



INSIDE DIRT

INSIDE THIS ISSUE

President's Message

David Bickerstaff, Master Gardener

April has been a busy time for our members! At the time of this letter, our Plant Sale and Greenhouse committee has been busy with activities leading up to our spring plant sale on April 27th at the Athens Senior Citizens Center. Some of our members have been planning to attend the Texas Master Gardener Association Annual Conference, April 25-27, in Victoria, Texas.



We have also been very busy with our major educational projects: DREAM garden (at the East Texas Arboretum), Harvest Garden (close to the Athens Fair Grounds), Children's Garden, Library Series (monthly educational topics at the Clint W. Murchison Memorial Library), advanced training for certified Master Gardeners and much more! Our members have already logged over 2,000 hours of service to Henderson County through March!

Are you a teacher in Henderson County? We are excited to offer you guidance related to the establishment of a children's garden. Educating our youth on the value of horticulture is important and we can help you start a program!

Did you visit the Dallas Arboretum this spring to enjoy "Dallas Blooms"? It has been voted one of the best spring flower festivals by Foder's Travel. They planted over 500,000 tulip bulbs and I recommend that you put this on your calendar for next year. If you join the East Texas Arboretum you will have access to arboretums across the country.

Hopefully you are enjoying the migration of the Monarch butterflies. Texas is an important state in monarch migration because it is situated between the principal breeding grounds in the north and the overwintering areas in Mexico. Monarchs funnel through Texas both in the fall and the spring. Consider creating a Monarch Waystation Habitat.



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Monarch Waystations are places that provide resources necessary for monarchs to produce successive generations and sustain their migration. Monarchs need our help! Visit www.monarchwatch.org for more information.

Where can I find more information on gardening, pests and general horticulture? Several resources are available to you:

- Texas A&M AgriLife website- <https://aggie-horticulture.tamu.edu/>
- Henderson Master Gardener website- <https://henderson-co-tx-mg.org/>
- Attend one of our educational events (see the calendar in this publication)
- Read ***Inside Dirt!***
- Purchase one of the HCMGA Gardening Guides (It's a bargain at only \$15!)
- Call the Henderson County Extension office at 903-675-6130
- Become a Master Gardener- we would like to have you join our group and the next class begins in September

"Flowers are restful to look at. They have neither emotions nor conflicts." ~ Sigmund Freud

"What is a weed? A plant whose virtues have never been discovered." ~ Ralph Waldo Emerson

Happy Gardening!

David Bickerstaff, President HCMGA

LIBRARY SERIES: Open to the public

Tuesday, May 21, at 5:30 pm Master Gardener Addie Matney will present "Garden Insects: Beneficial, Harmful and Pollinators".

Tuesday, June 18, at 5:30 pm To be announced. Watch the HCMG website: <https://henderson-co-tx-mg.org/welcome/events/learn-at-the-library-series/>

Library Series meets the 3rd Tuesday of every month at the Clint W. Murchison Memorial Library, 121 S. Prairieville, Athens.

For details on these presentations, Turn to page 7, or visit us at <https://henderson-co-tx-mg.org/welcome/events/learn-at-the-library-series/>

HCMGA Projects

- **Children's Garden:** HCMGA is available for consultation on school or teaching gardens.
- **DREAM Garden:** (Demonstrate, Research, Educate, Apply, Maintain) The HCMGA maintains a cottage-style ornamental garden at the East Texas Arboretum in Athens.
- **Fall Conference:** The largest fundraiser for HCMGA, this conference includes a guest speaker, possible raffles and/or auctions and a dinner.
- **Greenhouse:** The HCMGA maintains a greenhouse located at Trinity Valley Community College. This greenhouse allows us to propagate and grow plants that are sold at our annual spring plant sale.
- **Harvest Garden:** The HCMGA's newest project, the Harvest Garden, is a teaching garden on growing fruits and vegetables with hands-on demonstrations. It is located inside the Regional Fairpark Complex.
- **Library Series:** Educational presentations are hosted by the HCMGA on the third Tuesday of each month. These programs are open to the public at the Clint W. Murchison Memorial Library in Athens.
- **Plant Sale:** The HCMGA hosts an annual plant sale in the spring which is open to the public. Master Gardeners propagate and grow different varieties of plants and trees. This event is a major fundraiser for the organization.
- **Summer Series:** Workshops are provided in the summer months to share expertise and educate the public on various gardening topics.

