In the Shade

Newsletter of the
ISA Texas Chapter
February, 2019

Protect your trees and the value of your property with **Mycoject® Ultra** antibiotic. Mauget's® ready-to-use formulation provides 4 months protection from Fire Blight and Bacterial Leaf Scorch, reducing both bloom and twig infection.

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Call and speak with our entomologist or consulting arborists for expert diagnostic advice, PHC therapies and applicator training in the use of the tree injection technologies.

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Fire Blight Photo: William Jacobi, Colorado State University, Bugwood.org
Bacterial Leaf Scorch Photo: William M. Ciesla, Forest Health Management International, Bugwood.org

Mauget

President's Letter

Emily King

Hello, Texas! This year has a lot in store for us. Here's the rundown:

2019 Work Plan: The Board of Directors recently adopted a 2019 Work Plan. The work plan is intended to help focus our efforts and build upon the good work the Chapter has been doing. Some of the tasks that I am most excited about include:

- Developing a 3-year educational events plan
- Doing more to promote the Texas Tree Climbing Championship
- Shoring up the chapter's volunteer base by creating a volunteer manual, volunteer task descriptions, and a volunteer management system

Building Capacity: With the newly adopted 2019 budget, we are planning for building capacity. Additional funding was allocated to our professional services contract, resulting in additional ISA Texas staff this year. Many readers will know that John Giedraitis is contracted to serve as the chapter's Executive Director; John will be bringing on support staff under his contract. The chapter has a healthy reserve in the bank, and we have reached the point of growth that it is time to put these funds to work for us in order to grow.

Horizon Issues: It's not too early to be thinking about nominations, both for 2019 Texas Tree Awards and for Board of Directors positions. Keep your eyes open for people or projects that you think might help make our chapter shine!

I will keep plugging the newly adopted ISA Texas Strategic Plan. If you haven't taken a look please do. It is on our website here: http://isatexas.com/about/isat-documents.

Cheers,
Emily

In the Shade

is published six times a year by the Texas Chapter,
International Society of Arboriculture.

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February 2019 **Vol. 42, No. 5**

NEW MEMBERS

Alejandro Acosta Garcia ..... Odessa
Edwin Barnes ..... Liberty Hill
Oscar Barron ..... San Antonio
Romeo Correa ..... Lindale
Roy Fickel ..... Fort Worth
Alan Hogan ..... Rowlett
Lastin Johnston ..... Midland
Reed Jones ..... Austin
Shae Kipp ..... McKinney
John Kirchner ..... Haslet
Joseph Lemond ..... Crosby
Nathan Lowery ..... Austin
Richard Melius ..... Odessa
Thomas Monks ..... Colleyville
Joe Partridge ..... Taylor
Luke Phillips ..... Palestine
David Robinson ..... Corpus Christi
Stephan Shimp ..... Midlothian
Clayton Tramel ..... Aledo
Michael Upton ..... Temple

ON THE COVER

With the news that EAB is in Ft Worth (see story on page 12) we thought it appropriate to feature the normally ignored flowers of the ash tree. Photo by Rebecca Johnson.

There are a thousand hacking at the branches of evil to one who is striking at the root.

–Henry David Thoreau

ISA Texas Board Retreat 2019

by Jason Alfaro & Evan Anderson, ISA Texas Board Members

ISA Texas President Emily King was at the helm of our Board of Directors' retreat to plan the exciting year ahead. This year's retreat was held on November 29th and 30th at the historic Dr. Pepper Museum. After an exhausting day of working on ISA Texas strategic and yearly planning, the board was able to squeeze in time for a tour of the Balcones Distillery in downtown Waco.

ISA Texas was able to introduce five new directors to the organization: A.J. Thibodeaux, Neil Manich, Gary O'Neil, Kirsten Schneider, and Star Quintero. This was their first opportunity to get familiar with the organization's ins and outs as well as being introduced to our goals and priorities for 2019.

Implementing the Strategic Plan

During 2018 there was a lot of hard work that went into the chapter's strategic plan. This plan was adopted by the board in late 2018 and was created to help the organization continue to meet and exceed the member's expectations as our chapter continues to expand. The plan was formally presented to chapter members during the annual business meeting this past September. Since the board retreat was our first meeting after the conference, 2019 will be the first year this strategic plan will be put into action for ISA Texas.

So now what? The ISA Texas board discussed and prioritized the goals laid out in the plan ranging from governance, member services, education, public awareness, and research. Board members reviewed and discussed the document in depth, refining the objectives and placing them with the appropriate committee. As simple as this may sound, it was quite the opposite. Bear in mind our committees were recently compartmentalized to create better efficiency. Our second day consisted of finalizing the work plan from the day prior, receiving our committee updates, and adopting the yearly budget.

The planning process for the 2019 Texas Tree Conference is already underway. Our theme this year is "Inspiring Change" taken from our strategic plan that we will implement this year. We will continue to bring in presentations that will get Texas arborists the tools and knowledge they need to care for our trees.

Educational Events

ISA Texas will continue to provide educational events throughout the year for arborists all across Texas. Be on the lookout for more information in your email or on the ISATexas.com website.

