

Box Turtles, May 2-8

Texas is home to two box turtle species and can be found in a variety of habitats across the state. For many Texans, box turtles are a charismatic species that are easily recognized and hold a lot of the same symbolic value as the armadillo or Texas horned toad.

Box turtles are the terrestrial turtles that we found far from water. A trait of all box turtles are the high domed shells that have a broad hinge between the top shell (carapace) and the bottom shell (plastron). This broad hinge allows box turtles to move the lobes of the plastron independently allowing for a very tight fit with the carapace resulting in a nearly imponderable armor. This armor allows box turtles to survive in terrestrial habitats. Box turtles are omnivorous and commonly live to at least 30 years old and up to 50 years old.

Eastern box turtle, *Terrapene carolina*, is represented by one subspecies in Texas, three toed box turtle, *Terrapene carolina triunguis*. As its common name suggests the three toed box turtle almost always has three toes on each hind foot, but it can have four. The carapace is bright to tan in color and can contain a faint pattern. The plastron is solid yellow without any markings. The three toed box turtle can be found roughly east of I-35 as it is a species of forest habitats. However, it can be found in grasslands and forest openings.

Ornate box turtle, *Terrapene oranta*, is represented by two subspecies in Texas and is a turtle of grasslands, plains, deserts, and other open habitats throughout the entire state. The first subspecies, ornate box turtle, *Terrapene oranta ornate*, can be found in all areas of the state except for the Trans-Pecos. The second subspecies, desert box turtle, *Terrapene ornate luteola*, makes it home in the deserts of the Trans-Pecos. The ornate box turtle can be ID by its broad almost flattened carapace compared to three toed box turtle that has more of a domed carapace. Ornate box turtle's carapace will have a visible pattern with many yellow lines and a plastron that is black with a pattern. Ornate box turtle almost always has four toes on each hind foot.

Older Texans can remember a time when box turtles were abundant across the state and were a common sight. That is far from the truth now as box turtle sightings are becoming rarer. This has caused biologists, landowners, and concerned citizens to become worried about the population of box turtles in the state. The reason for the steep decline in recent decades is unknown, but a combination of reasons is likely and includes highway mortality, habitat degradation, urban sprawl, pet trade, and low reproduction rates. Biologists are very concerned about the long term status of box turtles due to their long life span. Many of the individuals observed in recent years are likely older adults and along with low reproductive rates may suggest box turtle populations may not be reproducing at a rate to stabilize or reverse population declines. Data and research are limited for box turtles and for this reason

Texas Parks and Wildlife Department has requested the help of citizens to report box turtle sightings to help biologist determine the status of box turtles in the state.



*Three Toed Box Turtle Above
Ornate Box Turtle Below*



Matthew R. March, MNRD

County Extension Agent- Agriculture & Natural Resources

Waller County | Texas A&M AgriLife Extension Service

846 6th St. Hempstead, TX 77445

Phone: (979) 826-7651

Website: <https://waller.agrilife.org/>

Facebook: <https://www.facebook.com/wallercoextension/>

Why are My Tomato Leaves Turning Yellow?, May 9-15

As a tomato plant grows, it is often thought that it is in the plant's nature for the lower leaves to turn yellow and die off. However, that is simply not true according to Joe Masabni, Ph.D., [Texas A&M AgriLife Extension Service](#) vegetable specialist in Dallas.



Yellowing leaves on tomato plants can be caused by multiple issues. (Texas A&M AgriLife photo)

Masabni, an assistant professor in the [Department of Horticulture](#) in Texas A&M University's [College of Agriculture and Life Sciences](#), explains that a healthy plant that is well maintained and not stressed by disease or nutrition should have green leaves from the bottom to the top. Typically, yellowing leaves are a result of a nutritional imbalance or disease outbreak, but other causes can play a part.

