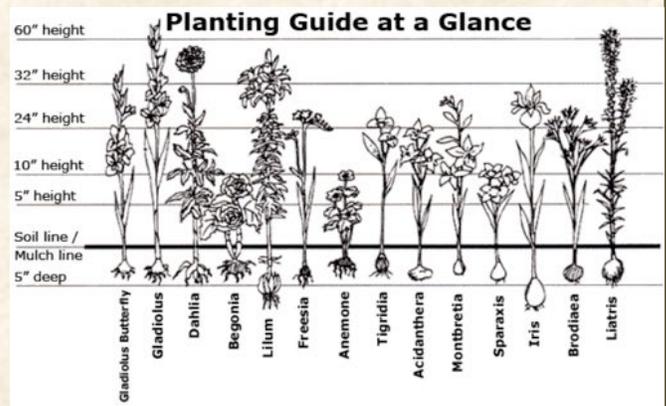
If you plant them later in fall than recommended, when the soil is very cold, they haven't set enough roots to support the fast spring growth

...What Can You Do?

The bulbs should correct themselves in future years. But do continue to sprinkle on a granular fertilizer every fall. ■



Spring Planting Guide



Source: Link: www.americanmeadows.com/



The Healing Power of Nature

Time Magazine | Alexandra Sifferlin | July 25, 2016

It sounded more like a lark than a scientific study when a handful of Japanese researchers set out to discover whether something special—and clinically therapeutic—**happens when people spend time in nature.**

They were inspired by a new recommendation from the Forest Agency of Japan, which in the early 1980s began advising people to take strolls in the woods for better health. The practice was called **forest bathing**, or **shinrin-yoku**, and it was believed to lower stress—but that hadn't been proved. Since then, **a large body of evidence has shown that spending time in nature is responsible for many measurable beneficial changes in the body.**

In one early study, Yoshifumi Miyazaki, a forest therapy expert and researcher at Chiba University in Japan, found that:

- *People who spent 40 minutes walking in a cedar forest had lower levels of the stress hormone cortisol, which is involved in blood pressure and immune system function, compared with when they spent 40 minutes walking in a lab. "I was surprised," Miyazaki recalls. "Spending time in the forest induces a state of physiologic relaxation."*
- *Another researcher, Dr. Qing Li, a professor at the Nippon Medical School in Tokyo, found that trees and plants emit aromatic compounds called phytoncides that, when inhaled, can spur healthy biological changes in a manner similar to aromatherapy, which has also been studied for its therapeutic benefits.*
- *In his studies, Li has shown that when people walk through or stay overnight in forests, they often exhibit changes in the blood that are associated with protection against cancer, better immunity and lower blood pressure.*
- *Recent studies have also linked nature to symptom relief for health issues like heart disease, depression, cancer, anxiety and attention disorders. "The quiet atmosphere, beautiful scenery, good smells and fresh, clean air in forests all contribute to the effects," says Li.*
- *Plants and trees release compounds that protect them from pests; when humans inhale those compounds, it promotes healthy—and measurable—biological changes.*



IT CAN LOWER BLOOD PRESSURE

- Spending time outside is good for the heart, research shows, and since high blood pressure costs the U.S. approximately \$48.6 billion per year and affects 1 in 3 Americans, visiting green spaces may be a simple and affordable way to improve heart health.
- A large June 2016 study found that nearly 10% of people with high blood pressure could get their hypertension under control if they spent just 30 minutes or more in a park each week. "If everyone were to make time for nature, the savings on health care costs could be incredible," says study author Danielle Shanahan, a research fellow at the University of Queensland in Australia. The fresh air could be one factor, since air pollution has been linked to a higher risk for heart attacks, but since the study participants lived in cities (and therefore were also being exposed to air pollution), that likely isn't the only driver.
- Scientists think stress reduction also plays a part. "Nature is undemanding," says Shanahan. "It requires effortless attention to look at the leaves of a tree, unlike the constant emails at work or the chores at home." Trees' natural fragrance may also play a role, as some studies have shown that phytoncides lower blood pressure by quelling the body's fight-or-flight response, which stresses the body.

EXPOSURE TO IT CAN INCREASE 'AWE'

- Looking at a stunning waterfall or undulating countryside can do more than enrich your Instagram feed: *it can also elicit feelings of awe that bring a number of health benefits.* In a 2015 study, researcher Paul Piff of the University of California, Irvine, found that people who spent 60 seconds looking up at towering trees were more likely to report feeling awe, after which they were more likely to help a stranger than people who looked at an equally tall—but far less awe-inspiring—building. "Experiences of awe attune people to things larger than themselves," says Piff. "They cause individuals to feel less entitled, less selfish, and to behave in more generous and helping ways."
- *The benefits of awe are physical too:* regularly experiencing moments of awe has been linked to lower levels of inflammatory compounds in the body.
- Everyday interactions with nature can also benefit. An April 2016 study of 44 cities found that urban areas with more parks scored higher on measures of community well-being. That's likely because parks give people opportunities to socialize and be active with their neighbors, which could improve health, the researchers say. *People in cities with lots of green space were more likely to report having more energy, good health and a sense of purpose too.*

Article Continues on Page 12

The Healing Power of Nature—Continued From Page 11**IT PROMOTES CANCER-FIGHTING CELLS**

- An April 2016 study published in the journal Environmental Health Perspectives reported that *women living in areas with a lot of vegetation had a 12% lower risk of death from all causes compared with people in the least green places*. That could be thanks to cleaner air, but nature may also offer its own medicine.
- Li's research at Nippon Medical School shows that when people walk through a forest, *they inhale phytoncides that increase their number of natural killer (NK) cells—a type of white blood cell that supports the immune system and is associated with a lower risk of cancer*. NK cells are also thought to have a role in combating infections and autoimmune disorders and tamping down inflammation, which contributes to a wide range of ailments, including heart disease and diabetes.
- In a 2010 study, researchers found that *people who took two long walks through forests on consecutive days increased their NK cells by 50% and the activity of these cells by 56%*. Those activity levels remained 23% higher than usual for the month following the walks.
- In another study, Li and his co-authors found that infusing people's hotel rooms with *phytoncides* had some of the same anti-cancer-cell effects as those seen among people walking through forests.

IT CAN HELP WITH DEPRESSION AND ANXIETY

Not surprisingly, urban dwellers are far more likely to have anxiety and mood disorders than people who live in rural areas. That's the bad news, since about 80% of Americans live in cities.

- The good news is that a small 2015 study published in the Proceedings of the National Academy of Sciences found that *people who walked for 90 minutes in a natural setting, such as a forest or a nature park, were less likely to ruminate—a hallmark of depression and anxiety—and had lower activity in an area of the brain linked to depression than people who walked in an urban area*.
- "Accessible natural areas may be vital for mental health in our rapidly urbanizing world," the study authors write. The exact mechanism of how nature helps mood disorders is unclear, but *researchers agree that at the very least, time in nature tends to lift spirits*. "When you have a short blast of nature exposure, people's moods go up," says Ming Kuo, an environment and behavior scientist at the University of Illinois at Urbana-Champaign.
- Another possibility is that *the air near moving water, forests and mountains contains high levels of negative ions, which are thought to potentially reduce depression symptoms*, according to a study in Frontiers in Psychology.

IT MAY HELP WITH ADHD SYMPTOMS

- Small studies in kids with attention-deficit/hyperactivity disorder (ADHD) have suggested that *nature walks could be a potential natural treatment to improve attention*. In one study, a team led by Kuo of the University of Illinois at Urbana-Champaign had kids with ADHD take three 20-minute walks, without their medication, in different locations: a park, a neighborhood and an urban area. When the researchers tested the children afterward, *they found that after a park walk, the kids were able to concentrate substantially better than after a walk in the other settings*.
- In a separate 2011 study, Kuo and her colleagues found that *children who regularly played in outdoor areas had milder ADHD symptoms*, according to their parents, than children who played indoors or in areas with less nature access. "Nature gives the part of the brain that's used in effortful concentration a rest," says Kuo. "If you spend time doing something mentally relaxing, you feel rejuvenated."
- *People without ADHD symptoms can also improve their attention and concentration by interacting with nature, evidence suggests*. One University of Michigan study found that people improved their short-term memory by 20% after a nature walk but had no changes after walking through city streets.