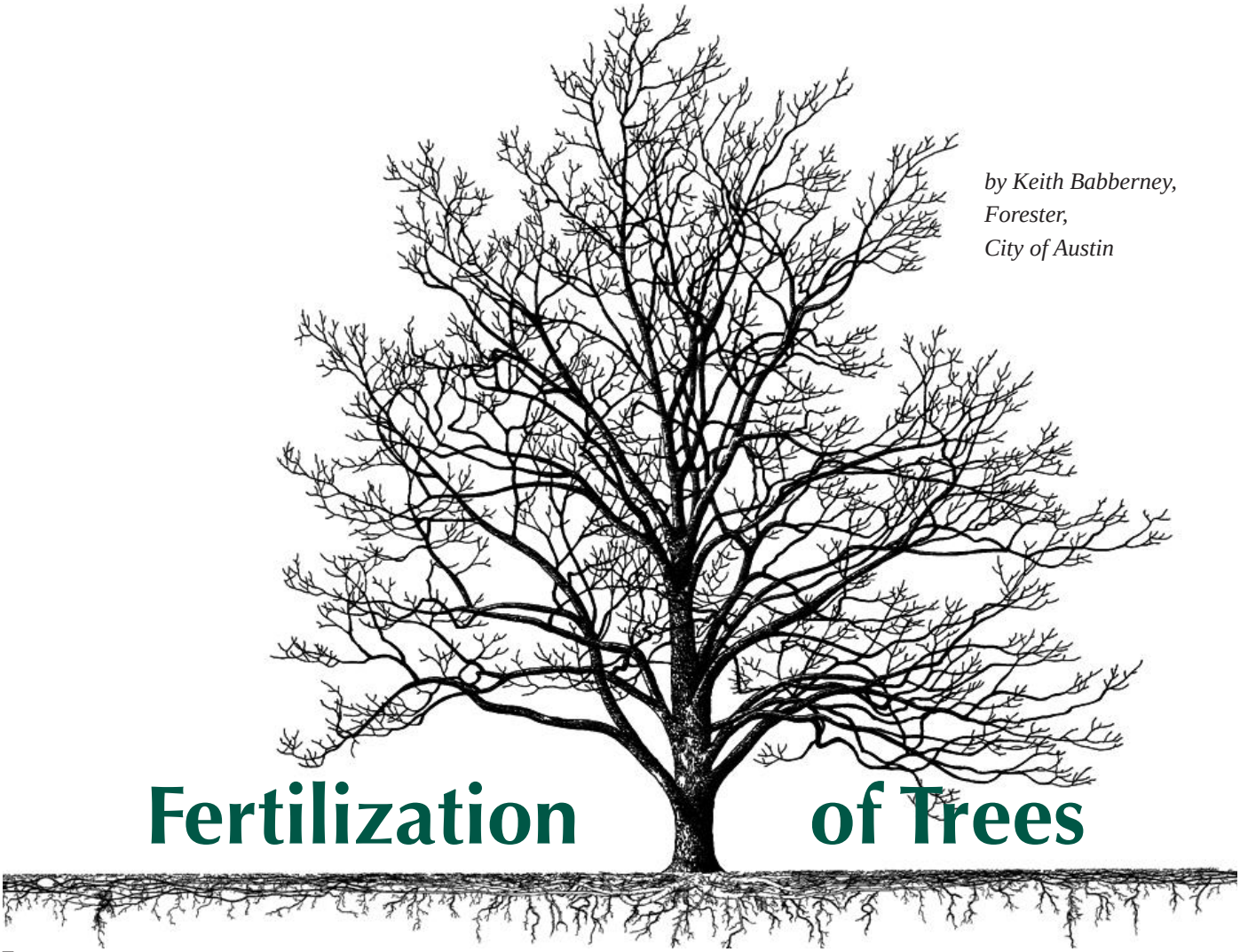
2019 is shaping up to be a great year for ISA Texas. We are looking forward to having all Texas arborists be part of the awesome activities we have planned for y'all. If you're interested in volunteering, please contact us at **http://isatexas.com/contact/** – we could always use an extra hand! ■

Board Members (left to right): John Giedraitis, Kirsten Schneider, Gary O'Neil, AJ Thibodeaux, Chris Lane, Priscilla Files, Evan Anderson, Emily King, Jason Alfaro, Gene Gehring, Star Quintero, Neil Manich. Not pictured: Rebecca Johnson, Oscar Mestas, Micah Pace, Curtis Hopper, Misti Perez, and Matthew Simmons.

Board hard at work.

Creating the 2019 Work Plan

Not all work, a little social bonding after the hard work is done



Fertilization of Trees

by Keith Babberney,
Forester,
City of Austin

It's common for arborists to get calls from customers who want to fertilize their trees. We're often all too happy to get the work, as it can keep a crew busy when pruning work may be slow. As professionals, though, we must make a careful assessment of the site and situation before beginning any sort of treatments. How do we decide whether to fertilize and, if so, which methods to use?

Fertilization simply means adding material to soil (or sometimes directly to plants) that provides the elements plants need. Trees, like all plants, require certain specific nutrients to survive. Most of these nutrients are drawn from the soil by roots and their associated fungal network. If one or more nutrients is lacking, the tree may be unable to complete the process of photosynthesis, which is how plants make their energy. When deficiencies exist, fertilization can restore the tree's ability to meet its needs and maintain health and vigor. When required nutrients are already present in soil, adding additional material can cause more problems than it solves.

Should I fertilize?

Fertilization is not always a good idea. Though hydroponic gardening proves plants can survive strictly on chemical nutrients, healthy soil is a thriving community of bacteria, fungi, insects, worms, and other living things. Plant stress may be caused by problems in the ecosystem that can't be helped with fertilizer. For example, in Central Texas soils iron is usually present but tends to form compounds with calcium, which some plants cannot absorb; plants will become chlorotic, but adding more iron would cause a short-term improvement, at best. When ample nutrients exist already, adding more can make soil toxic to plants. Excess fertilizer also can wash away into creeks and lakes, which can cause problems for wildlife. Fertilizer should never be added to soil without confirmation that some nutrient is needed. It is important to follow label instructions carefully when applying any product.

The first step should be to have the soil tested for current nutrient levels. Nurseries sell home kits that can be helpful, but the most reliable option is to send samples to a laboratory for testing. Texas A&M University offers affordable testing (http://soiltesting.tamu.edu/) that includes full recommendations based on current soil conditions and the plants of concern. Some commercial labs also perform testing services for the public. Basic testing generally measures levels of the three major nutrients (nitrogen, ▶

potassium and phosphorus) and most micronutrients (such as iron, calcium, and boron), as well as providing pH analysis. Specialized tests are also available if a particular problem is suspected.

