

The PALLET

Newsletter of Turfgrass Producers of Texas

Spring 2018



TURFGRASS GROWTH IN SHADE

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By Casey Reynolds, PhD

Managing turfgrasses in shade can be one of the more challenging aspects encountered by turfgrass managers everywhere. Unlike weeds, insects or diseases, you can't simply spray something to correct it. Furthermore, who doesn't love a good shade tree on a hot summer day?

Privacy fences, homes or other structures, trees, shrubs, etc. all have the capacity to block sunlight from reaching turfgrasses and thereby creating shade. In this edition of Rooted in Research, we'll explore the fundamentals behind shade, its impacts on turfgrass health, and recent research designed to determine exactly how much sunlight is needed to meet the needs of various turfgrass species.

In order to understand shade, it's important to first understand the sunlight that it's blocking. Sunlight has properties of both particles and waves. Particles of light called photons contain energy that is delivered in various wavelengths which are defined by the distance between successive crests. The electromagnetic spectrum (Figure 1) includes the entire range of wavelengths of electromagnetic radiation delivered to the Earth's surface by the sun. Unfortunately, not all of these wavelengths are useful for plant growth. In fact, photosynthetically active radiation (PAR), which is what drives growth in plants, makes up a very small amount of this spectrum. The entire 300 nanometer (nm) range of PAR from 400-700 nm,

when compared to the entire electromagnetic spectrum, is equivalent to the width of a coin (a United States dime) when compared to driving from New York, NY, to Los Angeles, CA. This tiny portion of light is all that's useful to plants. As a result, one can imagine that it doesn't take much additional shade from cloud cover, trees, homes, etc. to limit turfgrass growth in shade.

Turfgrasses, like all plants, require sunlight in order to supply energy to support photosynthesis, which literally means "synthesis using light." As photosynthesis occurs, solar energy is used to drive the synthesis of carbohydrates and oxygen from carbon dioxide and water. In shaded environments, photosynthesis is reduced, which can result in decreased growth rates of turfgrasses, thinning, and even death. This is because plant survival dictates that net photosynthesis (carbon gains) exceed respiration (carbon losses) for the plant to continue to grow, produce new tissues, store carbon, etc. The point at which this pendulum swings in either direction is called the light compensation point, or the point at which photosynthetic CO₂ uptake exactly balances CO₂ release through respiration.

Generally speaking, cool-season turfgrasses reach light saturation, the point at which any additional sunlight cannot be effectively used for photosynthesis, at approximately 50% of full sunlight. By contrast, warm-

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Join us for an Exclusive Turfgrass Field Day

The turfgrass breeding program of the Texas A&M AgriLife Research and Extension Center at Dallas invites you, the Turfgrass Producers of Texas, to join us for an exclusive turfgrass field day on June 7, 2018. Registration 8:00 AM Program begins at 9:00 and ends at noon with lunch provided. After lunch we will offer continuing education for TDA applicators. This program will run from 1:00pm-4:00 pm and offer 3 CEU's.

Take a private, behind-the-scenes tour of the breeding program at Dallas alongside the Texas A&M AgriLife Research turfgrass breeding team. Field day events will include a showcasing of newly released cultivars, breeding innovations in zoysiagrass and St. Augustinegrass, shade and drought tolerance evaluations, management trials, NTEP trials and other multi-environment studies.

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Executive Director's Message

By **BRENT BATCHELOR**

The calendar says it is spring. It hasn't felt like it. Most of the nights have been unseasonably cool and the days have been cloudy. Not ideal conditions for grass growth. It is trying but green up has been slow.

I am seeing a lot of loads of grass on the highways. Wet conditions in some of the markets have caused a backload of orders. The housing market seems to be picking up and there are a lot of phone calls being made to find grass as inventories are very low in the grass business.

My phone has been ringing a lot as landscapers and others try to find grass. I refer them to our website where they can find a listing of growers who grow the variety of grass that they want.

On the down side, parts of Texas is sliding into a drought. I know those of you on the coast will be glad to send your bounty of moisture else where for now, but North Texas has been drying through the winter and soil moisture is suffering.

Back to the upside, Interviews are complete for two Extension turf positions and offers will be made by the time most of you receive this addition of the Pallet. The first to filled will be the College Station position followed by the Dallas Job. I was able to participate in most of the interviews and feel we will be happy with the new specialists.