Welcome Spring

By Lydia Holley, Master Gardener



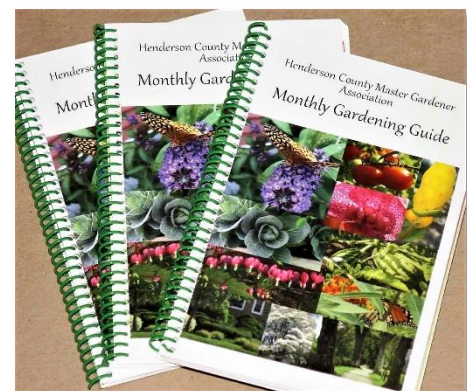
Spring, glorious spring! As much as I enjoy seeing the bones of my garden, and appreciate gardens that are filled with hedges, structure, and evergreens, there is nothing that gives me more joy than blooms. Big, bold, bright blooms. Small, pastel, romantic blooms. All of them delight my soul.

Gardeners have felt that way forever. While watching 'Monty Don's Italian Gardens' on Netflix, he makes a point of educating the viewers about Renaissance gardens. Although these gardens are filled with geometric shapes outlined in evergreen hedges, he explains that the Renaissance gardener would have filled those shapes with an abundance of blooms. I could imagine them overflowing with roses, lilies, daffodils, or other blooms. These gardens were showpieces. Filled with the newest blooming plant or bulb being discovered, many of the gardens of olde that still remain, had an exorbitant price tag.

I think one of the easiest ways for the modern gardener to enjoy spring is through the use of bulbs. Rising up out of the ground without much effort and many times, without much expense, bulbs can return year after year if they appreciate the climate.

Bulbs that grow well here are daffodils, grape hyacinths (*Muscari*), summer snowflakes (*Luecojum*), dutch irises, and paperwhites. Bulbs that may bloom in other seasons include rain lilies, spider lilies (*Lycoris*), oxblood lilies (*Rhodophiala bifida*), crinums, and hardy amaryllis (*Hippeastrum x johnsonii*).

As your gardens enjoy the height of spring, note where you'd like additional spring blossoms. Use the HCMGA Monthly Gardening Guide to help you decide what to plant and when to plant it. Copies can be obtained through the Henderson County Extension office (903-675-6130).



Bats - Why Should I Care

David Bickerstaff, Master Gardener

I thought that I was reading a gardening publication, so why is this guy writing about bats? Please read on and you will learn about the importance of bats in horticulture.

Bats are wonderfully beneficial creatures that provide invaluable services to both natural ecosystems and human economies around the world. Yet they are also among the most misunderstood of animals – routinely feared and loathed as sinister denizens of the night. Except in China, where bats have long been celebrated as symbols of good luck and happiness.

Bats are mammals that belong to the order Chiroptera (from the Greek cheir - "hand" and pteron - "wing"). The forelimbs of bats form webbed wings, making them the only mammals naturally capable of true and sustained flight.

The Truth about Bats

Here's a few of the common myths about bats – and the real story:

- **Blind as a bat**

Forget it. Bats not only see as well as just about any other mammal, but most bats also use a unique biological sonar system called echolocation, which lets them navigate and hunt fast-flying insects in total darkness. Basically, the bat emits beep-like sounds into its path, then collects and analyzes the echoes that come bouncing back. Using sound alone, bats can see everything but color and detect obstacles as fine as a human hair.

- **Bats are flying mice**

Nope. Bats are mammals, but they are not rodents. In fact, they are more closely related to humans than to rats and mice.

- **Bats get tangled in your hair**

Get real. This was a common myth a few decades ago, but bats are much too smart and agile for that.

- **Bats are blood suckers**

Well, there really are three vampire bat species (out of more than 1,300 bat species) that feed on blood; only one targets mammals. All vampire bats are limited to Latin America. Oh, and they don't suck blood, they lap it like kittens with milk. And a powerful anticoagulant found in vampire saliva, which the bats use to keep blood from clotting, has been developed into a medication that helps prevent strokes in humans.



- **All bats are rabid**

Not even close. Bats, like other mammals, can be infected with the rabies virus and some of them are. But the vast majority of bats are not infected. However, a bat that can be easily approached by humans is likely to be sick and may bite if handled. Simply do not touch or handle a bat or any other wild animal and there is little chance of being bitten. Teach children to never handle any wild animal.



Many of the more than 1,300 bat species consume vast amounts of insects, including some of the most damaging agricultural pests. Others pollinate many valuable plants, ensuring the production of fruits that support local economies, as well as diverse animal populations. Fruit-eating bats in the tropics disperse seeds that are critical to restoring cleared or damaged rainforests. Even bat droppings (called guano) are valuable as a rich natural fertilizer. Guano is a major natural resource worldwide, and, when mined responsibly with bats in mind, it can provide significant economic benefits for landowners and local communities.

