

Release of DT-1 Bermudagrass

University of Georgia Tifton Campus

April 28th, 2015



Brian Schwartz

University of Georgia

tifturf@uga.edu



Southeastern Turfgrass Conference

www.turfconf.com





Southeastern Turfgrass Conference

www.turfconf.com





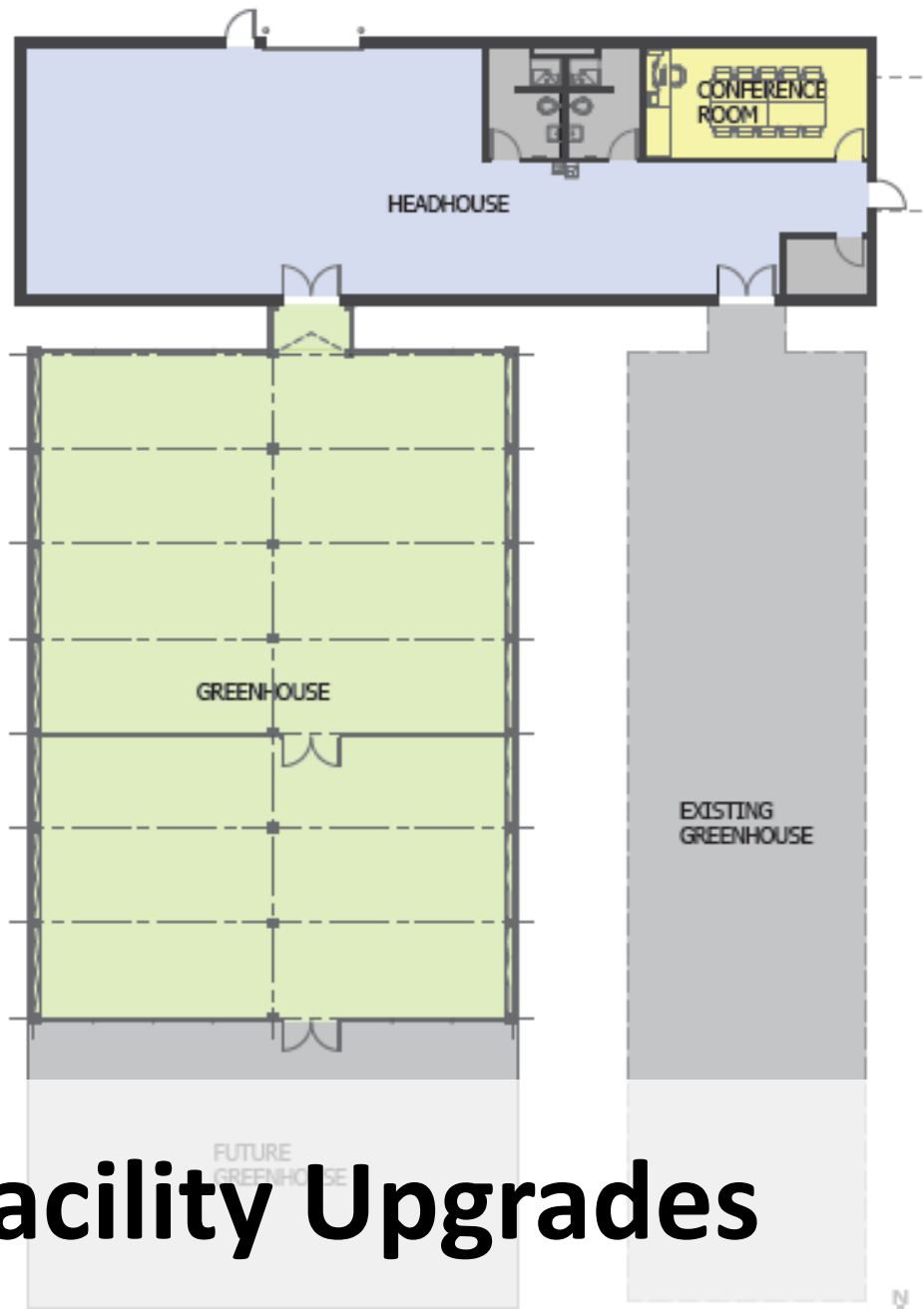
Southeastern Turfgrass Conference

www.turfconf.com



Facility Upgrades





Headhouse	3,264 sf
Greenhouse	3,500 sf
<hr/>	
Square Footage =	6,764 sf

Facility Upgrades



Website Upgrades

[HOME](#)

[SUPPORTERS](#)

[PRESENTATIONS](#)

[PROGRAMS](#)

2014

2014 Introduction

Significant Trees in the Landscape -Documentation and Care -Tim Smalley

Emerging Diseases of Centipede Grass on Home Lawns in the Gulf Coast States (Morning) -Philip Vines

Afternoon -Philip Vines

Warm-Season Turfgrass Seedhead Control Research Update -Patrick McCullough

Grass Roots -Kevin Morris

Herbicide Resistance in the Southeast: An Emerging Problem for Turf Managers -Jim Brosnan

Every Single Drop: Utilizing Deficit Irrigation to Managing Warm-Season Turfgrass Lawns -Jason Kruse

Surface Firmness: Can We Manage It? -Clint Waltz

Dollar Spot Resistance in Seashore Paspalum -Clint Steketee

No Till Planting Method -Bruce Allison

Game Changers NexGen Turfgrasses Will Be Here Sooner Than Later -Brian Schwartz

Performance of Bermudagrass vs. Synthetic Turf for Athletic Fields -Adam Thoms

2013

UGA & Plant Introductions, Inc. Ornamental Plant Breeding Programs -Michael Dirr

This Is Not Your Father's Oldsmobile, I Mean Turfgrass -Brian Schwartz

2012

Thank You

- **UGA Tifton Campus Conference Center**
 - **UGA Turf Team**
 - **ABAC Turf Team**
 - **Collaborators**
 - **2015 Turfgrass Conference Speakers**
-
- **USDA-ARS**
 - **USGA**
 - **GGCSA**
 - **Urban Ag Council**

Thank You - Sponsors

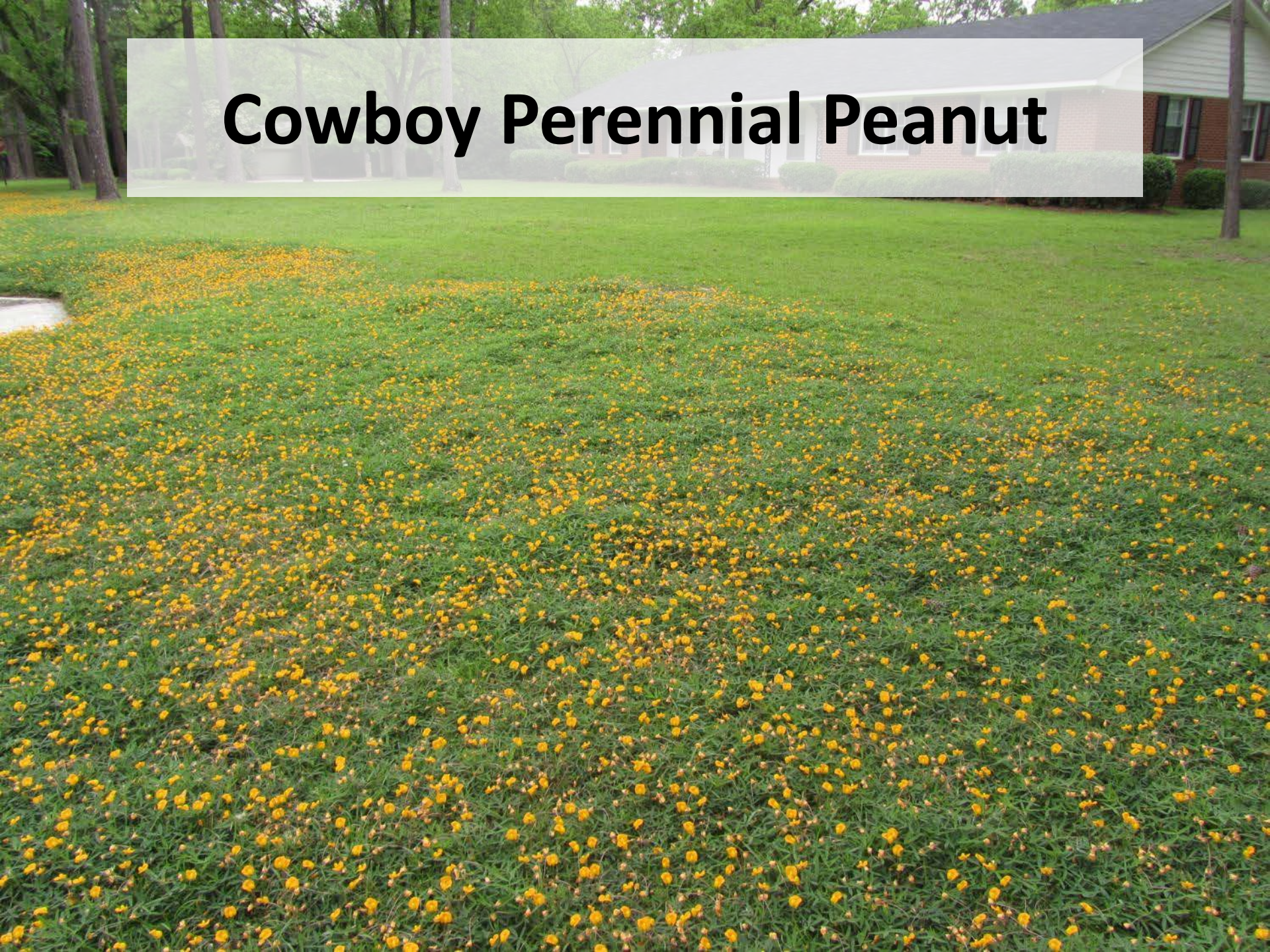
- **UGARF**
- **GSDC & GCIA**
- **Patten Seed Company**
- **Everyone Attending**

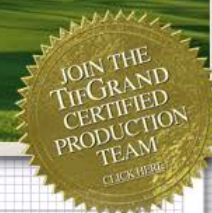


Cowboy Perennial Peanut



Cowboy Perennial Peanut





Beginning in 1959 with the release of Tifway 419, The University of Georgia Tif-Hybrid series bermudagrass varieties set the bar for homes lawns, golf courses and athletic field playing surfaces around the world. Now the best has gotten better.

