Turfgrass Selection & Management

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Texas A&M Turfgrass Resources

- Topics of Discussion
  - AggieTurf Website (AggieTurf.Tamu.Edu)
  - Turfgrass Management Practices
    - Species Selection
    - Mowing
    - Fertilization
    - Water Use/Irrigation
    - Weed, Insect, & Disease Control
  - Extension Publications

New AggieTurf Website launched in July 2015
- Over 130 pages of content
- Texas Turfgrasses
- Turfgrass Weeds
- Turfgrass Insects
- AgriLife Publications
- Useful Links
- Events
- Twitter & Facebook Profiles

Proper Turfgrass Selection

- There are several season species available for use in Texas and proper selection is the first step to successful management.

<table>
<thead>
<tr>
<th>Warm-season Species</th>
<th>Cool-season Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bahiagrass</td>
<td>Annual ryegrass</td>
</tr>
<tr>
<td>Bermudagrass</td>
<td>Creeping bentgrass</td>
</tr>
<tr>
<td>Buffalo grass</td>
<td>Fine fescue</td>
</tr>
<tr>
<td>Centipede grass</td>
<td>Kentucky bluegrass</td>
</tr>
<tr>
<td>Seashore Paspalum</td>
<td>Perennial ryegrass</td>
</tr>
<tr>
<td>St. Augustine grass</td>
<td>Tall fescue</td>
</tr>
<tr>
<td>Zoysiagrass</td>
<td></td>
</tr>
</tbody>
</table>

Growth Calendars for Cool and Warm-season Turfgrass Species

Texas A&M Turfgrass Resources

Cool Season Grasses at Augusta National
Turfgrass Selection & Use

Cool-season species are not typically suited for Texas environments due to:
- Low water-use efficiency
- Low nitrogen-use efficiency
- Ideal temperature range of 60-75 °F
- High disease incidence
- Can lack rhizomatous and/or stoloniferous growth habits which allow them to recover from stresses associated with drought, pests, traffic, etc.

Proper Turfgrass selection

- Be sure to match the strengths of each grass to its desired area of planting and use

<table>
<thead>
<tr>
<th>Warm-season Species</th>
<th>Strengths</th>
<th>Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bahiagrass</td>
<td>Rapid growth, low N use, drought</td>
<td>Shade, salts, mowing frequency, lack of density</td>
</tr>
<tr>
<td>Bermudagrass</td>
<td>Heat, drought, traffic, disease</td>
<td>Shade</td>
</tr>
<tr>
<td>Buffalo grass</td>
<td>Drought, Low input</td>
<td>Disease, moisture, traffic, fertilization</td>
</tr>
<tr>
<td>Centipedegrass</td>
<td>Low input</td>
<td>Traffic, salts, high pH, shade</td>
</tr>
<tr>
<td>Seashore Paspalum</td>
<td>Salts, traffic, shade</td>
<td>Cold, disease</td>
</tr>
<tr>
<td>St. Augustinegrass</td>
<td>Shade, Cold</td>
<td>Traffic, cold</td>
</tr>
<tr>
<td>Zoysiagrass</td>
<td>Heat, drought, shade, moderate traffic, cold, low input</td>
<td>Thatch, slow establishment/recovery rate</td>
</tr>
</tbody>
</table>

Proper Turfgrass selection

- Species and Variety Selection

<table>
<thead>
<tr>
<th>Warm-season Species</th>
<th>Variety</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bahiagrass</td>
<td>Argentine, Penna, Tifton 9</td>
</tr>
<tr>
<td>Bermudagrass</td>
<td>Celebration, Common, Zoysia, North Bridge, Prince, Tifton 10, Tiffard, TifTough, TifGreen, TifSport, Tifway 425</td>
</tr>
<tr>
<td>Buffalo grass</td>
<td>Density, Prairie, Prestige</td>
</tr>
<tr>
<td>Centipedegrass</td>
<td>Common, Hammock, Sandtex, TiffHar</td>
</tr>
<tr>
<td>Seashore Paspalum</td>
<td>Seabird, Seawrap, Sea Isle</td>
</tr>
<tr>
<td>St. Augustinegrass</td>
<td>Carrizo, Common, DelMar, DelMarhole, Florastem, Palmetto, Raleigh, Sapphire</td>
</tr>
<tr>
<td>Zoysiagrass</td>
<td>Carrizo, Cavalier, Crown, Diamond, El Toro, Emerald, Empire, Geo, Jamac, Meyer, Palawes, Royal, T-2, Zear, Zorro</td>
</tr>
</tbody>
</table>