Also, Dr. Ambica Chandra and company at Texas A&M Dallas is planning a Turfgrass Research Field Day in on June 7th. Details and a registration link can be found in this edition

It was good to see all of you at our annual conference and trade show in College Station. We had a good turnout and even though the weather canned the educational meeting it was worth the effort. A lot of people were responsible for it including our exhibitors. When it comes time to buy equipment and other products, I hope you will remember who was at our trade show.



Please let us know if you have any ideas for how we might make the event better.

Thanks to those who are willing to serve on the Board their help and input is very valuable to me and the association. We welcome the three new Board members Aland Wittig, Darin Douget, &, Lindy Murff. The new officers are Brian Gieger President, Billy Mayfield Vice President and Seth Thomas Secretary Treasurer. The remaining returning board mem-

bers are Mark Graf, John Romine, and Michael Rhyne.

One of the discussion items at the January Board meeting was over all Turfgrass Promotion. We will be working on a plan to increase promotion and marketing of turfgrass in the future, so stay tuned.

As always feel free to call with any questions.

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Shade For Turfgrass?

(Continued from Page 1)

season turfgrasses typically require full sunlight to reach light saturation. This introduces a series of questions, such as: “How much full sunlight do various turfgrass species and varieties need to row?” “Is afternoon sun better than morning sun?” “Is four hours of shade/partial sun better or worse than two hours of full sun?” “how do we measure it?” and so on.

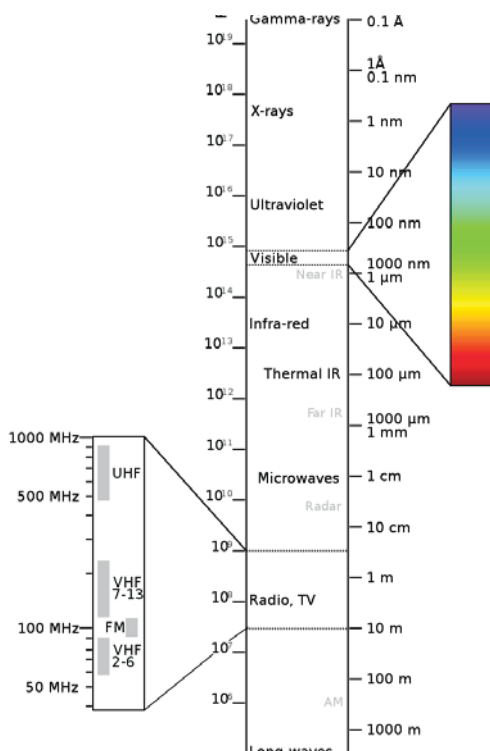
Light intensity varies by location, diurnal cycle, time of year, atmospheric conditions, cloud cover, shade, etc.

Sometimes this is measured as photosynthetic photon flux density (PPFD) in units of $\text{mol m}^{-2} \text{s}^{-1}$, which provides an instantaneous value for how much PAR is reaching a leaf's surface. However, the item of most interest to turfgrass researchers is how much photosynthetically active radiation

(PAR) strikes a surface throughout the course of a day, season or year. This integrates PPFD into a term called the Daily Light Integral (DLI) and is much more useful for quantifying shade tolerance in plants. DLI also is useful because there are simple,

inexpensive devices capable of measuring DLI that are commercially available to turfgrass managers.

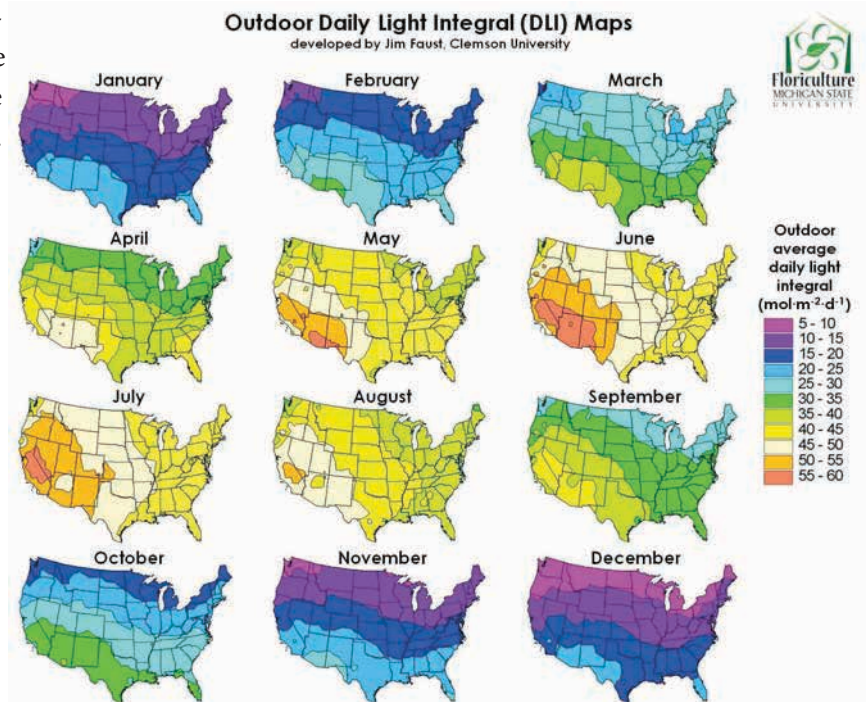
Publicly available data on DLIs, such as the information in Figure 2, illustrate the amount of PAR striking the Earth's surface at various points in the United States at different times of year. One can see from this data the substantial differences that exist based on location and season. For example, during the spring months there can be 46 percent more PAR in the desert southwest than the northeast United States