TifGrand® (PP21017) is the world's first seed and pollen sterile (triploid hybrid) Bermudagrass scientifically developed to produce a superior turf cover in full sun and to thrive in limited light environments.

- Thrives in 60-70% continuous shade (approximately 5 hours direct sun)
- Superior quality in full sun
- Semi-dwarf nature with naturally dark green blade
- Produces a dense turf with vertical blade orientation
- Significantly reduced fertilizer (N) requirement
- Reduced water requirement
- Increased cold tolerance
- Spreads by stolons and rhizomes
- Tawny-mole cricket non-preference
- Only produced by license Certified Producers



• Developed By Dr. Wayne Hanna and Dr. Kris Brame and the University of Georgia's world renowned turfgrass breeding program.



Engineering Better Turfgrass
One Blade At A Time.

*exclusive production
licensing agent*

Tel: (770) 207-1500

Fax: (770) 207-6019

TIF GRAND™

CERTIFIED BERMUDA



TIF GRAND™

CERTIFIED BERMUDA



TIF GRANDTM

CERTIFIED BERMUDA





TIF GRANDTM

CERTIFIED BERMUDA

After first frost in Tifton 2009

Tifdwarf

TifGrand



TIF GRANDTM

CERTIFIED BERMUDA

TifGrand

Limited dew accumulation

TifEagle



TifGrand at The Dye Preserve

TifGrand Greens (0.156"), collars (0.25"), & roughs (2.0")



TifGrand at The Dye Preserve

TifGrand Greens (5/32")



TifGrand at Suwannee CC

TifGrand Greens (0.160")

- April 7th, 2015
- 3 oz Primo per month
- 9.8' Stimp Avg. on 3 greens

TifGrand at Suwannee CC

TifGrand Greens (0.160")

- April 7th, 2015
- 3 oz Primo per month
- 9.8' Stimp Avg. on 3 greens

TifGrand at Suwannee CC

TifGrand Greens (0.160")

- April 7th, 2015
- 3 oz Primo per month
- 9.8' Stimp Avg. on 3 greens

TifGrand at Suwannee CC

TifGrand Greens (0.160")

- April 7th, 2015
- 3 oz Primo per month
- 9.8' Stimp Avg. on 3 greens



TIF GRANDTM

CERTIFIED BERMUDA



- TifGrand at the Country Club of Columbus



TIF GRANDTM

CERTIFIED BERMUDA



- TifGrand in a yard in Tifton, GA



Advanced Bermudagrass Lines

- Objectives
 - Evaluate the range of adaptation of superior genotypes





Bermudagrass

- Drought and Stress Work – Dry Down Testing



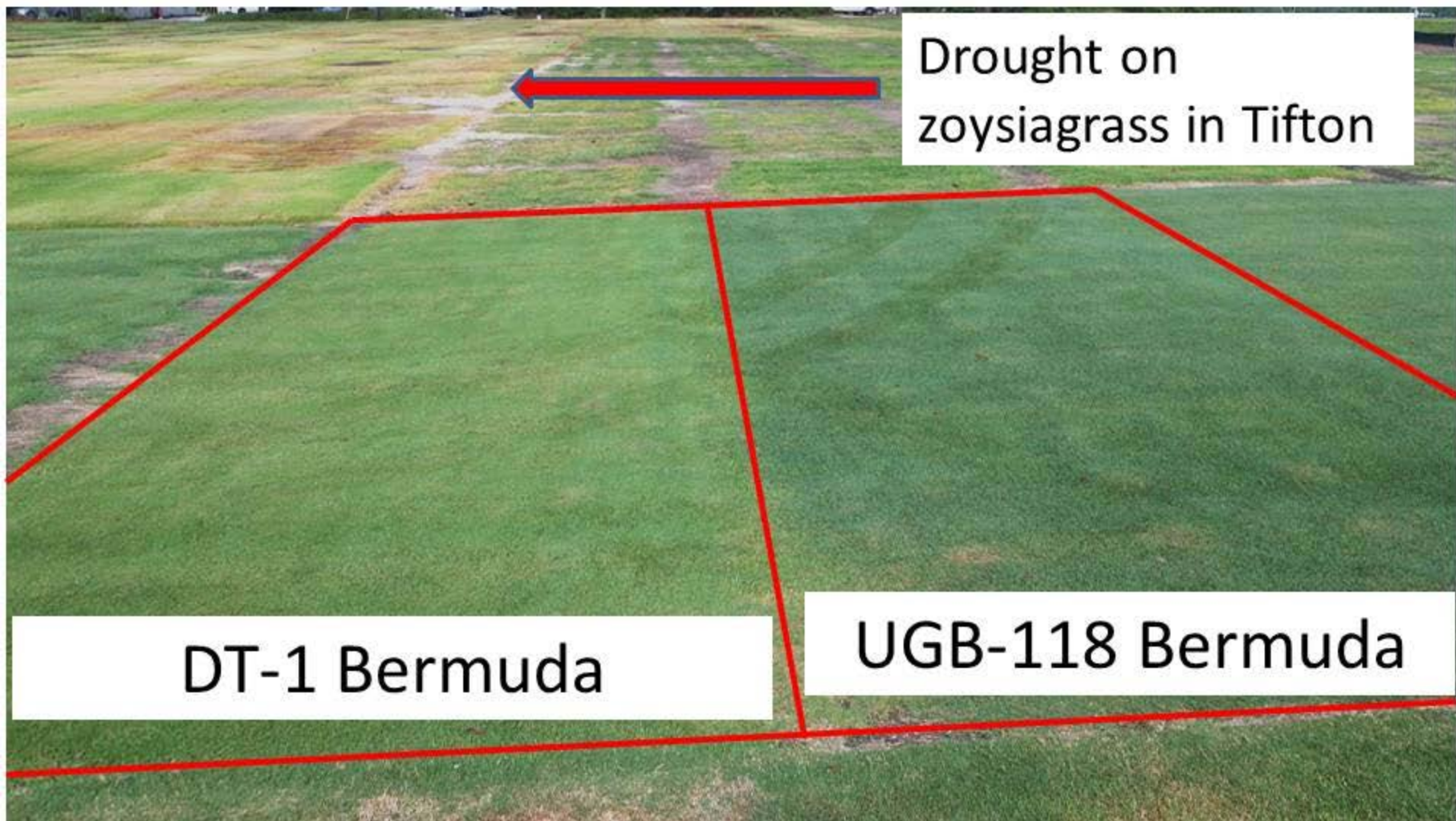
The Future? DT-1



Experiment Station Trials

A wide-angle photograph of a large experimental field. The field is divided into numerous rectangular plots of varying shades of green, indicating different grass treatments or stages of growth. The plots are arranged in long, parallel rows that recede into the distance. In the background, there are trees, a clear blue sky with some clouds, and a building with a yellow wall and a white garage door. A dirt path or road runs along the right side of the field.

- Bermudagrass



- Bermudagrass & Zoysiagrass



Plant Responses to Drought

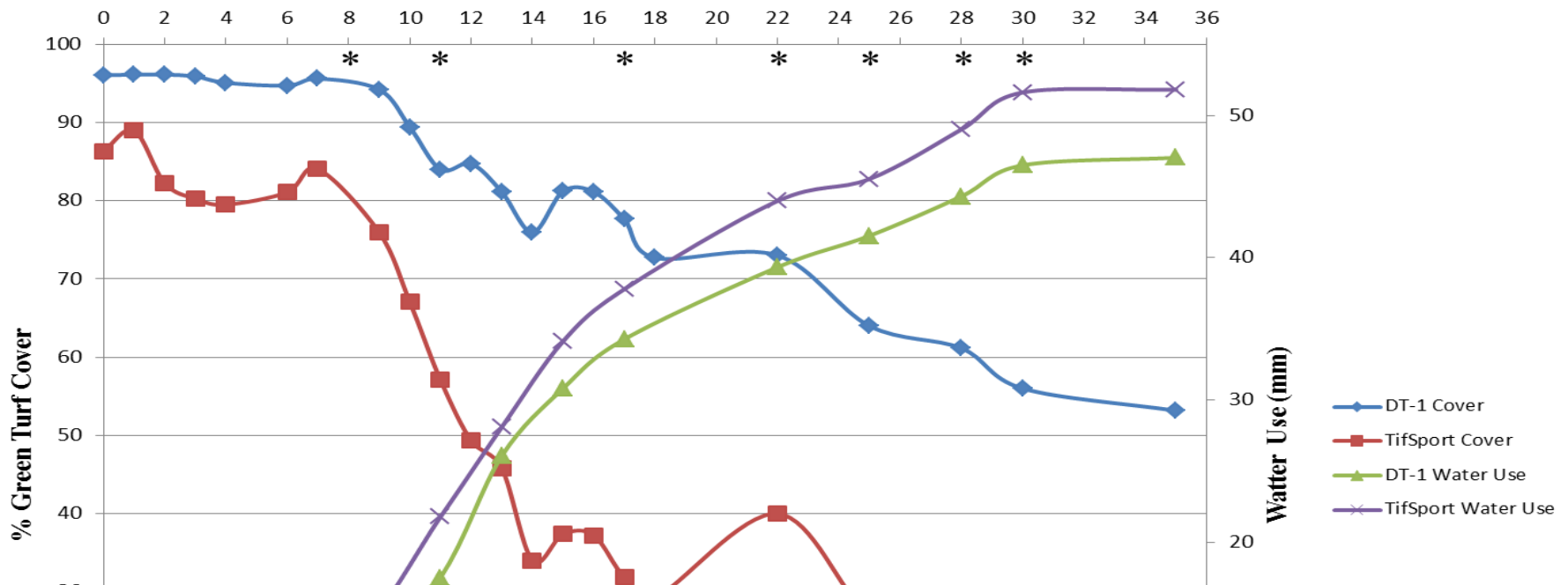
- **Avoidance**
 - Deeper root extension
- **Tolerance**
 - Osmotic adjustment, membrane stability, etc.
 - aka, using less water
- **Escape**
 - Drought dormancy

