Buffalograss Establishment and Management: Myths and Misconceptions

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Buffalograss

- *Buchloë dactyloides* (Nutt.) Engelm. 
  (*Bouteloua dactyloides* (Nutt.) Columbus)
- Warm season perennial species
- Stoloniferous
- Sod forming
- Fine textured
- Dark bluish-green color
- Excellent drought/heat/cold tolerance

Average Annual Precipitation

Spatial Climate Analysis Service, Oregon State University

Buffalograss is dioecious
Historical Perspective

- 1930's mention as a lawn grass (Wenger)
- Water and Environmental Concerns in the 1970's
- USGA Grant in Early 1980's

Buffalograss as a Turfgrass Species

- A Warm Season Species that has Cold Tolerance
- A Low Maintenance
- A True "Native" Species

Water use

<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>Buffalograss, Texas Common</td>
<td>5.3a*</td>
<td>4.6a</td>
<td>4.4a</td>
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<tr>
<td>Centipedegrass, Georgia Common</td>
<td>5.5abc</td>
<td>4.7ab</td>
<td>4.9abc</td>
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<tr>
<td>Bermudagrass, Aztexa Common</td>
<td>5.8abc</td>
<td>4.2a</td>
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<tr>
<td>Bermudagrass, Tifgreen</td>
<td>5.4ab</td>
<td>4.6ab</td>
<td>5.2c</td>
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<tr>
<td>Bermudagrass, Tifway</td>
<td>5.8ab</td>
<td>4.1a</td>
<td>4.9abc</td>
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<tr>
<td>Seashore paspalum, Adakayd</td>
<td>6.2ab</td>
<td>5.1b</td>
<td>4.7ab</td>
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<tr>
<td>Zoysia greens, Meyer</td>
<td>5.8abc</td>
<td>4.7ab</td>
<td>5.6d</td>
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<tr>
<td>St. Augustinegrass, Texas Common</td>
<td>6.5f</td>
<td>4.9ab</td>
<td>5.6d</td>
</tr>
<tr>
<td>Zoysigress, Emerald</td>
<td>6.5f</td>
<td>4.9b</td>
<td>6.0e</td>
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<tr>
<td>Bahiagrass, Common</td>
<td>5.7ab</td>
<td>-</td>
<td>-</td>
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<tr>
<td>Bahiagrass, Argentine</td>
<td>6.5f</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Tall fescue, Kentucky 31</td>
<td>7.1g</td>
<td>5.1b</td>
<td>-</td>
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<tr>
<td>CV</td>
<td>7.3</td>
<td>11.8</td>
<td>12.8</td>
</tr>
</tbody>
</table>

Well watered turf <5.5 considered low ET rate

Kim and Beard, 1988
20-25% converted to buffalograss = ~40% less water used

Shade Tolerance

Shade tolerance

2020-2025

7/19/2021
Traffic Tolerance

Traffic applied weekly June through October to mature buffalograss stand for two years

Soil Type


- Bowie at 0.5, 1.0, 2.0, 4.0, 8.0 #/PLS
- 4-8 #/PLS when rapid establishment is desired
- As little as 1.0 #/PLS is slower but not unacceptable if economics is critical

Planting Depth Effect on Emergence and Morphology of Buffalograss Seedlings

- 3 cultivars at 0.5, 1.0, 1.5, 2.0, 2.5 and 3.0" depth
- 0.5-1.0" best; go deeper (1.0") if site is not irrigated.

Nitrogen, Phosphorus, and Potassium Effects on Seeded Buffalograss Establishment

- KSU, OSU and UNL
- Establishment enhanced up to 150 #/acre N
- K, no effect; P depended on location
- 1-1.5 #/M preplant in a conventional starter fertilizer
CROP PHYSIOLOGY & METABOLISM

Nitrogen Rate and Mowing Height Effects on Turf-Type Buffalograss

• Established in UT, KS and NE
• 1.5 #N/yr “best” quality
  • 1 or 2 applications spaced 30-45 days apart during active growth
  • 2-3 “best” mowing height

Mowing Response

• Left unmown “8-12”
• Certain cultivars can tolerate low mowing
• May improve spring greenup

Irrigation

• Supplemental irrigation
  • limited moisture
  • higher maintenance
• Irrigate to maintain active growth
• Deep soaking during July and Sept may benefit high maintenance areas
• Occasional to no watering for low maintenance
• ~1” per month

Overseeding Buffalograss Turf with Fine-Leafed Fescues
S. Sevemacher, T. P. Riordan, R. C. Shurman, E. E. Gunwink, and L. E. Moser

ABSTRACT

Overseeding buffalograss (knot) with fine-leafed fescues (fine fescues) to a turf

• 2-4 #/M
• blue >hard = chewings
• Single aeration pass followed by broadcast seeding
• Fall better than spring
• Recommendation
  • Blue fescue
  • Establish buffalograss first
  • Fall seed at 1-2 lbs/M

• 2-4 #/M
Colorant Effects on Dormant Buffalograss Turf Performance

R.C. Shearman1, L.A. Wei2, S. Severnathia, H. Buda3, and R.E. Guisardi4

• Appearance equivalent to adjacent cool season grasses
• Enhanced spring green-up
Establishment Herbicides (old recommendation)