Tips for growing turfgrass in shade

- Select the appropriate species and cultivar. Fine fescue and Tall fescue offer the highest shade tolerance for cool-season lawns while St. Augustinegrass and Zoysiagrass provide the highest shade-tolerance in warm-season turfgrasses.
- Shade source matters: Trees are more likely to alter light quality (red light, blue light, red/far red ratios) than buildings or other structures which primarily reduce light quantity.
- Tree species matters: Evergreen trees provide more shade than deciduous trees.
- Mowing height: Mow turfgrasses on the upper end of their recommended height range.
- Fertilization: Reduce nitrogen applications. Excessive leaf growth comes at the expense of roots and other stored carbon sources.
- Traffic: Limit traffic when possible; turfgrasses under shade grow less vigorously and therefore won't recover as rapidly as in full sun.
- Plant growth regulators: PGRs have been shown to increase turfgrass quality in closely mowed turf when grown under moderate shade.

and from January to August in Houston, TX, the amount of PAR increases by 142 percent. These types of baseline data are important for calculating percent reductions using light meters under various shade levels.



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Much of the current turfgrass shade research regarding determining minimum required DLIs is focused primarily on warm-season turfgrasses. Cool-season turfgrasses are typically more shade tolerant than warm-season turfgrass species so, generally speaking, DLIs for cool-season turfgrass are lower than those for many warm-season turfgrasses. Reported DLIs for several warm-season species and cultivars are reported in Table 2. Bermudagrass, as expected, has the highest DLIs ranging from 13.9 – 18.6 mol m⁻² d⁻¹ in the spring/fall and 18.6 – 22.4 mol m⁻² d⁻¹ in the summer. This was followed by Centipedegrass (13.4 – 14.7), Seashore paspalum (11.1 – 13.0), St. Augustinegrass (10.6 – 11.5), and Zoysiagrass (9.7 – 11.3). Therefore, for clients dealing with substantial shade in southern environments, zoysiagrass and St. Augustinegrass offer the highest shade tolerance (lowest DLI) and greatest likelihood for success. Within zoysiagrass varieties, additional research has shown that fine textured species that are often interspecific crosses of *Z. japonica* and *Z. matrella* or *Z. pacifica* typically have better shade tolerance than coarse textured varieties of *Z. japonica*.

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Commercially Available Light Meter for determining DLI

It is important to remember that most, if not all, turfgrass species will perform best in full sun. Shade tolerance varies among species and cultivar and selecting the appropriate one for use is the first line of defense in managing healthy turfgrass in moderate to dense shade. Also, next time you see your shadow on the lawn, remember that the particles of sunlight hitting your back just traveled 93 million miles only to be obstructed from hitting your turfgrass in the last few feet thanks to you!

Casey Reynolds, PhD, is executive director of Turfgrass Producers International.



Table 1. Relative shade tolerance of turfgrasses

Tolerance	Cool-season species	Warm-season species
Highly Shade Tolerant	Annual bluegrass Fine fescue Tall fescue	None
Shade Tolerant	Roughstalk bluegrass	Centipedegrass Seashore paspalum St. Augustinegrass Zoysiagrass
Shade Intolerant	Kentucky bluegrass	Bermudagrass
Highly Shade Intolerant	Creeping bentgrass Perennial ryegrass	Bahiagrass Buffalograss Carpetgrass

Gardner and Goss, 2013. Management of Turfgrass in Shade and Turgeon, 1995.