Artificial Selection

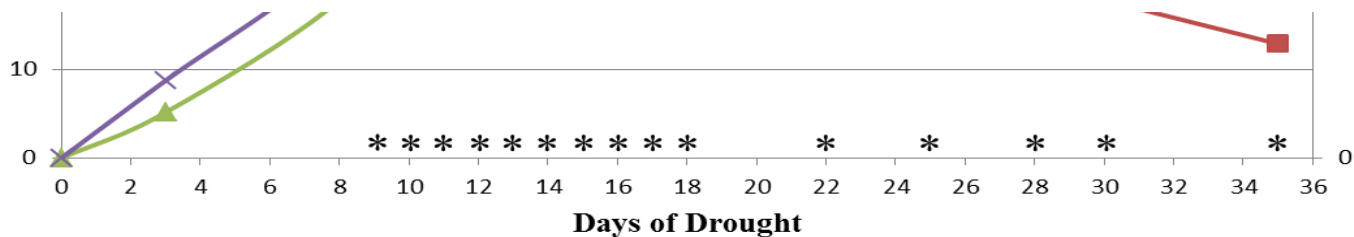
- Rain Exclusion Structures



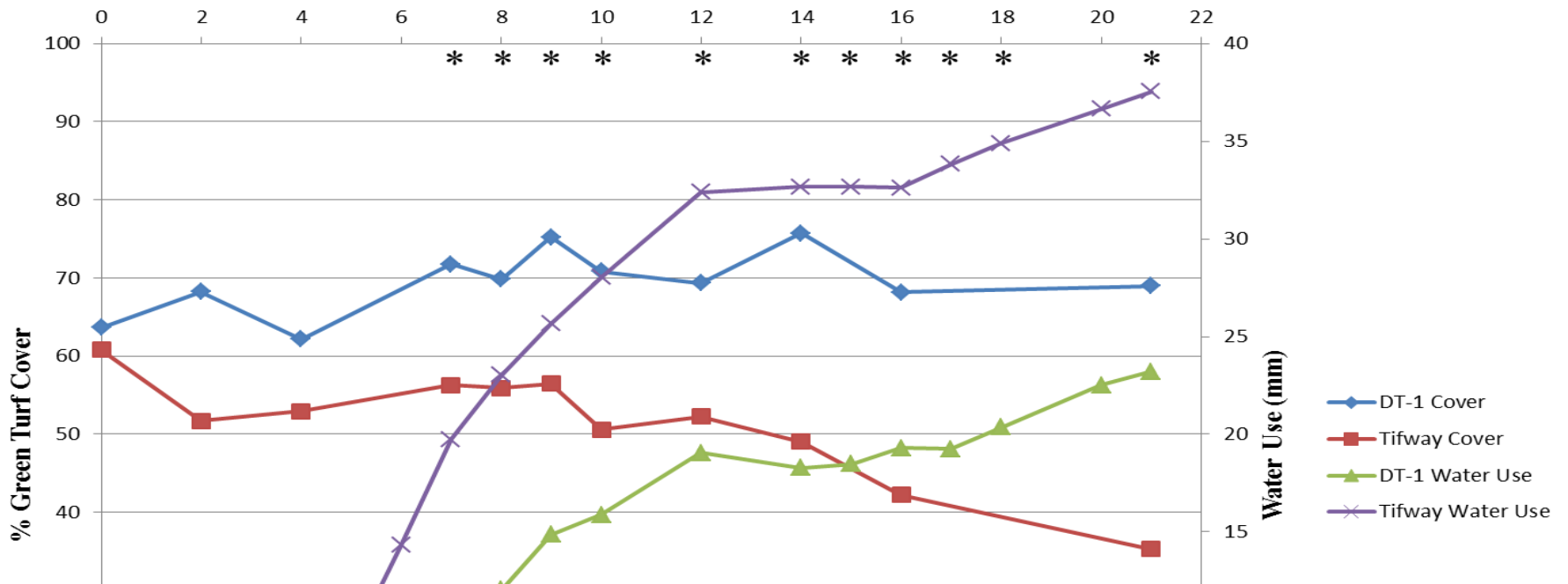
Short-Term Drought (Tifton)



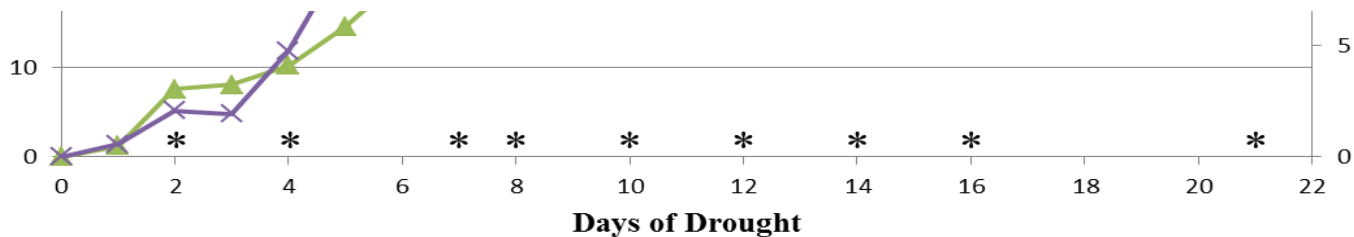
- TifSport used 9% more water than DT-1



Short-Term Drought (Atlanta)



- Tifway used 38% more water than DT-1



Long-Term Drought (Florida)

Table 9. Mean turfgrass quality of five bermudagrasses mowed at 3.8 cm (1.5 in) averaged over four dates in 2010, 2011, and 2012 after sustained droughty conditions in the Linear Gradient Irrigation System (LGIS) evaluation at the West Florida Research and Education Center (WFREC) in Jay, FL¹.

Genotype	Irrigation level (% ET ₀)								Average
	120	105	80	54	37	25	13	3	
	Visual rating ²								
Celebration	4.7 b ³	4.5 bc	4.3 b	3.9 bc	3.7 bc	2.8 c	2.1 c	2.2 c	3.5
Common	4.7 b	4.1 bc	4.1 b	3.8 bc	3.6 cd	2.9 c	2.4 c	2.2 c	3.5
DT-1	6.8 a	6.6 a	6.4 a	6.3 a	6.3 a	5.8 a	4.7 a	4.6 a	5.9
Princess-77	4.7 b	4.6 b	4.3 b	4.3 b	4.1 b	3.9 b	3.1 b	2.9 b	4.0
Tifton 10	4.2 c	4.0 c	3.9 b	3.6 c	3.3 d	2.7 c	2.3 c	2.2 c	3.3

¹Field trial planted during 2010.

²Turf quality was rated on a 1 to 9 scale with 1 = dead, 5 = acceptable, and 9 = excellent.

³Means within columns followed by the same letter are not significantly different according to Fisher's LSD ($P \leq 0.05$).

Drought

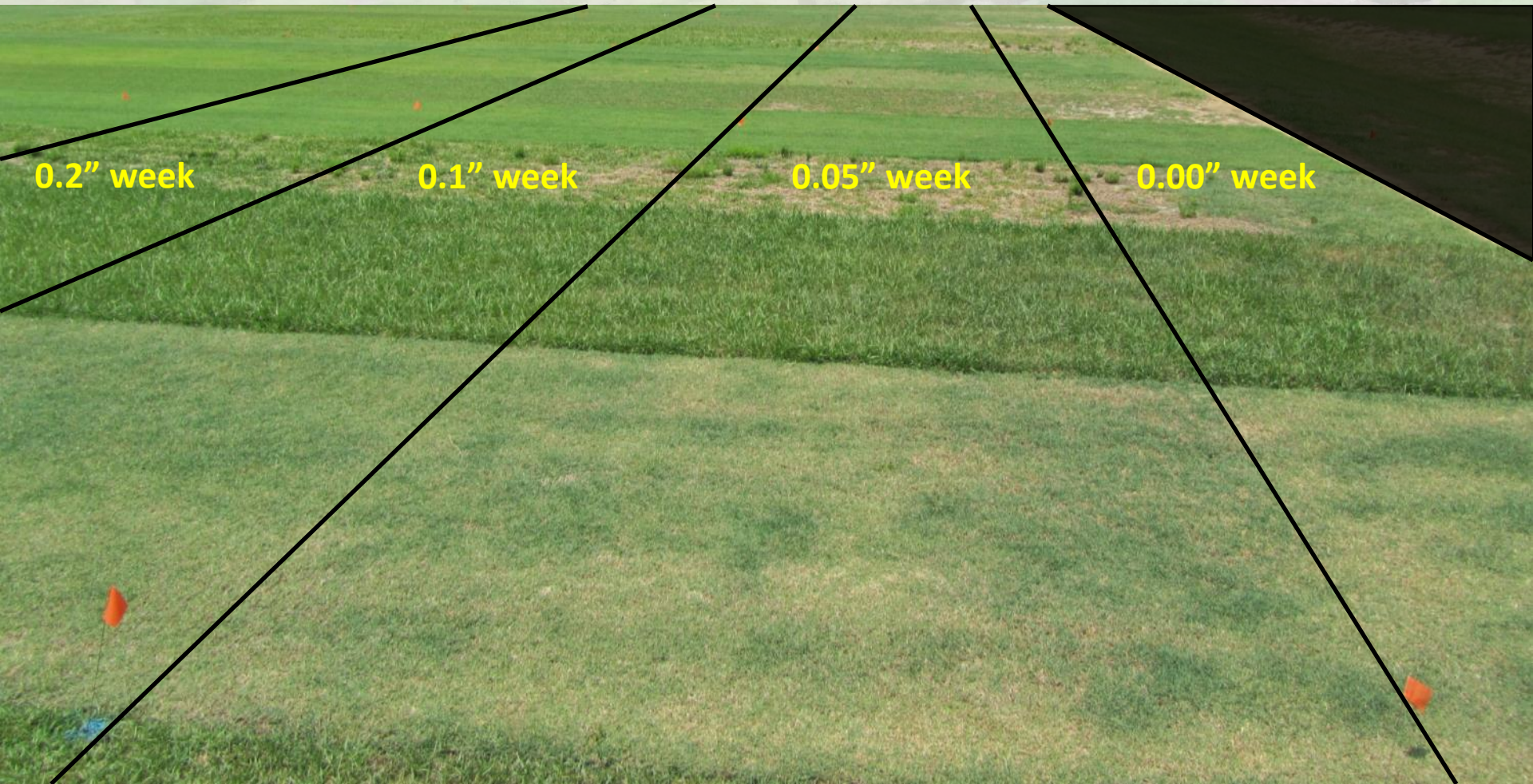
- University Drought Trial during 2011 in Florida