The millions of Mexican free-tailed bats at BCI's Bracken Cave in Central Texas eat tons of insects each summer night. And a favorite target in the United States and Mexico is an especially damaging pest called the corn earworm moth (aka cotton bollworm, tomato fruitworm, etc.) that attacks a host of commercial plants from artichokes to watermelons. Worldwide crop damage from this moth is estimated at more than \$1 billion a year, and research in 2006 concluded that freetails save cotton farmers in south-central Texas more than \$740,000 annually. Throughout the United States, scientists estimate, bats are worth more than \$3.7 billion a year in reduced crop damage and pesticide use. And that, of course, means fewer pesticides enter the ecosystem.

From deserts to rainforests, nectar-feeding bats are critical pollinators for a wide variety of plants of great economic and ecological value. In North American deserts, giant cacti and agave depend on bats for pollination, while tropical bats pollinate an incredible number of plants. A few of the commercial products that depend on bat pollinators for wild or cultivated varieties include: bananas, peaches, durian, cloves, carob, balsa wood, and agave.

The International Union for the Conservation of Nature (IUCN) currently lists 24 bat species as Critically Endangered, meaning they face an imminent risk of extinction. Fifty-three others are Endangered, and 104 bat species are considered Vulnerable. Bats also are among the most under-studied of mammals. Because bats reproduce slowly, with females of most species giving birth to only one pup per year, recovery from serious losses is painfully slow and tenuous at best. It is often difficult to spot significant declines in such species until their situation is dire. Most bat-moms give birth to a single pup at a time, for good reason. Baby bats can weigh up to one-third of their mother's body weight. To put that into perspective, just imagine birthing a 40-pound human infant!

In North America, meanwhile, over 5.7 million of bats have been killed by White-nose Syndrome, a wildlife disease that continues its spread across the continent. Caused by a cold-loving fungus called *Pseudogymnoascus destructans*, WNS attacks hibernating bats, causing mortality rates that approach 100 percent at some sites. The disease was first spotted in a cave in Upstate New York in February 2006 and has since expanded across the eastern half of the United States and Canada. Despite tireless scientific efforts to find a solution, the disease is still killing huge numbers of bats. Until the arrival of WNS, two Endangered U.S. species, the Indiana myotis (*Myotis sodalis*) and gray myotis (*M. grisescens*), were showing promising signs of recovery. That now seems doubtful. And scientists predict that the once common little brown bat (*Myotis lucifugus*), will be reduced to just 1% of its pre-WNS population numbers by 2030.

According to the Texas Parks and Wildlife Code, (Chapter 63, Section 63.101; <http://www.statutes.legis.state.tx.us/Docs/PW/htm/PW.63.htm>), no one may hunt, sell, offer for sale, buy, offer to buy, or possess after purchase a bat or any part of a bat, dead or alive.

So where are some of the best places to see bats in Texas?

- Bracken Cave Preserve- outside of San Antonio
- Camden Street Bridge- San Antonio Riverwalk
- Congress Avenue Bridge- Austin

Happy gardening and be nice to your new friend the bat!

David

Resources:

- Texas A&M Agrilife Extension (<https://agrilife.org>)
- Texas Parks & Wildlife (<https://tpwd.texas.gov>)
- Bat Conservation
- International (www.batcon.org)
- National Wildlife Federation (www.nwf.org) – building a bat house

2019 HCMGA Meetings

When: Noon (luncheon), 3rd Wednesday of the month

- | | |
|---------------------------|------------------------------|
| * May 15 th | * September 18 th |
| * June 19 th | * October 16 th |
| * July 17 th | * November 20 th |
| * August 21 st | * December 18 th |

Where: Richard M. Hart & Johnny Morris Conservation Center

Address: 5601 Country Road 4812 Athens, TX 75752

For more information on how you can become a Master Gardener:

- Call: (903) 675-6130
- Email: CMGA@gmail.com
- Visit: txmg.org/hendersonmg

For more events, see the calendar on page 8

Resources for Natives Plants

Filling your garden with native plants may seem like quite the challenge. Which plants are native? Where do you find them? How do you care for them? The HCMGA **Monthly Gardening Guide** has an article on Earth-Kind from Texas A&M AgriLife Extension. In that article are listed many native grasses, groundcovers, perennials, shrubs and trees of all sizes, as well as vines. The index lists about 325 plants, trees, shrubs, and vines, by both their common name, as well as their scientific name. The natives all have stars next to them. Here are a couple more awesome resources:

- Native Plant Society of Texas: <https://npsot.org/wp/>
- Ladybird Johnson Wild Flower Center: <https://www.wildflower.org/magazine/landscapes/natural-accent> - click on "South Central Plains"
- Texas A&M AgriLife Extension: <https://aggie-horticulture.tamu.edu/earthkind/> and <https://agrilifeextension.tamu.edu/solutions/best-plants-trees-grow-texas-landscapes/>
- Texas A&M Agriculture Program: <https://aggie-horticulture.tamu.edu/ornamentals/nativeshrubs/>
- Texas A&M East Texas Gardening: <https://easttexasgardening.tamu.edu/east-texas-home-gardening/plants-for-east-texas/>