Table 2. Reported DLI values (mol m⁻² d⁻¹) for various warm-season turfgrass species

Species/Cultivar	Spring/Fall	Summer
Tifeagle bermudagrass	n/a ¹	32.6
Tifway bermudagrass	17.4 – 18.6	21.4 – 22.4
Celebration bermudagrass	14.2 – 15.7	19.5 – 20.2
Tifgrand bermudagrass	13.9 – 15.4	18.6 – 20.9
Tifblair centipedegrass	13.4 – 14.7	13.3 – 14.7
Seadwarf seashore paspalum	11.1	13.0
Captiva St. Augustinegrass	10.8	10.6
Floritam St. Augustinegrass	10.8	11.5
Palisades zoysiagrass	10.5 – 11.3	10.9 – 11.3
Diamond zoysiagrass	10.1 – 11.1	11.0 – 11.1
Jamur zoysiagrass	9.7	9.9

¹ data not available

² Data compiled from Bunnell et al. (2005) Glenn et al. (2012) and Zhang et al. (2017)

Texas Pipeline Easement Negotiation Checklist

Tiffany Dowell

Assistant Professor and Extension Specialist
 Texas A&M AgriLife Extension Service

In response to the oil and gas boom in Texas, pipelines are rapidly being built to ensure line space for the increased production. As of 2012, there were more than 366,000 miles of oil and gas pipelines crisscrossing the state.

Pipelines are usually built across private lands after the pipeline company obtains an easement (the right to use a specified portion of the property of another) from the landowner. Although the monetary compensation is certainly an important factor for a landowner to consider, the nonmonetary terms of the easement may be, in some cases, more important and more valuable. It is critical to include in the written easement agreement any statement or

promise made by the company or it likely will not be enforceable.

The following checklist is certainly not exhaustive, and any landowner negotiating an easement agreement should hire an attorney to represent his or her interests. **This list is not a substitute for legal advice.** Each property is unique, and the following considerations may not apply the same way to different properties because of their specific use and characteristics. Although this list is based on a pipeline easement, these terms may also be helpful in negotiating other easements, such as those for electric or transmission lines, water, wastewater, drainage, or related infrastructure easements.



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- ❑ **Determine whether eminent domain power exists.** Before beginning negotiations, determine whether the pipeline company has eminent domain power. An entity holding power of eminent domain has the right to take private property for a public use upon payment of adequate compensation to the landowner, even without the landowner's consent. A landowner dealing with a company that does not have eminent domain power is in a much stronger negotiation position. In that case, if the company does not agree to the landowner's terms, it may not legally acquire the easement. If the company has eminent domain power, however, and an agreement cannot be reached, the company could still obtain the easement through eminent domain by filing a condemnation proceeding in court. To understand the positions of the parties, make this determination at the outset of negotiations.

To get this information:

- Ask the company for a copy of the statute that grants them eminent domain power.
 - Find out if the company is validly registered with the State Comptroller's office as having eminent domain power.
- If the pipeline company claims eminent domain power because it is a common carrier pipeline (a pipeline-for-hire), request evidence supporting its common carrier status.
 - For transmission lines, obtain a copy of the company's Certificate of Convenience and Necessity from the Public Utility Commission. It explains what condemnation power the company has and may provide additional information about the proposed project.

- ❑ **Identify the parties.** Include the names and addresses of the landowner and the company acquiring the easement. Require the pipeline company to designate a specific contact person in case any issues arise and to provide the landowner with a notice in a set period (such as 30 days) if the designated contact person changes.

- ❑ **Determine compensation.** Specify the compensation the company will make for the easement, including when the payment is due. Generally, payment is based per foot, per acre, or per rod (a rod is 16.5 feet) of the pipeline, but may also be a set sum rather than tied to a measurement. Consider seeking payment per square foot rather than per foot or per rod to be adequately compensated for the entire area the company will use. If the company wants a temporary work area on the property in addition to the actual easement area, seek additional compensation for the temporary use of this area.

In addition to a damage payment for the portion of the land used, Texas courts recognize remainder damages (the decreased value of the remainder of the property outside of the easement strip) because of an easement on the property. This is important when the easement agreement limits some or all of the future surface use over the easement area. Consider these types of damages when calculating compensation.

Finally, discuss with an accountant how the payment will be described or structured. The payment description as an easement purchase versus a payment combined with remainder damages may have tax consequences.