0.2" week

0.1" week

0.05" week

0.00" week



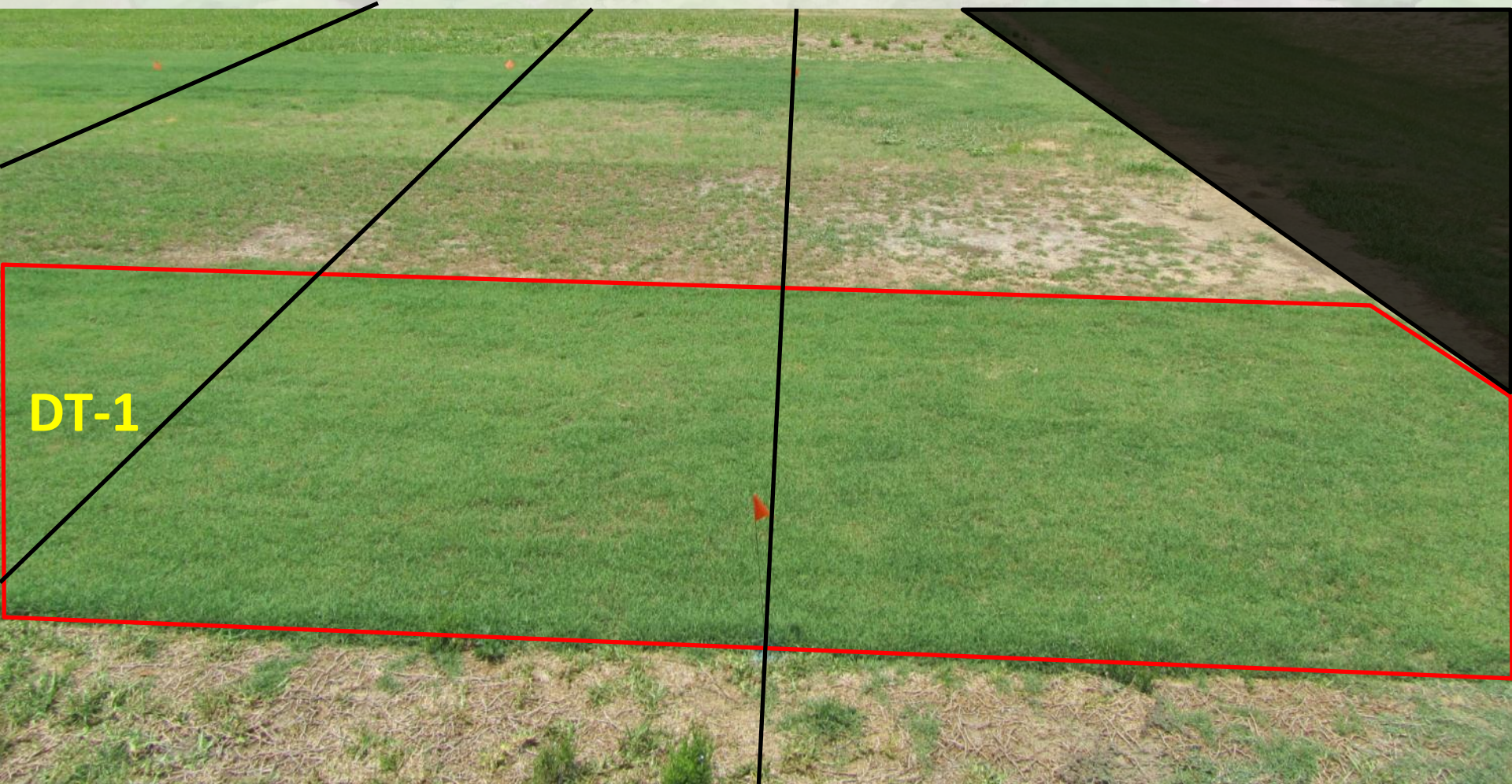
Long-Term Drought (Florida)

Genotype (with)		Irrigation level (% ET ₀)			
Genotype		37	25	13	3
		Visual rating ²			
Celebration	c	3.7 bc	2.8 c	2.1 c	2.2 c
Common	c	3.6 cd	2.9 c	2.4 c	2.2 c
DT-1		6.3 a	5.8 a	4.7 a	4.6 a
Princess-77		4.1 b	3.9 b	3.1 b	2.9 b
Tifton 10		3.3 d	2.7 c	2.3 c	2.2 c

¹Field trial plot

Drought

- University Drought Trial during 2011 in Florida



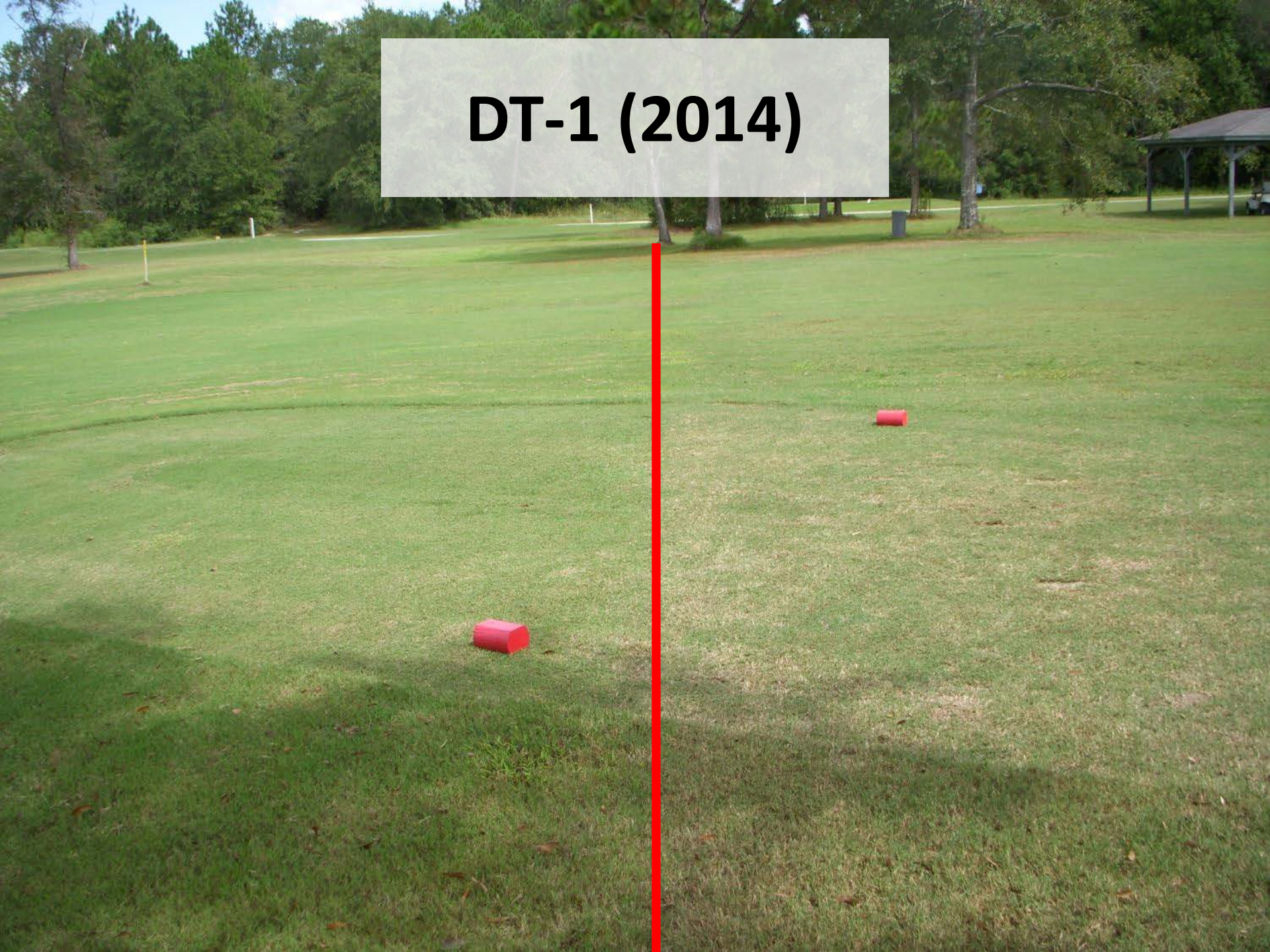
Long-Term Drought (Florida)



Short & Long-Term Drought (US)

