

Turf In South Texas

“Measured” Management Practices for Predictable Turf Quality”



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Urban Agriculture?

Urban Agriculture is the creation, growth, introduction and management of constructed landscapes designed to support and enhance natural environmental systems and a sustainable quality of life through mitigation of land altering activity.

The Georgia Urban Agriculture Council

Turf has:

- ✓ **Landscape Ornamental Benefit**
- ✓ **Recreational Use Benefit** - Footing, surface characteristics and resiliency for safety
- ✓ **Functional Benefit** Soil erosion control (protects soil resource), Dust stabilization, Heat Dissipation, Noise abatement, Glare reduction, Reduced runoff loss of precipitation, Higher groundwater recharge Increased degradation of organic chemicals, Safety in vehicle operation, Facilitates security for key installations, Reduced fire hazard, Reduced problems with pests (insects, snakes, rodents), Economic importance



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Take Home Message?

Give Turf A Chance!

Have a lawn to your liking!



Rodolfo Gonzalez AMERICAN-STATESMAN

Turned off sprinkler system and left town for months so her lawn would kick the bucket. Then she painted it! - a form of Yard Art!

“Acceptable” levels for Turf Quality varies with each home consumer’s lawn grass, expectations and site conditions.



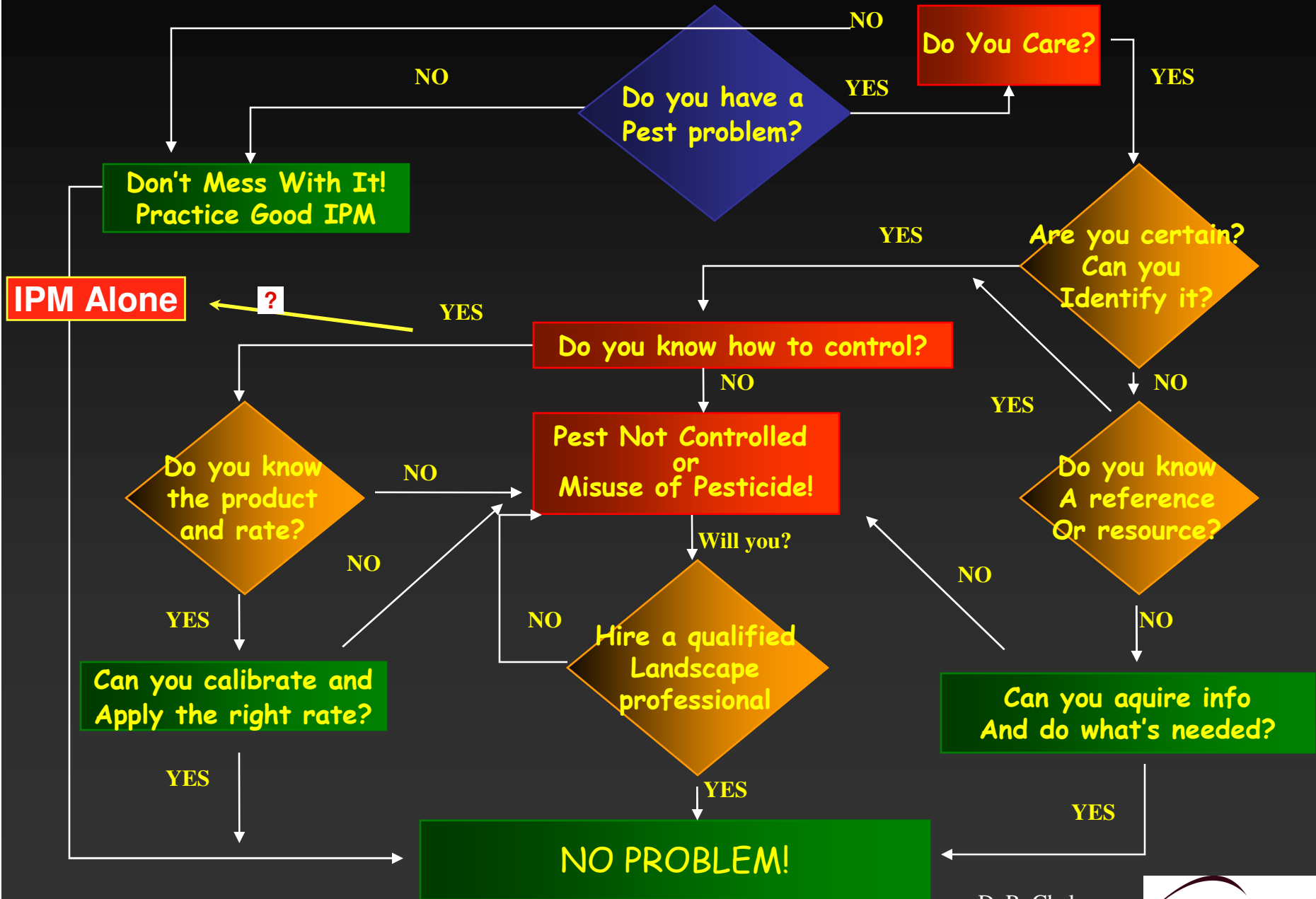
Turfgrass Management

Often a complex subject for the home consumer!

- ✓ Your turf has is not looking too good!
- ✓ Could you correctly diagnose the problem?
- ✓ Could it be a pest or some other problem?
- ✓ Can you figure it out?
- ✓ If it was a pest could you treat to prevent?
- ✓ What are your options in how to go about it?
- ✓ Can you get this done in a timely manner?
- ✓ What information do you need?



Using the Decision Tree for Pest Control



Scouting & Diagnostic techniques

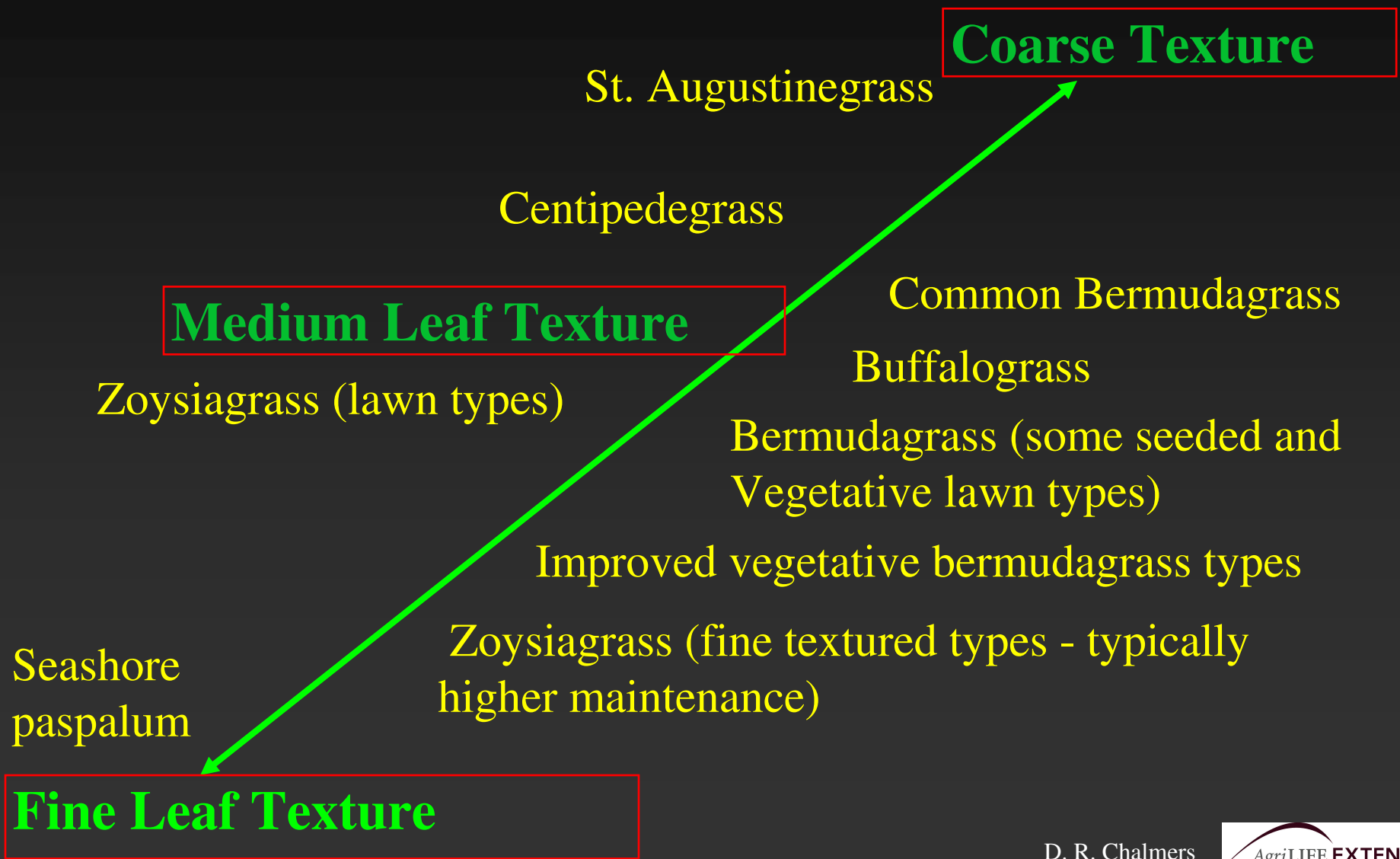
To determine if decline is biotic, or caused by other factors?