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- ❑ **See that the easement is specific, not blanket.** Easement agreements often state that a pipeline will be laid “over and across” the landowner’s property. This is a blanket easement that allows the company to place the line anywhere on the property, even if the company verbally promised to place the line in a certain location. To avoid this issue, define a specific easement area and have the company survey it and any temporary work areas. Make that survey an exhibit (documented evidence) to the easement. Also consider requiring a specific setback distance from any buildings or structures if this is a potential issue.
- ❑ **Grant a nonexclusive easement.** Reserve the right to grant additional easements to other parties within the easement area. For example, if another pipeline company wants to place a line on the property, the landowner may want the right to have the line placed within the same easement, rather than having two separate easements across the property.
- ❑ **Check restrictive covenants.** The easement may be planned for property that is subject to restrictive covenants, which might specify the required location and depth of any pipelines. Check any restrictive covenants to determine how they might apply.
- ❑ **Limit the easement agreement to only one pipeline.** Many proposed easement agreements seek to allow the company to “lay lines” or “construct pipelines” across the property. Limit the easement agreement to allow only one line on the property. Also, prohibit the company from assigning or granting rights to another party to lay an additional pipeline in the easement. With this term included, the landowner retains the right to negotiate and receive payment for all additional lines to be added to the easement area, rather than receiving just a one-time payment for an easement that could allow additional lines in the future.
- ❑ **Limit the types of products run through the line.** In addition to restricting the easement to a single line, seek to limit that line to carrying



a single product. For example, a landowner might grant the right to lay a natural gas pipeline, but if the company later wants to flow carbon dioxide through the line, a second easement would be necessary. At minimum, a landowner should know what products are running through the line.

- ❑ **Determine the permissible pipeline diameter and pressure.** Generally, a landowner wants a smaller, lower-pressure line and a company wants the right to place the largest, highest-pressure line it may ever need. During negotiations, seek an agreement that the line will not exceed a certain diameter and specific pressure to help alleviate safety concerns.
- ❑ **Determine the width of the easement.** Widths are often described in two measurements, a temporary construction easement (generally 50 feet or wider) and a permanent pipeline easement (typically ranging from 20 to 50 feet). Limit both of these measurements to the narrowest width possible to control the amount of land used or damaged by the easement. Also, determine a date by which the temporary pipeline easement will terminate and provide for damages if the company extends this deadline.
- ❑ **Require a specific pipeline depth.** In the past, many easements stated that the pipeline would be “plow depth.” Avoid this type

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TPT Annual Meeting



Meeting Wrap Up

The TPT annual meeting was held January 15th in College Station. We were able to conduct the needed business for the association and had a nice time visiting with the sponsors who were set up during the meet and greet.

However, the dicey weather called our hand and we cancelled the events for the next day. The board has indicated that anyone wanting a refund for the day two events should contact Brent Batchelor at b_batchelor86@att.net and I will process the refund. The folks we had contracted for the next day all provided full refunds, so the association was only out some printing cost for day two.



Most in attendance like the current format and location (College Station). We are tentatively scheduling the 2019

Annual Meeting and Conference for January 21-22 in College Station. We plan to conduct both days at the hotel in 2019 and have an optional tour after the conference at the Texas A&M Turf Facilities. This location allows us to tap into more Texas A&M Turf Faculty and Graduate Students for presentations.

We are always on the look out for topics that interest you so feel free to drop us a note if you think of anything we need to cover.



of nonspecific, subjective term. Easements usually stipulate that the line will be buried 36 inches below the ground, the depth that Texas law requires. If a pipeline is buried at 36 inches, erosion will eventually make the line too shallow to comply with state law. In light of this, have the line buried to at least 48 inches deep, or stipulate that the company maintain the 36-inch depth.