**EVEN FAKE NATURE HAS BENEFITS**

Before you start planning your escape to the countryside, consider this: "*There is plenty of evidence that you will get a range of benefits even if all you can manage is putting a plant in your room or looking at trees through your window at home*," says the University of Queensland's Shanahan.

- *Research shows that even if they're artificial, the images, sounds and smells of nature can have positive health effects*.
- Listening to nature sounds over headphones, for instance, has been shown to help people recover faster from stress—which might explain why so many spas employ nature sounds in their treatment rooms.
- Several studies have also shown that having a window view can improve attention, reduce stress and even help people in hospitals heal after operations.
- One widely cited study of people recovering from abdominal surgery found that those with tree-lined views were released faster from the hospital, experienced fewer complications and required less pain medication than people whose rooms faced a brick wall. ■

*This Article was provided by
Ruth E. Rose, Certified Master Gardener*



Amazing Air Plants

Melissa Ozawa | Garden Design Magazine
and Caleb Melchior | Horticulture Magazine

Tillandsias—an epiphytic genus commonly known as air plants—are no ordinary plants. Bulbous, feathery, or spiky—the poet Hart Crane called one an “inverted octopus with heavenward arms”—they make their home above ground, suspended in the air among trees, cacti, and rocky outcrops.

Found throughout the Americas, *tillandsias* comprise the largest genus of the *Bromeliad* family, with more than 450 recognized species, including the ethereal Spanish moss (*Tillandsia usneoides*), which drapes from the branches of live oaks in the Southern United States.

- Air plants put down no roots in the soil and receive nutrients and moisture through their leaves. They are quirky little plants that are easy to fit into any interior. For the most part they're very low maintenance, but there are a few tricks to their care, and one key step that will nearly ensure their survival.
- The plants range in size from three centimeters to five meters, and have leaves of silver, green, and even rusty red. They produce dramatic inflorescences in shades of purple, red, pink, green, and yellow.
- Air plants generally grow high in the forest canopy in the wild. They are *epiphytes*, meaning they rely on another plant for physical support and they draw moisture and nutrients from the air and rainfall, rather than soil. They also tend to be *xerophytes*, meaning they tolerate dry periods. They prefer bright but indirect light.
- They can tolerate temperature extremes and will survive a long time without any attention at all but are happiest in locations of 70°F to 80°F with good air circulation and bright indirect light.
- Many are fragrant, such as *T. crocata*, a small, clumping species with a honeysuckle-like scent, and *T. duratii*, which flaunts exceptionally fragrant and long-lasting purple flowers. Once it blooms, a *tillandsia* begins producing offshoots called pups that become new plants in one to two years.
- The trickiest part of air plant care for many is the timing of watering. Frequency of watering will vary depending on the amount and intensity of light, the air temperature and humidity and whether the plant is enclosed in a terrarium or growing out in the open. To prevent rot, err on the side of under-watering your air plants to start; brown leaf tips or a more pronounced curve to the leaves will indicate more frequent watering is needed.

- Run the plants under the faucet a few times a week (if you have hard water, use filtered). Let the leaves be your guide. If they're curled more than usual, the plants need water: submerge them in a bowl of water overnight.
- To water, submerge the air plant for 10 to 20 minutes and then set it upside down on a towel or dish-drying rack for several hours so that excess water will drain away, rather than collecting between the leaves and prompting rot. This drainage period is the key to air plant care; skip this step and your air plant will likely remain too soggy at its center and begin to fall apart.
- Alternatively mist the plant several times weekly, wetting it well and letting it dry upside down

How to “Display” Air Plants

Tillandsias may free you from the constraints of pots and soil, but that leaves the question of **how to display them.** With suggestions from breeder Paul Isley, who has grown air plants for more than 30 years, we offer three options:



--Mounting--

- 1. Mounting:** Use floral wire to fix the plant onto a branch, fence slat, or section of tree bark. Hold the base of the *tillandsia* against the object and secure it there by weaving the wire through the plant leaves and around the base several times.



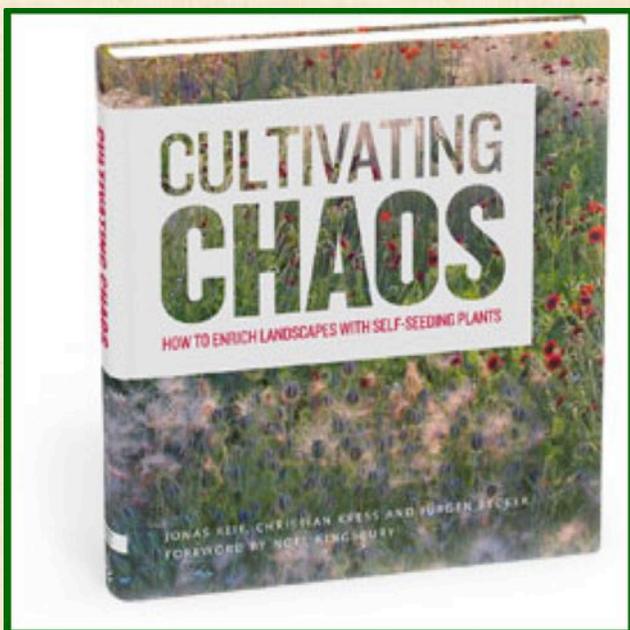
--Hanging--

- 2. Hanging:** Take wire that's flexible but sturdy and custom design your own planter. Make a loose basket or spiral shape to hold the plant, and at the other end of the wire, create a hook for hanging it.



--Velcro--

- 3. Velcro:** With a hot-glue gun that has cooled briefly, attach one half of a Velcro dot to the plant's base and the other half to the wall. This makes it easy to remove the plant for watering. ■



CULTIVATING CHAOS: How To Enrich Landscapes With Self-Seeding Plants

Jonas Reif, Christian Kress & Jürgen Becker (Authors)
Timber Press Publishers | August 12, 2015 | Hardcover

Self-seeding plants can create naturalistic gardens of great charm, but left to their own devices quickly spiral out of control. Maintaining the balance of plants so that a small number of robust species do not evict the others and developing the structure of the garden are important techniques to acquire.

Taking inspiration from the gardens of Christopher Lloyd, Derek Jarman and Henk Gerritsen, **Cultivating Chaos** teaches how to prepare your soil for improved germination, guide your planting as it evolves, and create different ecological niches from which will emerge beautiful, species-rich gardens. ■

About the Authors

- **Jonas Reif** is an experimental landscape designer who designs vibrant, varied plantings for both private gardens and city parks.
- **Christian Kress** is the owner of Sarastro Perennials nursery in Austria, one of the most respected nurseries in central Europe.
- **Jürgen Becker** is a successful international garden photographer. He trained at the Academy of Art in Düsseldorf and has won Garden Media Guild awards for his work.

Sources: Amazon.com & Timber Press Publishers



TOMATO CHOOSER

NEW TOMATO CHOOSER APP MAKES IT EASY TO SELECT THE TOP VARIETIES FOR YOUR CONDITIONS

Whether tomatoes are your passion or you're choosing cultivars to try for the first time, this \$1.99 Apple App profiles the flavor, shape, color and size of 333 varieties. You can also narrow searches by yield, days to maturity, and open-pollinated and hybrid, as well as determinate and indeterminate types.

See a photo of each tomato and learn a bit of its history, too—or keep scrolling for an at-a-glance breakdown of important characteristics and favored conditions. Then learn about symptoms of six common diseases, which can help you get cultivars with the right disease resistance.

TOPEKA, Kan. (Nov. 24, 2014) – Mother Earth News, the longest-running publication dedicated to sustainable lifestyles, today launched the **Tomato Chooser app** for iOS in the Apple App Store.

The Tomato Chooser enables users on iPhones, iPads and iPod touches to:

- Search 333 varieties by size, color, disease resistances, yield, cold and heat tolerance, open-pollinated vs. hybrid, days to maturity, and growth habit.
- Find the best varieties for canning, making paste and sauce, drying, and winter storage.
- Combat tomato diseases common to their location by finding varieties that show resistance (and learn the symptoms for six common diseases).
- See a summary of all the key characteristics of each variety – and narrow their search by which varieties have been rated as having exceptional flavor according to tomato experts.
- Mark varieties as favorites, to reference later.
- Read expert growing guides from Mother Earth News.
- Peruse quotes from tomato experts – including Amy Goldman, Carolyn Male, Craig LeHoullier, William Woys Weaver and Gary Ibsen – about many of the varieties profiled.