Nutrition can be a cause for yellowing leaves on tomato plants. "Nitrogen is the most common cause, because people generally don't fertilize tomatoes enough," Masabni said. Tomatoes are heavy feeders, meaning the plant requires twice the amount of fertilizer that a cucumber needs, and even four times the amount as beans, he explained. If you don't fertilize enough with nitrogen, the older leaves will begin turning yellow and, in many cases, may fall off. The older leaves turn yellow because they are providing their nitrogen to the younger leaves to survive. Yellowing of leaves can also be the result of an iron deficiency in the plant, but this will be most prominent in the youngest leaves. A magnesium deficiency however will produce yellowing that looks more like speckles or spots on the older leaves. "Those three – nitrogen, iron and magnesium – are the most common nutritional deficiencies growers should pay attention to and fertilize regularly for," Masabni said. It is good to keep in mind, that with the use of a lot of fertilizer, the plant will also require a lot of water. "There is no perfect recipe for how much water your tomato may need, but a good rule of thumb is to do a moisture test

where you place a finger several inches deep in the soil to test for moisture near the roots,” he said. “If it feels dry, it’s time to water, and as the tomato plants get closer to full maturity, they will require more and more water. Better yet, buy a soil moisture meter and use it regularly as a guide on when to water.”



Leaf symptoms of early blight are large irregular patches of black, necrotic tissue surrounded by larger yellow areas. (Photo courtesy of [Aggie Horticulture](#))

Texas is a prime location for fungal diseases in tomatoes, simply due to the heat and humidity that are common in the state. Because these conditions are ideal for spreading diseases, Masabni suggests using a fungicide protectant on a regular basis, once every seven to 10 days, and up to 14 days in a dry year. “Spray on a schedule whether you think you need it or not,” he said. Fungicides are typically used as protective and not as a curative measure for fungus. So, this is a proactive approach that gardeners will want to start before seeing signs of disease to protect the plants from developing one. Once you can see the disease, it is often too late.



Powdery mildew is first noticed on older leaves as a yellow spotted appearance, that upon closer inspection has a whitish-gray powder on the surface.

Most fungal and bacterial diseases cause some kind of yellowing, he explained. The most common fungal disease seen in Texas is powdery mildew or early blight, which starts from the bottom of the plant and moves up as the leaves die off.

Physiological disorders can produce yellowing of the leaf. Salt damage – not just table salt or sodium chloride, but any excess mineral – can result in yellowing. If you are growing

tomatoes in a container and your water contains a heavy amount of salt, once in a while water the container until it leaches out, so the salt can run through the soil and flush out of the container. This will help in preventing buildup of those salts within the container itself.

Use caution with herbicides “Gardeners should avoid Roundup near the vegetable garden because tomatoes are super sensitive to Roundup,” Masabni said. Roundup injury to tomatoes creates a bleaching effect from the inside to the outside of the leaf and affects the newest growth of the plant such as the youngest leaves and shoots.

On the Aggie Horticulture website, the vegetable resources link provides a [vegetable problem solver](#) where you can look at different common problems you may encounter in Texas. “The bottom line—any form of yellowing is not good,” he said. Even if you don’t know the cause, remove any yellow leaf and throw it away in case it is diseased so it will not spread and infect others. Remove that leaf, spray a fungicide and hopefully the problem will be resolved by early diagnosis. When removing leaves, be sure to remove them with a clean hand and properly dispose of the leaf. Wash your hands thoroughly before you continue working on other healthy plants to avoid spreading any disease between plants. Also, ask yourself if you have been fertilizing regularly. Does the plant look tall enough or is it the same height as a month ago, which may mean you need more fertilizer? Placing a fertilizer solution on the end of your hose and washing off your plant from top to bottom on occasion will also simulate a rainfall situation, he explained. This will be especially helpful in a dry year, when mites may become a bigger issue. Washing the plant with water will wash off the mites, and clean and cool the plant, all while fertilizing it. For more information on vegetables and gardening resources, visit the [Aggie Horticulture](#) website.

Article Written by Laura Muntean, Texas A&M AgriLife, Communication Specialist

Matthew R. March, MNRD

County Extension Agent- Agriculture & Natural Resources

Waller County | Texas A&M AgriLife Extension Service

846 6th St. Hempstead, TX 77445

Phone: (979) 826-7651

Website: <https://waller.agrilife.org/>

Facebook: <https://www.facebook.com/wallercoextension/>

Read the Tag Before You Buy the Plant, May 16-22

Walk through any garden center this time of year and it’s easy to see how decisions get made. Bright blooms. Healthy leaves. Maybe a sale sign. And before long, that plant is in the cart headed for a spot in the yard that may—or may not—fit what it actually needs. The

problem isn't the plant. The problem is that most folks never read the tag. That small plastic tag stuck in the pot is one of the most useful tools you have when selecting plants. It tells you how that plant is expected to grow and what it needs to perform well. But only if you use it.