- ☐ **Specify what surface facilities, if any, are permitted.** Even underground pipelines require some surface facilities such as cleaning stations, compressor units, and pump stations at points along the line. Require a pipeline company to either waive all surface facilities on the property or specify exactly how many surface facilities will be allowed, their size, type, and location. If surface facilities will be placed on the property, negotiate additional compensation.
 - ☐ **Reserve surface use.** Retain the right to use as much of the easement area as necessary. For example, once an underground pipeline is in place, the landowner may want to graze his cows on the property, including the surface above the pipeline. Similar consideration applies to the landowner's ability to place roadways, ponds or tanks, and water lines across the easement.
 - ☐ **Provide property access for the landowner.** It is not uncommon to install a pipeline beneath an entry road or driveway to the landowner's property. State in the agreement that the company will provide access to the landowner's property during the pipeline installation, as well as after the construction is completed.
 - ☐ **Limit access to the easement.** A landowner can limit the company's access to the easement in a number of ways:
 - Require that notice be given before entry.
 - Set certain times or days when entry is not permitted.
 - Determine where company employees may enter and exit the property.
 - Designate what roads may be used while on the property.
 - Prohibit any fishing or hunting on the easement or any of the landowner's property by the company or any of its employees, agents, or contractors without landowner permission.
- If there are no limitations in the easement agreement, the company can enter the easement at any time for any purpose.
- ☐ **Request the use of the double ditch method.** The double ditch method requires the company to dig the pipeline trench so that the topsoil remains separate from the subsurface soil and is placed back on top of the subsoil when the construction is completed and the line buried.
 - ☐ **Include the right to damages for construction, maintenance, repair, replacement, and removal.** Require the company to be responsible for damages caused not only during construction, but also during future maintenance, repair, and replacement activities. Also, include any limitations or notice requirements desired for the company's maintenance schedule. For example, a farmer growing crops near the pipeline may want written notice before any pesticide or herbicide is sprayed on the easement area.
 - ☐ **Set specific restoration standards.** To ensure that the easement area is properly restored, state the company's responsibilities regarding repairs. How will the disturbed area over the pipeline be treated after the pipeline has been installed? Will the operator remedy any changes to the slope of the land or replace the topsoil? Will the reseeding be done with native grass or is a special type of seed required? Address these issues in detail. Consider setting a measurable standard to ensure that repairs are adequate or appoint a neutral third party to inspect the land after the damages have been repaired to determine if the repairs are sufficient.

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(Continued from Page 14)

- ❑ **Request payment for damages.** Because pipeline easements generally last a long time, request an up-front payment for damages or require the company to post a bond so that money is available for future damages. This provides some protection to the landowner in the event the company disappears before making damage repairs. Additionally, require that repairs to the surface of the easement be done when the construction is completed as well as when the easement terminates.
- ❑ **Specify fencing requirements.** Require the pipeline company to fence the easement area according to specifications such as the type of fence to be built, the number and type of H-braces to be installed, and the tinsel strength of the wire.
- ❑ **Include repairs or improvements to existing roadways.** Constructing a pipeline requires significant equipment and vehicle traffic. If the company will use any roads owned by the landowner or will construct roads across the landowner's property, require that it restore or improve the roads when the construction is finished.
- ❑ **Determine maintenance responsibilities.** Define whether the company or the landowner is responsible for surface maintenance over the pipeline, such as mowing or removing weeds and overhanging limbs.
- ❑ **Define when the easement will terminate.** From a landowner's perspective, this is perhaps the most important provision of an easement agreement. There are several circumstances under which an easement might terminate under Texas law, but abandonment is the most common concern for landowners with pipeline easements.

Under Texas law, an easement is considered abandoned if there is non-use by the company (an objective test) and the company indicates an intent not to use the line in the future (a subjective test). Under this rule, it is difficult for a landowner to prove the subjective test in order to have the easement terminate due to abandonment.

Instead of relying on the general rule, set a specific, objective standard for when the easement will end. This could be a specific time in the future (for example, the easement will last for 10 years) or may be a statement that if the pipeline company does not flow product through the line for a certain period (for example, 1 year), it is considered abandoned and the easement terminates. Whatever the standard, including it in the agreement prevents easements from lasting into eternity. Further, require that the company provide a release of the easement so it can be recorded in the public record when the easement ends.

- ❑ **State the requirements for removing facilities.** Require the company to remove all lines and structures after termination of the easement or forfeit them to the landowner. Also, state that any damages caused by this removal will be the responsibility of the company.
- ❑ **Determine remedies for violating the easement agreement.** If a company violates the easement agreement, the landowner can file a lawsuit to terminate the agreement, but the court will require that the violation is "material" before granting termination of the agreement. Whether a violation is material is determined on a case-by-case basis on the specific facts at issue. This causes two potential problems: (1) the landowner must go to court, which is expensive and time-consuming, and (2) the violation must be material for termination to be permitted.



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To avoid these issues, consider two options:

First, the landowner may be able to define what violations are deemed material and state that in the agreement. For example, the agreement could state that “employees shall be permitted on the easement only and if they leave the easement and enter the landowner’s property, this shall constitute a material breach.” This material breach would permit the landowner to terminate the agreement without court action.

Second, require conditions in the agreement by stating “or the agreement shall terminate without further action by the landowner.” For example, the agreement could say, “employees shall be permitted on the easement only. If they leave the easement and enter the landowner’s property, this shall constitute trespass and the agreement shall terminate.”

Under either of these scenarios, the landowner knows precisely when he or she may terminate the agreement, rather than having to wait for a judicial determination of material.