Results

Analysis	*Value Found*	*Optimum Range*	*Analysis*	*Value Found*	*Optimum Range*
Soil pH (1:1, H2O)	6.6		**Cation Exch. Capacity, meq/100g**	9.5	
Modified Morgan extractable, ppm			**Exch. Acidity, meq/100g**	1.7	
Macronutrients			**Base Saturation, %**		
Phosphorus (P)	4.7	4-14	Calcium Base Saturation	65	50-80
Potassium (K)	222	100-160	Magnesium Base Saturation	11	10-30
Calcium (Ca)	1229	1000-1500	Potassium Base Saturation	6	2.0-7.0
Magnesium (Mg)	128	50-120	**Scoop Density, g/cc**	1.19	
Sulfur (S)	15.4	>10	**Optional tests**		
*Micronutrients **			Soil Organic Matter (LOI), %	6.2	
Boron (B)	0.4	0.1-0.5	Soluble Salts (1:2), dS/m	0.05	<0.6
Manganese (Mn)	17.2	1.1-6.3	Nitrate-N (NO3-N), ppm	1	
Zinc (Zn)	2.5	1.0-7.6			
Copper (Cu)	0.7	0.3-0.6			
Iron (Fe)	31.6	2.7-9.4			
Aluminum (Al)	92	<75			
Lead (Pb)	1.9	<22			

Soil Test Interpretation

Soil test results provide an interpretation of the soil that you can use to determine which nutrients you need to provide while the analysis provides graphic representation (photo from Linda Chalker Scott).

Soil tests can be very useful for identifying most nutrient deficiencies, though detected nitrogen levels can vary dramatically depending on the timing of the samples and other factors. If a test reveals a shortage of nitrogen but adequate potassium and phosphorus, most commercial, "complete" fertilizers would add chemicals that are either unnecessary or damaging to plants. We must learn to interpret the content of commercial products to ensure they only add what's needed.

Not all fertilizers are the same. Packaging should always include three numbers that tell how much of each major nutrient is present. If the bag says "N-P-K 20-10-15," we know the fertilizer is 20 percent nitrogen, 10 percent phosphorus, and 15 percent potassium. The recommendations from the soil lab would tell you how much of each nutrient to apply per square foot, and a quick calculation would determine how much of the bag to use. If only one nutrient is deficient, you would not want a 20-20-20 product. For example, if you only want to supplement nitrogen, you would look for a package marked with a high first number and low second and third numbers, something like 5-0-0 or 6-1-1.

How should I fertilize?

If a soil test identifies a problem, we must choose the best method to correct it. To help decide, we must first understand where roots grow. Tree roots spread outward from the trunk, extending well beyond the ends of the branches. The deepest roots anchor the tree, while the fine roots that absorb water, air, and nutrients are normally close to the surface. The best method of fertilization for a given tree will depend on the site, but the more soil volume we affect in the root zone, the easier it will be for the tree to take advantage of the improvements.

On urban and suburban lots with mature trees, this usually means we want to treat the entire yard. Turf grass often becomes significant to the job. Grass forms a dense mat of roots that compete well for soil resources, particularly water. While grass roots normally only grow down a few inches, trees can have feeder roots up to two feet deep. Of course, not all soils are even one foot deep, and some soils are so compacted that roots can't grow very deep, but the basic principle is that trees do best when they get slow, deep irrigation at longer intervals. Short, frequent irrigation cycles can result in lush grass growing around trees that are under drought stress. Mulch can create a buffer between turf and trees to help the trees compete, but any product we add to the soil will spread more deeply and effectively when and where soil is moist. With this in mind, there are three basic ways to provide what's needed to the trees. Each has advantages and disadvantages.

1. **Surface application:** The simplest method—and often the cheapest—is to broadcast materials over the surface of soil and let gravity and water carry it to roots. Plants have evolved to get their

Too much fertilizer can cause fertilizer burn.

nutrients this way, and it still works fine. A wide range of products can be broadcast; they are sold as powders, granules, or pellets. They can be spread by hand with scoops or shovels, or a wide range of machines are available that can help distribute materials evenly over a large area.

Timing of surface applications can be important. Adding a concentrated chemical to grass during hot weather can cause "burning" damage to plants, so it's better to apply granular fertilizers during mild weather. Often, spring and/or fall are preferred. No matter when it is applied, fertilizer should be watered in after spreading to wash the chemicals from the plants and carry them into the soil. Again, trees prefer a slow, deep soaking to a short, light sprinkle.

Mix your samples from the same property in a bucket to get a sample that is representative of the entire property.

This is not as big an issue when organic materials of lower concentration are used (such as N-P-K 1-0-0 instead of 20-0-0.) A quality compost can be spread up to 1/2" thick any tine with little risk of damage to plants. Not only does compost provide mild levels of nitrogen, but as it decays it feeds and invigorates the soil ecosystem. Healthy soil supports healthy plants.

However, surface application is not always the best choice. On steeply sloping lots or severely compacted soils, fertilizers may wash away before they can be absorbed into the soil, which not only wastes money but can cause problems for wildlife along our creeks and lakes. It often requires a lot of work to move heavy bags around and spread the material. A big pile of compost might take up valuable space that has to be reclaimed quickly. It is important to spread the product evenly to avoid concentrated pockets of chemical that can be toxic to roots and leaves. After spreading, it should be watered in, which adds a step to the process and might take too much time. There may be a delay between application of the product and visible results—which suits trees fine, but doesn't always sit well with homeowners.

2. Subsurface application: Another method of fertilizing is to apply materials directly into the soil, below the surface. This could mean digging a grid of small holes and filling them with dry fertilizer. Some companies offer fertilizer "spikes" that can be pushed into the soil where they slowly dissolve and become available to plants.

You can use a spreader to provide surface application of fertilizer.

The problem with these techniques is that the material does not readily move through the soil. It leads to isolated pockets of toxic soil, surounded by larger pockets of soil where plants can access the nutrients, leaving the majority of the soil unaffected. The most effective subsurface technique is often marketed as "Deep-root" fertilization or feeding. Fertilizer is dissolved in a large tank of water. A large metal spike is pushed into the soil and the liquid is pumped by a machine below the surface. This requires speialized equipment, so generally professional arborists or landscape companies are the ones to do it. Some consumer products can work in a similar way, but they tend to be much smaller and slower to treat a large area.

You can use a trowel or a soil auger to gather your soil samples.

There are several advantages of deep-root applications. The liquid is injected below grass roots, so trees can benefit without having to settle for what the grass leaves behind. Because it goes directly into soil, there should be little or no runoff with this method. The solution used can be customized to include soil conditioners, like humates or mycorrhizae. Nutrients are potentially available to the plant immediately, and are not as likely to burn plant tissues because

the chemicals are diluted and spread out through the soil more effectively. The injection needle can puncture layers of compacted soil, allowing water, air, and nutrients to penetrate more deeply than they would with surface application.