- ✓ Visual characterization of the site
- ✓ turfgrass community symptoms
- ✓ foliar symptoms
- ✓ using the soil probe
- ✓ Lab tests
- ✓ Analysis of the cultural program



Is this the right order? After the fact... or before?

“Leaf texture” is based upon the width of leaf blades. The coarser the blades the coarser the lawn texture. Below are the relative ranking of lawn grass types (species) for leaf texture.



Common Reasons for Poor Turf Quality

- ✓ Species and/or variety not adapted
- ✓ Improper establishment
- ✓ Mismanagement
- ✓ Lack of cultivation (thatch & soil)
- ✓ Pests
- ✓ Mistakes in pesticide use
- ✓ Excessive use/traffic

Controls of Turf Quality

✓ Inherited Characteristics (Species/cultivar)

- pests (disease, insects, nematodes)
- wear tolerance & recuperative potential
- environment (heat, cold, drought, shade, salinity)

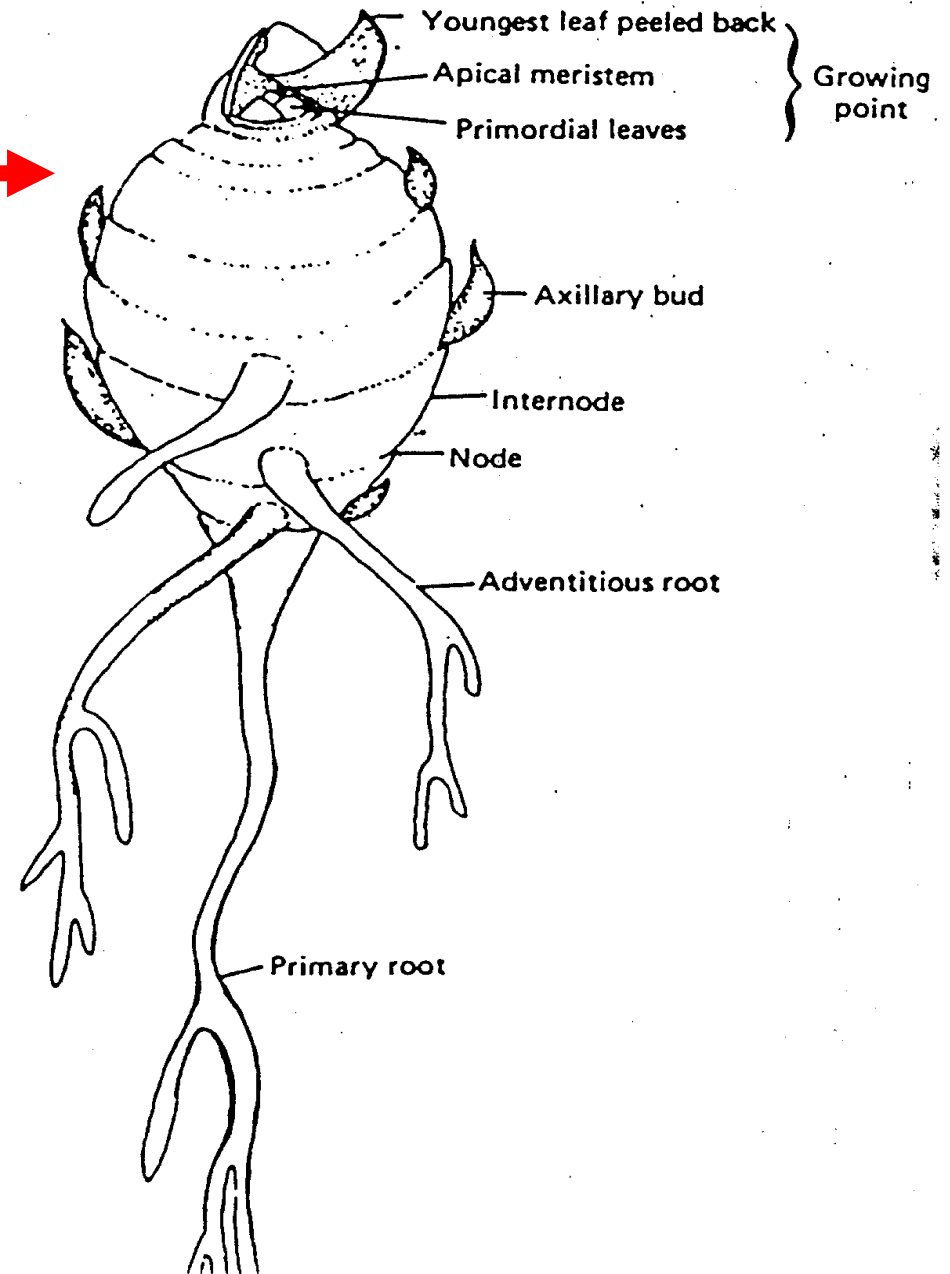
✓ Surrounding environment

- soil
- microenvironment (shade, light, temperature, drainage)
- use (seasons and amount)
- intensity of culture (water, nutrients, soil aeration, thatch control, traffic)