For a complete list of warm-season species and varieties available as sod, visit www.txsod.com

Also AggieTurfTamu.edu

Turfgrass Selection & Use

- Warm-season species are typically much better suited for Texas environments
  - However, they also have a high sunlight requirement

<table>
<thead>
<tr>
<th>Sunlight Requirement</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>Bermudagrass</td>
</tr>
<tr>
<td></td>
<td>Bahiagrass</td>
</tr>
<tr>
<td></td>
<td>Centipedegrass</td>
</tr>
<tr>
<td></td>
<td>Zoysiagrass (Z. japonica)</td>
</tr>
<tr>
<td></td>
<td>Zoysiagrass (Z. matrella)</td>
</tr>
<tr>
<td>Low</td>
<td>St. Augustinegrass</td>
</tr>
</tbody>
</table>

Turfgrass Selection & Use

- ALL grasses need at least some level of sunlight to perform well. Reductions in sunlight result in decreased photosynthesis and less creation of sugars and carbohydrates needed for growth and storage
- Turfgrasses under excessive shade will ultimately result in:
  - Thinning of the turf canopy
  - Elongation (lengthening) of leaves, reduced leaf width, absence of photosynthetic tissue
  - Encroachment of weeds
  - Eventual death if light is not sufficient for survival
Bermudagrass

Zoysiagrass thriving in Filtered Shade

Zoysia

Slow growing

Turfgrass Selection & Use
• Warm-season species are typically much better suited for Texas environments

<table>
<thead>
<tr>
<th>Drought Tolerance</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>Bermudagrass, Buffalograss</td>
</tr>
<tr>
<td></td>
<td>Zoysiagrass (Z. japonica)</td>
</tr>
<tr>
<td></td>
<td>Bahiagrass</td>
</tr>
<tr>
<td></td>
<td>St. Augustinegrass</td>
</tr>
<tr>
<td></td>
<td>Zoysiagrass (Z. matrella)</td>
</tr>
<tr>
<td>Low</td>
<td>Centipedeagrass</td>
</tr>
</tbody>
</table>

Un-irrigated Tifway bermudagrass
College Station, TX
Drought Hardiness

August 2012
November 2012
Turfgrass Selection & Use

- Intended use is an important consideration.

<table>
<thead>
<tr>
<th>Traffic Tolerance</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>Zoysiagrass</td>
</tr>
<tr>
<td></td>
<td>Bermudagrass</td>
</tr>
<tr>
<td></td>
<td>Bahiagrass</td>
</tr>
<tr>
<td></td>
<td>St. Augustinegrass</td>
</tr>
<tr>
<td>Low</td>
<td>Centipedegrass</td>
</tr>
</tbody>
</table>

Texas A&M Turfgrass Resources

2016 Texas A&M NTEP and SCRI

Texas A&M Turfgrass Resources

- AggieTurf.Tamu.Edu

12 Texas Turfgrass Pages

- Each Texas Turfgrass species has its own page with useful information on:
  - Use sites
  - Strengths & Weaknesses
  - Growth Habits
  - Texas Adaptability Maps
  - Recommended management practices such as mowing height, irrigation, etc.

Turfgrass Cultural Practices

- What is mowing?
  The process of regularly removing leaf tissue from a turfgrass plant.

- Grazing/Mowing

Meristem (Growing Point)
Turfgrass Cultural Practices

• Impacts of Mowing
  – Increases uniformity
  – Results in finer (thinner) textured leaf blades
  – Greater plant density per unit area

Texas A&M Turfgrass Resources

Keep Mower Blades Sharp!