"This app opens a whole new world of possibilities for tomato lovers, plus makes it easy to choose varieties that should grow well in their conditions," says Cheryl Long, editor in chief of Mother Earth News.

The app costs \$1.99 and can be downloaded from the Apple App Store.



Honey-Do List for January 2017

Much of our suggested garden task information comes 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. Also, some of our recommendations come from *Southwest Planting Tips by the Month* and the *Tucson Gardening Calendar* both of which are produced by the Tucson Botanical Gardens. Another resource used in our Honey-Do Lists is *The Desert Gardener's Calendar: Your Month-by-Month Guide* by George Brookbank (1999.) Recommendations from Sunset Magazine's monthly *Southwest Garden Guides* may also be included.

GENERAL: Happy New Year to All!

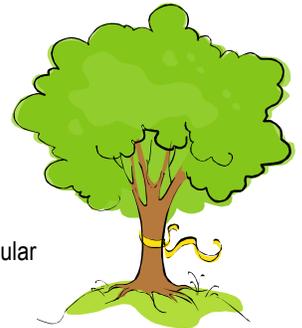


ORNAMENTALS

- Plant corms of gladiolus this month.
- Sow seeds of spring and summer annuals indoors now for transplant outdoors in a couple of months.
- Water your winter annual wildflowers a minimum of once per week.
- Thin wildflower seedlings if crowded.
- Plan for new plantings. Order seeds and garden "odds and ends".
- Plant and tend pansies, stock and other winter annuals. Keep them watered and deadheaded.
- Native annuals do not need fertilizing, but to speed up blooming and increase the number of flowers, fertilize annuals late in the month. Use a balanced formula that has high phosphorus but relatively low nitrogen content. Too much nitrogen will make plants grow leaves lushly at the expense of flowers.

FRUIT, NUT, CITRUS & SHADE TREES

- Plant bareroot, balled and burlap and container-grown specimens. Bareroot plants should become available soon and must be planted before they break dormancy.
- Time for dormant-season pruning. Remove dead, crossing, diseased and damaged limbs.
- Use horticulturally-sound pruning practices leaving branch collars when removing limbs.
- Do not "top" trees.
- Do not fertilize any fruit tree that has not been in the ground for at least a year. Use a well-balanced granular fertilizer, and water well before and after applying it.
- Wait to prune stone fruit trees and spring flowering shrubs.
- Vigorous shrubs such as photinia and privet may be pruned by 30% while junipers by no more than 20% at one time.
- Clean-up crepe myrtles and oleanders by removing seed heads.
- Spray deciduous trees and shrubs prone to insect damage with dormant oil.
- Deep water established trees, shrubs and succulents once a month during winter.



VEGETABLES, FRUIT & HERBS

- Plant cool season crops such as carrots, onions, parsnips, radishes, English peas, snow peas, fava beans, garbanzo beans, lettuces and other green leafy vegetables after mid-month.
- Start seeds of summer vegetables indoors then transplant outdoors when threat of frost has passed.

LAWNS / TURF / ORNAMENTAL GRASSES

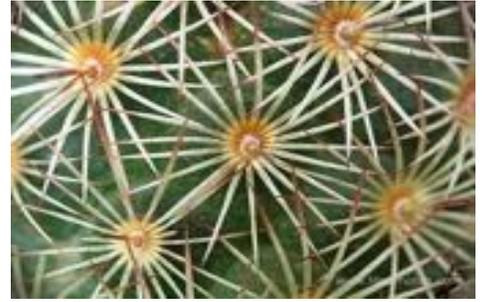
- Relax! Warm-season grasses are dormant and cool-season grasses are quiet; no need to mow or fertilize this month.
- Water lawns at least once a month—twice a month may be preferable depending on soil type, temperature, wind, rain and quality of turf desired.



Honey-Do List for January 2017—Continued

CACTI & SUCCULENTS

- The holiday season is not a good time to plant any succulents outside—wait until later in January to plant cool-season succulents.
- Do not prune succulents this month.
- Do not fertilize cacti this month.
- Even if plants experience severe cold damage, do not prune affected stems or leaves until the weather warms up in February. The only exception is flowering stalks on aloes, which can be removed anytime.
- Water sparingly this month. You can water cool-season succulents once during this month.



Some of the above recommendations came from the Tucson Botanical Garden's monthly "Calendar of Care" for cacti and succulents.

ROSES



- Do not prune roses until late January or early February, but **do prune** them before Valentine's Day.
- 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.
- If mild winter conditions exist, extend the watering of your roses deeply every 7-10 days depending on the weather.
- Unless you have been fertilizing on a six-week schedule during the winter, do not fertilize roses this month.
- Begin to plan which new roses you'd like to plant in your garden in late March or early April after the danger of freezing has passed.

It's always important to correctly identify any pest or insect you suspect may have caused damage to your plants. If you do not know what the culprit is, collect one in a plastic bag or small jar and take it to the Doña Ana County (DAC) Cooperative Extension Office that is now located at 1170 North Solano Street, Suite M, in Las Cruces (at the corner of Spruce & Solano Streets.)

Our new Hotline Office is located in Room 1833 in Suite M. Our Hotline number remains the same. (575) 525.6649

MISCELLANEOUS



- Recycle your Christmas tree.
- Clean and organize your potting bench, garage, and shed; clean up and sharpen your gardening tools—oil them if needed.
- On pretty, warmer days turn over your garden beds and add organic matter.
- Add extra mulch to established plantings and seedbeds.

REMINDER!

Our next monthly MG meeting is scheduled for:

Wednesday, January 11, 2017

Our meeting time is 9:15am to 11:30am

Location: Branigan Library, Roadrunner Room

MG Graduation & Awards

Saturday, February 4, 2017

11:00am to 2:00pm

**St. Paul's United Methodist Church, Reception Hall
225 West Griggs, Las Cruces, NM 88005**



JANUARY 2017 MG BIRTHDAYS

(Active MG's & Interns)

★ Laurie Davidson ★ Kathy Vinyard

★ Laura Gordon

In order to reduce the chances of Identity Theft for our MG's, exact birthdate info will no longer be printed in our Magazine.



Relocation of Doña Ana County Master Gardener Office

Dear Master Gardeners:

Hopefully all of you have heard that our office has moved to a new location. This will be a very positive move for our office and we are looking forward to our new space!

As of December 19, 2006, our new location is 1170 N. Solano at Spruce, Suite M, Las Cruces, New Mexico, 88001. We have moved into the New Mexico Region 5 Public Health Building.

We greatly appreciate our County providing this space for us and see it as beneficial because it will allow us to be closer to many of our community partners. Our office has a long history of working with programs housed at the Public Health Office such as the WIC Nutrition Program, Community Wellness, Health Promotion, Healthy Kids Las Cruces, Office of Border Health, Office of Emergency Management among others and we look forward to continuing these partnerships.

We also greatly appreciate how warm and welcoming New Mexico Department of Health staff have been throughout this process and look forward to working together to improve the lives of the community we serve. After all, Extension and the NM Department of Health both provide the public with valuable programs and services.

Another significant benefit is that our office will be a more integral part of the County and will save taxpayer dollars because the County will no longer have to pay to house our Offices in a separate building. One challenge will be changing how we use the office after hours and on weekends. Agents will still be able to offer programs in the evenings and weekends, but we will no longer let the office be used after hours and on weekends without an Agent. Our office can meet with you to brainstorm alternative spaces you may be able to use for your club and project meetings.

Again, we hope you will see the many benefits of this move as significantly outweighing the challenges. If you have any concerns, please contact Karim Martinez, County Program Director at 575-525-6649 or karmarti@nmsu.edu, or Tom Dean, Southwest District Director at 575-835-8033 or tdean@nmsu.edu.

See Page 31 for information on Hotline Duty at our new Office location that began on Tuesday, Dec. 20, 2016!