Henderson County Master Gardener Association Presents

Learn at the Library Series

May 21st at 5:30pm: *Garden Insects: Beneficial, Harmful and Pollinators*

As part of the Henderson County Master Gardener Association's Library Series, Master Gardener Addie Matney will present "*Garden Insects: Beneficial, Harmful and Pollinators*". Ms. Matney received her Master Gardener certification in McLennan County. She also has certifications as a Vegetable Specialist and in Native Plant Landscaping. She lives in Athens with her daughter and two grandchildren. Come join us for this fascinating and helpful presentation.



June 18th at 5:30pm: *To-be-determined*

For details as the month approaches, visit <https://henderson-co-tx-mg.org/welcome/events/learn-at-the-library-series/>

Location & Time

All presentations are **free**, open to the public, and held at the Clint W. Murchison Memorial Library, 121 S. Prairieville, Athens. Presentations start at 5:30 pm sharp. For more information, please call (903) 675-6130, send an email to hendersoncmga@gmail.com or visit our website: txmg.org/hendersonmg.

Harvest Garden Happenings

By Lydia Holley, Master Gardener



The Harvest Garden, a demonstration garden for growing vegetables, herbs, grapes, fruit trees, and berries, located at the Henderson County Regional Fairpark Complex, 3356 Hwy 31, Athens, is starting to look like a true garden.

For months, we planned, however, progress was slowed due to the rain and cold. With warmer weather, though, Henderson County Master Gardeners have begun work on the numerous areas of the garden.

A fence was installed and painted. Irrigation was trenched and tested. By the time this article goes to print, we may already have put together raised beds, erected a hoop house, and poured a slab for an education center and future building. Scheduled for May is the planting of fruit trees, berries, and grapes. Come out and see how fast the progress happens!

Demonstrations or presentations on each step of building a Harvest Garden will be given to the public, so you can start a Harvest Garden of your own. Please look for the dates/times in your email inbox or announced in the local newspapers. A Grand Opening will also be publicized. We hope you join us.

Calendar

Of Events

May

5/12 – Mother’s Day
 5/13 - HCMGA Board Meeting
 5/15 - HCMG Monthly Meeting
 5/16 to 5/18 - HCMGA Hosts Specialist Training: EarthKind®
 5/21 - Library Series
 5/27 – Memorial Day

June

6/12 to 6/14 - Advanced Training: Tree Care (Kerrville)
 6/16 to 6/24 - International MG Conference (Valley Forge, PA)
 6/16 – Father’s Day
 6/17 – HCMGA Board Meeting
 6/18 – Learn at the Library Series
 6/19 - HCMGA Monthly Meeting

Events

Around Town

- **Throughout May - Dallas Arboretum:** <https://www.dallasarboretum.org/events-activities/dallas-blooms/> **Daily Harvest (10:00am-10:30am)** – *“Free event with general admission - Join our horticulture team as they harvest veggies right out of the garden in A Tasteful Place. Hear all about what they are harvesting and how they do so.”*
- **May 4th – Collin County Master Gardener:** <https://www.facebook.com/events/294621864539133/> **“Earth Kind Garden Party” (9:00am – 3:00pm)** – *“A free family-friendly event. On the patio of Wholefoods Market, Plano. Topics Include: Earth-kind gardening for any size space, grow your own culinary herbs and veggies, Free kids-in-the-garden activities, composting basics, and small-space portable gardens.”*
- **May 5th – Lady Bird Johnson Wildflower Center:** <https://www.wildflower.org/events/2019-03/> **Class: Native Plants to Dye For (10:00am-1:00pm)** *“Celebrate the season of spectacular colors with your own plant-dyed fabrics!”*
- **May 17th - Smith County Master Gardeners:** <https://txmg.org/smith/coming-events/> **Master Gardeners at the Library (11:30am-1:00pm)** – *“The Smith County Master Gardeners lecture series continues with a free lecture at the Tyler Public Library. “Home Landscaping: Right Plant, Right Place” – Greg’s 5 basic principles of landscape design, including do’s and don’ts, with Greg Grant, Texas A&M AgriLife Extension Horticulture Agent for Smith County.”*
- **Throughout June - Dallas Arboretum:** <https://www.dallasarboretum.org/events-activities/dallas-blooms/> **Daily Harvest (10:00am-10:30am)** – *“Free event with general admission - Join our horticulture team as they harvest veggies right out of the garden in A Tasteful Place. Hear all about what they are harvesting and how they do so.”*
- **June 1st– Texas Parks and Wildlife (Tyler State Park):** <https://tpwd.texas.gov/calendar/tyler/wildfood-walk-10> **Wild Food Walk (2:00pm-3:00pm)** - *“Edible and useful plants: Learn to identify edible and useful plants and how to prepare them. Many edible plants may be seen during this short hike. Learn about plant safety, too. Meet at the Blackjack Nature Trail.”*
- **June 20th – Van Zandt Free State Master Gardener:** <https://txmg.org/freestatemastergardeners/event/growing-olive-trees-in-tx/> **“Growing Olive Trees In Texas” (5:30pm – 7:00pm)** – *“Library Series Presentation by Jim Henry of Texas Olive Ranch. Free and open to the public.”*