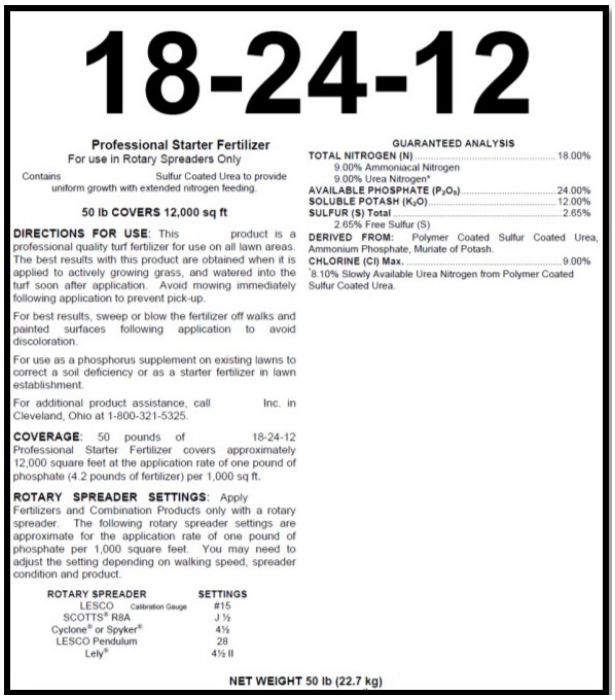
This method can be problematic, though. In severely compacted, shallow, or rocky soil, it may be impractical to insert the injection wand deep enough to penetrate the grass. In softer soils, the needle may go too deep and place the chemicals below the tree roots, where it is wasted. The liquid sometimes splashes out of the injection sites, which can be messy, and some chemicals may stain concrete or other hardscape. Pressure from the pump sometimes pushes up large plates of soil, which can shear off delicate feeder roots between the plates. And, because the equipment is somewhat large and expensive, it can create logistical headaches and might not be affordable to smaller companies.

3. Direct injection: Another possibility is to inject liquid nutrients directly into plant tissues. Small holes are drilled through the bark of the tree trunk or primary roots into sapwood, then specialized equipment is used to push the chemical into the tree's vascular system. Several techniques and devices are available for these injections.

As an ongoing maintenance plan, injections are not a good choice. The drilled holes can provide entry for decay or disease organisms. Injected chemicals don't always move through the tree as well as what comes in through roots naturally. The chemical is often quite concentrated, which can damage the tree's cells at injection sites. Even at their best, injections only have a short-term effect on the plant and no effect on the soil. Without some kind of soil remediation, the process would have to be repeated at some interval, perhaps annually, requiring new drilling each time.

Still, injections have their place. The effect is almost immediate, so if there's a question about which nutrient is deficient, injections can be used to diagnose the problem. If the soil is severely compacted, steeply sloped, or very limited in volume, injections may be the only practical way to get adequate amounts of the chemicals into the plant.

4. Foliar application: A final technique involves dissolving nutrients in water and spraying the solution onto the leaves of plants. The nutrients are absorbed through the leaves to become available for photosynthesis and other processes. Like injections, spraying is not usually a good choice for ongoing treatments. Timing is critical to ensure the leaf pores are open and active to absorb the chemicals. The effect is short-lived and does little to improve the soil in the root zone. As with any spraying, wind might blow the chemicals onto other plants or property where it isn't needed and might cause staining or other problems. Technicians may struggle to get adequate coverage on leaf surfaces to have a significant effect.



18-24-12

Professional Starter Fertilizer
For use in Rotary Spreaders Only

Contains Sulfur Coated Urea to provide uniform growth with extended nitrogen feeding.

50 lb COVERS 12,000 sq ft

DIRECTIONS FOR USE: This product is a professional quality turf fertilizer for use on all lawn areas. The best results with this product are obtained when it is applied to actively growing grass, and watered into the turf soon after application. Avoid mowing immediately following application to prevent pick-up.

For best results, sweep or blow the fertilizer off walks and painted surfaces following application to avoid discoloration.

For use as a phosphorus supplement on existing lawns to correct a soil deficiency or as a starter fertilizer in lawn establishment.

For additional product assistance, call Inc. in Cleveland, Ohio at 1-800-321-5325.

COVERAGE: 50 pounds of 18-24-12 Professional Starter Fertilizer covers approximately 12,000 square feet at the application rate of one pound of phosphate (4.2 pounds of fertilizer) per 1,000 sq ft.

ROTARY SPREADER SETTINGS: Apply Fertilizers and Combination Products only with a rotary spreader. The following rotary spreader settings are approximate for the application rate of one pound of phosphate per 1,000 square feet. You may need to adjust the setting depending on walking speed, spreader condition and product.

ROTARY SPREADER	SETTINGS
LESCO Calibration Gauge	#15
SCOTTS® R8A	J ⅓
Cyclone® or Spyker®	4⅓
LESCO Pendulum	28
Lely®	4½ II

GUARANTEED ANALYSIS

TOTAL NITROGEN (N) 18.00%
9.00% Ammoniacal Nitrogen
9.00% Urea Nitrogen*
AVAILABLE PHOSPHATE (P_2O_5) 24.00%
SOLUBLE POTASH (K_2O) 12.00%
SULFUR (S) Total 2.65%
2.65% Free Sulfur (S)
DERIVED FROM: Polymer Coated Sulfur Coated Urea, Ammonium Phosphate, Muriate of Potash.
CHLORINE (Cl) Max. 9.00%
*8.10% Slowly Available Urea Nitrogen from Polymer Coated Sulfur Coated Urea.

NET WEIGHT 50 lb (22.7 kg)

This 50lb bag of 18-24-12 fertilizer has 9 pounds of nitrogen.

Like injections, foliar treatments can be useful in certain situations. The effects of spraying will be evident quite rapidly, so it can help diagnose a deficiency when other methods are inconclusive, and on difficult sites these may be the only two practical methods to affect a particular tree.

Fertilization has its place in arboriculture, and sometimes could help a struggling tree recover its health and vigor to survive for years longer than it might without the treatments. Still, not every tree needs fertilizer, and fertilizer could be harmful to some trees. As arborists, we must be careful to assess the site-specific needs and address them directly rather than using a cookie-cutter approach to every tree. ■

Subsurface application of fertilizer. (Picture provided by Arborilogical Services featuring Salvador Martinez.)