Turfgrass Cultural Practices

• Mowing Height

<table>
<thead>
<tr>
<th>Species</th>
<th>Mowing Height</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bermudagrass</td>
<td>0.75 – 2.0 inches</td>
</tr>
<tr>
<td>Zoysiagrass</td>
<td>1.0 – 2.0 inches</td>
</tr>
<tr>
<td>St. Augustinegrass</td>
<td>2.5 – 4.0 inches</td>
</tr>
<tr>
<td>Centipedegrass</td>
<td>1.5 – 2.0 inches</td>
</tr>
<tr>
<td>Seashore Paspalum</td>
<td>1.0 – 2.0 inches</td>
</tr>
<tr>
<td>Buffalograss</td>
<td>2.5 – 3.0 inches</td>
</tr>
<tr>
<td>Tall fescue</td>
<td>2.5 – 4.0 inches</td>
</tr>
<tr>
<td>Fine fescue</td>
<td>2.5 – 4.0 inches</td>
</tr>
<tr>
<td>Kentucky bluegrass</td>
<td>1.5 – 3.0 inches</td>
</tr>
</tbody>
</table>

Texas A&M Turfgrass Resources

Turfgrass Cultural Practices

• Mowing Frequency
  – As often as necessary so as to not remove too much leaf tissue at one time.
  – 1/3rd rule

<table>
<thead>
<tr>
<th>Species</th>
<th>Mowing Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bermudagrass</td>
<td>Daily to 7 days</td>
</tr>
<tr>
<td>Zoysiagrass</td>
<td>5 to 7 days</td>
</tr>
<tr>
<td>St. Augustinegrass</td>
<td>5 to 7 days</td>
</tr>
<tr>
<td>Centipedegrass</td>
<td>7 to 14 days</td>
</tr>
<tr>
<td>Seashore Paspalum</td>
<td>Daily to 7 days</td>
</tr>
<tr>
<td>Buffalograss</td>
<td>7 to 14 days, if mowed</td>
</tr>
<tr>
<td>Tall fescue</td>
<td>5 to 7 days</td>
</tr>
<tr>
<td>Fine fescue</td>
<td>7 to 14 days, if mowed</td>
</tr>
<tr>
<td>Kentucky bluegrass</td>
<td>5 to 7 days</td>
</tr>
</tbody>
</table>
Turfgrass Cultural Practices

• Fertilization

Turfgrass Cultural practices

<table>
<thead>
<tr>
<th>Essential Mineral Elements for Turfgrass Nutrition</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Amount</th>
<th>Element</th>
<th>Chemical Symbol</th>
<th>Available Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>MACRO</td>
<td>Nitrogen</td>
<td>N</td>
<td>NH₃, NO₃</td>
</tr>
<tr>
<td></td>
<td>Phosphorus</td>
<td>P</td>
<td>H₂PO₄, H₃PO₄</td>
</tr>
<tr>
<td></td>
<td>Potassium</td>
<td>K</td>
<td></td>
</tr>
<tr>
<td>SECONDARY</td>
<td>Sulfur</td>
<td>S</td>
<td>SO₄²⁻</td>
</tr>
<tr>
<td></td>
<td>Calcium</td>
<td>Ca</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Magnesium</td>
<td>Mg</td>
<td>Mg²⁺</td>
</tr>
<tr>
<td>MICRO</td>
<td>Iron</td>
<td>Fe</td>
<td>Fe²⁺, Fe³⁺</td>
</tr>
<tr>
<td></td>
<td>Manganese</td>
<td>Mn</td>
<td>Mo</td>
</tr>
<tr>
<td></td>
<td>Boron</td>
<td>B</td>
<td>H₂BO₃</td>
</tr>
<tr>
<td></td>
<td>Copper</td>
<td>Cu</td>
<td>Cu²⁺</td>
</tr>
<tr>
<td></td>
<td>Zinc</td>
<td>Zn</td>
<td>Zn²⁺</td>
</tr>
<tr>
<td></td>
<td>Molybdenum</td>
<td>Mo</td>
<td>Mo₄²⁻</td>
</tr>
<tr>
<td></td>
<td>Chlorine</td>
<td>Cl</td>
<td>Cl⁻</td>
</tr>
</tbody>
</table>

Turfgrass Cultural Practices

• When is the optimum time to fertilize?
  – Time your fertilization when the plant is actively growing.