Trinity Valley Community College & Henderson County Master Gardeners

Partnership Benefits Community

Press Release: April 23, 2019, Athens, TX.



Pictures of greenhouse in disrepair before the partnership with HCMGA

Trinity Valley Community College (“TVCC”) owns a commercial sized greenhouse on its Athens campus that was historically used for horticulture curriculum. Over time horticulture was no longer part of the curriculum and due to lack of use, the greenhouse fell in a state of disrepair.

TVCC offered to partner with the Henderson County Master Gardeners Association (“HCMGA”) to allow them to use the greenhouse for the benefit of the community. HCMGA gladly accepted the invitation and this began a partnership which has existed since 2015.

Due to the efforts of the HCMGA, the greenhouse is once again a great asset for TVCC and the community. HCMGA uses the greenhouse to grow plants from seed as well as propagating plants. These plants are nurtured by the HCMGA team and then sold in their annual spring plant sale. The proceeds from this sale helps fund various projects which benefit Henderson County residents.

On Tuesday, April 23rd, Dr. Jerry King, President of TVCC, toured the greenhouse and witnessed the transformation that has occurred as a result of the partnership. Dr. King stated, “It is impressive what HCMGA has accomplished with our asset that was in disrepair. We are proud to have a partnership with HCMGA and hope it continues for many years”.

“This greenhouse has provided the Master Gardeners in Henderson County a place to grow healthy plants under near ideal conditions,” said Cynthia Holifield, Co-chair of this year’s plant sale, “We are able to provide the best possible plants to the people who buy them and take them home as part of our plant sale.”

David Bickerstaff, HCMGA President said, “The partnership with TVCC has allowed us to achieve our mission of providing Henderson County residents with relevant research-based information for successful, sustainable, and healthy gardening. We value our partnership with TVCC and work hard to be a good steward of their asset.”

The HCMGA will be holding their annual plant sale on Saturday, April 27th, from 9:00 am to 2:00 pm, at the Athens Senior Citizens Center, located at 3344 State Hwy 31 E, Athens (by the arena).



Pictured, from left: Barbara Thompson, Yvonne Sparks, County Extension Agent Spencer Perkins, TVCC President Dr. Jerry King, David Bickerstaff, Cynthia Holifield.

Offerings will include a wide variety of annuals, perennials, herbs, vines, succulents, houseplants, Texas Superstars, as well as bat and bird houses. This year will be one of the largest with over 5,000 plants. This is in large part due to the partnership with TVCC.



The greenhouse today under the care of Henderson County Master Gardeners

About TVCC:

Trinity Valley Community College is a learning-centered college that provides quality academic, workforce, college preparatory, student support, and community service programs that prepare and empower students for success and promote and enhance life-long learning for all communities served. www.tvcc.edu

About HCMGA:

Master Gardeners are members of the local community who take an active interest in their lawns, trees, shrubs, flowers and gardens. They are enthusiastic, willing to learn and to help others, and able to communicate with diverse groups of people.

What really sets Master Gardeners apart from other home gardeners is their special training in horticulture. In exchange for their training, persons who become Master Gardeners contribute time as volunteers, working through their Extension office to provide horticultural-related information to their communities. <https://henderson-co-tx-mg.org>

Editor's Note: [click this link](#) to visit the HCMGA Facebook page. There you can see a video interview and tour of the greenhouse. You'll get to go behind the scenes to see the activity and strategies that have made the greenhouse a great success.

May & June Gardening Tips

In General:

Regular activities include weeding, fertilizing, and mowing. Through May, we'll want to keep an eye on the weather to ensure adequate rain falls. Otherwise, supplemental watering may become necessary. Come June however, consistent watering begins.

Love veggies and herbs?