Please see Page 31 for information about the
NMSU Plant Diagnostics Clinic

GOT IDEAS? If you have a gardening-related article or a suggestion about a Plant-of-the-Month, a vegetable or fruit, tree, invasive plant or weed to share for our MG Magazine, please send me a link or email your idea to me.

MG CONTACT INFORMATION Be sure your email address is current so that you will be able to receive important information throughout the month from the MG Program. I regularly update our MG Contact List. If you need a copy of this file, let me know.

MG MAGAZINE DEADLINE The deadline for submitting articles and information for inclusion in our **February 2017** MG Monthly Magazine will be **Tuesday, January 31, 2017**

Contact Info: Ann Shine-Ring, Editor
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Seeds Galore! Seeds Support Your Garden and Your Life!

So how do you prepare for those vital selections that impact next year's food garden and your nutrition? Could be done willy-nilly - seduced by beautiful pictures and intriguing names – with you likely ending up with too many or too few or the wrong ones and missing the planting windows. Or it can be done with forethought and planning with the likelihood of better results.

Not all seeds are of equal quality, varying from supplier to supplier. So, how do you select your seed companies? Are they the first to get a catalog in the box, are they the biggest companies, or are they recommendations for trusted sources? Are they global, national, regional, local, corporate, or family owned, or a seed association? If it makes a difference to you, some research and consideration is in order before you start to purchase next years seeds.

Which brings up the question of who owns the seed companies that supply your garden? If it matters to you, do a web search to locate those companies that are and are not owned by Monsanto, DuPont or Syngenta. That will help you locate the independently owned companies.

The independent companies are my preference, but that may not be important to you. I published a list of seed companies on my website in 2005 that is still useful. See the Resources section at the bottom of this article for these references and links.

The next consideration is about what to plant. You may have favorites that you grow year after year - I certainly do - and you may explore new and interesting varieties. I try two or three new varieties every year to keep expanding my food and knowledge base. There's nothing like new discoveries that become old favorites. But, before getting to ordering there are some assessments that guide the decision process. There are lists of varieties recommended by the Extension Service and by me on the web.

The first thing I assess is last year's seed success. Did I over purchase? Did I order what I needed? Did the seeds germinate well? Did the seedlings grow vigorously? Were the plants vigorous? Did they produce well and have good flavor? Do I want to return to the same supplier this year? What seeds did I save from my own garden production? Do I have a garden plan for the 2017 spring season and know what and how much seed I need to purchase? What did I discover last season that I want to plant again this year?

I know, that is a lot of questioning and planning, but it's worth doing. Since I rarely use all the purchased seed during the year, the first thing I recommend doing is creating a seed database. My edibles list for 2016 is organized by categories and has 184 entries from about 20 suppliers. (See sample below)

Hopefully, your list is shorter. I also keep a separate list for flowers (much shorter). I maintain notes about germination and vigor on another data tracker, so I know how the seeds from a supplier perform. Next, I assess how the new trial varieties performed during the last season and add them to the list for the New Year. In 2016 I had some successes with new varieties.

Edibles Seeds - Master List - 2016 (184) Sample

Num.	Name	Source	Seed	Planted
BEANS				
1	Christmas Limas - Pole Bean	Baker Creek Heirloom Seeds	2016	2016
2	Hopi White Tepary Beans	Native Seeds SEARCH	2015	
3	Blue Speckled Tepary Beans	Native Seeds SEARCH	2013	
4	Black Tepary Beans	Self Saved	2014	2016

Article Continues on Page 19

Seeds Galore—Continued From Page 18**My New Varieties from 2016**

I found seeds of three varieties that I love and want to continue with in 2017. Here's a brief description and suppliers. You might want to try them - they have been proven successful.



Escalade F1 Spinach - A nicely savoyed, slow growing spinach that is extremely productive in our soils. Plant in early spring and plan to harvest before May 24th (first 14 hour day) because it bolts on cue. Mine produced 3/4 lbs/sq ft. That is great for spinach in spring! The only down side, it is a hybrid - so saving my own seed is out.

Seed Source - High Mowing Seeds



Schweizer Riesen (Giant Swiss Snow Peas) - A wonderful large edible pod pea that remains sweet even after the seeds are fully formed. Grows 8-9 feet tall and produces over a long season. Produced 1/4 lb./sq. ft by mid-June. Introduced into the United States by True Turtle Seeds. Also, check out the company - doing really good work with learning disadvantaged adults.

Seed Source - Heirloom



Early Perfect Italian Pepper - The discovery of the year! This classic Italian red-roaster sweet pepper is prolific, thick walled, sweet flavored and so far disease free. It is a new introduction by the breeders at Wild Garden Seeds in 2016. Definitely a keeper and open pollinated, so I can save seed for next year

Saving Seeds from Your Garden

So, how about it? Are you saving seeds and building your own seed library? Not only is it not difficult, it's engaging and essential for local seed and food security. And the added benefit is that the longer you save seeds from you own garden the more adapted the plants become to your local conditions.

I recommend starting with the easy varieties: peas, beans, onions, leeks, lettuce, tomatoes, and peppers. Note: onion and leek seeds have a short storage life, unless stored frozen. Many of the flower varieties are also very easy to save: Bachelor Buttons, Calendula, Zinnias and Marigolds. Note: Calendula seeds are only viable for a year, unless stored frozen.

If you are new to seed saving or want to learn more, there is a good introductory webinar presented by Bill McDorman of the Rocky Mountain Seed Alliance. There is a link to the webinar on the Rocky Mountain Alliance website home page. (bottom of page) He also runs an annual Seed School if you want to get really hooked on seeds and seed saving.

"Seed to Seed, Second Edition" - is a complete seed-saving guide that describes specific techniques for saving the seeds of 160 different vegetables. The book will carry you through all of the steps of extracting, sorting, drying and storing. It is available from the Seed Savers Exchange.

Hopefully, this is a useful introduction to seeds for the garden and recommended local varieties and seed saving resources. There are many more aspects to selecting, germinating and saving seeds than mentioned here - so explore on your own and share your discoveries with others.

Until next month, Good Gardening & Good Eating
Darrol Shillingburg, Doña Ana County Master Gardener

Resources:

Darrol's Seed Sources - <http://darrolshillingburg.com/GardenSite/SeedSuppliers.html>

Circular 572: Vegetable Variety Recommendations for New Mexico Backyard and Market Gardens - http://aces.nmsu.edu/pubs/_circulars/CR572.pdf

High Mowing Seeds - www.highmowingseeds.com (free shipping)

Turtle Tree Seeds - <http://turtletreeseed.org>

Wild Garden Seeds - <https://www.wildgardenseed.com>

Rocky Mountain Seed Alliance - <https://rockymountainseeds.org>

Seed Savers Exchange - <http://www.seedsavers.org/seed-to-seed>

If you have comments or questions, please feel free to contact me at: darrols@comcast.com



FREE SEEDS!

Without Local Seeds, Local Food Is An Illusion. So, What Can We Do About That? Save Seeds!

This year I collected more seeds from the garden than I can use - so, I am offering some to Master Gardeners and others reading this month's magazine. Why? Because seeds independence is a vital part of food and nutritional security, as is growing your own food.

Is there a less risky way to explore new varieties than from locally grown seed that is free? Perhaps, some will discover new flavors worth adopting and growing year after year. If not, at least some will have explored growing something edible and nutritious.

Here's how it works.

- I will provide starter packs of seeds for nine varieties, with each pack containing 20 or so seeds - more for onions.
- Each pack is labeled with basic starting information, with a more complete information about each variety on my website - should growers need it.
- You can also contact me by email if you want further information or dialogue.
- For Master Gardeners I will bring your seeds to the February 8th monthly meeting - **but only if I am contacted in advance by email**. That way I can bring the appropriate seeds for each person.
- If you want seeds and cannot make that meeting, I will mail the seeds if you pay the packing and mailing costs - \$2.00 for each mailing. Contact me by email to make arrangements. For the non-Master Gardeners who want to participate I will mail seeds for the same cost.

Varieties Offered

I am offering nine varieties in five families - all are hardy and produce well in Las Cruces.