Genotype	Turf quality ³			Stress turf quality ⁴		
	South	North	All	South	North	All
	Visual rating			Visual rating		
Celebration	5.8 bc	6.1 b	5.9 c	3.4 b	4.2 b	3.9 b
DT-1	7.3 a	7.3 a	7.3 a	5.9 a	6.0 a	5.9 a
Latitude 36	5.5 c	7.0 a	6.4 b	3.7 b	3.8 b	3.8 b
Tifway	6.2 b	7.1 a	6.7 b	4.2 b	4.3 b	4.2 b

DT-1 (2014)



Tifway (1960)



 — **BLACK OUT** — 
— SANFORD STADIUM —

November 13, 2007 • Georgia vs. Auburn 20

TifWay (1960)

- Sup
- see
- Da
- ear
- and
- Ma
- tee
- Vas



from

e,

ys,



Bermudagrass



Wear Trials



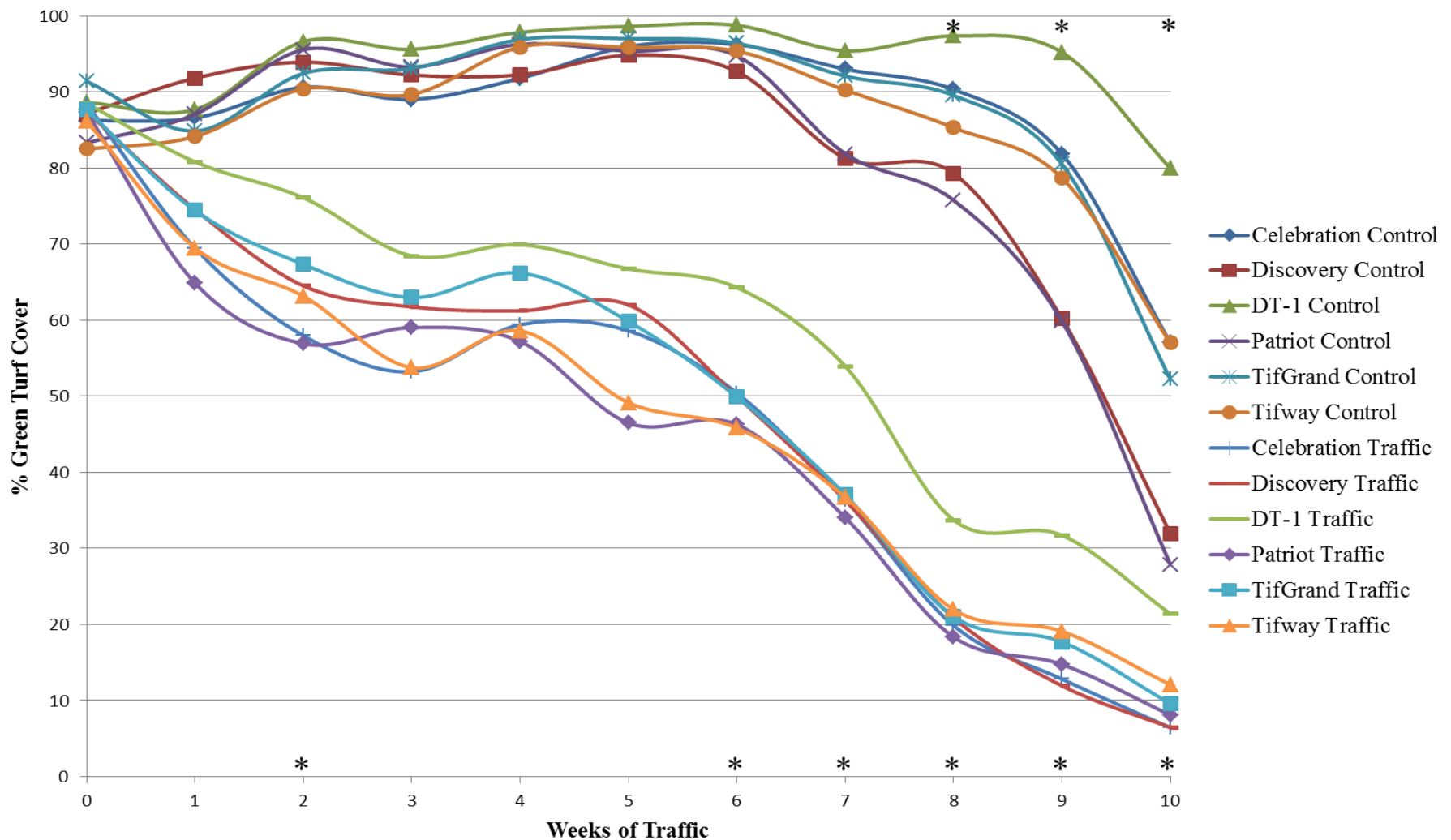
Wear Trials

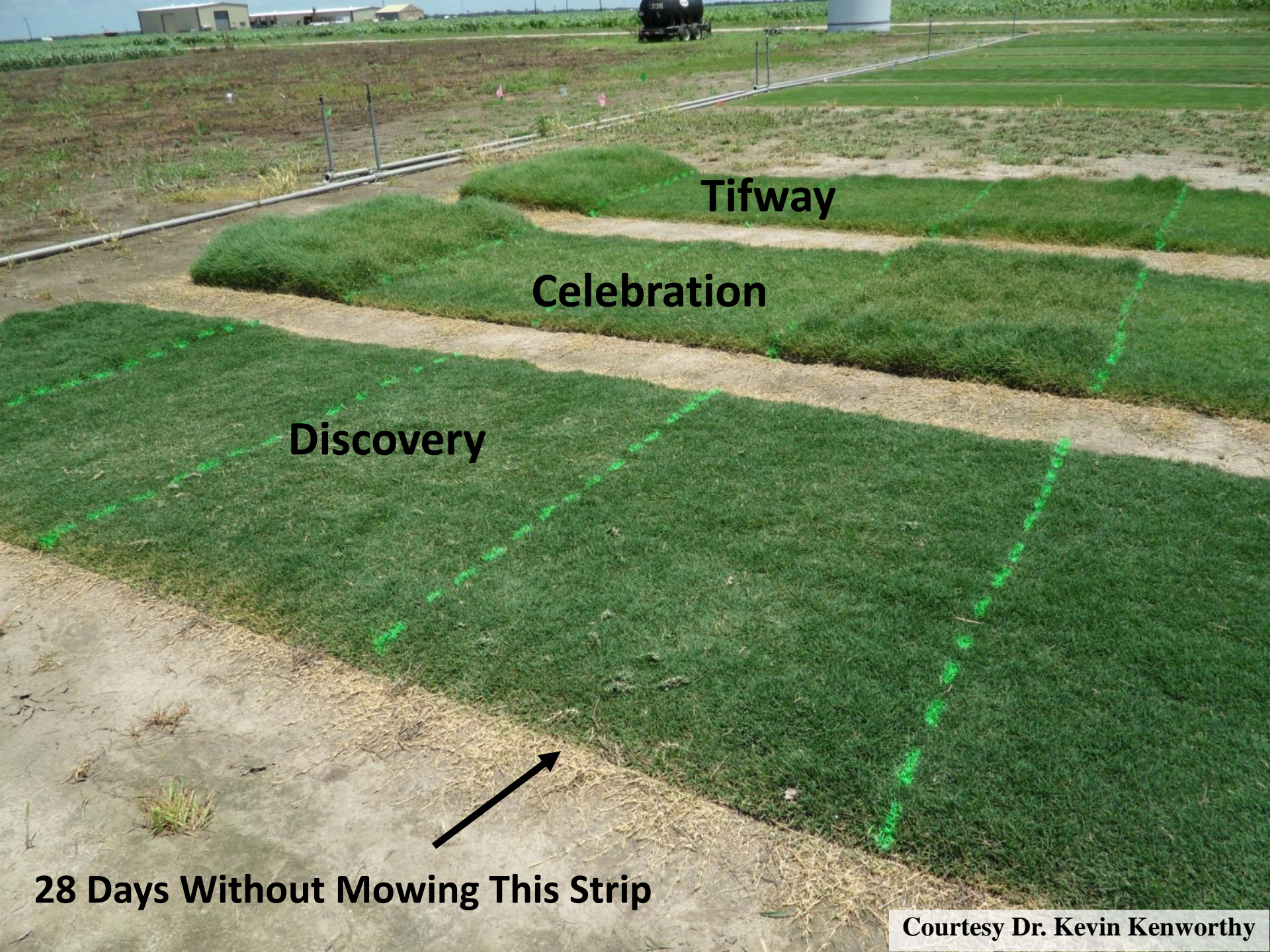


Wear Trials



Wear Trials





Tifway

Celebration

Discovery

28 Days Without Mowing This Strip

Courtesy Dr. Kevin Kenworthy



Tifway

Celebration

Discovery

**Same Strip Newly Mowed
(Scalping on 419 and Celebration)**

“Economic” Trials

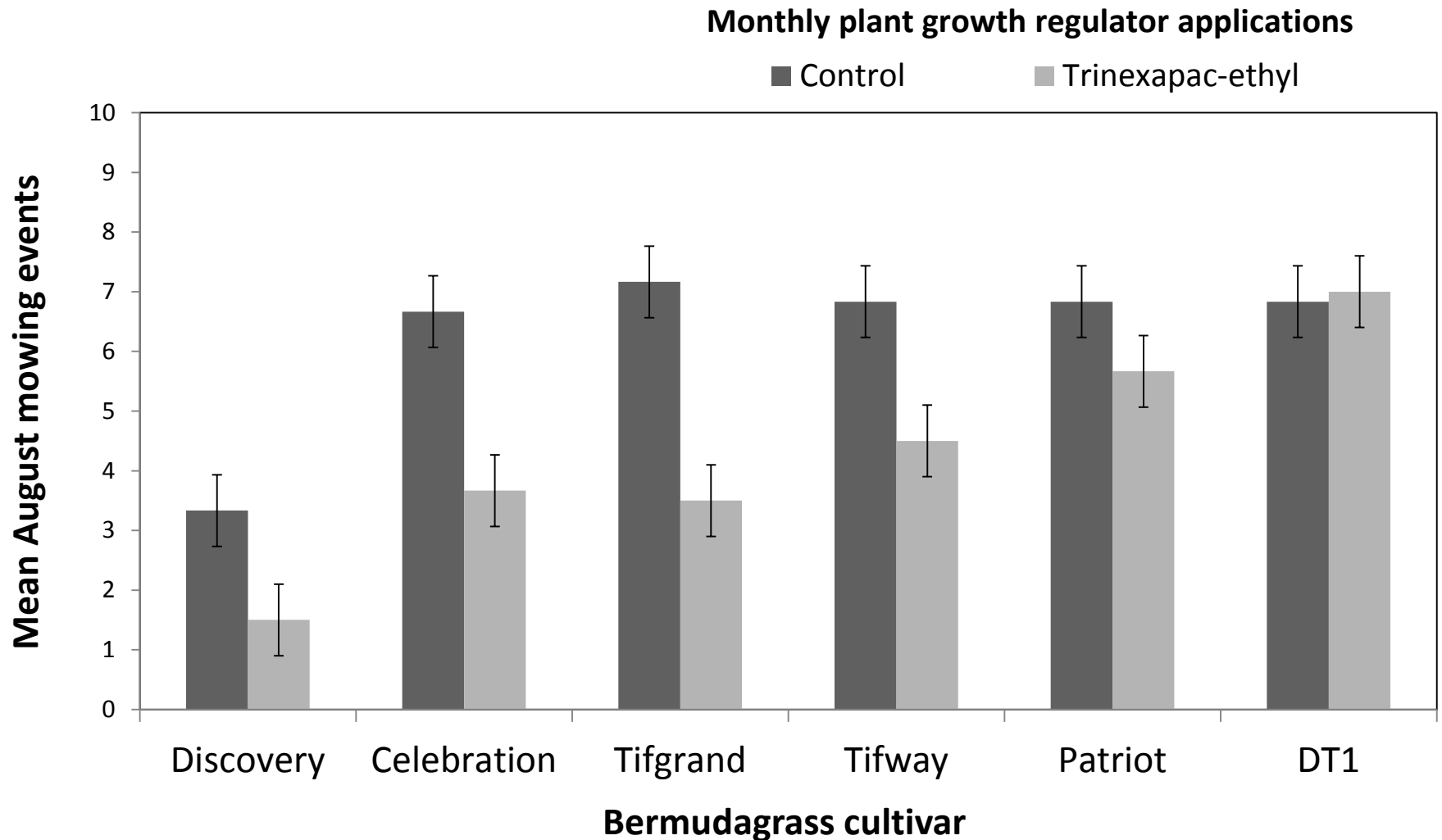


- **DT-1**

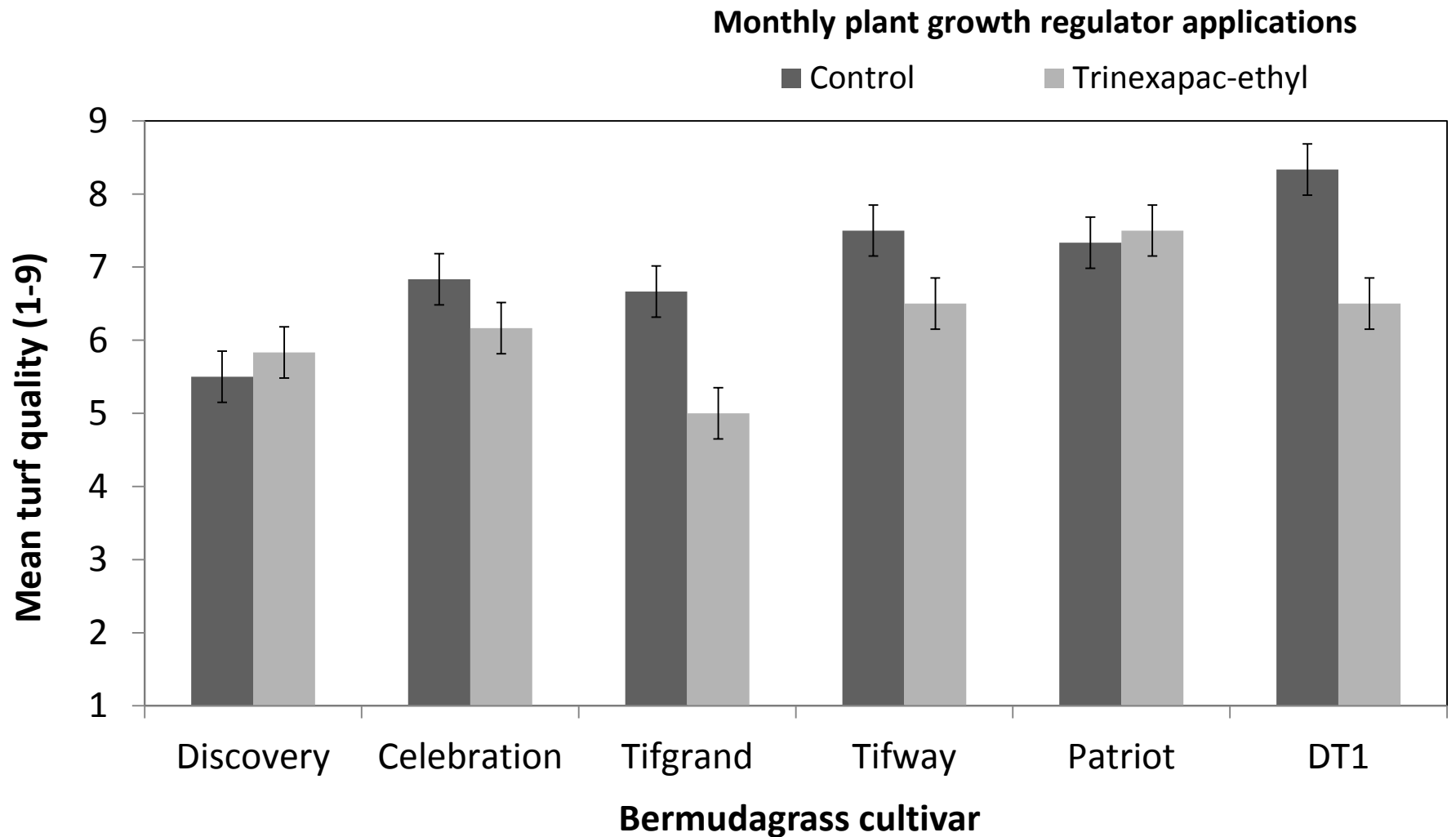


- **Discovery**

“Economic” Trials



“Economic” Trials



Drought/Shade Trials



Drought/Shade Trials



A photograph of a well-maintained green lawn in front of a brick house. The lawn is covered with long shadows from trees on the left. A concrete sidewalk curves along the right side of the lawn. A large, semi-transparent white box with black text is overlaid on the top half of the image.

Drought/Shade Trials

- **Home Lawn Trials during 2012 in Georgia**



Drought/Shade Trials

- **Home Lawn Trials during 2013 in Georgia**

A photograph of a residential lawn with large trees and shadows. The scene is a grassy area with several large trees, their trunks visible in the foreground and midground. The ground is covered in green grass, with long, dappled shadows from the trees stretching across it. In the background, a paved road and some houses are visible under a bright sky.

Drought/Shade Trials

- **Home Lawn Trials during 2014 in Georgia**

A photograph of a well-maintained green lawn in a residential setting. Several large, mature trees are scattered across the lawn, casting long, dappled shadows. In the background, a portion of a house with a grey roof and brick walls is visible, along with some landscaping like hedges and a white mailbox. The overall scene is bright and sunny.

Drought/Shade Trials

- **Home Lawn Trials during 2014 in Georgia**

A photograph of a green lawn with a tree trunk on the right side. The grass is dappled with sunlight and shadows. There are some fallen leaves on the lawn.