Harvesting the greens will come to an end as the temperature climbs, but other veggies will be reaching maturity. Compost your cool-season crops. As Tomatoes and Peppers set first fruit, a light application of side dressing will keep plants robust while producing the maximum amount of fruit. Continue harvesting and weed as needed.

Keep an eye out for pests, especially aphids which are happiest on new plant growth. Some beneficial insects that are natural enemies of aphids include ladybugs, lacewings, and parasitic wasps. You can order these online or inquire at your local garden center. Remember however, not all crawly things are pests. If you are not sure, contact the local AgriLife Extension Office for identification. Keep the good guys around.

The single, most important factor in a successful vegetable garden is water. Too much or not enough is never a good thing. Keep soil evenly moist. Add mulch to control evaporation and keep the ground cool. Do not mulch around Squash plants as mulch provides a hiding place for squash bugs.

If Tomatoes show signs of blossom end rot, (sunken, brown, leathery bottoms where the blossom was), add calcium to the soil before the next crop is planted. Blossom end rot (BER) results from cold ground, inconsistent water, wet weather turning dry, and the plant cannot take up and distribute calcium throughout the fruit properly. BER usually affects the first set of tomatoes. Add calcium to the soil if you see signs of blossom end rot (BER) on tomatoes.

How about Flowers?

Continue to plant, water and deadhead flowers as needed. For fuller plants, pinch back Asters and Chrysanthemums. Establish new baskets for summer accents. There are many flowers that can be seeded now through August, such as Cosmos, Marigolds, Ornamental Sweet Potato, Periwinkle, Portulaca, and Zinnias. Keep the old spent flowers pinched back to encourage reblooming.

There is still time to plant Mums for fall if you can obtain strong healthy container grown plants. Continue to pinch terminal growth on existing established plants to induce more branching.

Spider mites love hot, dry weather. Look for stippled leaves which may indicate the presence of spider mites. A strong stream of water or insecticidal soap should do the trick.

Do you care for your trees and shrubs - or are they just there?

Be sure to have adequate organic mulch around trees and shrubs to conserve moisture and keep the soil cooler through the hot summer months.

Remove flowers regularly on Rose bushes as they fade to encourage new blooms.

Thin emerging fruit from trees in order to promote a healthy harvest. Remove fallen fruit and debris from beneath trees to eliminate sources of insects and fungus.

And what about your grass?

If your lawn has some low places in it, May is a good time to repair. To repair your lawn, choose a soil which matches your native soil for the fill. Mow and fertilize the lawn prior to applying your selected soil. If needed, plant new sod or plugs. May is the last month to apply broadleaf weed killers before the weather becomes hot.

Once you have mowed your grass several times, and all the grass is in, you can start fertilizing. Continue to fertilize every six weeks in summer until September. Try to fertilize right before a rain or be sure to water well after fertilizing so you will not burn your lawn. Applying lawn fertilizer by hand is not recommended, as the results will be uneven and can damage the grass.



Spencer's Corner

Water Wise

By Spencer Perkins, County Extension Agent

Water is so fundamental to the life of gardens, lawns, trees and landscape, that it is worth thinking through the most efficient use of this precious resource. Even though Henderson County receives an average of 43 inches of rain per year, we know rainfall is not evenly distributed from month to month. Some seasons can bring an abundance of rain. When this is the case, only supplemental watering is needed. For example, September through December of 2018 brought an average 7 to 9 inches of rain a month. January through March of this year has seen 2-3 inches of rain. An excellent resource for historical information on rain fall can be found at <https://etweather.tamu.edu/rainhistory/>.



Leave clippings behind when mowing in the summer to provide a natural mulch.

Once the heat hits, regular watering is usually required. During the summer months, lawns and landscapes can take 35-50% of our water usage. Watering and mowing correctly can make for a stronger, healthier lawn that is less susceptible to heat, disease, and fungus. For example, in the summer, set the mower height slightly higher. By leaving the clippings behind, you provide a natural mulch that will keep the ground cooler and reduce evaporation.

Lawns should be watered when they need it. One way to tell is if you leave footprints behind when you walk on your lawn. When you do water, do so to a soil depth of 6 inches. Doing so encourages roots to go deeper in search for water. Use a rain gauge to keep track of weekly rainfall or check online at <https://etweather.tamu.edu>.

Strategically placed cat food cans or tuna cans throughout your landscape can be used to assess how long it takes your sprinkler or watering system to deliver the required amount of water.

Start by running the irrigation system for the length of time you normally would. Check the amount of water collected in the cans and calculate the average. Next, dig down in the soil to see to what depth the water penetrated. You can now calculate any adjustment that might be needed in water-time. For example, say an average of $\frac{1}{2}$ inch of water collected in the cans in a 15-minute time period, and the water penetrated the soil to a depth of 3 inches. You now know that it will take approximately 30 minutes, or 1 inch of water to penetrate to a depth of 6 inches.