Some of these varieties I have grown for more than twelve years and some for only one. All of the seeds were grown in 2016 and if properly stored should remain viable for many years (onions are the exception)

HEIRLOOM SEEDS

☐ Schweizer Riesen (Swiss Giant Snow Pea)



This is a new introduction from True Turtle Seeds. It is a Swiss heirloom that grows well here in the spring season. Sow seeds 1/2" deep and 3" apart in April. Trellis and support well. These tall, vigorous plants with attractive purple-flowers bear large, tender, flavorful, exceptionally sweet snow peas. People sometimes mistake the showy flowers for sweet peas. The purple flowers and young leaves make a beautiful and delicious addition to spring salads.

In 2016, my 16-foot row of **Schweizer Riesen** produced 11.8 lbs of delicious peas plus enough seed for next year with some extra to share. Here is a link to the True Turtle Seed website for those interested in more information. <http://turtletreeseed.org>. Germination temp range - 50°F - 70°F, 3-10 days, direct sow (can pre-germinate and direct sow)

☐ Shishito Pepper



The traditional Japanese frying pepper. These small pepper plants are strong and extremely productive. I think they are better as a green fried pepper, but will ripen red if left on the plant. The fruit are about 3 inches long, slightly wrinkled and perfect for making tempura and other traditional recipes. I fried them in olive oil and ate them lightly salted, also excellent on the grill.

Germination temp range 75°F -85°F, 8-14 days, transplant

Article Continues on Page 21

Free Seeds—Continued From Page 20**HEIRLOOM SEEDS** (Continued)▣ **Jimmy Nardello Pepper**

This is a uniquely flavored Italian frying pepper brought into the U.S. in 1860 from Italy by the Nardello family. It has been grown by local market growers and home gardeners ever since.

The flavor is best when red ripe and is excellent raw, grilled, roasted or fried. I have also used them for stuffed peppers.

Germination temp range 75°F -85°F, 8-14 days, transplant

▣ **Tarahumara Purple Ojos Beans**

A native of Mexico and well adapted to altitude and heat. This vigorous pole bean is genetically variable as are many native landraces. They have been intentionally kept diverse by selecting for all characteristics. There is a beautiful range of stripes and speckles of purple and tan, yellow, and gold.

These late-maturing pole beans are originally from the Sierra Tarahumara, Chihuahua Mexico.

Germination temp range - 65°F -85°F 3-8 days Direct (can pre-germinate and planted direct)

▣ **Hopi Red Lima Beans**

This sprawling and climbing lima bean is genetically part of the Hopi Mottled Lima Bean complex. Here is a link to an article on their history and origin - <https://www.slowfoodusa.org/ark-item/hopi-mottled-lima-beans>

The plant is heat tolerant and will bloom until first frost. Germination temp range - 65°F -85°F 3-8 days Direct (can pre-germinate and plant direct)

▣ **Hopi Pumpkin**

A vigorous sprawling summer squash has a fine sweet flavor and excellent texture. The round fruit can be harvested between 2 and 4 lbs for use as a summer squash.

Plant direct (do not transplant) in late April and plant again in late August. Senescent plants are susceptible to powdery mildew. The vines grow up to 20 feet long and will take root at the nodes if in contact with moist soil.

Culinary info - slice young green fruit - up to about 2 lbs in 1/2" circles, coat both sides with olive oil and grill or broil until slightly translucent, some charring is desirable. Larger green fruits are best water cooked with English thyme until translucent. This one is not advisable as a winter squash as it is high in fiber and low in sugar. Germination temp - 60°F -80°F, 5-10 days, direct

▣ **Heshiko Bunching Onions**

An heirloom Japanese, perennial bunching onion with stalks that grow and divide from the base. This is a mild onion that is an essential ingredient in both Oriental and American foods. It will not bulb but will winter over and keep producing year round, easily reseeds itself in second year.

Germination temp range - 50°F -75°F, 3-7 days to germination. direct or transplant

▣ **Early Perfect Italian Pepper**

A new introduction for 2016 from the breeder at Wild Garden Seeds. A thick walled classic Italian roasting pepper. Large enough to stuff and sweet enough to eat from raw to roasted to grilled to stuffed. Also great in a stir-fry.

My plants were taller and stronger than the bell varieties and were very productive with no sign of diseases. Here is a link to Wild Garden Seeds website: - <http://www.wildgardenseed.com/> Germination temp range 75°F -85°F 8-14 days, transplant.

Article Continues on Page 22

Free Seeds—Continued From Page 21

▣ **Chocolate Lightning Dwarf Tomato**



This is one of the newer releases from the Dwarf Tomato Project which breeds full sized tomatoes on dwarf or "tree" tomato plant stock. The project is entirely volunteer and has released 66 varieties to date.

Chocolate Lightning grows a little taller than other dwarfs and in my experience needs some staking to keep the plants and fruit off the ground. You can treat it like other tomatoes except the plants are a little more brittle.

In 2016 my plants produced 4.65 lbs of delicious tomatoes per plant with excellent favor in the totally ripe fruit and a tart flavor in the under ripe fruit. I will grow them again this year, they are that good! The variety is mostly stable, but may occasionally produce some off variety fruit. They can be grown in pots, but my potted ones last year were very disappointing.

Here is a link to the Dwarf Tomato Project website for those interested in more information: <http://dwarftomatoproject.net>.
Germination temp range - 65°F -85°F, 5-10 days,

Contact me by email if you are interested in growing any of these varieties in 2017. Due to a limited supply please request only one seed pack per variety.

Thank you for your interest and enjoy the fruits of your gardening.

Darrol Shillingburg, Doña Ana Master Gardener:
Email: darrols@comcast.net



Tips for Using *Irish Spring* To Deter Garden Pests

Angela Brown | DIYEverywhere @ Link:

<http://gardening.diyeverwhere.com/2016/06/21/use-irish-spring-to-deter-garden-pests/>

Watching deer graze in a field or rabbits bouncing through the grass can be a peaceful experience. Watching them graze in your garden, not so much. While these charming creatures mean no harm, they can leave your veggies and plants nibbled and damaged.

In order to check on garden pests, regularly check your leaves.

- Bugs will leave jagged edges and half-eaten leaves.
- Rabbits and deer will leave a clean cut or eat the entire foliage.

You can keep your plants and veggies safe from the friendly herbivores without expensive chemicals or dangerous traps by using something you may already have on hand: ***Irish Spring Soap!***

The soap only works on pests like mice, rabbits, and deer (you'll have to address insect problems another way). While it isn't going to completely eliminate your problem, this simple remedy should keep most visitors at bay.

Instructions

- You'll need to slice an Irish Spring bar of soap into 1/2-inch cubes. (They don't have to be exact, you just want enough cubes to spread out).
- Next, place two pieces of the soap into a drawstring pouch, and knot it closed. Alternatively, you can wrap it in some cheesecloth.
- Staple your soap bag to a wooden stake and drive the stake into the ground about 5 to 10 feet apart, around your garden. (See photo in Column 2.) If you don't want to nail stakes into the ground, you can lay the pouches under vegetation. (Monitor your garden to determine if you need to add more pouches to certain areas.)

In particular, deer are put off by the scent of animal fats in the soap. If you can't get ***Irish Spring***, try any scented soap made with tallow, which is derived from animal fat. Additional research by the University of Vermont Extension, *suggests that soaps containing coconut oil can attract deer* (so check your ingredients!) If you have a high deer population, you may need to put out more soap bars.



Gardener Scott shared his experiments with ***Irish Spring*** soap as well as some homemade soaps. "They (garden pests) begin to recognize that the surprising and offensive odor is now normal and part of the landscape. At about the six-week point, I noticed deer damage to plants at the periphery of my test area. The plants within a two-foot radius (.6 meter) of the soap bars were still untouched," he writes. He recommends using more soap in closer proximity, or regularly changing the smell to keep it offensive to the deer.



Artemisia



Tansy

In addition to soap, try planting artemisia, tansy, yarrow, mint, thyme, tarragon, oregano, dill, or chives. The smell of these plants may also act as a deterrent, according to the University of Vermont Extension. ■

This article provided by Mona Nelson, Certified Master Gardener



Scarlet-and-Green Leafhopper (*Graphocephala coccinea*)

LEAFHOPPERS:

Hop, Hop and Away: Leafhoppers impress us with their tiny size and their big leap!