San Marcos celebrates Arbor Month with launch of Discovery Arboretum

by Kelly Eby, Urban Forester, Community Services, San Marcos

San Marcos designated the whole month of November as Arbor Month. This was accomplished by giving and planting 90 trees at local middle and elementary schools through a grant, planting trees in parks, and giving 100 trees through electric utilities. The topping on the cake was putting together an arboretum and holding an arboretum unveiling on November 28th, 2018. Volunteers helped with many of the facets of design and implementation of this grand idea which was executed in a short time period.

The creation of the Discovery Arboretum involved many steps. The woody plants in the garden had to be identified. Master Naturalist volunteers helped scrub and paint common and scientific names on limestone rocks. I learned how to operate an engraver machine to etch numbers into cedar posts. More trees were planted; and volunteers from Texas State helped paint, seal, and install markers in the garden. My intern, Tammy, learned tree species identification through the process of creating the maps, lists, web links, and QR codes. A snowbird and fellow arborist, Gow Litzenburg, visiting for the winter from Michigan, suggested getting the arboretum registered on Arbnet and facilitated the process. Now San Marcos has the Discovery Trail Arboretum -Level 1 accreditation from the distinguished Morton Arboretum.

The Arbnet accreditation is important because the more you share and educate, the more valuable a resource it becomes. Arbnet is a key factor with its worldwide reach, and it provides this new valuable educational resource a great distinction to be in association with the famed Morton arboretum and other arboretums. More information at **http://arbnet.org/arboretum-accreditation-program.** Now the Discovery Arboretum Trail is only one of three arboretums in Texas on this platform. I hope more communities join in soon.

Thanks to the community of Master Gardeners, Master Naturalists, local native plant enthusiasts, the Habitat Conservation Program, and other community members, this place has evolved into the diverse and scenic spot it is today. The Discovery Arboretum Trail takes visitors on a tour through a variety of native and adapted woody shrubs and trees. Some of the trees are mature and some are young and just beginning to establish and grow. The trail is located close to the Balcones fault line and showcases many species of woody trees and shrubs that can grow on either the blackland prairie or the Edwards plateau, covering a range of habitats including riparian, mesic, and upland species. The trail winds through the Discovery Center butterfly, bird, herb, grass, and cactus gardens that change beautifully with each season, highlighting plants that grow well in our region. Benches, fish ponds, rain catchment and composting demonstration areas complement the trail, as does an insect hotel and a large old tree trunk. The insect hotel is home to native bees and other beneficial insects. There is an old rotten log that is covered in fungi breaking down, thus demonstrating the cycle of decomposition and new life. ■

Left: Insect hotel.

Below: Unveiling the first trail marker.

Editor's Note

Rebecca Johnson

Each year we stop and take stock of what happened last year and what we hope to have happen this year. We make plans, we try to get more organized and we vow to improve and do better (along with vowing to exercise and lose ten pounds).

The ISA Texas Board of Directors meets at the end of each year to plan for the coming year and introduce the new board members to each other. To that end, time is planned for informal socializing as well as the business at hand. We're fortunate that we have a dedicated group of people who are willing to sacrifice hours of their time each month making our chapter as good as it can be. You can read the report of this year's retreat on page 4. If you think it looks like fun and want to know how you can join in next year, be sure to nominate yourself for the board when the nominations open this summer. If you don't necessarily want to run, but know of someone who would be an effective board member, encourage them to run.

In December, the Texas A&M Forest Service confirmed that emerald ash borer (EAB) was found in Tarrant County. With this news, we have a renewed focus on preparing our members to deal with the coming storm. For many of our members, this will mean more paying work but it comes with the downside of the trees being less safe to work with. Now is the time to start educating yourself and your clients with ash trees. You can read about it on page 12. As always, this newsletter is member driven and the articles are written by chapter members. If you'd like to submit an article or picture. If you'd like to be on the list to be reminded of upcoming deadlines, sign up at **http://eepurl.com/dNJMhc**. We especially want to hear about any events in your area that are arboriculture related and that provide ISA CEUs.

Emerald Ash Borer found in Tarrant County *by Dana Karcher*

Emerald Ash Borer (*Agrilus planipennis* or EAB) has been located for the second time in Texas and confirmed in early December 2018. Tarrant County was the victim this time. As arborists, we should engage in the public relations programs that help support the identification of EAB and prevent the spread of the pest. This includes the movement of firewood off property where ash trees are located. We should be knowledgeable about treatment and make recommendations based on safety first and foremost.

In a research project that was completed in 2009/2010 by the Davey Institute, it was found that ash trees infested by EAB have lower moisture levels. This was shown in both static loading experiments, and by Resistograph readings. The static loading experiments showed that the branches of trees that were infested and in severe decline failed closer to the branch union and had significantly more cracking than visually unaffected trees. Resistograph evaluations "found significant divergence of resistance... of healthy trees versus trees that have recently died from EAB activity and are still standing." [1] The full study is well worth reading for the practicing arborist. Making decisions on rigging and climbing should be done with as much knowledge of the health of the tree in question. If that tree is an ash tree, even with no apparent infestation, quantifying the risk and being aware of potential issues is critical.

The population of ash trees in Texas is significant. Wiping out a single species will be devastating. However, as stated on the Texas A&M Forest Service website (**https://tfsweb.tamu.edu/eab/**) , there may be a positive outcome as more communities grapple with how to deal with this pest. Any pest or disease such as EAB gives cities, towns and property owners the opportunity to diversify the number of species that are planted. As arborists and professionals, it is important that we deliver that message of tree diversity to our partners such as landscape architects and planners, and to our clients as we help them select new species for their property. EAB, in spite of its devastation, can be used to tell a story about what happens when the urban forest is not diverse.

As EAB moves (or even skips) across the country, it is important that we maintain an understanding of the outcomes of infestation. Additionally, arborists need to be aware of how those states and communities that have been affected by the beetle have dealt with its arrival and treatment. Continue to watch your professional resources for the latest in research on both the beetle itself, and assuring safety when managing infested trees. If you suspect you have found EAB in a new area, call the hotline to Report: 1-866-322-4512. EAB Regulations in Texas can be found at **http://bit.ly/2K9Mg0x**. ■

[1] Persand, Anand B, and John Siefer, Roy Mantan, Scott Kirby, Oscar J. Rocha, Michael E. Redding, Christopher M. Ranger, and Andrew W. Jones. "Effects of Emerald Ash Borer Infestation on the Structure and Material Properties of Ash Trees." Arboriculture & Urban Forestry, vol. 39, Issue 1, January 2013, pp. 11-16.