- Seeded
  - Plateau (do not exceed 2-4 oz/acre)
  - Princap (some label restrictions)

Buffalograss Establishment with Preemergence Herbicides

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Dan D. Bucan and Robert A. Muñoz
Department of Agronomy, University of Nebraska, Lincoln, NE 68583

The Effect of Various Herbicides Applied at Different Growth Stages of 'Sundance' Buffalograss

- 1st year during establishment
  - Tenacity grassy weeds, broadleaves, sedges
  - Drive XLR8 grassy weeds, broadleaves
  - SquareOne grassy weeds, broadleaves
  - Solitaire grassy weeds, broadleaves
  - Quicksilver broadleaves
  - Dismiss sedges, grassy weeds, broadleaves
  - Pre-emergence: season long weed control
    - prodiamine (60 DAS), pendimethalin (4 mowings 90 DAS)
Established Buffalograss Weed Control

- Spring Preemergence (Essential application)
  - Prodiamine
  - Pendimethalin
  - Dithiopyr* (do not apply until second year after establishment)

Summer Weed Control

- Summer treatment
- Choose your poison based on weeds present
- Least opportune time to manage weeds
- Unsightly weeds require treatment
- Potential damage
- High heat
- Luckily! Many herbicides labeled for established buffalograss

Summer application safety on established buffalograss

- 25 herbicides applied at high label and 2x
- Bowie buffalograss stand
- Applied in above normal application temperatures
- Mid-July

<table>
<thead>
<tr>
<th>Herbicide</th>
<th>25 lb/ac</th>
<th>50 lb/ac</th>
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<tbody>
<tr>
<td>Amicarbazone 70WG</td>
<td>5 oz/a</td>
<td>10 oz/a</td>
</tr>
<tr>
<td>Trimec Classic 4 pt</td>
<td>2 pt/a</td>
<td>4 pt/a</td>
</tr>
<tr>
<td>Octane 2%SC</td>
<td>2 fl oz/a</td>
<td>4 fl oz/a</td>
</tr>
<tr>
<td>SquareOne 70WG</td>
<td>18 oz/a</td>
<td>36 oz/a</td>
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<tr>
<td>Blindside 75WG</td>
<td>10 oz/a</td>
<td>20 oz/a</td>
</tr>
<tr>
<td>Plateau 2AS(SL)</td>
<td>8 fl oz/a</td>
<td>16 fl oz/a</td>
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<tr>
<td>Specticle 5 oz/a</td>
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<td></td>
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<tr>
<td>Celsius 4.9 oz/a</td>
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<td></td>
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<tr>
<td>Speedzone 4 pt/a</td>
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<tr>
<td>Speedzone Southern</td>
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</tr>
<tr>
<td>Onetime 64 fl oz/a</td>
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</tr>
<tr>
<td>2-4D Amine 1.5 qt/a</td>
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<tr>
<td>2-4D Amine 3 qt/a</td>
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* Susceptibility: ● = susceptible, ○ = moderately susceptible, and ○ = tolerant.
Y numbers refer to reference number in Literature Cited.
Table 1 = modified from Table 1.
3 Week Average Phytotoxicity of Various Herbicides at 2x applied to Bowie Buffalograss at 2x the High Label Rate, a Rating of 7 or Above was Considered Acceptable.

- Glyphosate
  - "dormant" glyphosate applications in the Spring can be disastrous
  - Fall after “hard” frost not a problem
  - Contact nonselective (diquat) acceptable

Buffalograss Savings
- "No matter what we’ve done (or not done) to buffalograss, average quality was similar and only slightly less than more intensively managed cool-season Kentucky bluegrass and creeping bentgrass maintained as a golf course fairway"
  Cole Thompson, PhD

Where to from here for buffalograss?
Sundancer

- Rapid establishment
- Broad adaptation range
- Enhanced turfgrass quality

Rapid establishment  
May 9th, 2012

Rapid establishment  
June 26th, 2012

Rapid establishment  
July 6th, 2012

Rapid establishment  
August 8th, 2012
Genetic Diversity

Stolon internode length

Selections with Extended Growing Season

Selections with excellent fall color retention

Spring green up

Buffalograss uses
 Buffalograss Working Group  
(past and present)

Bob Shearman, PhD  
Terry Riordan, PhD  
Bekele Abeyo, PhD  
Tiffany Heng-Moss, PhD  
Don Lee, PhD  
Paul Twigg, PhD  
Gautam Sarath, PhD  
Roch Gaussoin, PhD  
Fred Baxendale, PhD  
Zac Reicher, PhD

Keenan Amundsen, PhD  
Lannie Wit  
Sajeewa Amarasada  
Carol Coha  
Sandra Schaeffer  
Mitch Stamm  
Matt Pedersen  
Jeff Witkowski  
Matt Sousek  
Luqi Li

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NATIVE TURF

Nebraska Turfgrass Association

USDA  National Institute of Food and Agriculture
UNIVERSITY OF IOWA
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