- **Include liability and indemnification provisions.** Incorporate liability and indemnification responsibility in the easement agreement. Provide that the landowner is not liable for any acts, omissions, or damages caused by the company, its agents, contractors, or employees. Further, stipulate that if any claim is made against the landowner by any party related to the pipeline or surface facilities, any of the company’s activities, or any environmental laws, the company will hold the landowner harmless and state that this includes paying any judgment against the landowner and providing a defense to the landowner without charge.
- **List the landowner as “additional insured” on the company insurance policy.** Require the pipeline company to list the landowner as an “additional insured” on its insurance policy. This is not usually a major cost to the company and may allow the landowner the protections of the company’s insurance policy if he or she is sued based on something related to the pipeline.



- **Do not be responsible for warranty of title.** Frequently, standard easement agreements require the landowner to warrant title (the landowner promises that there are no other unknown owners or encumbrances on the property). Because the pipeline company is in a better position to conduct a title search and make sure they are negotiating with all the right parties, the landowner should not take the risk of warranting title. If the company goes through the condemnation process, Texas law does not allow it to obtain a warranty of title, so there should be no reason to require this term in a negotiated agreement.
- **Limit the terms of transferability.** Specify whether the company can assign its rights under the agreement to a third party. Request that no assignment be made without prior written consent of the landowner, state that any assignee will be held to the terms of the original agreement between the landowner and the company, and state that the company will remain liable in the event of a breach of the agreement by the assignee. At a minimum, require notification before an assignment occurs.
- **Request a most-favored-nations clause.** Although pipeline companies dislike these requests, ask for a most-favored-nations clause. This provides that if any other landowner in the area negotiates a more favorable deal

(Continued on Page 18)

within a certain timeframe, the landowner is given the benefit of the more favorable deal.

- **Seek payment for negotiation costs.** Because the landowner may incur significant costs during the negotiation process, including appraiser costs, fees for forestry or agricultural experts, surveyor expenses, and attorney's fees, require the company to pay all or a portion of these costs.
- **Use a choice-of-law provision.** A choice-of-law provision allows the parties to determine which state's law will govern the agreement in the event of a dispute. For example, a pipeline company headquartered in another state may try to require that the law in their home state apply to any dispute involving the easement agreement. Generally, courts enforce these clauses as long as they are not against public policy and are reasonably related to the contract. Because many laws vary by state and a choice-of-law provision could significantly impact rights under the agreement, consult with an attorney to determine which options are the most advantageous to the landowner.
- **Include a forum clause.** A forum clause provides that a dispute over the agreement will be heard in a particular location or court. Include a requirement that any lawsuit be filed in the county where the land is located or the landowner lives. This can significantly lower litigation and travel costs and ensures that if a jury trial occurs, the jury will be made up of local citizens.
- **Understand dispute resolution clauses.** These types of clauses limit the time and expense of a court action in the event of a dispute. There are two primary types of dis-

pute resolution: arbitration and mediation. In arbitration, a third party arbitrator (usually an attorney) hears evidence and delivers a decision. If the arbitration is "binding," that judgment is final, absent evidence of fraud by the arbitrator. Mediation involves a neutral third party who works with the landowner and the company to reach a mutually acceptable resolution. If both parties refuse to agree to settle, the case goes to court. Understanding the difference between these options is important; consult with an attorney to determine which option is best. A dispute resolution clause should identify how the arbitrator or mediator is selected.

- **Review by a licensed attorney.** A licensed attorney familiar with easement negotiation issues should review all pipeline easement agreements. Although hiring an attorney who specializes in representing landowners in these types of transactions may be an additional cost, it could save money in the long run by preventing a dispute from arising because of an unclear or inadequate easement agreement.
- **Money-saving tip.** Because most attorneys bill by the hour, a client can save considerable fees by doing as much legwork as possible before going to the attorney's office. For example, a landowner could collect necessary documents such as the legal description or sketch of the property, saving the attorney the time of locating that information. Moreover, a landowner could prepare a first draft of the easement agreement using this checklist. This would save the attorney the effort of starting from scratch and allow him or her to simply edit the draft prepared by the landowner.