Before you ever pick a plant, you need to know what kind of space you're trying to fill. Is it full sun or mostly shade? Does water drain well, or stay wet after a rain? Do you have room for something that grows 6 feet tall, or do you need it to stay under a window? Those answers should drive the decision—not just how the plant looks sitting on the bench.

Let's start with sunlight. Every plant tag will tell you something like "full sun," "part sun," or "shade." That's not a suggestion—that's a requirement. If a plant calls for full sun and you put it under a canopy of trees, it's going to struggle no matter how healthy it looked when you bought it. In East Texas, this matters even more because many of our homes are blessed with large, mature trees. We have a lot more shade than we think, and that limits what will truly perform well.

Next, pay attention to spacing and planting recommendations. Those guidelines are there to help roots establish, reduce stress, and allow the plant to grow the way it was intended. Skipping over them might not cause problems immediately—but it often does later.

Don't forget to study the 'mature size'. That small plant in a one-gallon pot will not stay small. If the tag says it grows 5 feet tall and 4 feet wide, that's what it's going to try to do. Ignoring that is how landscapes become overcrowded, pushing up against your exterior walls or rubbing against the eaves of the roof. Plants end up fighting for space, airflow is reduced, and suddenly you're pruning constantly just to keep things in check. Frequent offenders are shrubs planted around the foundation of a home. Planted too close from the beginning, they will crowd the walls and cover up the windows. The tag told you. You just have to believe it.

And finally, water needs are important. Some plants require consistent moisture. Others prefer to dry out between watering. If you put a low-water plant in a bed that stays wet, or a high-water plant in a dry area without irrigation, you're setting it up to fail from the start. Earlier this week, someone brought in leaves from a Yucca plant. The homeowners were taking excellent care of it by watering it three times a week. The fact is that Yucca is a wonderfully drought tolerant plant that is highly sensitive to waterlogged soil and requires excellent drainage. Matching the plant to your watering ability is just as important as matching it to sunlight.

The mistake isn't buying bad plants. It's buying the right plant for the wrong place. My wife bought Blue Spire salvias for their beautiful blue blooms and hardiness. The problem was that the salvias need six to eight hours of full sunlight. The space allocated for them was under

two large oak trees that cast full shade most of the day. Just like our salvias, the information needed to avoid mistakes is right there on the tag.

Good gardeners don't just shop with their eyes. They take a few extra seconds, read the label, and match the plant to the conditions they actually have. Because the best-looking plant at the nursery won't stay that way for long if it's planted in the wrong spot. And that's a mistake that's easy to avoid—if we just read the tag.

Article Written by Cary Sims, Texas A&M AgriLife Extension Agent Angelina County



Matthew R. March, MNRD

County Extension Agent- Agriculture & Natural Resources

Waller County | Texas A&M AgriLife Extension Service

846 6th St. Hempstead, TX 77445

Phone: (979) 826-7651

Website: <https://waller.agrilife.org/>

Facebook: <https://www.facebook.com/wallercoextension/>

Pond Management Resources, May 23-29

Phone calls and questions about pond management including stocking and aquatic plants are some of the most common inquiries received at the extension office. The extension office should always be your go-to-source if you have any questions about your pond, but there is also a plethora of informative information that can be found online and through other professional sources.

Texas A&M AgriLife Extension has put together a fabulous website called <https://aquaplant.tamu.edu/> This website can be used as a source to research information on ID aquatic plants, managing an aquatic plant, or pond management. If you want to ID an aquatic plant the first step you will need to do is determine if it falls into four categories: algae, submerged, floating, or emergent. Algae are microscopic plants that are thin and stringy or hair like in nature. Algae will not have a root system. Submerged plants are rooted plants in which all or most vegetative material remains below the water surface. This would include such plants as coontail or hydrilla. Floating plants such as duckweed float on the surface water, but roots are not attached to the bottom. Lastly, emergent plants such as cattails and alligator weed are rooted firmly to the bottom and stand above the water surface. After you determine which category your aquatic plant falls into you can then search through pictures on the aqua plant website to help you ID your plant. Once you ID your plant you can then click on manage a plant tab that will provide you in depth details on how to manage your aquatic plant. This includes, but is not limited to physical management options, biological management options and herbicide control options. The pond management tab provides links and articles on a variety of topics. This includes common management practices such as liming, water testing, species profiles, stocking considerations, stocking rates, aeration, and sport fish management. It also includes some more unique articles on commercial aquaculture and aquaponics.