Diagram of a Crown

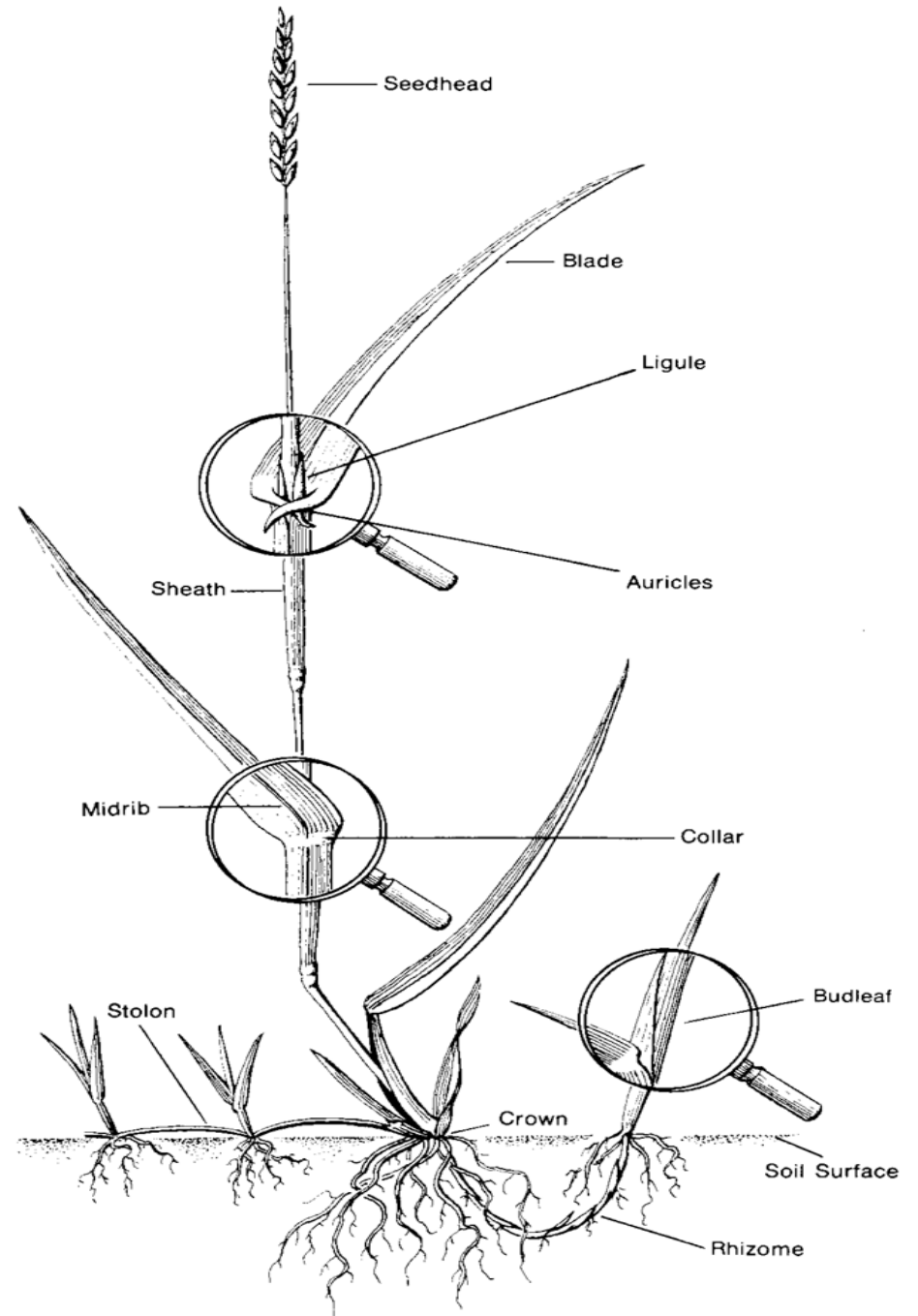


Seedlings mature to form the crown



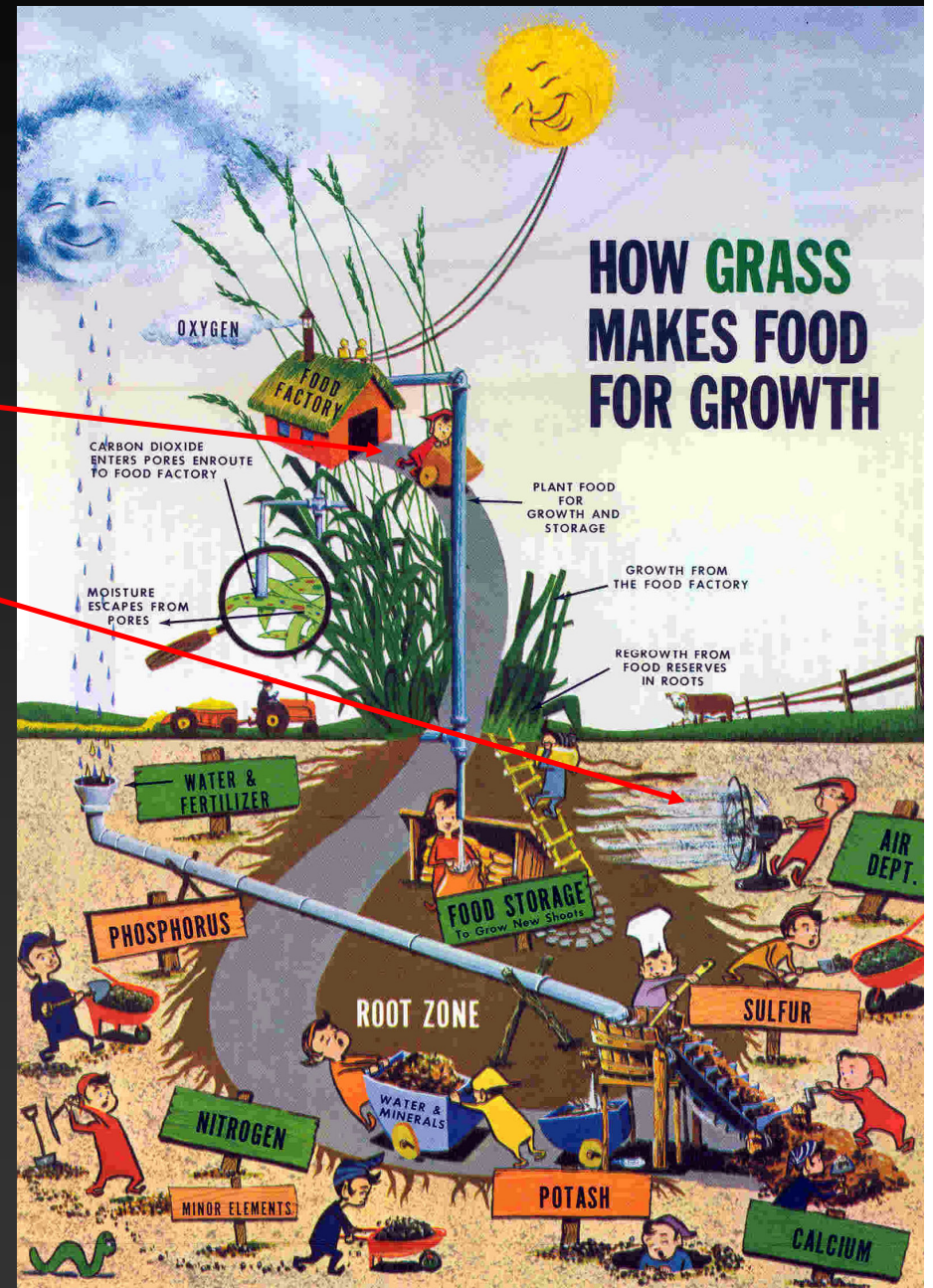
The Turfgrass Plant

- ✓ Crown
- ✓ Rhizome
- ✓ Stolon
- ✓ Tiller
- ✓ Leaf
- ✓ Sheath
- ✓ Node
- ✓ Seedhead



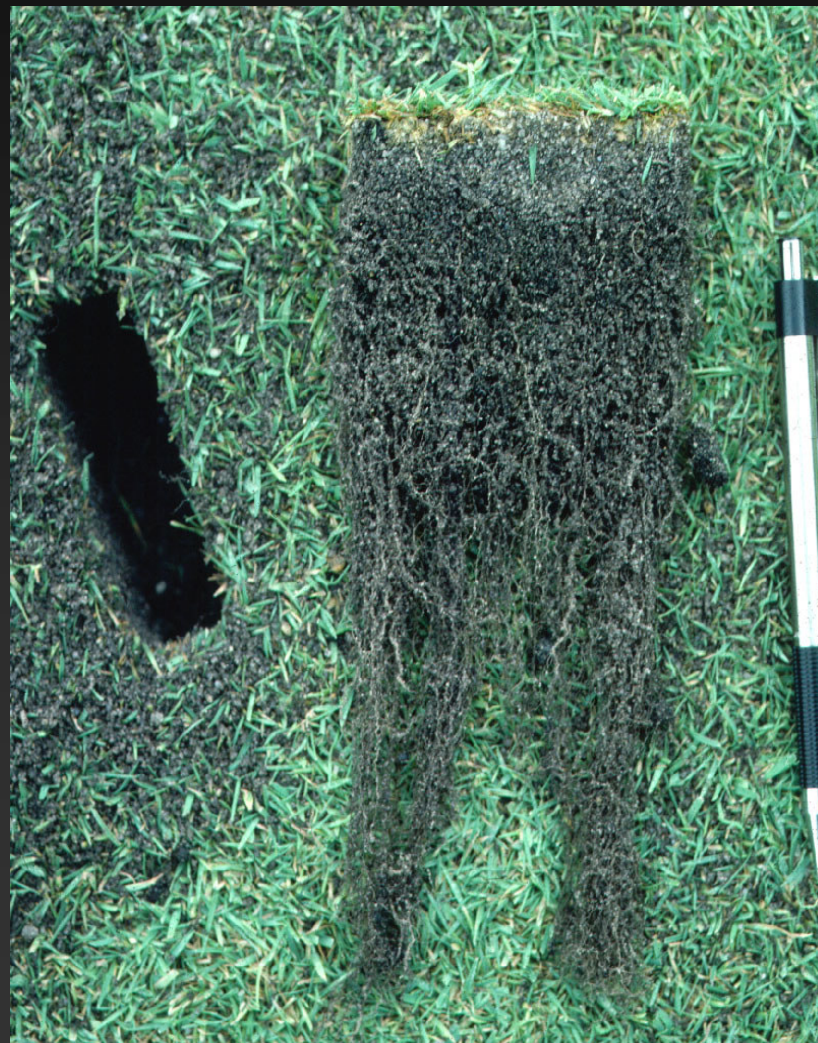
Root growth originates from the crowns

- ✓ Up to 90 % of the weight of the turfgrass plant is in the roots.
- ✓ Root meristems use carbohydrates from photosynthesis
- ✓ Roots need oxygen in the soil to take up nutrients and water.
- ✓ Roots are in various stages of development. As they age they mature, cease their function, die back and then break down and add to the soil organic matter.
- ✓ Turfgrasses have efficient fibrous root systems.
- ✓ Root growth & depth is best in deep soils & non-compacted soils



Turfgrass Growth & Development

- ❑ Growth = irreversible increase in size
- ❑ Development = change in form, structure and complexity.
 - vegetative (seedling to mature plant)
 - reproductive flower and seed = inflorescence



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Root:Shoot Ratio - Want good roots!