Dana Karcher is a Certified Arborist with the Davey Resource Group, Inc. She is a board Member of the International Society of Arboriculture and member of ISA Texas.

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TREE INJECTION SYSTEM

Our advanced technology for tree treatment allows you to

INCREASE THE NUMBER OF TREES YOU TREAT IN A DAY!

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- No guarding or return trips
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Tree Injection Solutions

EVENTS

February 1, 8, 15 & 22, 9:00 AM to 4:00 pm
Healthy Trees and Certified Arborist Preparation Course
San Antonio, TX This course was designed for the citizen who wants to stay safe while improving the health of trees and learn more about the value of trees and also prepare professional arborists for an ISA Certified Arborist examination.
http://bit.ly/2SyGGtH

February 5, 2019, 1:00-2:00
Webinar: The Salt Dilemma: Growing Better Urban Trees in Northern Climates
Can urban trees and city winter weather protocols peacefully co-exist? Join us for a webinar discussion of the latest research findings related to successfully growing trees under these conditions.
https://treefund.org/webinars

February 7, 2019, 11:00-noon
Webinar: From Seed to Shade: Managing a Municipal Nursery
Join Alex Sherman, City Forester & Tree Warden, Springfield MA, as he introduces and discusses the do's and don'ts of establishing and managing a municipal nursery.
http://www.urbanforestrytoday.org/

February 9, 2019
12th Annual Tree Planting Competition in Missouri City
hosted by Houston Area Urban Forestry Council, for more information contact Monica Singhania at msinghania@tfs.tamu.edu

February 11-15, 2019, 8:00-5:00
TCIA Winter Management Conference
St. Kitts. Join hundreds of like-minded tree care professionals for five days of sharing knowledge with industry peers, finding solutions for your business in today's complicated world, and celebrating successes and milestones with your colleagues.
http://bit.ly/2suGQa8

February 13, 2019, 8:00 am – 4:15 pm
2019 North Central Texas Urban Forestry Conference
Growing On and Branching Out
Arlington, TX Join the Cross Timber Urban Forestry Council for the 2019 North Central Texas Urban Forestry Conference. The focus of the conference will include improving tree quality and success in the landscape, as well as expanding our knowledge of tree pests.
http://ctufc.org/conference/

February 22, 2019 7:30am
Certified Tree Worker Exam skills exam
Austin, TX check in at 7:30am, exam starts at 8. Deadline to register is 2/6/2019.
Any questions, please email Misti Perez at mistiperez1076@gmail.com

March 2, 2019
Texas Wildlife & Woodland Expo
Lone Star College-Montgomery
Texas Wildlife & Woodland Expo and Spring Fling – a free, how-to event – affords families, youth and adults a chance to get outdoors – learn about the natural environment – recognize the significance healthy forests, trees, wildlife, and pollinators have on clean air, clean water and our overall health.
http://www.lonestar.edu/WildlifeExpo.htm

March 8, 2019, 7:30 am
Certified Arborist, Municipal, Utility and Tree Worker exam
Selma, check in at 7:30am, exam starts at 8. Deadline to register is 2/20/2019
Any questions, please email Misti Perez at mistiperez1076@gmail.com

March 28-29, 2019, 8:00-5:00
Wildfire Risk Reduction Qualification Course and Assessment
The Texas A&M Forest Service and Texas Chapter ISA have developed this qualification to introduce you to new terms and principles to incorporate into your arboriculture practice. You will explore how wildfire moves through a landscape and mitigation options you could perform or bring to the attention of your client.
http://bit.ly/2stwyar

SAVE THE DATE – Mid April
Tree Risk Assessment Qualification and TRAQ Renewal
Watch the ISA Texas events page (http://isatexas.com/events) for date announcement and registration link.

April 1, 8, 15 & 22, 8:30-5:00
Austin Certified Arborist exam Prep class
Austin, Texas - This course provides fundamental knowledge in arboriculture for individuals interested in the ISA Certified Arborist Exam. Folks who live &/or work within the Austin MSA qualify for a discount. Scholarships are available. http://www.arborholic.com/cap

Landscaping for the Future

by Greg Church, Ph.D., Plant Pathologist, Consulting Arborist, Arborilogical Services, Inc.

American landscapes face challenges for long-term sustainability. At the forefront of those challenges is the conservation of natural resources. Drought, urbanization, invasive species, landscape debris in landfills, air pollution, and the contamination of soil and water all indicate the importance of protecting our natural resources. Texas A&M developed Earth-Kind® Environmental Stewardship to focus on protecting and preserving the environment through a research-based landscape management system.

Research has been conducted at over 40 different public garden sites across Texas and the United States to help increase visibility of the success of Earth-Kind. This systematic approach is focused on the goals of water conservation, pollution prevention, waste reduction, and energy conservation. Principles of Earth-Kind include: proper planning and design, soil analysis and preparation, practical turf areas, appropriate plant selection, efficient irrigation, and appropriate maintenance. The principles and practices of Earth-Kind work together to achieve the highest degree of environmental protection and success in the landscape and garden.

The research program is designed to identify landscape plants that are drought tolerant, adaptable to diverse environments, disease and insect resistant, and beautiful in the landscape. Initially, cooperators chose one of the most challenging landscape plants to test. For over a decade, sites across the U.S. tested more than 100 varieties of roses. The research identified over 20 varieties of drought tolerant roses that do not require fertilizer and pesticides. During the last 10 years, research was expanded to include additional types of plants including perennials, annuals, shrubs, crape myrtles, vegetables, grapes, and ornamental grasses. Overall, the research found that all types of plants, with most varieties, perform at an exceptional level without synthetic fertilizers, pesticides, and with very limited irrigation per year.