Sloped yards are tricky. You may need to water in two or more time periods an hour or so apart. This may allow for better penetration.

Soil type will affect water absorption rates and depth. Water filters more quickly through soil with high sand content. Soils with more clay require more water. Notice if your property has more than one soil type as that is common in Northeast Texas.

Water early in the morning. Doing so in the evening will cause water to remain on the plants overnight, making them susceptible to disease.

When possible, plan your landscape so that plants with the same water requirements are together. By using native plants, you reduce your need for supplemental watering.

Most shrubs need only an inch of supplemental water per week during the tough summer months. 2-3 inches of mulch around shrubs will keep the soil cool and moist. Keep the mulch off stems and trunks to avoid disease. Cedar and Cypress mulches also deter pests.

Vegetables need 2-4 inches of water per week during the growing season. Consider a drip irrigation system or soaker hose so that water goes only to the plant roots where it is needed. Provide lots of organic material to hold water. Again, use mulch to retain moisture in the soil.

Look at your plants in the morning to assess their water needs. Plants that tend to wilt in the afternoon on a hot day are conserving energy. They will recover overnight when temps are cooler. If they still look wilted in the morning, it is time for water.

You can help newly planted trees by placing a 3 to 4-inch PVC pipe in the ground adjacent to the root ball. Position the PVC such that the bottom of the pipe is at the same depth as the roots of the new tree and the top is a few inches higher than soil level. When you fill the pipe with water, the slow release at the root level will encourage the roots to grow deeper. And again, provide 2-3 inches of mulch around the tree. Keep the mulch off the trunk to avoid disease.

A Little Math Can Go a Long Way

By Robert Erickson, Henderson County Master Gardener

Henderson County Master Gardeners

The master Gardener program is a volunteer development program, offered by Texas AgriLife Extension Service, that disseminates horticultural information to individuals and groups in Henderson County. The mission is to develop and cultivate community projects related to horticulture. We are a group of volunteers who share a love of gardening and are eager to learn and share our knowledge.

Although I can hear people cringe at the title of this article, the truth is, a little basic high school math can be very beneficial in the garden. It isn't rocket science by any means but knowing a couple of numbers about your garden can improve results and possibly save money.

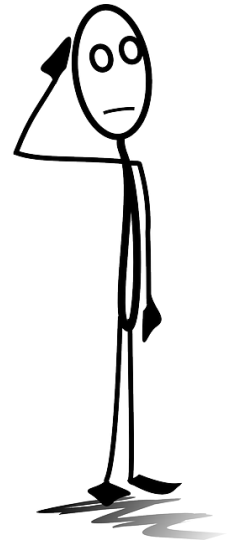
Area: How big is your garden? This is a primary number that is applicable for everything from planning, planting, watering, and fertilizing. Simply stated, it is the measure of the size of your garden plot usually stated in square feet (area is always stated as square something: feet, yards, miles, or whatever units you measure it in). In a square or rectangular garden, it is simply the length times the width. If you have a round or an odd shaped garden, an estimate using the length times width is still probably accurate enough. But to be specific, the area of a circle or an almost circle is $A = \pi r^2$. Assume π is 3.14 and the r is the radius of the circle. For most uses, getting a close number is more than adequate. It makes little difference if it is 32 square feet or 32.5 square feet.

Where is this important? First, your soil test will recommend nutrients based on 1000 square feet. If you have a 200 square foot garden, divide the recommended nutrient number by 5. If it is 100 square feet, divide the number by 10. In addition, when you are planning or planting your garden, if you know the area, you can lay out what plants to place in various locations. A tomato, lettuce, or cabbage usually required 1 square foot of area. Onions, garlic, and others require less space and you can plan accordingly. Knowing the area of your garden is a basic fact that you

need to be aware of.

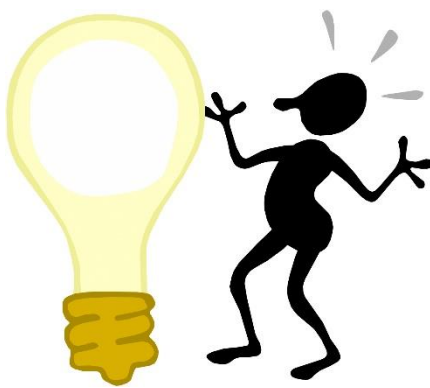
Volume: Volume is a little more complicated but is critical for those using raised beds or when adding additional material to your garden. It is also critical when planning the watering schedule for your plants. Volume is simply the area times the depth you are working with. Gardening directly in the ground doesn't require understanding soil volume. However, if you want to add two inches of compost or mulch, then volume becomes important.