Shade Trials

- Home Lawn Trials during 2014 in Georgia

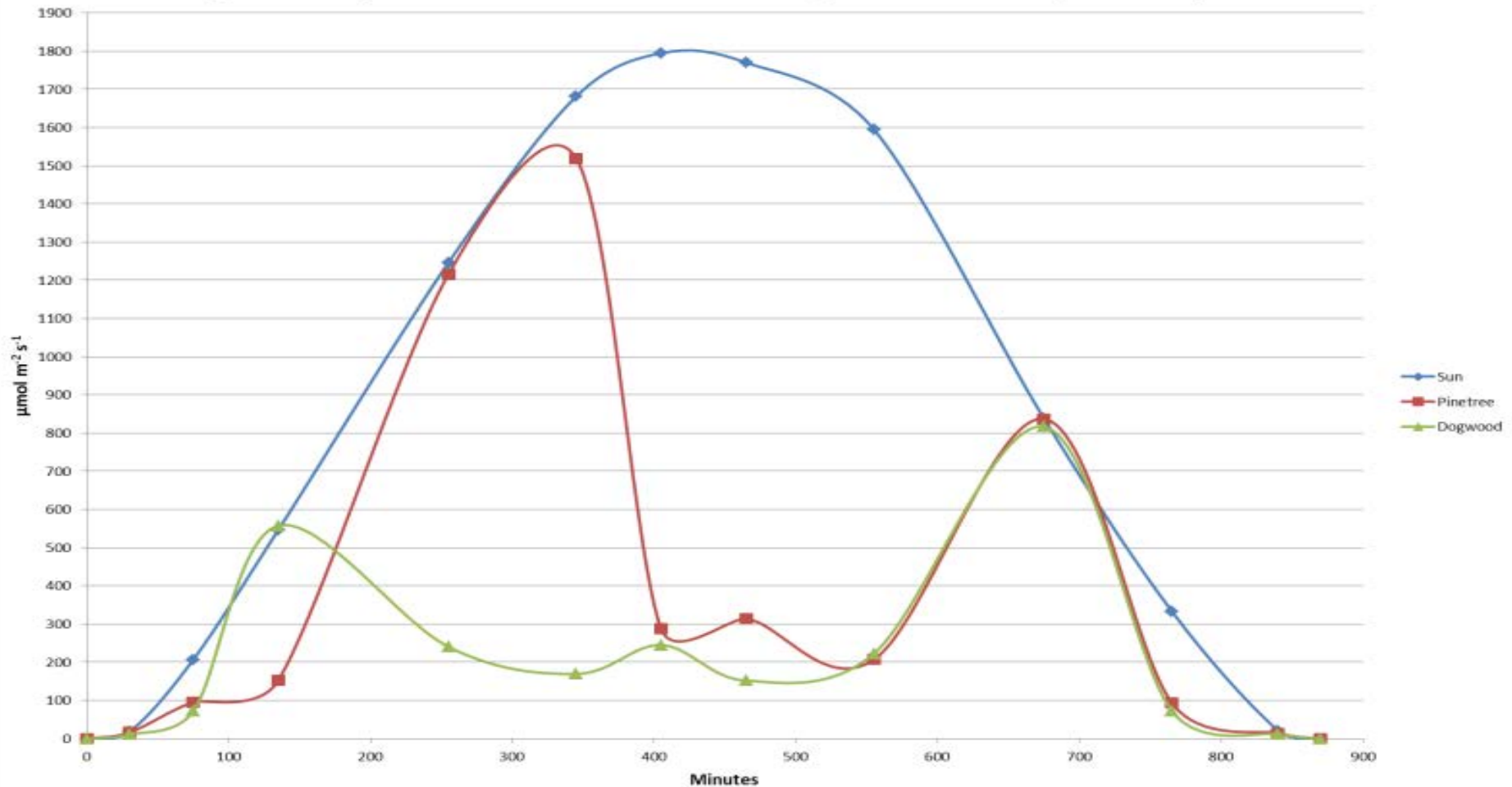


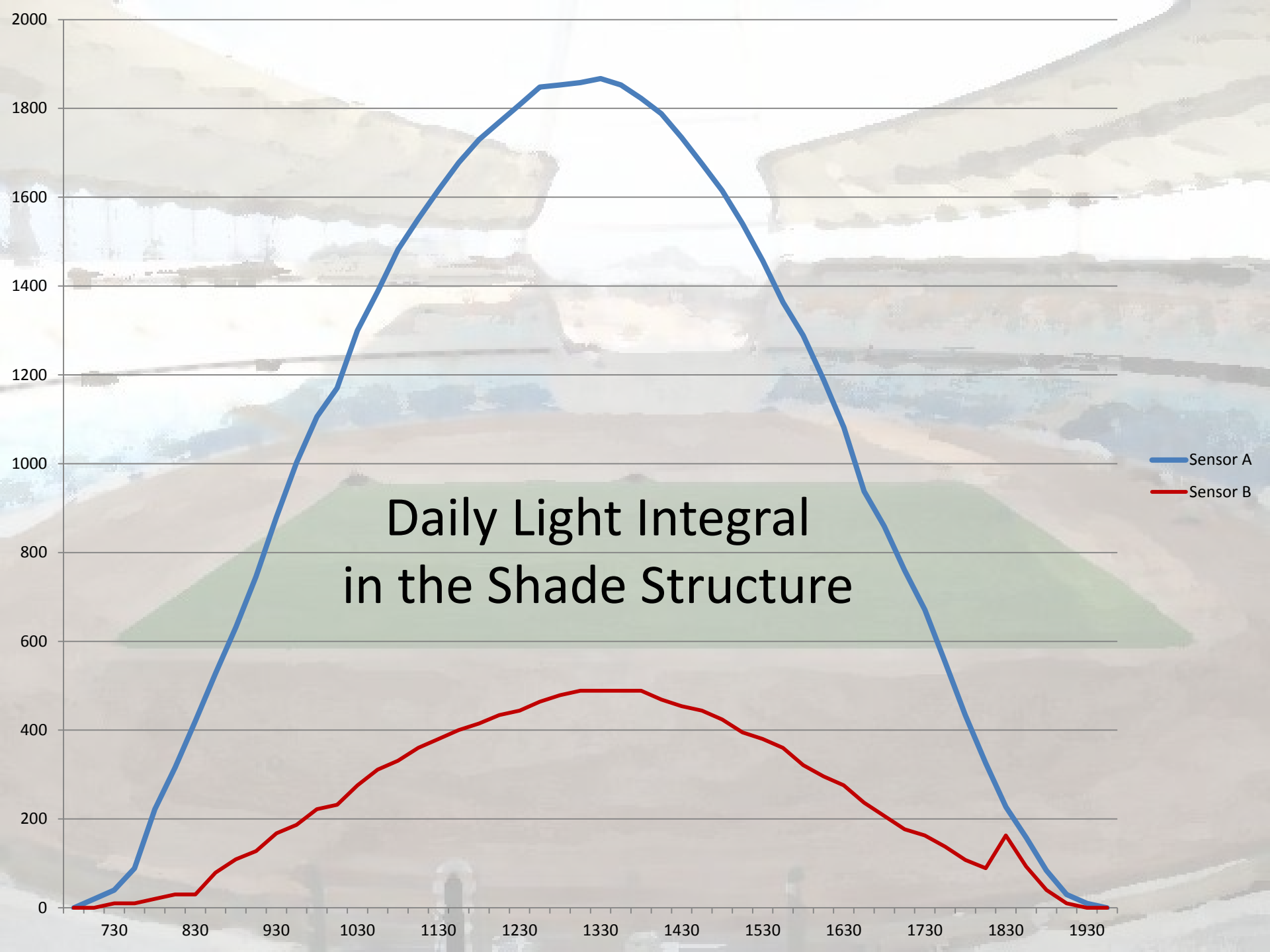
Shade Trials

- Home Lawn Trials during 2014 in Georgia

Drought/Shade Trials

Light Intensity in Different Areas of DT-1 Bermudagrass Yard in Tifton, GA on May 23 2014





2014 RFT Shade Test



2014 RFT Shade Test



2014 RFT Shade Test



2014 RFT Shade Test



TIF GRAND™

CERTIFIED BERMUDA



Sod Farm Trials





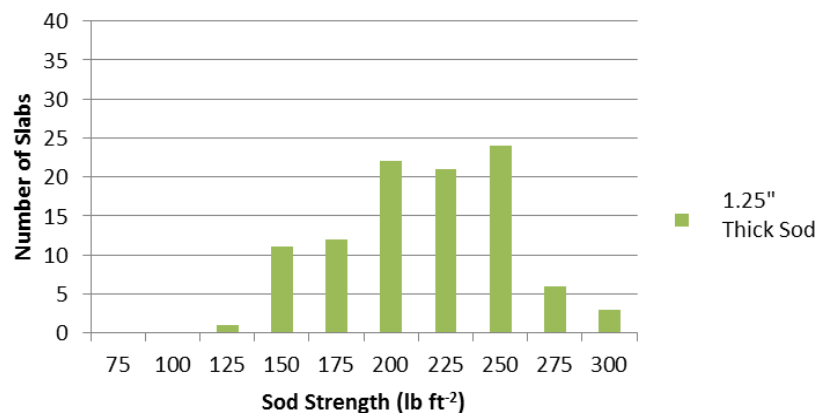
Tifway



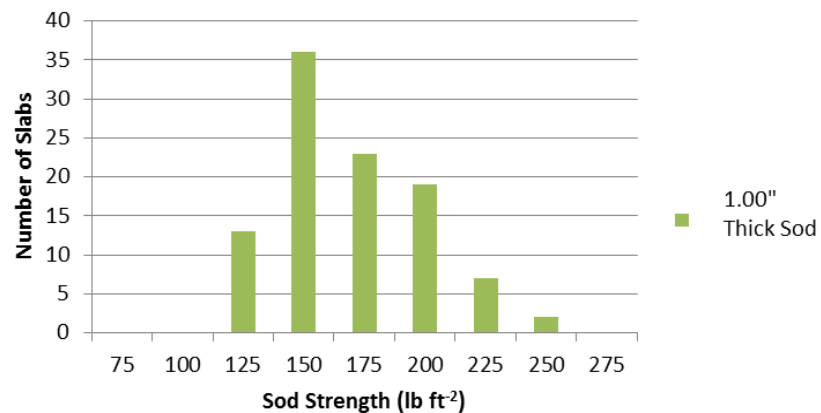
DT-1

DT-1

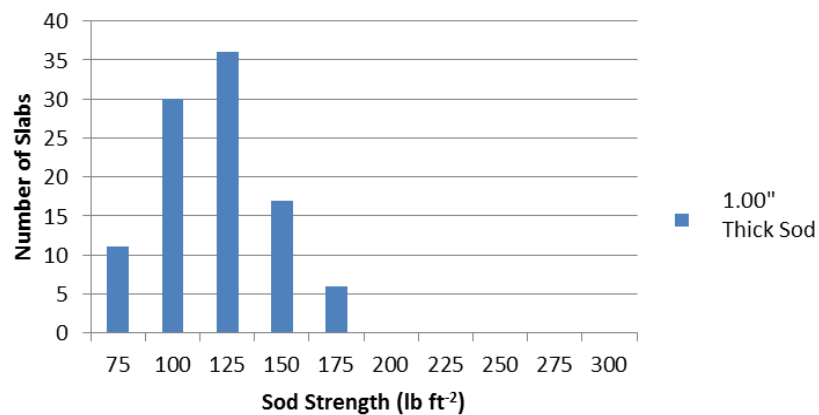
DT-1 in Perry, GA (8/2/2013)