Our soil is a vital resource that needs to be protected to maintain its health and productivity for the future. The Earth-Kind Soil Management System is a critical component of the success. The research tests the genetics of the plants in the landscape beds prepared with compost, maintained with mulch, and irrigated with drip irrigation. Earth-Kind is a simple approach the public can easily understand and implement. The science behind this approach uses plants with superior genetics in combination with improvements to soil properties, and encourages beneficial organisms to achieve a balance of nature not typically seen in a managed environment. Learn more about Earth-Kind and visit the gardens: http://ccmgatx.org/earth-kind-gardening.aspx . ■

Greg Church, Ph.D. joined the team at Arborilogical Services in Wylie, Texas, where he serves as a Plant Pathologist and Consulting Arborist. Dr. Church has served as a Plant Pathologist and Horticulturist for Texas A&M AgriLife Research and Extension and for the USDA Horticulture Research Laboratory in Florida. He has been focused on finding alternative methods for pest and disease control that preserve and protect the environment. During the past decade, Dr. Church led a team of volunteers and collaborators to test a diverse range of landscape and garden plants through the Earth-Kind Environmental Stewardship Program.

ASCA Annual Conference in San Diego, November 2018

by David M. Vaughan

This Year's American Society of Consulting Arborists Annual Conference was in San Diego, CA. When I told my wife Berti there was no program for spouses she said, "Great, buy me a plane ticket." She had a great time; I spent the entire time in sessions and saw little of San Diego. They even made us eat a box lunch on the bus while we traveled to Balboa Park for the outdoor session of their academy workshop on Wednesday. On Thursday, the sessions started at 8:00 am and did not end until after a reception at 7:30 pm.

Wednesday was a workshop aimed at caring for mature, veteran trees; the ones we are likely to remove as we assess and manage for risk reduction. Much emphasis on their value for carbon sequestration, wildlife habitat, stormwater infiltration and shade (cooling). The fig trees at Balboa Park were magnificent!

Thursday started with Dr. Michael Raupp talking about a warming climate and how it could affect insect and mite pests of our trees. Pests will develop faster in warmer weather leaving less time in which they are exposed and vulnerable to their predators. He cautioned that pests that are single generation may become multiple generation and multiple generation pests may add another generation. Most of the predators will remain single generation and will be very slow to adjust to the new changes. He was also concerned about plants emerging earlier but not their pollinators. The remainder of the day was aimed at topics for consulting arborists with a very good session addressing ethics. When it's over, all you will have is your integrity. Guard it carefully.

Friday again started out with Michael Raupp, this time talking about IPM and pesticides. For me it was very refreshing to hear an emphasis on good cultural practices and more of an organic approach (I'm IPM proud). He said that chemical pesticides were once the first choice for control and that they now should be our choice of last resort. Right tree in the right location, manage water, control compaction, compost and mulch, and beneficial organisms need to be considered before chemical pesticides. He gave numerous examples of control measures gone wrong including introductions of "beneficial" insects and diseases that backfired. Gypsy moth (Lymantria dispar) was brought in to produce silk. A fly parasite brought in to control gypsy moth turned out to be a generalist in America and almost eradicated several non-harmful moths. He also said that most of the nitrogen we apply for trees is going into the pest that consumes the sap. It is not being used by the tree. It makes the pest healthier and increases reproduction. We are creating superbugs. Same with the systemic pesticides. Mites are able to absorb a systemic insecticide and then become toxic to their predators.

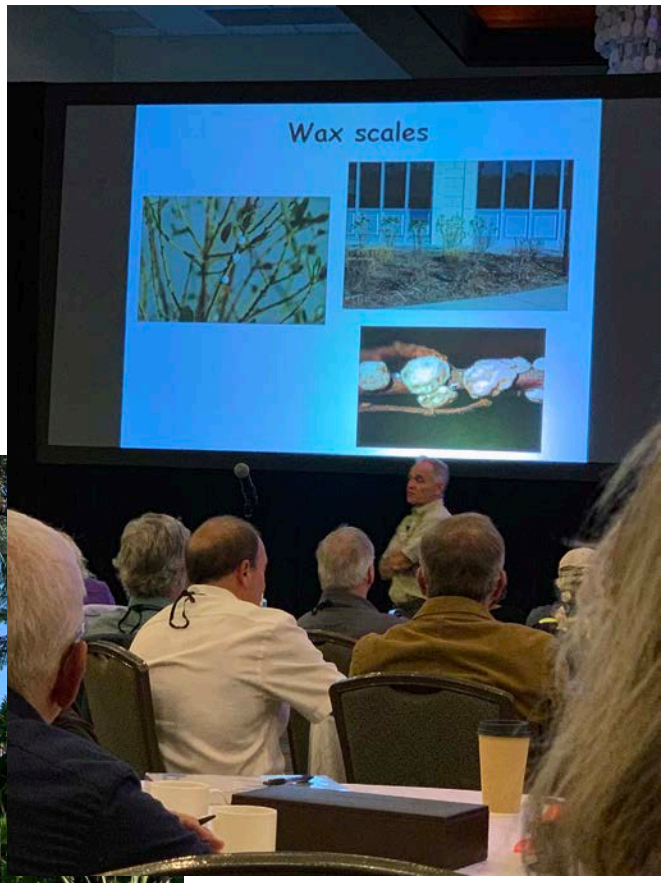
We had an entertaining session on communicating science, a skill we all need. Arborist talk usually does not communicate well to our clients. Research shows that people do not care about the data (I'm all about the data). They want to know who you are, where you work, what you care about. Find a story, listen without thinking of your reply, build trust. Data shows (I like data) that 93% of what your client receives is non-verbal. The biggest problem with communication is the illusion that it has taken place (a botched quote from a famous author; not Mark Twain).

Dr. Igor Lacan is as funny as our Todd Watson and did two nice presentations. One talk was on water, too much and too little, and its effect on mature trees. A second talk was on decay and tree failure. He is from UC Berkley and is with the UC Division of Agriculture and Natural Resources and it would be worth looking at some of his research and papers.