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- Grass plants are 75 to 80% water, by weight.
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- Clippings contain nutrients useable to the grass, when left on the lawn.
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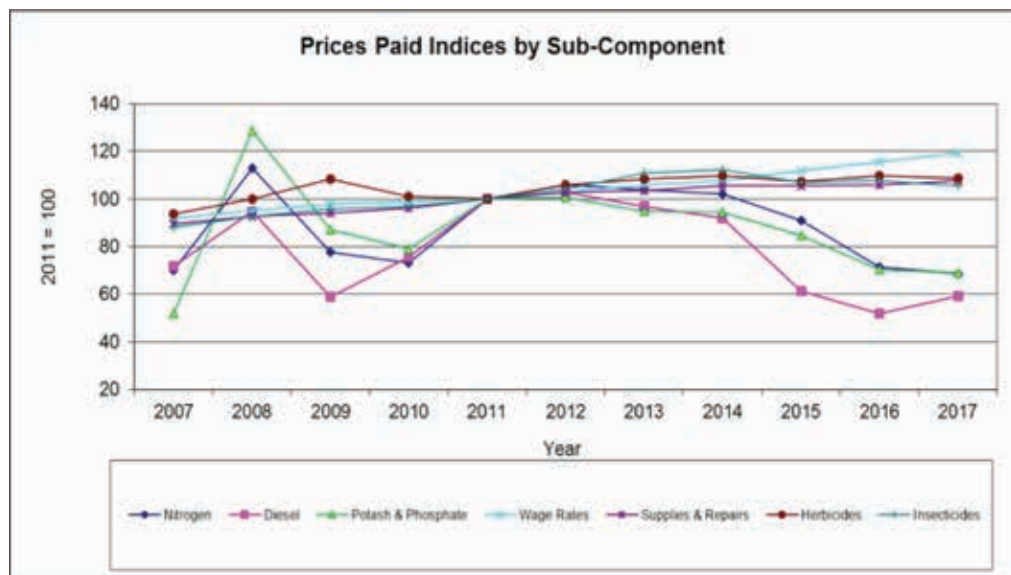


USDA Announces December Prices

Input Price Trends

by **DR. MARK WALLER**
Extension Economist
Texas A&M AgriLife Extension

The prices paid by farmers indices by sub-component shown in the graph below represent nationwide average annual prices of inputs purchased by farmers and ranchers to produce agricultural commodities. As can be seen, on an average annual basis, price indices for diesel, wages, and supplies & repairs have moved higher, while nitrogen, potash & phosphate, herbicides, and insecticides moved lower.



Statistics Board, U.S. Department of Agriculture. *Agricultural Prices*. Accessed February 19, 2018. Web available at <http://quickstats.nass.usda.gov>.

While the annual averages are slower to respond, the shorter time-framed monthly indexes are beginning to show increasing input costs. On a monthly basis, mid-December 2017 (the most recently available data) monthly input prices were mixed, with some unchanged and some higher. Diesel and wage rates were unchanged from the previous month. Nitrogen, potash & phosphate, supplies & repairs, herbicides and insecticides increased +3.5%, +0.7%, +0.2%, +0.2% and +0.2% respectively, from November to December 2017. Relative to last year (December 2016), all 7 input series were higher, Nitrogen, diesel, potash & phosphate, wage rates, supplies & repairs, herbicides, and insecticides prices increased +9.9%, +15.8%, +5.3%, +1.3%, +1.7%, +1.6%, and +1.3% respectively, relative to last year (December 2016).

The average price when multiplied by quantity purchased should equal total producer expenditures for the item. The prices paid data are obtained from establishments that sell goods and services to farmers and ranchers. Annually, about 8,500 firms are randomly selected from lists by type of item sold with an average response rate in the range of 75-80 percent. Firms are asked to report the price for the specified item "most commonly bought by farmers" or that was the "volume seller."

Source: National Agricultural Statistics Service, *Agricultural*



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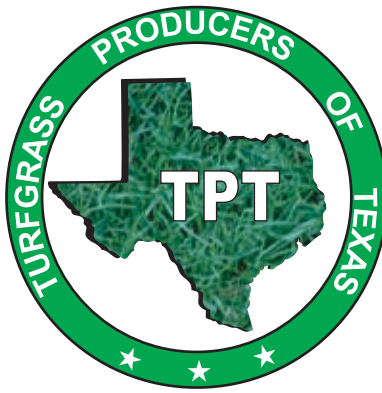
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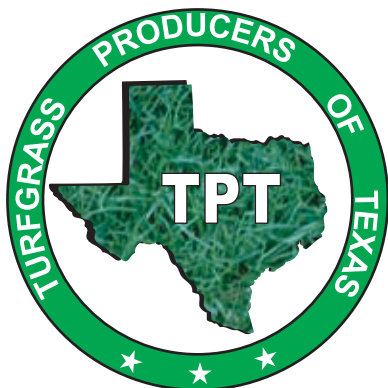
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