Conditions extreme reduce rooting!

Influenced by:

- High temperatures
- Close cutting
- Excessive nitrogen
- Low light
- Compaction (less oxygen/mech. resistance)
- Soil: depth, poor soil mixture
- Excess soil moisture (irrigation/drainage)
- Pests (insects, nematodes, root fungi)

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What do we mean when we say a grass is “adapted”?

- ✓ **The grass type (species) and variety is truly adapted to climate and use meaning that it performs well with "normal" maintenance.**
- ✓ **Practical Take Home Message:** The lawn will persist with modest effort and input (nutrients, water, good soil drainage, adequate sunlight and !
- ✓ **Examples of lawn grasses:**
 - St. Augustinegrass, bermudagrass, zoysiagrass and centipedegrass in east Texas where annual rainfall is greatest.
 - Buffalograss in areas where rainfall is 20 inches or less.
 - Note while the above grasses do well in lawns only bermudagrass and to some extent zoysiagrass recover from traffic damage well enough to be adapted for sports turf

Bermudagrass

Used most commonly as a low to high maintenance lawn or sports turf.



Growth Habit: stolons & rhizomes

Nitrogen requirement: 2 - 6 lbs of nitrogen/1000 ft²/year

Drought tolerance: very good

Shade tolerance: require full sun - not shade tolerant

Mowing height: 0.75 to 2 inches

Thatch: (thatch control may be needed)

Winter overseeding: may be done to provide “winter color”.

Varieties: improved varieties are most traffic tolerant. Differ in leaf texture. And maintenance.

Adapted to: most all of Texas - more irrigation required the further west it is grown.

Bermuda

Common drought tolerant, easy to establish by seed.

Tifway 419 is an improved variety that is vegetatively established. Used extensively on sodded Football and Baseball fields.

FloraTex™ is one of the Bermudas developed in Texas and Florida and is an improvement over the common varieties and has a medium texture that is not as fine as the Tif varieties and requires less fertilizer and has better drought resistance. This variety is vegetatively planted and used in finer lawns.

Bermudagrass Adpataion



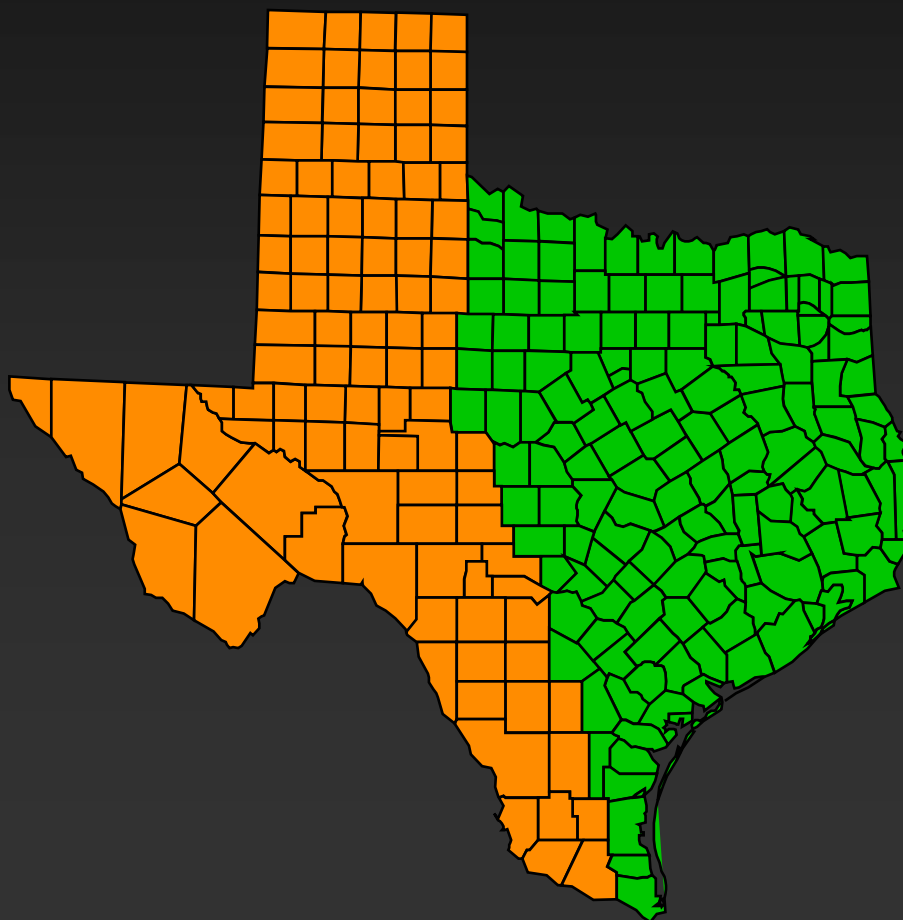
Adapted in these areas



Higher maintenance required (supplemental irrigation and/or additional cultural practices)



Not adapted in these areas. Other grass types are recommended.



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Bermudagrasses vary in texture and density



Tifway 419 type hybrids require higher maintenance than common-types (closer and frequent mowing, more fertilizer, etc.)



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Leaf textures of bermudagrasses varieties available as seed (S) or as vegetative (V) varieties that do not produce viable seed.

✓ Medium textured bermudagrass varieties

- Tifway 419 (V), TifSport (V), Baby (V), GN1 (V), Texturf 10 (V), Princess (S), Riviera (S), Midlawn (V), Patriot (V), Celebration (V)

✓ Somewhat coarser textured bermudagrass varieties

- Transcontinental (S), Savannah (S), Southern Star (S), Sydney (S), Majestic (S), Blue-muda (S), Blackjack (S), Pyramid (S), Numex-Sahara (S), Shangri-la (S), Jackpot (S), Shanghai (V), Arizona Common (S), native common types.

- ✓ Note: the availability of grass varieties differs greatly with region of the state whether purchased as seed or as sod.

Bermudagrasses in Marketplace - 2008

- ✓ *Examples of seeded bermudagrasses include (but are not limited to): Arizona Common, Blackjack, Blue-muda, Contessa, Jackpot, LaPaloma, Majestic, Mohawk, NuMex Sahara, Panama, Princess 77, Pyramid, Pyramid, Riviera, Savannah, Shanghai, Shangri-la, Southern Star, Southern Star, SR 9554, Sunbird, Sundevil II, Sunstar, Sydney, Transcontinental, Veracruz, and Yukon*
- ✓ *Examples of hybrid or vegetative bermudagrass available from Texas sod producers include, but are not limited to: Baby, Celebration, Common, GN-1, Tifgreen – sometimes referred to as “328”, Tifway – sometimes referred to as “419”, TifSport, and Tif-*

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Growth Habit: stolons

Nitrogen requirement: 2 - 6 lbs of nitrogen/1000 ft²/year

Drought tolerance: good, irrigation to persist central and west Texas

Shade tolerance: best shade tolerant warm season grass & does well in full sun.

Mowing height: 2 to 3 inches

Thatch: (thatch control may be needed with high N rates)

Winter overseeding: may be done to provide “winter color”.

Varieties: not many to choose from.

Adapted to: used mainly as a lawn grass, salt tolerant. See map at right for where it can be grown in Texas.

St. Augustinegrass

Most commonly used as a low to high maintenance lawn.



St. Augustine

Common varieties are still the only ones grown in the Texas areas. The main common variety has developed natural adaptations on its own.

Raleigh came from North Carolina and was developed to withstand the cooler temperatures, finer textured, SAD resistance and more shade tolerant. It forms a dense, thick coverage.

Floritam is similar to the first two with the difference being it will not stand the colder weather and must be grown in the lower sections of Texas and can handle full sun or shade.