A 4 X 8-foot bed is 32 square feet. If you want to add 2 inches of compost, you multiply 32 times $1/6$. This tells you that you need just over 5 cubic feet of compost or mulch. This is one of the issues to remember, in area and volume, you always multiply the same units of measure; feet times feet, inches times inches, and so forth. When you add a different measure (like inches), you have to convert it to the other dimensions. In this case, 2 inches is $1/6$ of a foot (12 inches). This is most important for raised beds when you buy your initial fill material or add to it.



Understanding volume is also very important in planning watering but there is another element involved. If you decide that you want to water 1-inch per watering, the calculation used about is the same. 32 square feet times $1/12$ foot. The answer is 2.67 cubic feet. But how much water is 2.67 cubic feet of water? The conversion factor for this is 7.48 gallons/cu ft for water. Therefore, you need to put 19.97 gallons of water or 20 gallons. Like I said, the difference in the numbers is not really significant. You can always err slightly on the over side to be safe.

One of the most confusing things for most gardeners is that fertilizer companies use a wide variety of recommendations for applying their products. Some do it by a certain amount per row, some suggest a measure like tablespoons or gallons, or pounds. Simply adjusting their suggestions based on your actual area and volume will get you where you need to get.



Watering takes a little more guess work. The safest way is to put a water meter on your hose or line but that can be expensive. If you use a sprinkler, put several tuna cans around the garden. When they fill up, you have put down about an inch of water. Drip irrigation can be estimated by counting your emitters and knowing their flow. If you put out ten 1-gallon emitters in your garden, they will put out ten gallons in an hour. So, you need to have it on for two hours to achieve your watering goal.

There are other math issues involved but these are the main ones. The same applies to larger gardens with acreage but the arithmetic process is the same; the numbers are just larger. The only other thing to be concerned about is that different plants and soil types may require different frequency and volumes of nutrients and water. Do your research on your plants and give them what they need.



Pests: Friend or Foe

By Susan Skommesa, Master Gardener



Not all creeping, crawling and flying things are pest - even if they feel like it. According to an article on the Texas A&M website, [Managing Insect and Mite Pests in Vegetable Gardens](#), there are about 30,000 species of insects in Texas. The article tells us that about 100 of them cause problems in vegetable gardens. pests tend to stress plants out, carry disease, and reduce flowering and fruit or vegetable production. It is important to be able to identify that creeping, crawling, or flying thing to find out if it is friend or foe.

It is easy to feel overwhelmed by a pest problem. Many multiply so fast that control seems impossible. Attackers range from aphids that envelope roses, squash bugs who overtake edible gourds, and mites and white fly that wither the ornamentals. Fire ants push through raised beds and overtake gardens. Leaf cutters walk off with shrubs. Cabbage and tomato horn worm consume plants overnight.

Being aware as soon as possible and taking preventative steps is the starting point. Daily walks to examine plants, shrubs, trees, and vegetables is not only good for the soul, but it makes you aware of what is going on in your gardens. Look under leaves that are starting to yellow, stipple, or curl. Look for clusters of little black eggs, stickiness, and white cocoons.

A multi-pronged approach is most effective. White fly can be treated with the hard spray of the hose. Mint planted near roses can help with mites, as can horticultural soap wash. Trellis cucumbers and squash to reduce the potential of cucumber beetles. Squash bugs and horn worms can be removed by hand. Ladybugs and parasitic wasps feed off of aphids. Food-grade diatomaceous earth smothers fire ant infestations. Neem oil sprayed on leaves works well to kill off mealybugs, whitefly, scale, and aphids. Some pollinators, such as bats, (see the article on page 4) also consume pests. Create an environment that welcomes pollinators to your gardens.



Good gardening practices can also reduce pests. Choose plant varieties that are pest resistant. Practice crop rotation, weed management, and clean up leaf debris. Take care of standing water, as it too draws pests. Remove infested leaves from plants. Spray Neem oil, which is safe and non-toxic, on young plants and soil. This causes the plant to take the oil into its vascular system. Pests don't like to feed on the oil and they will leave the plant alone.





For more information on pests, attend the Henderson County Master Gardener’s Library Series on May 21, 2019. Master Gardener Addie Matney will present “*Garden Insects: Beneficial, Harmful and Pollinators*”. Ms. Matney is a certified Vegetable Specialist and a specialist in Native Plant Landscaping. All presentations are free, open to the public, and held at the Clint W. Murchison Memorial Library, 121 S. Prairieville, Athens. Presentations start at 5:30 pm sharp. For more information, please call (903) 675-6130, send an email to hendersoncmga@gmail.com or visit our website: txmg.org/hendersonmg.



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