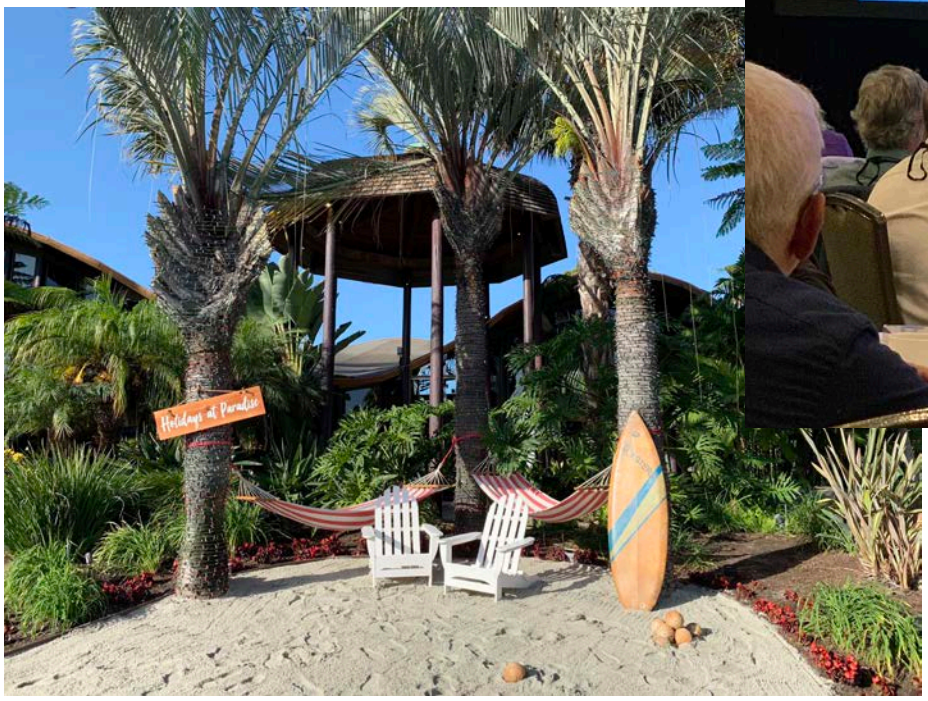
As a consulting arborist, I got the most out of two sessions aimed at expert witnesses. First were two experienced trial judges and their perspective on what makes a good expert witness. They were informative and funny. Second was a trial lawyer who took us through a mock deposition. He was fantastic at explaining why he asks the questions he does and what he is trying to do with those questions. He is not trying to trap, but he is trying to box you in so he will know what he wants to ask at trial and what he wants a jury to hear. He is also trying to discover if he should settle the case and not go to trial. ▶

Meet leading industry experts. Pictured here is ISA Texas board member Curtis Hopper and arboricultural legend Nelda Matheny

As an arborist, the ASCA conference does not compare to the information you can receive at the Texas Tree Conference (TTC). In my opinion, our TTC is much better than the ISA International Conference or the ASCA Conference for Texas arborists. As a consulting arborist, the ASCA conference is superior and you should attend if your intention is to consult. Next ASCA conference is in New Orleans. How could you not find a reason to go to New Orleans? Berti said, "Buy me a ticket". Think we will drive. Hope to see you there. I'll be the semi-retired bald arborist with the fishing tan and the Yoga body (you should probably just look for the tan). ■



Attend in-depth lectures



Bad pruning happens everywhere, even in places that host professional arboricultural conventions

Unique Trees of North Texas: Eve's necklace, *Styphnolobium affine*

by Susan Henson CA, horticulturist/arborist

This is a unique spring bloomer that has been underutilized in the urban landscape. It is an attractive small tree that can be used under power lines, grows well in the shade or full sun, plus blooms pink, fragrant, and wisteria-like flowers in the spring (March, April or May). The seed pods look like the old pop string pearls which help provide year-round interest. It could be used as a replacement for crapemyrtle and creates an impact when grown alone. Eve's necklace is a legume, and since discovering the roots lack nitrogen fixing bacteria, the name was changed from *Sophora affine* to the current *Styphnolobium affine*.

Eve's necklace has lustrous green leaves, scaly reddish brown bark and a rounded crown with yellow hard, dense sap wood. The yellow sap wood is used to make yellow dye. It grows quickly when young and can grow to 6 feet from seed in 3 years. When planted in a sunny location it reaches 15 feet in height quickly and then the crown becomes more rounded and the growth slows. When grown in dense shade it will become spindly to the point of looking almost vine-like, reaching for the sun. It is related to the Texas mountain laurel (*Dermatophyllum secundiflorum*) which is evergreen. Leaves are divided into 6 to 8 pairs of leaflets and a terminal on an axis up to 9 inches long. Leaflets are also elliptic to oval, averaging an inch long, with a rounded, indented, or pointed tip, with smooth margins, and a rounded tapered base.

This tree thrives in the North Texas area on clay, sand or limestone but the area must be well drained. The tree is native to Oklahoma, Arkansas, Louisiana, North Central and Central Texas. Once established this tree is extremely drought tolerant and only requires occasional watering. It can grow to 35 feet but I have never seen it grow above 20 to 25 feet in height. In the wild it is usually an understory tree but can be found growing in roadsides, prairies, plains, meadows, pastures and open woodlands. Though short-lived at 25 years it is easy to grow from seeds or cuttings.

The National Champion resides in Real County and is 37 feet tall, with a 77-inch circumference, a spread of 47 feet and an index rating of 125. There are specimens planted in Fort Worth as street trees on the north side of Park Hill between University and McCart, Turner Park in Grand Prairie, the campus of SAF under the power lines along the coliseum parking lot, San Antonio Botanical Gardens. "Amy" is the name of the specimen in the Botanic Gardens in San Antonio and she has a dark burgundy flower. The flowers can range from white to burgundy but are usually a lighter pink. This tree should be utilized more in the Central Texas area. ■

This article originally appeared in the newsletter of the Cross Timbers Urban Forestry Council. http://ctufc.org/tag/unique-tree/

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What's the Big IDea?

Can you identify this Texas tree?

If you know this tree, look for the photo on our Facebook page and correctly identify it in the comment section under the photo, using the full scientific name and one or more common names. If you don't know it, check the page for an answer in a few days. The winner gets bragging rights and the chance to submit a tree to stump fellow arborists in the next issue. Hint: This tree was prized by homesteaders.

Last issue's tree ID

Last issue's winner was Jonathan Motsinger, Program Leader, Texas A&M Forest Service. He correctly identified Osage Orange/Bois d'arc, *Maclura pomifera*, he also provided this issue's challenge.