St. Augustine

Seville is a dwarf variety that was developed for shorter stems and therefore a finer texture with the smaller blades, chinch bug infestation and SAD resistance. It is another one that is not cold hardy.

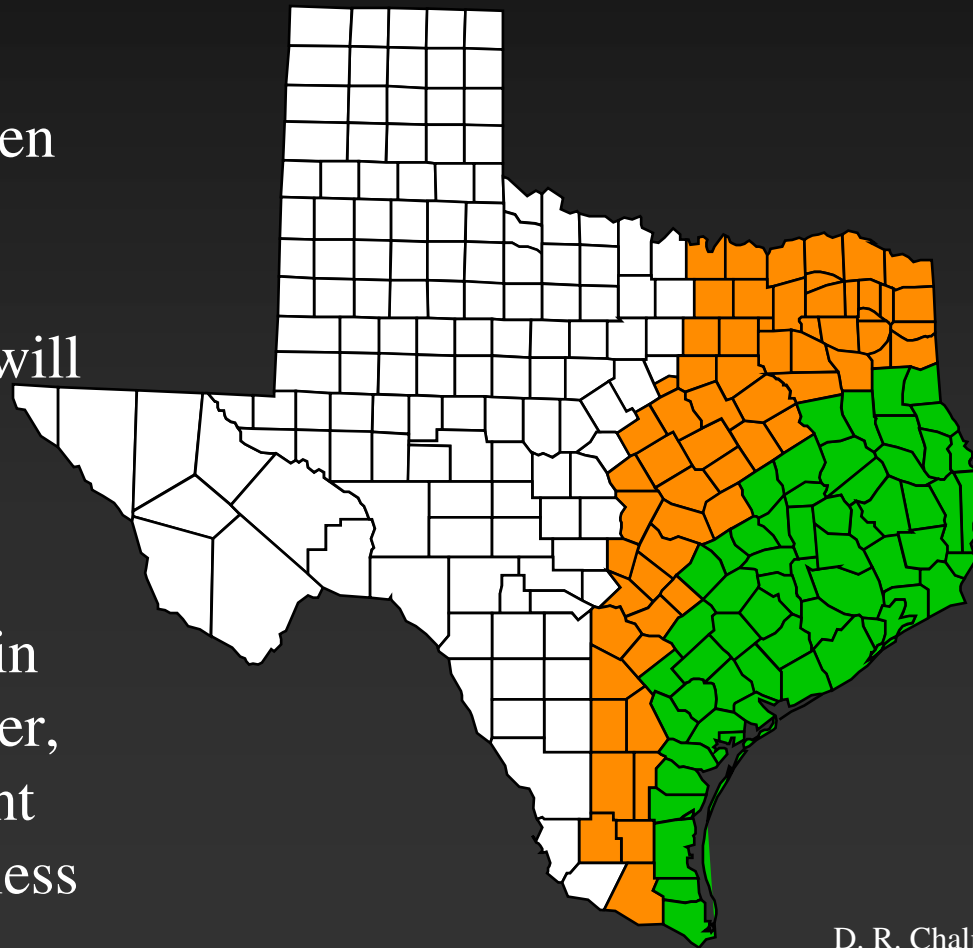
Palmetto is a newer variety used extensively in South Florida.

Delmar is an improved variety with excellent cold and shade tolerance

St. Augustinegrass Adaptation

-  Adapted in these areas
-  Higher maintenance required (supplemental irrigation and/or additional cultural practices)
-  Better adapted grass available

St. Augustine has been used for lawns in Central And West Texas. It will persist with higher maintenance and as a grass alternative to using groundcovers in shaded sites. However, More drought tolerant grasses persist with less irrigation



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- ✓ No seeded types available (only vegetative establishment by sod, stolons or plugs)
- ✓ Fast spreading growth allows for recovery from damage.
- ✓ Common insects: chinchbug,
- ✓ Common problems:
 - SAD (St Augustinegrass decline virus), Brown patch, Take-all Root Rot
- ✓ Varieties: Texas common, Raleigh*, Floratam*, Seville, Delmar. Palmetto.
- ✓ Winterkill can be a problem in north Texas
- ✓ Best soil conditions: moist, soil pH between 6.5 - 7.5

More St. Augustinegrass Basics!

Stolon of St. Augustinegrass





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St. Augustinegrass Common disease problems...



Growth Habit: stolons & rhizomes

Nitrogen requirement: 1-3 lbs of nitrogen/1000 ft²/year

Drought tolerance: very good

Shade tolerance: can tolerate a moderate amount of shade

Mowing height: 1 to 2 inches

Thatch: common problem with higher nitrogen rates and frequent irrigation

Winter overseeding: very difficult - not advised.

Varieties: most vegetatively planted, few seeded types

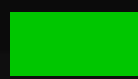
Adapted to: Better cold tolerance than bermudagrass. See map at right for where it can be grown in Texas.

Zoysiagrass

Used most commonly as a low to moderate maintenance lawn.



Zoysiagrass Adaptation



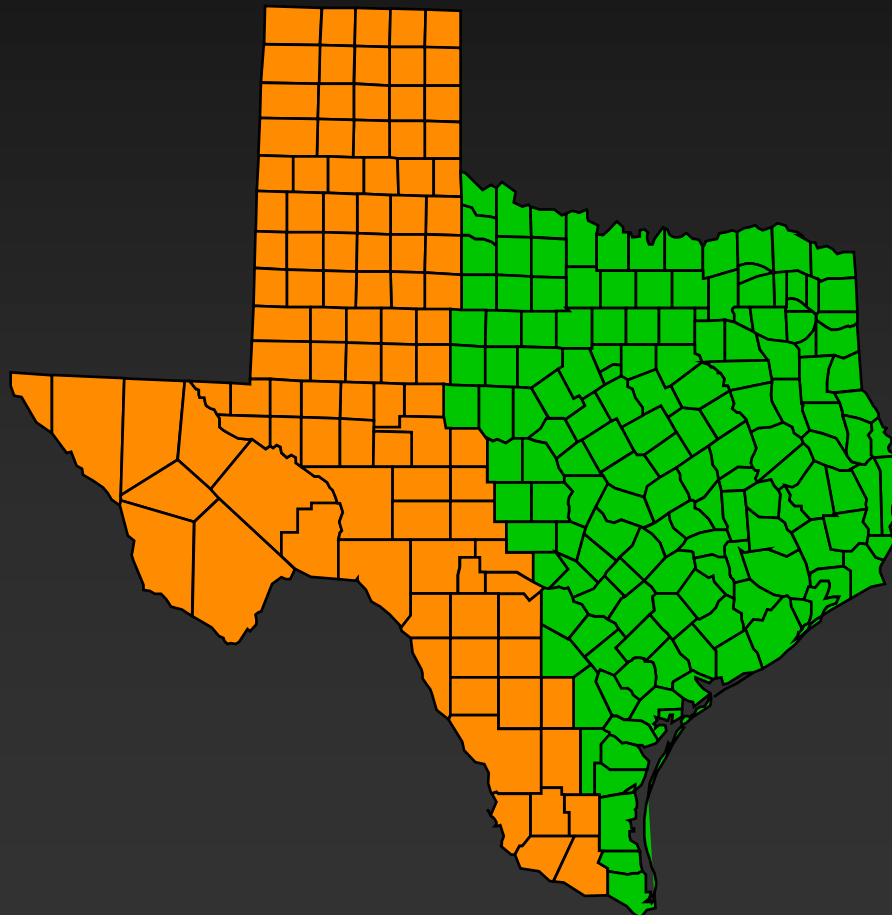
Adapted in these areas



Higher maintenance required (supplemental irrigation and/or additional cultural practices)



Not adapted in these areas.



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✓ Common issues:

- sod cost is typically 2 to 3 times more than other grasses;
- need to sharpen mower often for good cut

✓ Varieties: most vegetatively planted, very few seeded turf-types

✓ Acceptance: Zoysiagrass has gained in acceptance in recent years with improved varieties and recognition as being a dense low to modest maintenance lawn with a finer texture than St. Augustinegrass (see picture to right)

✓ Zoysiagrass from seed: Seeded turf-type zoysiagrass may take as long as 8 to 12 weeks to cover (much slower to establish than other seeded grasses).

More Zoysiagrass Basics!