Bill Johnson | Horticulture Magazine | November/December 2016

Sometimes it's hard to see how an insect (or plant) got its common name, but that's not so with leafhoppers. They derive their name from their ability to hop. When something or someone approaches them, they'll reposition their hind legs in a way that causes a spring-like action that can launch them to safety. Fleas use a similar spring-like ability to escape, but it's said that certain species of leafhoppers hold the leaping record of all animals, if their size is considered against the distance covered.

Leafhoppers—in the order *Hemiptera* and family *Cicadellidae*—are very diverse in size, color and geographical distribution. The largest species reach around 12 or 13 millimeters in length, but the majority stay just 2 to 5 millimeters long. Their coloration ranges from almost clear with little or no markings to a sampling of the rainbow.

I've chosen three of my favorites and more common colorful species as examples. There are many more species not shown there that have colorful red, yellow and orange spots all of their wings. I've even had children tell me that they look like candy.



Red-Banded Leafhopper

Indeed, one of the most common species, found over a large portion of the United States, is the candy-striped leafhopper (*Graphocephala coccinea*). It's also known as the red-and-green, scarlet-and-green or red-banded leafhopper (shown above.) One of the largest species, it gets to about 10 millimeters long and thus it can be easily seen. It's often encountered around various berry species, but I see it frequently throughout my garden on many different plants.



Grapevine or Grape Leafhopper

The grapevine, or grape leafhopper (*Erythroneura vitis*) is one of my favorites for its amazing color and its tiny size—four to five millimeters. Its name comes from its relationship with grapes (*Vitis* spp.), its main host plant. (Shown above)



Saddle-backed Leafhopper

The saddled or saddle-backed leafhopper (*Colladonus clitellarius*), see photo above, gets its names from the distinctive pattern on its head and wings, which looks similar to a saddle. It's about the same size as the Grapevine Leafhopper, but it's more associated with various shrubs and trees, including willows.

Leafhoppers feed by a piercing-sucking method, using a rigid beak-like tube that otherwise rests underneath their bodies. A hinge at the front of the insect's head brings the structure out for feeding; it's then inserted into the outer layer of a plant stem to suck out the sap.

Various species can be vectors in viral and bacterial transmission, with some plants mildly or severely affected. The common disease Aster Yellows, for instance, is due to a small handful of leafhopper species.

I grow many different plant species in my garden, though, and over the years, I've photographed over 250 different species of leafhoppers. I've yet to see any serious damage to my plants. ■

The Association of Garden Communicators (GWA) awarded author Bill Johnson, a Silver Medal for his Insect ID Column in its 2016 Garden Media Awards.



Bee guards (as shown above) give hummingbirds access but prevent bees from taking ownership of feeding ports.

HUMMINGBIRD FAQ's

Answers To The Most Common Questions About These Tricky-to-Attract Birds

Kenn & Kimberly Kaufman | *Birds & Blooms* | June/July 2016

How do I draw them to my yard?

Think red! Colorful feeders visible from a distance and classic, tubular flowers are two ways to increase your chances of attracting these birds. It's especially worthwhile adding nectar flowers to your garden and keeping feeders filled and clean at all times.

What can I do about a hummingbird that drives others away from the feeder?

These birds have an instinct to defend their food sources because a patch of flowers produces only a little nectar each day. Even at a feeder, hummingbirds practice the same defensive behavior. A good strategy to prevent one from dominating the food source is to put up several feeders, located some distance apart from each other. If a feeder is out of sight from the others (around a corner, for example), it makes it harder for one bird to control them all. In a situation like that, even the more aggressive hummingbird may give up and just share with others.

Which is better, pre-made or homemade sugar water? Should I add red dye?

Commercial nectar may be convenient, but you can easily make your own. Mix one part white sugar with four parts water. Bring it to a boil to remove impurities, so it will keep longer before it starts to spoil. Don't add honey or any other ingredients. Avoid red dye. It doesn't help the birds and may be bad for them.

How do I keep bees, wasps or ants away from my nectar feeders?

The type of feeder makes a difference. In saucer-style feeders, the sugar water is far enough below the feeding ports that insects can't reach it. Some feeders have wasp guards over the feeding ports that deter these insects while allowing hummingbirds to sip. Bee guards won't help if sugar water spills on the outside of the feeder, so keep it clean. If ants are a problem, buy a feeder with an ant moat (a small basin of water that acts as a barrier), or get an add-on ant moat that hangs above the feeder. See photo at top of Column 2 of an ant-moat.



When should I take my feeders down in fall?

It depends on where you are. In the South and along the Pacific Coast, you may have hummingbirds all winter. Farther north, hummingbirds will probably be gone by October.

Later in fall, however, there may be the odd hummingbird from the West showing up in the East. If you keep your feeders up until November, you might attract some surprising visitors. Don't worry that your feeders might keep the locals from migrating. Their migration instinct is very strong. They will leave when they're ready, and neither flowers nor feeders can tempt them to stay. ■





BLOOMS FOR HUMMINGBIRDS

Follow Our Field Editors' Advice & Get Their Favorites
Birds & Blooms | June/July 2016

- 1) Autumn Sage and Trumpet Vine are **Black-Chinned Hummingbird** magnets! The hummingbirds also enjoy Hosta and native and non-invasive Honeysuckle, but Sage is by far their favorite.
- 2) Hummingbirds find your yard during the end of summer migration, from August to September. Bee Balm attracts them best. The birds always stop by and even go to Bee Balms when the flowers are just about spent.
- 3) Hummingbirds swarm to Canna (see photo below), Butterfly Bush, and Hosta, flitting around from sunrise to sunset.
- 4) In northern California, fellow gardeners have hummingbirds visiting year-round. The birds hang around Fuchsia, Hibiscus and occasionally Snapdragons, and Princess flowers.
- 5) Gardeners in Indiana get the most nectar by planting tons of Salvia. They prefer taller varieties—Black and Blue, Hot Lips, Maraschino and Amistad cultivars. Other flowers planted include Crocoshmia, Red-Hot Poker and Penstemon. ■



Container Gardens for Hummingbirds

Plant a container garden to attract hummingbirds to your backyard.

Kris Wetherbee | Birds & Blooms |

Attract hummingbirds to your backyard by planting a hanging basket, sure to lure them in. Hanging flower baskets are a great way to brighten the view almost anywhere. But if you plant blooms that also attract hummingbirds, the scene can be even more spectacular.

Imagine several gorgeous hummingbirds hovering around your hanging baskets, each vying for a dining spot. And once they find your flowers, it's likely they'll return again and again all season long. Luckily, it's not difficult to make that dream a reality. Just start with the simple tips and ideas on these pages.

1. Select the Right Flowers

There are several factors to consider when choosing flowers that will thrive in hanging baskets and attract hummingbirds.

...Nectar. First, look for nectar-rich, tubular blooms, such as those on penstemon, salvia and petunia. Hummers are able to access the nectar easily with their long, narrow bills and tongues.

...Plant form. Since hummers typically feed while hovering, flowers that stick out from a plant's foliage, by either protruding or dangling, provide ample air space so the birds' beating wings easily clear any leaves.

...Color. People often associate hummingbirds with the color red, and for good reason. These inquisitive birds can see red from a great distance, so offering nectar-rich flowers in crimson shades should always get their attention. However, they'll eagerly sip nectar from flowers in almost any hue, including orange, pink, purple, white and yellow.

... Number of Flowers. The amount of blooms a plant produces also plays a big role in attracting these tiny birds. Plants with multiple flowers in open clusters are more appealing than plants like hibiscus that feature a small selection of large blooms.

...Think about it from their perspective. How much more enticing is a buffet table laden with multiple food offerings than several tables spaced 10 feet apart, each featuring only a few dishes of food?

...Bloom time. Plants with a long flowering season will provide nectar for an extended period of time. Another way to achieve this is to choose flowers with staggered bloom times—whether in one basket or by offering several hanging baskets.

Article Continues on Page 27

Container Gardens for Hummingbirds—Continued From Page 26



2. Basket Basics

Hummingbirds aren't going to care what type of container you use—whether you select plastic, wood, pottery or a wire basket lined with sphagnum moss. However, the size of the planter will affect its upkeep and placement.