Turfgrass Cultural Practices

• When is the optimum time to fertilize?
  – Frost dates are a good reference point
  – Also consider ideal range of temperatures
    • Warm-season: 80-95 °F
    • Cool-season: 60-75 °F

Turfgrass Cultural Practices

• Nutrient Management Programs
  Fertilization rates
  – The nutrients N-P-K are found in plant tissues at approximately a 3-1-2 ratio

Turfgrass Cultural Practices

• Things to consider when selecting fertilizer
  – Use rate (3-1-2)
  – Nitrogen source
  – Nutrient fate and mobility
  – Soil test!
    • soiltesting.tamu.edu
Turfgrass Cultural Practices

N Sources
- Quickly Available
  - Inorganic Salts (NH₄NO₃, Urea)
- Slowly Available
  - Slowly Soluble (SCU, PCU, UF, IBDU)
  - Organic Fertilizers (Milorganite, Manures)

Quick-Release Nitrogen Sources commonly used in turfgrass fertilizers

<table>
<thead>
<tr>
<th>Source</th>
<th>Chemical formula</th>
<th>Fertilizer grade</th>
<th>Salt index*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urea</td>
<td>CO(NH₂)₂</td>
<td>46-0-0</td>
<td>75</td>
</tr>
<tr>
<td>Diammonium phosphate</td>
<td>(NH₄)₂HPO₄</td>
<td>20-50-0</td>
<td>34</td>
</tr>
<tr>
<td>Monammonium phosphate</td>
<td>NH₄HPO₄</td>
<td>11-48-0</td>
<td>70</td>
</tr>
<tr>
<td>Ammonium nitrate</td>
<td>NH₄NO₃</td>
<td>33-0-0</td>
<td>105</td>
</tr>
<tr>
<td>Ammonium sulfate</td>
<td>(NH₄)₂SO₄</td>
<td>21-0-0</td>
<td>87</td>
</tr>
<tr>
<td>Calcium nitrate</td>
<td>Ca(NO₃)₂</td>
<td>16-0-0</td>
<td>53</td>
</tr>
<tr>
<td>Potassium nitrate</td>
<td>KNO₃</td>
<td>13-0-0</td>
<td>74</td>
</tr>
</tbody>
</table>

*Salt index is a relative measure of the salinity of fertilizers and indicates the relative burn potential of nitrogen sources (a high salt index indicates a high potential to burn turf). Sodium nitrate is the benchmark value against which all other materials are compared, with a salt index of 100. Salt indices may vary with formulation.

Slow-Release Nitrogen Sources commonly used in turfgrass fertilizers

Source
Peter Landschoot, Penn State University

Turfgrass Cultural Practices

- Yearly nitrogen requirements by species

<table>
<thead>
<tr>
<th>Species</th>
<th>Yearly N requirement (lbs N/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bermudagrass</td>
<td>3 to 6</td>
</tr>
<tr>
<td>Zoysiagrass</td>
<td>2 to 4</td>
</tr>
<tr>
<td>St. Augustinegrass</td>
<td>2 to 4</td>
</tr>
<tr>
<td>Centipedegrass</td>
<td>1 to 2</td>
</tr>
<tr>
<td>Seashore Paspalum</td>
<td>2 to 4</td>
</tr>
<tr>
<td>Buffalograss</td>
<td>1 to 2</td>
</tr>
</tbody>
</table>

Turfgrass Cultural Practices

- Nutrient Management Programs (Nitrogen)
  - Application rates
  - 0.5 to 1 lb N/month during the growing season is a typical recommended range
Turfgrass Cultural Practices

• Determining how much N to apply depends on several factors:
  – Species:
  – Desired outcome: High quality, pristine turf vs. utility turf
  – Maintenance: How much maintenance can you provide?
  – Use: Highly trafficked athletic turf vs. ornamental lawn

Turfgrass Cultural Practices

• Benefits of Returned Clippings
  • Nutrient addition
    – Nitrogen (5%)
    – Phosphorus (0.5%)
    – Potassium (2-3%)
  • Easy disposal
  • Root zone modification