Zoysiagrass Varieties



- ✓ **Vegetative Lawn Types (*Zoysia japonica*):** Crowne, El Toro, Empire, GN-Z, Jamur, Meyer, Palisades
- ✓ **Seeded lawn type:** Zenith
- ✓ **Higher maintenance types (not for lawns)**
 - (*Zoysia matrella*) Cavalier, Diamond, Empress, Royal, Zeon
 - *Zoysia japonica x tenuifolia*: Emerald

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Growth Habit: stolons

Nitrogen requirement: 1 to 2 lb of nitrogen per 1000 ft²/year

Drought tolerance: poor to fair, irrigate in drought

Shade tolerance: can tolerate a light shade

Mowing height: 1 to 2 inches

Thatch: usually not a problem with this low maintenance lawn

Winter overseeding: not advised.

Varieties: Common or Tiff Blair can be planted as sod or seed (slow to establish from seed)

Adapted to: Eastern Texas, prefers moist slightly acidic (pH of 4.5-5.5). See map at right for where it can be grown in Texas.




Other: iron chlorosis concerns, centipedegrass can decline with higher fertility

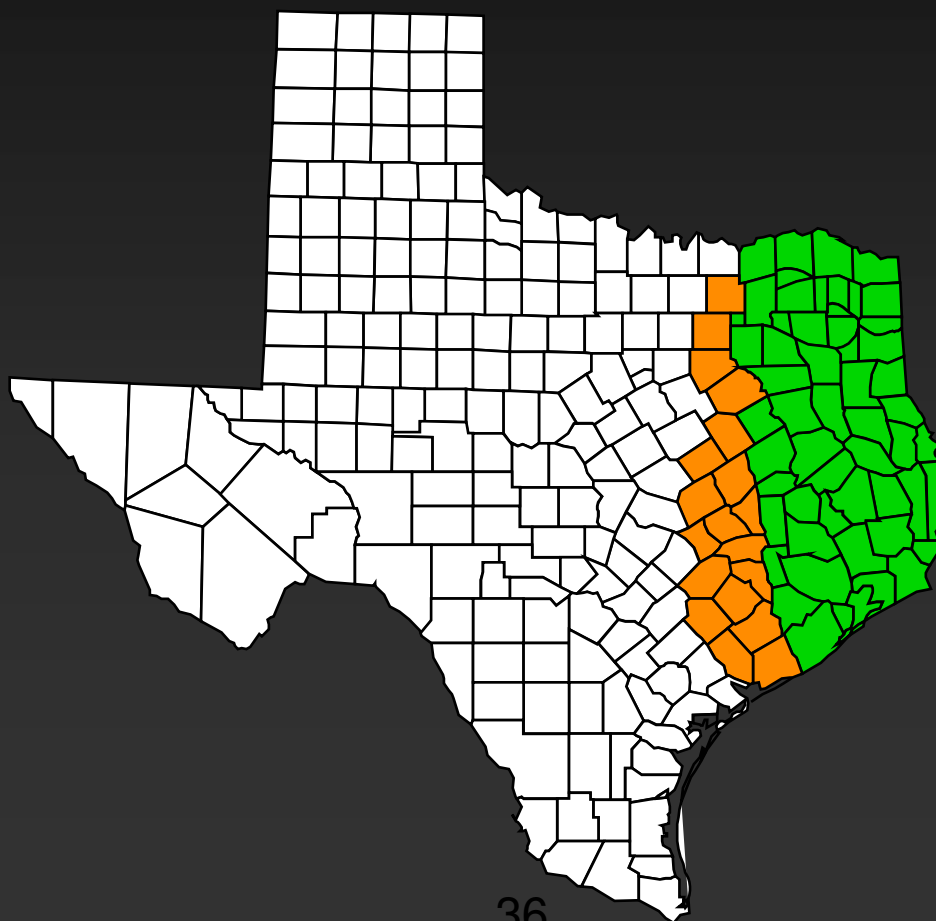
Centipedegrass

Used most commonly as a low maintenance lawn.



Centipedegrass Adaptation

-  Adapted in these areas
-  Higher maintenance required (supplemental irrigation and/or additional cultural practices)
-  Not adapted in these areas.



Growth Habit: stolons

Nitrogen requirement: 1 - 2 lbs of nitrogen/1000 ft²/year

Drought tolerance: excellent

Shade tolerance: not shade tolerant

Mowing height: 1 to 3 inches if mowed

Thatch: not likely to thatch

Winter overseeding: not recommended

Adapted to: best at <20 to 25 inches of annual precipitation (infrequent and minimal irrigation). In Eastern Texas higher rainfall enables other grasses and weeds can out compete buffalograss.

Varieties: Vegetative (V) or seeded (S),
Prairie(V), Stampede (V), 609(V), Texoka (S), Common (S), Density (V), Tech Turf (V)

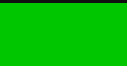


Other: Expect relatively low turf quality compared to other types

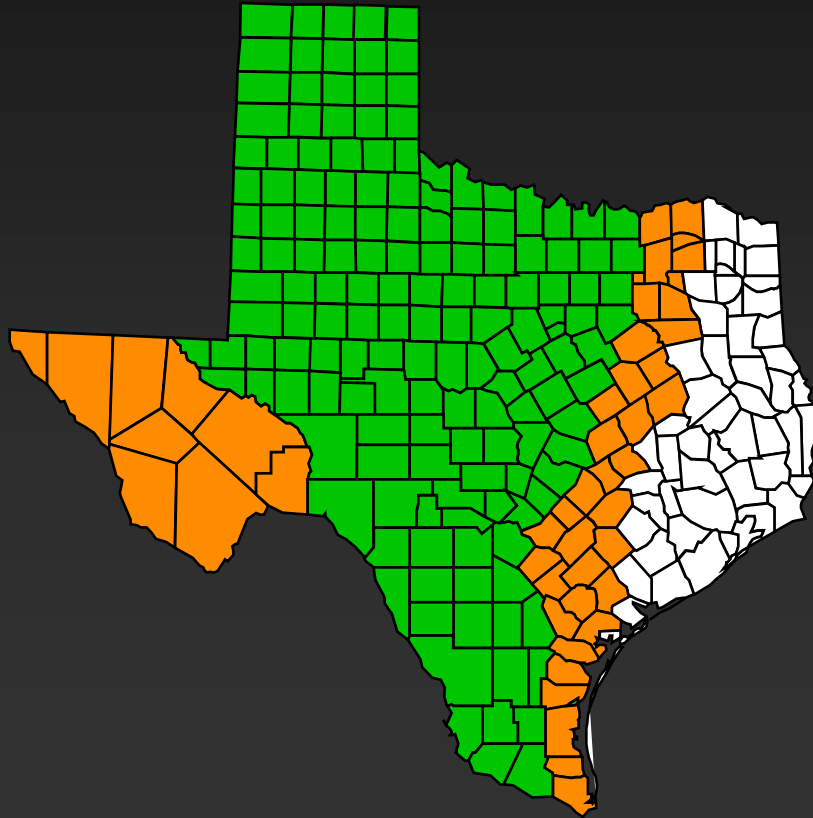
Buffalograss

Most commonly used as a low maintenance lawn in dry areas.



Buffalograss Adaptation

-  Adapted in these areas
-  Higher maintenance required (supplemental irrigation and/or additional cultural practices)
-  Not adapted in these areas.



Comparing Buffalograss and Zoysiagrass on a golf course in San Antonio, Texas:

Creeping bentgrass putting green

**Zoysiagrass primary
rough**

Buffalograss Perimeter Rough




Seashore paspalum

Use is not yet common. Suited as a moderate to high maintenance lawn or sports turf.

- ✓ Growth Habit: stolons and rhizomes, textures (fine to coarse) vary with variety.
- ✓ Nitrogen requirement: 2 to 5 lb of nitrogen per 1000 ft²/year
- ✓ Drought tolerance: very good, tolerates irrigation with salty water.
- ✓ Shade tolerance: full sun to partial shade
- ✓ Mowing height: 3/4 to 2 inches (varies)
- ✓ Thatch: can be a problem
- ✓ Winter overseeding: not advised.
- ✓ Varieties: vegetative planting, not available as seed.
- ✓ Adapted to: See map at right for where it can be grown in Texas. Lack of cold tolerance limits use.