- **Hanging baskets for hummers should be at least 12 inches in diameter.** Lightweight pots or smaller containers are easier to handle, but larger containers hold more plants, make for a more eye-catching display and keep plant roots moist longer.
- Just remember that **a heavy pot or large container can easily weigh 50 pounds or more when filled with damp soil and plants.** These will need heavy-duty hooks and require strong support.

3. Compose the Display

The sky's the limit when it comes to the variety of flowers and foliage that work well in hanging baskets. You can always count on traditional hummingbird favorites—geraniums, fuchsias, nasturtiums, petunias, lantana and impatiens, for instance—to create a spectacular hanging display.

But even vines and upright perennials, such as garden phlox, veronica or penstemon, can look attractive in larger baskets and appeal to a hummingbird's appetite. Here are some other design factors to consider:

...Color and texture. A combination of both foliage and flowers creates the most alluring effect. For example, the purple foliage of some coral bell cultivars add drama, while the blooms provide nectar. Combine different leaf shapes or forms for a striking arrangement, and create special tactile interest by using plants with different textures.

...Height and form. Bring depth and visual interest to your hanging garden by combining plants with staggered heights and habits. For example, you could place mounding or upright plants, such as salvia, penstemon or zinnias, toward the center of the pot, then accent with trailing plants—such as verbena, parrot's beak or trailing petunias—positioned along the outer edges to spill over the sides.

...Plant requirements. No matter what combinations you select, be sure that plants destined to share the same basket also share similar water and light needs.

4. Put It Together

Now that you know what you'll be planting, it's time to gather the materials needed to make your baskets. Start with the soil. A good lightweight potting mix is a must, preferably one that includes peat moss and perlite or vermiculite to provide aeration and drainage.

...Plan the arrangement. It's a good idea to set out your plants ahead of time to figure out the best arrangement. The spacing needed between each plant will depend on the varieties and the container you've selected, and the nature of the plant's growth habits and characteristics.

Smaller plants can be spaced closer together than larger plants, so the total number will vary. But as a general rule, a 12-inch container will house about five to seven plants. Wire baskets fit more plants since you can also plant in the sides.

...Time to plant. Once you've determined the arrangement, fill the pot two-thirds full with potting mix and plant the largest plants and those in the center first, followed by the smaller plants and those around the outer edges of your container.

- Be sure to **place the plants at the original depth** as they were in their containers. Then secure them in place with additional soil and water well. Wire baskets are a bit different because in addition to the top, both the sides and even the bottom of the container can be planted, creating a colossal sphere of living color.
- **Line the basket with a thick layer of damp sphagnum moss or a preformed fiber mat liner.** Plant the bottom and sides by poking holes through the moss or liner and gently pushing in the plants' roots from the outside. Add potting mix and secure the roots as you work your way toward the top of the basket. Then plant the surface as you would for a regular basket.



5. Hang It Up

When hanging your basket, choose a sunny, sheltered location within easy viewing range so you can watch the hummingbirds up close. Or, if your basket contains low-light garden plants, pick an appropriate spot in the shade.

And don't limit locations to areas near windows—think of the other places you spend time outside. Add pizzazz to boring entrance areas by hanging several baskets near the front door, bring a new dimension to walls and doorways, or add colorful charm to a courtyard. Or, why not expand your hanging garden to a balcony, arbor or gazebo?

Wherever you decide to hang your hummingbird garden, be sure to include a comfortable place nearby where you can sit back, relax and enjoy the view. ■

HEALING HERBS & PLANTS



Arnica montana

Sources: *Arnica* on Wikipedia @ Link:
<https://en.wikipedia.org/wiki/Arnica>

& *Arnica Montana* @ link: <http://www.arnicare.com/about/arnica-montana/>

Arnica is a genus of perennial, herbaceous plants in the Sunflower family (*Asteraceae*). The genus name *Arnica* may be derived from the Greek *arni*, "lamb", in reference to the plants' soft, hairy leaves.

Several species, such as *Arnica montana* and *A. chamissonis*, contain **helenalin**, a sesquiterpene lactone that is a major ingredient in anti-inflammatory preparations (used mostly for bruises).

Arnica species are used as food plants by the larvae of some Lepidoptera species including *Bucculatrix arnicella*. *Arnica* was previously classified in the tribe *Senecioneae* because it has a flower or pappus of fine bristles.

What Is Arnica Montana?

Arnica montana is the Latin name for a perennial that grows 1 to 2 feet tall with bright, yellow daisy-like flowers that appear in July and August. It is found on the moist, grassy upland meadows in the hills and mountains of northern and central Europe and Siberia. It is also found sparsely in the northwestern United States.

More common names for *Arnica* are **Mountain daisy**, **Leopard's bane** and **Mountain tobacco**. *Arnica* is toxic when ingested at full strength, but it can be used as an ointment, gel or cream on unbroken skin or taken internally when it is diluted homeopathically.

St. Hildegard, a nun known for her keen observation of nature and physiology, among other things, wrote about the healing properties of the *Arnica montana* plant in the 12th century. Since at least the 16th century, mountain people in the Alpine area have used it to relieve muscle aches and bruises.

Today, *Arnica* has grown to be one of the most popular homeopathic medicines throughout the world. It is trusted by professional athletes to soothe sore muscles, by prominent cosmetic surgeons to relieve post-procedure pain, and by savvy moms to treat playground bumps and bruises.

Arnica can also be used to relieve stiffness from flying or long-distance driving. And anyone who bruises easily will appreciate *Arnica*'s ability to reduce bruise discoloration. To help recover from minor injuries, overexertion or surgery; *Arnica* is a must for every medicine cabinet.

ARNICA OVERVIEW INFORMATION

Source: WebMD @ link: <http://www.webmd.com/vitamins-supplements/ingredientmono-721-arnica.aspx?activeingredientid=721&activeingredientname=arnica>

- *Arnica* is an herb that grows mainly in Siberia and central Europe, as well as temperate climates in North America. The flowers of the plant are used in medicine.
- People take *Arnica* by mouth for sore mouth and throat, pain such as pain after surgery or wisdom tooth removal, insect bites, painful and swollen veins near the surface of the skin (superficial phlebitis), bruising, muscle pain, vision problems due to diabetes, stroke, and for causing abortions.
- *Arnica* is applied to the skin for pain and swelling associated with bruises, aches, and sprains. It is also applied to the skin for insect bites, arthritis, muscle and cartilage pain, chapped lips, and acne.
- In foods, *Arnica* is a flavor ingredient in beverages, frozen dairy desserts, candy, baked goods, gelatins, and puddings.
- In manufacturing, *Arnica* is used in hair tonics and anti-dandruff preparations. The oil is used in perfumes and cosmetics.
- In manufacturing, *arnica* is used in hair tonics and anti-dandruff preparations. The oil is used in perfumes and cosmetics.

How does it work? The active chemicals in *arnica* may reduce swelling, decrease pain, and act as antibiotics.

Possible Side Effects

- *Arnica* is POSSIBLY SAFE when taken by mouth in the amounts commonly found in food or when applied to unbroken skin short-term. The Canadian government, however, is concerned enough about the safety of *Arnica* to prohibit its use as a food ingredient.
- Amounts that are larger than the amount found in food are LIKELY UNSAFE when taken by mouth. In fact, *Arnica* is considered poisonous and has caused death. When taken by mouth it can also cause irritation of the mouth and throat, stomach pain, vomiting, diarrhea, skin rashes, shortness of breath, a fast heartbeat, an increase in blood pressure, heart damage, organ failure, increased bleeding, coma, and death
- *Arnica* is often listed as an ingredient in homeopathic products; however, these products are usually so dilute that they contain little or no detectable amount of *Arnica*.