Texas A&M Turfgrass Resources

Turfgrass Water Use

Turfgrass Selection & Use

• Warm-season species are typically much better suited for Texas environments

<table>
<thead>
<tr>
<th>Drought Tolerance</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>Bermudagrass, Buffalograss</td>
</tr>
<tr>
<td></td>
<td>Zoysiagrass (Z. japonica)</td>
</tr>
<tr>
<td></td>
<td>Bahiagrass</td>
</tr>
<tr>
<td></td>
<td>St. Augustinegrass</td>
</tr>
<tr>
<td></td>
<td>Zoysiagrass (Z. mertensii)</td>
</tr>
<tr>
<td>Low</td>
<td>Centipedegrass</td>
</tr>
</tbody>
</table>

Turfgrass Selection & Use

• Much of the drought tolerance associated with warm-season grasses is a result of drought “avoidance” through deep rooting potential.
• A study performed in San Antonio titled “Evaluation of Sixty-Day Drought Survival in San Antonio of Established Turfgrass Species and Cultivars” covers this in detail.
  – The full study can be found at: http://itc.tamu.edu/documents/2008FinalReportSAWS&T_PT_s.pdf
Turfgrass Selection & Use

Evaluation of Sixty-Day Drought Survival in San Antonio of Established Turfgrass Species and Cultivars

- **Brief Overview of Research and Results**
  - A drydown structure (5,000 ft²) was constructed in San Antonio
  - Two soil depths were constructed within the drydown structure
    - 4 inches and unrestricted
  - 4 species and 25 varieties were planted in each of the soil depths
    - Bermudagrass, St. Augustinegrass, Zoysiagrass, and Buffalograss
  - After establishment by sod, the plots were exposed to a 60 day drought period and a 60 day recovery period

- **Results**
  - NO grass survived 60 days of drought on 4" soil profile
  - ALL grasses survived 60 days of drought on unlimited soil profile

Water Budgeting

<table>
<thead>
<tr>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sept</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
</tr>
</thead>
<tbody>
<tr>
<td>mm/day</td>
<td>3.85</td>
<td>4.03</td>
<td>3.53</td>
<td>4.25</td>
<td>5.00</td>
<td>4.17</td>
<td>4.26</td>
<td>3.95</td>
<td>3.32</td>
<td>2.33</td>
<td>1.61</td>
</tr>
<tr>
<td>in/week</td>
<td>0.53</td>
<td>0.67</td>
<td>0.87</td>
<td>1.17</td>
<td>1.37</td>
<td>1.14</td>
<td>1.17</td>
<td>1.08</td>
<td>0.91</td>
<td>0.64</td>
<td>0.44</td>
</tr>
</tbody>
</table>

Data from the USGS Evapotranspiration Stations Home Page [http://fl.water.usgs.gov/et/etdata.html](http://fl.water.usgs.gov/et/etdata.html)

- **Crop coefficients [K_c]** for bermudagrass have been reported to range between 0.54 to 0.79 with acceptable quality maintained at 0.60. (Bañuelos et al., 2011)
  - \[ K_c = \frac{ET_a}{ET_o} \]}
Deficit Irrigation = Intentionally irrigating to below turf’s maximal water use

Daily replacement at various percentages of actual ET (ETa)

Know your system

- How many minutes does your system take to deliver water?
  - Ruler, tuna fish or coffee cans, and a stop watch.

Texas A&M Turfgrass Resources

Bermudagrass Home Lawn Management Calendar
- Monthly Guidelines for Managing Home Lawns
  - Fertilization
  - Irrigation
  - Mowing
  - Weed Control
  - And more...
- Home Lawn Management Calendars for other species are currently being produced
  - St. Augustinegrass
  - Zoysiagrass
  - Etc..

Matching Products to Pests
Weeds
- Weeds are generally placed into one of three categories based on their growth characteristics.
  - Grasses
    - Monocots (one cotyledon leaf)
    - Leaves arranged in two vertical rows
    - Stems are hollow, not solid
  - Broadleaves
    - Dicots (two cotyledons)
    - Leaves are arranged in three vertical rows
    - Stems are solid, not hollow
    - Triangular stems
  - Sedges
    - Leaves arranged in three vertical rows

Grasses
1. Monocots (one cotyledon leaf)
2. Hollow stems, not solid
3. Leaves arranged in two vertical rows

Sedges
1. Triangular, solid stems
2. Leaves arranged in three vertical rows

Broadleaves
1. Two seedling leaves
2. Showy flowers
Sedges

Unlike grasses, these plants have pithy, triangular stems and their leaves arranged in threes.