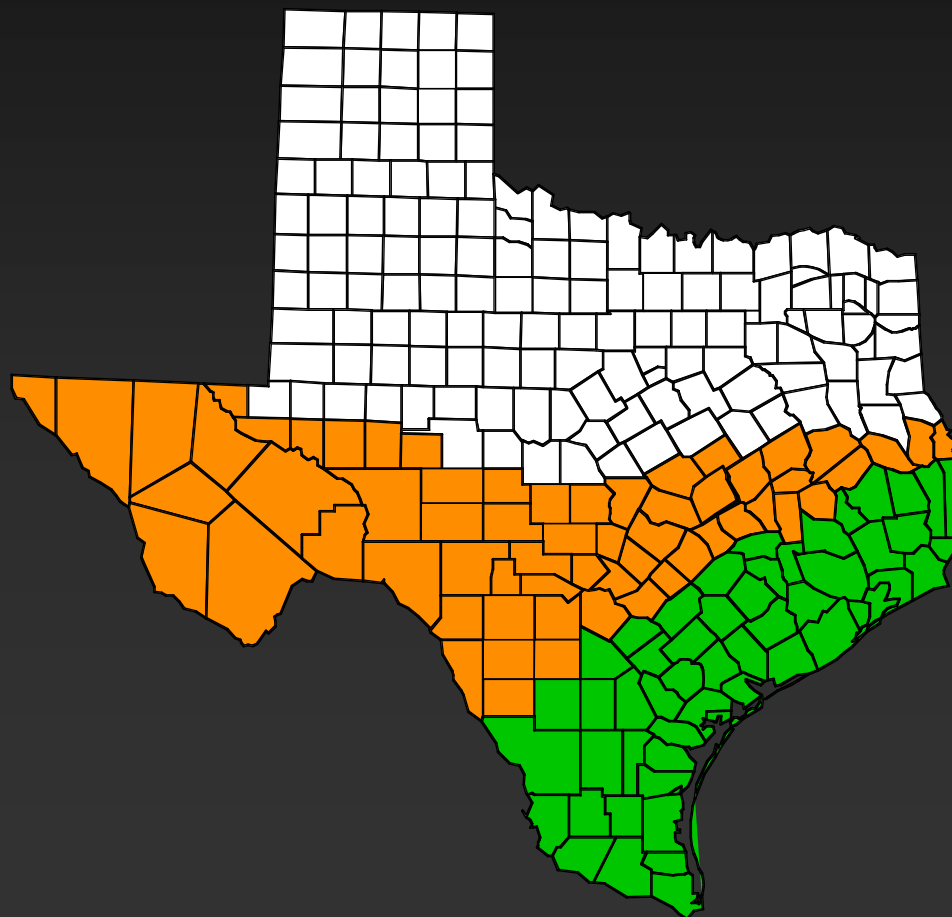
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Texas A&M System

Seashore Paspalum Adaptation

-  Most adapted in these areas
-  May require supplemental irrigation, appropriate variety selection and/or higher maintenance)
-  Not adapted in these areas. Other grass types are recommended.



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Growth Habit: short compact rhizomes,
somewhat open canopy with low inputs.

Nitrogen requirement: 1 to 2 lb of nitrogen per
1000 ft²/year

Drought tolerance: very good to excellent

Shade tolerance: poor

Mowing height: 3 to 4 inches

Thatch: usually not a problem with this low,
maintenance utility-type turf

Winter overseeding: not advised.

Varieties: Common, Argentine, Pensacola, and
Paraguay (Texas bahia) can be planted as
sod or seed (slow to establish from seed)

Adapted to: South to Mid-Texas. Not cold hardy.




Other: sharp mower required - tough to cut. Seed
stalks detract from turf quality.

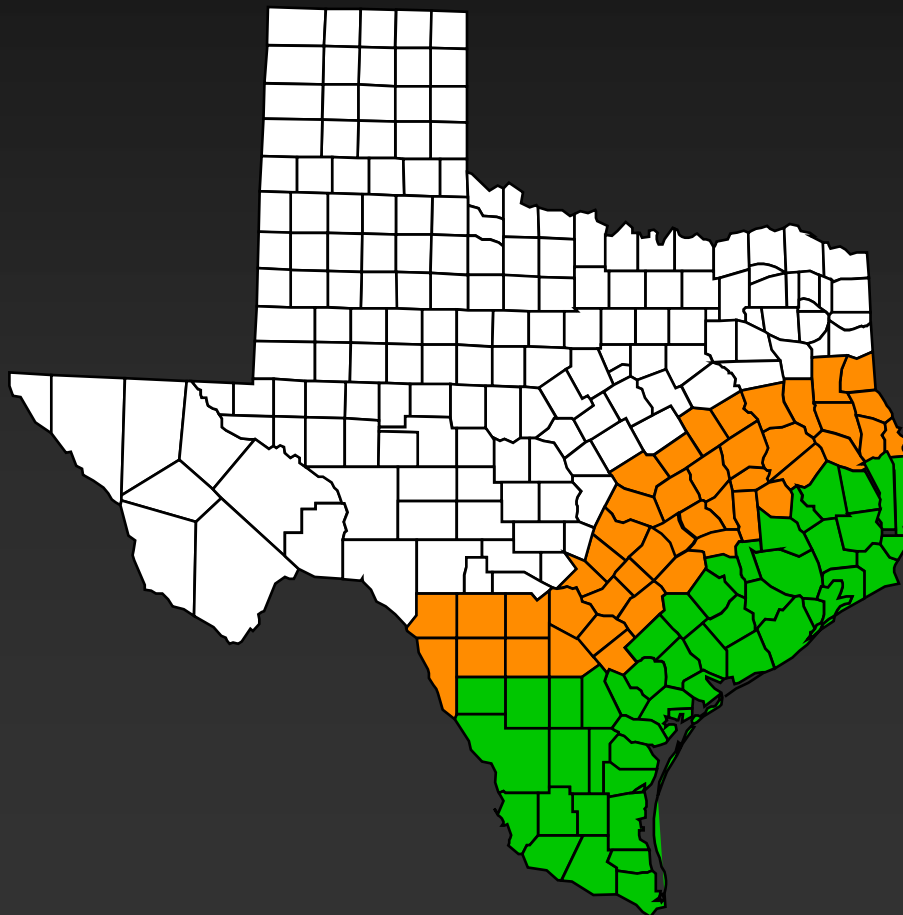
Bahiagrass

Used more as a low
maintenance roadside turf
but seed can invade fine
turf as a weed.



Bahiagrass Adaptation

-  Most adapted in these areas
-  Better adapted grasses available.
-  Not adapted



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SHADE TOLERANCE

Ranking of Turfgrasses

Highest



- ↙ Fescue, Red
- ↙ St. Augustinegrass
- ↙ Zoysiagrass
 - Seashore Paspalum
 - Tall fescue
 - Centipedegrass
 - Buffalograss
 - Bentgrass, Creeping
 - Bluegrass, Kentucky
 - Ryegrass, Perennial
 - Bermudagrass

Sod Prices 2006

St Augustine

Raleigh: 115 pallet or 99¢/pc
 Requires 4-4 1/2 hours of direct sun

Palmetto: 131 pallet or 150¢/pc
 Uses less water than other St Augustines
 Requires 4-4 1/2 hrs of direct sun
 has massive root system that gives it extra drought & cold tolerance

Del Mar: 154 pallet or 150¢/pc
 Requires 3-3 1/2 hours of sun
 Emerald green in color, maintains good winter color. Very cold tolerant

Amerishade: 175 pallet or 200¢/pc
 Most shade tolerant
 Requires 2-2 1/2 hours of sun

Buffalo full sun

Prairie: 120 pallet or 150¢/pc
 Native, fine textured, apple green colored
 Spreads fast, very dense

Turfgrass

Zoysia

Palisades: 154 pallet or 175¢/pc
 Requires 3 1/2-4 hours of direct sun
 leaf blade is medium-coarse textured
 Very cold hardy & drought tolerant
 Good traffic tolerance

Emerald: 163 pallet or 200¢/pc
 3 1/2-4 hours of sun
 price established it will crowd out weeds
 Fine textured, dense growing dark green turfgrass

Zorro: 163 pallet or 200¢/pc
 grows the fastest out of the Zoysias
 3 1/2-4 hours of sun

609: 145 pallet or 150¢/pc
 "Top of the line"
 Drought tolerant
 Low Nitrogen requirements

Bermuda

Lif Sport: 131 pallet or 175¢/pc
 (at least 8 hrs of direct sun)
 excellent weed & disease resistance

Tif 419: 115 pallet or 150¢/pc

Hybrid Bermuda
 at least 8 hrs of sun
 good traffic & drought tolerance
 Excellent disease & weed resistance