Special Precautions & Warning:

- **Pregnancy and breast-feeding:** Don't take *Arnica* by mouth or apply to the skin if you are pregnant or breast-feeding. It is considered LIKELY UNSAFE.
 - **Allergy to ragweed and related plants:** *Arnica* may cause an allergic reaction in people who are sensitive to the *Asteraceae/Compositae* family. Members of this family include ragweed, chrysanthemums, marigolds, daisies, and many others. If you have allergies, be sure to check with your healthcare provider before applying it to your skin. Do not take *Arnica* by mouth.
 - **Broken skin:** Don't apply *Arnica* to damaged or broken skin. Too much could be absorbed.
 - **Digestion problems:** *Arnica* can irritate the digestive system. Don't take it if you have irritable bowel syndrome (IBS), ulcers, Crohn's disease, or other stomach or intestinal conditions.
 - **Fast heart rate:** *Arnica* might increase your heart rate. Don't take *Arnica* if you have a fast heart rate.
 - **High blood pressure:** *Arnica* might increase blood pressure. Don't take *Arnica* if you have high blood pressure.
- Surgery:** *Arnica* might cause extra bleeding during and after surgery. Stop using it at least 2 weeks before a scheduled surgery. ■

—U.S.D.A. INVASIVE/WEEDY PLANTS—



Puncturevine

(*Tribulus terrestris* L. (Creosote-bush family, Zygophyllaceae))

Source: USDA Invasive Plants and Weeds of the National Forests and Grasslands in the Southwest Region, Second Edition

- Description** Annual plant develops a mat of prostrate stems that range from 1 to 3 feet across; branches frequently at the base and occasionally elsewhere; round stems are initially green, but quickly become brown; they are densely covered with short hairs and sparsely covered with long hairs; root system consists of stout taproot that can extend several feet into the ground.
- Origin** Native to the Mediterranean regions; Puncturevine is unlikely to be confused with other weeds. It is an Arizona prohibited/regulated noxious weed.
- Habitat** Cultivated and disturbed or degraded moist sites in grassland, woodland, and riparian communities, and roadsides growing best on dry, sandy soils, but tolerates most soil types within elevations that generally range below 7,000 ft.
- Leaves** Compound leaves are evenly pinnate, 2 to 4 inches long, consisting of four to eight pairs of leaflets, with a hairy central stalk; dark, short petioled, green leaflets are up to ¾ inch long and ¼ inch wide, oblong, smooth along the margins, and sparsely to moderately hairy.
- Flowers** Flowers April to October; flowers occur individually from the axils of the compound leaves on hairy pedicels about ½ inch across; with five triangular green sepals; the petals are well rounded and longer than the sepals.
- Fruit** Fruit is a stout-spined bur that divides into five wedge-shaped segments, gray to yellowish-tan, hairy, to 3/8 inch in diameter, flattened, lobes, with two stout spines 1/8 to ¼ inch long and several prickles; seeds usually three to five per segment, remain enclosed within burs.
- Propagation** Reproduces by seed; plants typically bear numerous burs (average 200 to 5,000) and often forms colonies at favorable sites.
- Problem** With its deep taproot, Puncturevine competes aggressively for water and nutrients in tree and field crops and turf. Puncturevine in hay will markedly reduce the quality of the product. When allowed to grow unchecked, Puncturevine will develop into a thick mat, hiding the sharp burs. Even under limited growth conditions, Puncturevine's prolific production of the seed burs creates dangerous conditions for livestock, people, and pets. ■



Puncturevine's Bur



Puncturevine's ability to spread

MASTER GARDENER MONTHLY MEETING

Date: December 14, 2016

Welcome: The Meeting was conducted by Ann Shine-Ring as Jeff Anderson was at NMSU for a FBI training session. Ann was also the Notetaker. Also, Jeff had provided some MG Program updates for the group to discuss:

- We will need a new MG Coordinator as Donna Knudson will be leaving
- We must find a location for our Graduation Banquet and we will need volunteers to help with the event.
- A caterer for the Banquet will be the same as last year's event.
- Important dates related to our Office move:
 - ...Friday, December 16 Final Office relocation date; Office will be closed.
 - ...Friday, December 23 Christmas Holiday; Office closed.
 - ...Friday, December 30 New Year's Holiday; Office closed.

Committee/Project Reports were given:

MG Hotline Magazine	Gail & David Ross; new Hotline office will be in Room 1833 in our new Office Update; Ann Shine-Ring Plant of the Month: Osage-Orange Tree Waterwise Plant: Aeonium
DAC News	Donna Knudson will be leaving us. We will need a new Volunteer to fill this important position
Luna MG News	<u>Alberta Morgan</u> The Luna MG's are not meeting again until Feb. 1, 2017. All six students passed their final exam.
MG Class	<u>Juliet Williams</u> We are trying to find a location for the Graduation Banquet. We may have to move this Event into February 2017. We will need volunteers to help with setup and take down arrangements.

Old/New/Continuing Business

Education Presenter: Dael announced that she will be stepping down from this volunteer position. We will need a new volunteer. Dael has reserved the Roadrunner Meeting room for January 11, Feb.8 and March 8. However, the new Education Coordinator will have to take over future meeting reservations, as well as arrange for future meeting presenters.

January Meeting: Since we will not have a new Education Presenter by then, we will focus on arrangements for our Graduation Banquet.

Important 2017 Dates:

- Graduation Banquet Awards Date to be announced.
- Chile Conference Feb. 7, 2017
- 'High on the Desert Conference', Sierra Vista, AZ March 9-10, 2017

Educational Presenter: Randy Shaw, Topic: "Brackish Groundwater", National Desalination Research Facility, in Alamogordo, NW

Next Monthly Meeting: **Wednesday, January 11, 2016**

Location: Branigan Library, Roadrunner Room

Time: 9:15 to 11:30am

2015-2016 Master Gardener Volunteer Hours

Pamela Crane has reported that there were 5,040.5 MG hours volunteered this past year: 4,210 hours by Certified Master Gardeners and 830.5 hours by Master Gardener Interns.

(This translates to 84% of the volunteer hours were done by Certified; and 16% were provided by Interns.)

Last years numbers were a total of 5,552.5 hours: 4655.75 by CMG and 896.75 by Interns respectively for an overall decrease of 9.2%, with a 9.6% decrease in Certified MG hours and a 7.4% decrease in MG Intern hours.

MASTER GARDENER HOTLINE DUTY



IMPORTANT: Please remember to be present on your assigned date for the Hotline. If another MG volunteer forgets, please give him or her a “reminder” call. Be sure to get a copy of the Subs List, for your information.

UPDATE: As of Tuesday, December 20, 2016, the Hotline will now operate in its new office located at 1170 Solano, Suite M, Room 1833. The Hotline will still be open to the public on Tuesdays and Fridays, from 9:00am through 12:00 noon. However, Hotline volunteers will continue to be on duty through 1:00pm. For your information, the Extension Office is closed daily from 12 noon to 1:00pm for staff lunches.

URGENT: We need a maximum of only 2 volunteers on each Hotline Day, as there is not enough space for additional people in the new Hotline Office located in Room 1833.

Please consider volunteering for at least one, four-hour assignment to ensure we have adequate coverage for our Hotline during the year.

As of September 11, 2013, per MG request, Hotline duty signups will no longer be listed in this Magazine. As of 1/8/14, we now can sign up for Hotline Duty online at the same website location where we now record our Volunteer Service hours.

Connect to link: <http://aces.nmsu.edu/county/donaana/mastergardener/> and click on Volunteer Hours Logging and you can click on either:

“Go to my log sheets” or “Go to my Calendar”

We are very grateful to Eric Graham, Certified MG, for donating many hours to creating this great new resource for MGs. Thank you!

LUNA COUNTY MASTER GARDENER HOTLINES

Deming (At Extension Office)	Thursdays 9:00-11:00am	(575) 546-8806	Closed Until Feb. 1, 2017
Columbus (At Library)	Mondays 10:30-11:30am	(575) 531-2612	Closed Until Feb. 1, 2017



Link: <http://aces.nmsu.edu/ces/plantclinic/index.html>

The **Plant Diagnostic Clinic** is designed to provide plant diagnostic services for the State of New Mexico. Its services include analysis of plant material for plant pathogens and environmental stresses as well as suggesting appropriate control measures when available.

The Clinic also facilitates insect and weed identification through referrals to other specialists. Its clients include extension personnel, crop consultants, growers, retailers, landscape professionals, golf courses, researchers, government agencies, and homeowners.

The Plant Diagnostic Clinic works very closely with the New Mexico Cooperative Extension County offices. For initial assistance with plant problems first contact the County Extension office near you. The County Extension staff will assist you with sample submission to the clinic if needed. No diagnostic service fees will be applied to samples submitted through Extension offices.

Doña Ana County Cooperative Extension Office (575) 525-6649