Another great website for aquaculture recourses is the Southern Regional Aquaculture Center <https://srac.msstate.edu/> This website is maintained by Mississippi State, but it contains relevant information for east Texas. Following the publications tab to fact sheets will allow you access to weeks' worth of reading material. For example, the site contains 14 different fact

sheets on catfish management from feeding to managing off flavor problems in pond raised catfish.

Lastly, private aquaculture business can be a great source of information. You just need to be cautious as these companies also want to sell their products. Boat Cycle and Memphis Net and Twine are popular companies used to purchase pond management equipment. Common pond stocking companies used in our region include but are not limited to Tyler Fish Farms, Overton Fisheries, Danbury Fish Farms, Henneke Fish Hatchery, and Duns Fish Farm.

Pond management from determining stocking rates and aquatic plant ID and control can be very difficult and sometimes a confusing process. The resources we reviewed today can be helpful, but as always, you can call the extension office with any pond management questions you may have.



Matthew R. March, MNRD

County Extension Agent- Agriculture & Natural Resources

Waller County | Texas A&M AgriLife Extension Service

846 6th St. Hempstead, TX 77445

Phone: (979) 826-7651

Website: <https://waller.agrilife.org/>

Facebook: <https://www.facebook.com/wallercoextension/>

Lawn Maintenance Tips, May 30 - June 5

Lawn maintenance is a year around commitment to achieve a lawn your neighbors would be envious of. Proper lawn maintenance skills and techniques can take years of practice to master. But there are some simple tips all homeowners should follow to ensure a healthy lawn.

If first starting a lawn you need to select turf grass appropriate for your site. This will take some research to determine the species and variety that best matches your soil type, shade tolerance, drought potential, traffic, cold sensitivity, and disease resistance needs. Your neighbor might have success growing a St. Augustine lawn, but growing conditions on your site might justify zoysia grass. Next, you will need to perform a soil test and build an adequate depth of at least 6 inches of healthy soil before planting seed or sod.

After your lawn becomes established there are simple maintenance tips you need to follow. Aerate once a year to improve drainage and reduce soil compaction. Irrigation is usually not a problem for most of the year in Waller County, but during dry periods you will need to irrigate. Irrigation should occur in the morning and wet soil to a depth of 4-6 inches. Soil should be allowed to dry out between watering to avoid fungal diseases. When mowing never take no more than one third of the grass blade off. Mower blades need to be kept sharp and only mow when the grass is dry. Mowing over leaves will allow leaves to decompose along with the grass clippings. Mulching blades will assist in properly shredding grass clippings. Over fertilizing can weaken your turf stand and can cause stand declines overtime. You should conduct a soil test at least yearly to ensure you are applying proper amounts of fertilizer.

Take all patch and brown patch may be the two most common diseases seen in Waller County. Prevention includes avoiding over fertilization and overwatering. Maintaining good drainage and raising mowing height to reduce stresses to your turf. Also, aerate at least once a year. Shade stress is another common issue. The best advice is to plant species suited for shade in your lawn. If your lawn is experiencing shade stress, raising the mowing height allows grass blades to remain taller thus capturing more sunlight.

Weeds are constant stress in turf. Herbicide options are available for most grass and broadleaf weeds. However, there are cultural practices that can reduce weed pressure while decreasing the use of herbicides. Turf grasses, when healthy have the ability to outcompete weeds. Weeds should never be allowed to flower and set seed as this will enhance the issue for years to come. Remove weeds routinely and reduce foot traffic and pet activity in shady areas.

Managing lawns sometimes seems like an overwhelming task and many homeowners become frustrated with poor results. By following the simple tips reviewed today you will be giving your lawn a fighting chance and ensure it is healthy for years to come.



Matthew R. March, MNRD

County Extension Agent- Agriculture & Natural Resources

Waller County | Texas A&M AgriLife Extension Service

846 6th St. Hempstead, TX 77445

Phone: (979) 826-7651

Website: <https://waller.agrilife.org/>

Facebook: <https://www.facebook.com/wallercoextension/>

Texas A&M AgriLife Extension provides equal opportunities in its programs and employment to all persons, regardless of race, color, sex, religion, national origin, disability, age, genetic information, veteran status, sexual orientation, or gender identity. The Texas A&M University System, U. S. Department of Agriculture, and the County Commissioners Courts of Texas Cooperating. Anyone needing special assistance at an Extension Program should contact the Texas AgriLife Extension Office at (936) 327-6828 at least one week prior to the program or event.