GN-199: 125 pallet or 135¢/pc
 at least 8 hrs of sun
 Very aggressive grass
 Establishes quickly; recovers from damage

Common: 99 pallet or 99¢/pc
 at least 8 hrs of sun
 Spreads vigorously
 basic bermuda

1 pallet = 450 sq ft (50¢)
 Pallet Deposit = 5.00
 Delivery Charge depends on Zip Code

Turfgrass Producers of Texas Members A through H

| MEMBER PRODUCER | ST. AUGUSTINE | | | | | | BERMUDA | | | | | | | ZOYSIA | | | | | | | BUFFALO | | | *ADDITIONAL VARIETIES* | | | | |
|---|---------------|--------|--------|----------|----------|---------|----------|------|-------------|--------|-----|------------|----------|---------|------------|----------|---------|---------|--------|-------|-----------|-----|------|------------------------|-------|---------|---------|------------------------------------|
| | Amerishade | Common | Delmar | Floritam | Palmetto | Raleigh | Sapphire | Baby | Celebration | Common | GN1 | TexTurf 10 | TifSport | Tif 328 | Tifway 419 | Cavalier | El Toro | Emerald | Empire | Jamur | Palisades | Y-2 | Zeon | | Zorro | Density | Prairie | 609 |
| HTTP://WWW.TXSOD.COM/ | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A GRASS FARM | | • | | | | | | | • | | | | | • | • | | | | | | | | | | | | | |
| A-1 GRASS FARM | | | | | • | • | | | • | | | • | | • | • | | • | | • | | | | | | | | • | Quickstand Bermuda |
| ALL SEASONS TURF GRASS | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ARMSTRONG RANCH, TURF | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| B & D FARM & RANCH | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BARE SPOT SOLUTIONS | | | | | • | • | | | | | | | | | | | | | | | | | | | | | | |
| BIG FOOT TURFGRASS FARM | | | | | | • | | | | | | | | | | | | | | | | | | | | | | |
| BILL HUBENAK FARMS | | | | | | • | | | | | | | | | | | | | | | | | | | | | | |
| BLADERUNNER FARMS | | | | | | | | • | | | | | | | | | | | | | | | | | • | | | |
| BRAZOS VALLEY GRASS | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BRYAN MILBERGGER FARM | | | | | | • | | | | | | | | | | | | | | | | | | | | | | |
| BUDDY'S GRASS | | | | | | • | | | | | | • | | | | | | | | | | | | | | | | Centipede |
| BUENA VISTA TURF FARM | | • | • | | | • | | | | | | | | | | | | | | | | | | | | | | Centipede U-3 Bermuda |
| CENTRAL TURF FARMS | | • | • | | | • | | | | | | | | | | | | • | | | | | | | | | | Centipede |
| CLASSY GRASS | | • | • | | | • | | | | | | | | | | | | | | | | | | | | | | |
| CHAMPION TURF | | | | | | | | | | | | | • | | | | | | | | | | | | | | | Champion-Dwarf Bermuda |
| COOPER TURF FARMS | | | | | • | • | | | | | | | | | | | | | | | | | | | | | | |
| DAVANT TURF | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DEL'S GRASS FARM | | | | | | • | | | | | | | | | | | | | | | | | | | | | | |
| DIAMOND TURF | | | • | | | • | | | | | | | | | | | | | | | | | | | | | | |
| DOGUET GRASS FARMS | | | | | | • | | | | | | | | | | | | | | | | | | | | | | Centipede |
| FARMER'S GRASS | | | | | | | | | | | | | | | | | | | | | | | | | | | | Retail/Wholesale Carrizo Zoysia |
| F D G FARMS | | | | | | • | | | | | | | | | | | | | | | | | | | • | | | |
| FLYING G TURF FARM | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GRASSLAND | | | | | | • | | | | | | | | | | | | | | | | | | | | | | |
| GREEN ACRES TURF | | • | | | | • | | | | | | | | | | | | | | | | | | | | | | |
| GRIMES GRASS CO. | | | | | | • | | | • | | | | | | | | | | | | | | | | | | | |
| HANSEN FARMS | | | | • | • | • | | | • | | | | | | | • | | | • | | | | | | | | | |
| HARLIEN'S INC. | | • | | | | • | | | | | | | | | | | | | | | | | | | | | | |
| HOPE PLANTATION TURF | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| HORIZON TURF GRASS | | | | | • | • | | | | | | | | | | | | | | | | | | | | | | |
| HUVAR FARMS | | | | | | • | | | • | | | | | | | | | | | | | | | | | | | |

Turfgrass Producers of Texas Members K through Z

| MEMBER PRODUCER | ST. AUGUSTINE | | | | | | | BERMUDA | | | | | | | ZOYSIA | | | | | | | BUFFALO | | | *ADDITIONAL VARIETIES* | | | |
|----------------------------|---------------|--------|--------|----------|----------|---------|----------|---------|-------------|--------|-----|------------|----------|---------|------------|----------|---------|---------|--------|-------|-----------|---------|------|-------|------------------------|---------|---------|-------------------------------------|
| | Amerishade | Common | Delmar | Floritam | Palmetto | Raleigh | Sapphire | Baby | Celebration | Common | GN1 | TexTurf 10 | TifSport | Tif 328 | Tifway 419 | Cavalier | El Toro | Emerald | Empire | Jamur | Palisades | Y-2 | Zeon | Zorro | | Density | Prairie | 609 |
| HTTP://WWW.TXSOD.COM/ | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KING RANCH | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KRAMR BROS. GRASS | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LARRY VIKTORIN FARMS | | | | | | | | | | | | | | | | | | | | | | | | | | | | Centipede |
| LONE STAR SOD FARM L. P. | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MATAGORDA DEVELOPMENT | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MAXIM TURF GRASS | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MAYFIELD FARMS | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MCMURRAY TURF FARM | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MICHAEL D. STONE GRASS | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MURFF TURF FARM | | | | | | | | | | | | | | | | | | | | | | | | | | | | Tif-Dwarf Bermuda |
| QUALITY TURF FARMS | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RED'S GRASS FARM | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RIVERSIDE IRRIGATION | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ROD FARMS | | | | | | | | | | | | | | | | | | | | | | | | | | | | Royal Zoysia |
| ROEDER GRASS FARM | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RUSSELL FARMS | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SLIVA TURF FARMS | | | | | | | | | | | | | | | | | | | | | | | | | | | | Centipede |
| SOUTH TEXAS GRASS | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| STARR TURFGRASS | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| STONE TURF FARMS | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T-8 GRASS FARM | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TEXAS GRASS FARMS | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TRI-TEX GRASS | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TRIANGLE TURF CO., INC. | | | | | | | | | | | | | | | | | | | | | | | | | | | | See Website for more varieties |
| TRINITY TURF NURSERY, INC. | | | | | | | | | | | | | | | | | | | | | | | | | | | | TifDwarf Bermuda, Tifton 10 Bermuda |
| TURF OF TEXAS | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TURFFALO | | | | | | | | | | | | | | | | | | | | | | | | | | | | Turffalo Buffalo |
| TURFGRASS AMERICA | | | | | | | | | | | | | | | | | | | | | | | | | | | | See Website |
| TWINWOOD, INC. | | | | | | | | | | | | | | | | | | | | | | | | | | | | Centipede |
| UNRUH TURF FARMS | | | | | | | | | | | | | | | | | | | | | | | | | | | | Centipede |
| VGT SOD, LP | | | | | | | | | | | | | | | | | | | | | | | | | | | | Centipede |
| WHARTON TURF-GRASS | | | | | | | | | | | | | | | | | | | | | | | | | | | | Crowne Zoysia |
| WITTIG GRASS SALES | | | | | | | | | | | | | | | | | | | | | | | | | | | | Crowne & Royal Zoysia, Centipede |

How To Get NTEP Reports & Info

Kevin Morris, Executive
Director

National Turfgrass Evaluation
Program

10300 Baltimore Ave. Bldg.
001, Rm. 245

Beltsville Agricultural Research
Center-West

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NTEP Website:
<http://ntep.org/>

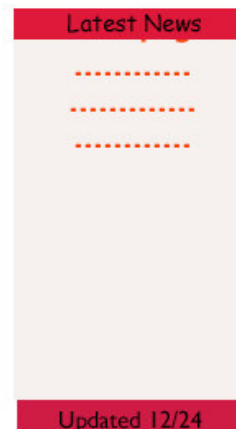


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D. R. Chalmers



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