Matching Products to Pests

Weeds

- They are also categorized into one of three life cycles.
  - Summer annuals
    - Summer annuals germinate in the spring when soil temperatures reach about 55°F, flower in the summer and die in the fall at the first frost.
  - Winter annuals
    - Winter annuals germinate in the fall, grow until spring and die during late spring or early summer.
  - Perennials
    - Perennial weeds are capable of living more than two years.

Matching Products to Pests

Weeds

- Annual Grassy Weeds
  - Crabgrass, Goosegrass, Sandbur, Annual bluegrass, etc.

Matching Products to Pests

Weeds

- Perennial Grassy weeds
  - Bahiagrass, Dallisgrass, Bermudagrass, Roughstalk bluegrass, etc.

Matching Products to Pests

Weeds

- Summer annual broadleaf weeds
  - Slender aster, spotted and prostrate spurge, purslane, etc.

Matching Products to Pests

Weeds

- Winter annual broadleaf weeds
  - Chickweed, Henbit, Lawn burweed, etc.
Matching Products to Pests
Weeds
• Perennial and Annual Sedges, Kyllingas

Matching Products to Pests
Weeds
• So, what are our control options given the various classifications, life cycles, species, etc.? – Annual weeds
  • Pre-emergence and post-emergence options
  • Perennial weeds
  • Primarily post-emergence options

Texas A&M Turfgrass Resources
AggieTurf.Tamu.Edu
Weeds of Texas Turfgrass
• Over 100 common Texas Turfgrass Weeds
• Weed Identification Tools
• Hundreds of high-resolution digital images for help with weed identification

Texas A&M Turfgrass Resources
Weed, Insect, & Disease Control in Turfgrass
• Over 120 pages of herbicide, insecticide, and fungicide control options labeled for Texas Turfgrasses
• Viewable for FREE in the Publications section of AggieTurf
• Hard-copies available for purchase through the AgriLife Bookstore

Texas A&M Turfgrass Resources
Insects & Mites of Texas Turfgrass
• Insect Identification Tools
• High-resolution digital images for help with insect identification
• Direct links to AggieTurf Insect publications on common Texas Turfgrass insects
Texas A&M Turfgrass Resources

Printable Turfgrass Insect Publications with ID, Life Cycles, & Treatment Options

Texas A&M Turfgrass Resources

➤ Social Media

➤ Twitter: @aggieturf

➤ Facebook

➤ YouTube: AggieTurf

Texas A&M Turfgrass Resources

2017 Turfgrass Short Course
- January 17th –22nd, 2017
- Memorial Student Center on Texas A&M Campus in College Station, TX
- $450 for week-long workshop

St. Augustinegrass and Zoysiagrass Development Update

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Associate Professor
Texas A&M Dallas Center

TamStar™ – First Interploid St. Augustinegrass Hybrid Tested as DALSA 0605

Breeder’s Field
August 14, 2013

1. Drought Resistance
2. High tolerance to Gray Leaf Spot
3. Suppression of Southern Chinch Bugs (Antixenosis)
4. Reasonable freezing tolerance
5. Fewer seedhead production
6. Highly Sterile – little to no off-types

‘Chisholm’ (Zoysia japonica) – Tested as DALZ 0102 in 2002 NTEP
Developed and Jointly Released by Texas A&M Agrilife Research and Kansas State University

- Comparable cold hardiness to Meyer
- Superior turf quality
- Rapid rate of establishment
- Rapid recovery rate following damage
- Good shade tolerance
- Good fall color retention
- High shoot density
- Low seed-head number
- Excellent resistance to zoysiagrass mite
‘KSUZ 0802’ – *Z. matrella* x *Z. japonica* Zoysia hybrid
Developed and Jointly Released by Texas A&M AgriLife Research and Kansas State University

Finer-textured than ‘Meyer’ and as cold hardy as Meyer

2015 – Spring Green-up, Manhattan, KS