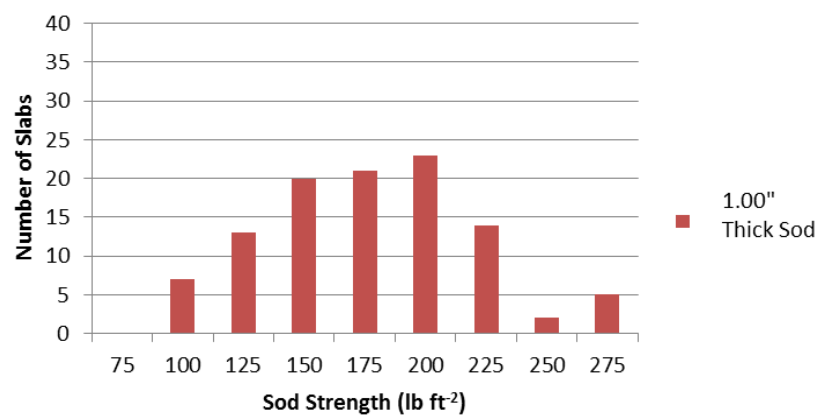
DT-1 in Marshallville, GA (8/2/2013)



Tifway 419 in Perry, GA (8/2/2013)



TifGrand in Marshallville (8/2/2013)



DT-1 Breeder's Field



DT-1 Breeder's Field



DT-1 Breeder's Field



DT-1 Breeder's Field



DT-1 Breeder's Field



DT-1 Breeder's Field



DT-1 Foundation Field



DT-1 Breeder's Field



DT-1 Foundation Field



UGA – Offsite Trials



- DT-1 at the Landings during 2013

UGA – Offsite Trials

- DT-1 at the Landings during early 2014

A photograph of a golf course. In the foreground, there is a large, irregularly shaped sand trap with reddish-brown soil. The sand trap is bordered by green grass. In the background, there is a well-maintained green golf course with a sand trap in the distance. The background is filled with tall, green trees under a clear sky.

UGA – Offsite Trials

- **Atlanta Athletic Club during 2014**
 - Red Clay vs. Tifton Sand



UGA – Offsite Trials

Tifway, Celebration, and DT-1

- **Atlanta Athletic Club during 2014**



UGA – Offsite Trials

Tifway, Celebration, and DT-1

- **Atlanta Athletic Club during 2014**

A photograph of a golf course. In the foreground, there is a large, flat area of green grass with some patches of brown, possibly from dry grass or a path. In the middle ground, there is a calm body of water, likely a lake or a large pond. Behind the water, there is a dense line of tall, green trees. The sky is blue with some white clouds. The overall scene is a typical golf course landscape.

UGA – Offsite Trials

Celebration

- **East Lake during 2014**

UGA – Offsite Trials



- East Lake during 2014

UGA – Offsite Trials

- Atlanta, GA lawn during 2014

UGA – Offsite Trials

- Jacksonville, FL lawn during 2014

UGA – Offsite Trials

- Austin, TX lawn during 2014



UGA – Offsite Trials

- Austin, TX lawn during 2015

2013 NTEP Trials (MS State)



Tifway



Celebration



Latitude 36

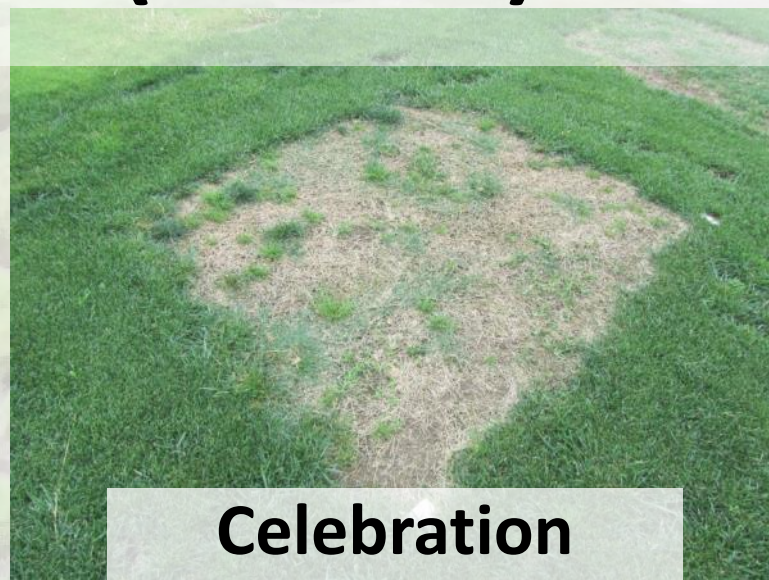


DT-1

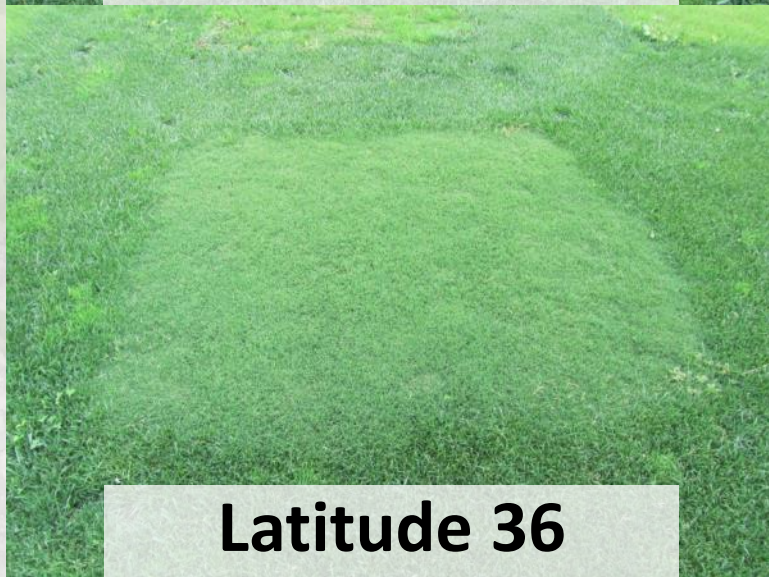
2013 NTEP Trials (Purdue)



Tifway



Celebration



Latitude 36



DT-1

2013 NTEP Trials (Auburn)



Tifway



Riviera



Latitude 36



DT-1

2013 NTEP Trials (K-State)



Jared Hoyle, PhD ([@KSUTurf](#))

[4/21/15, 12:56 PM](#)

[@turfdom](#) [@BayerGolf](#) [@kopptweets](#) [@zacbayerturf](#) Also, survives winters in KS. DT-1 (94% survival) no diff. than Lat36, Yukon, Patriot, Riviera

2012 USDA Trials (UF)



Bryan Unruh
@jbunruh

Follow

#SCRI_Turf_Breeding @SodSolutions
#Celebration_Bermudagrass (bottom) and
@UGATurfgrass #DT-1_Bermudagrass
(above)

Florida, USA



2014 King of the Hill Trials



2014 King of the Hill Trials



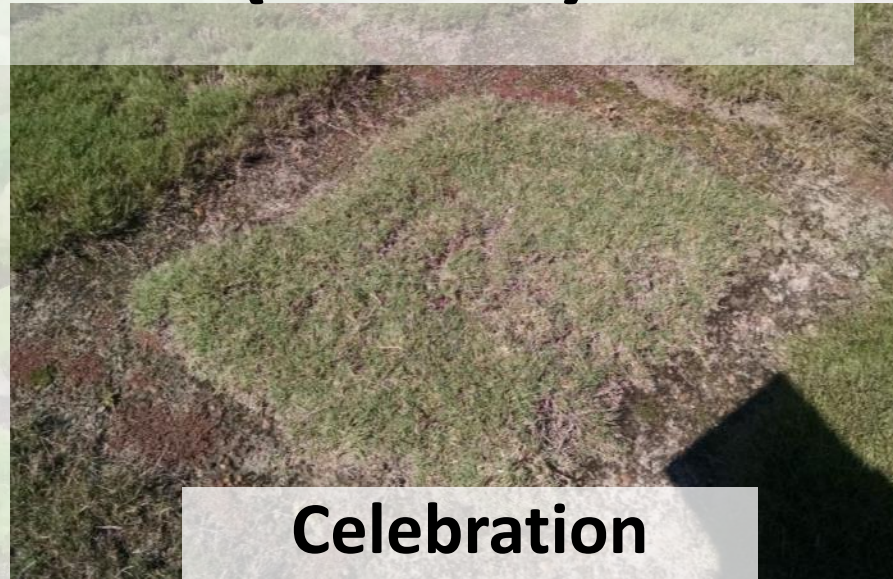
2014 King of the Hill Trials



2014 King of the Hill Trials



2010 USDA Trials (Tifton)



A photograph of a green lawn in Tifton, GA, with a large tree trunk on the left and a house in the background.

UGA – Offsite Trials

- Tifton, GA lawn on April 27th, 2015

DT-1 (2014)

- Superior hybrid cross from (4x) by (2x) parents which has been tested for over 22 years
- More **drought tolerant** than Tifway, Celebration, TifGrand, and Latitude 36
- Better establishment and cover than Tifway
- Superior traffic tolerance than Tifway or Celebration
- Higher sod strength than Tifway in the Spring and Fall
- Faster Spring green-up than Tifway and Celebration
- Greater color retention than Tifway and Celebration during the onset of fall/winter dormancy

DT-1 (2015)

- Licensed to New Concept Turf
- Marketed by the Turfgrass Group

The screenshot shows the website for The Turfgrass Group, Inc. The header includes the company logo, a navigation menu with links to Home, About Us, Varieties, Growers, News, Links & Resources, and Contact, and contact information: (770) 207-1500. A search bar is also present. The main content area features a large image of a green turf field. On the left, there is a technical diagram of a grass blade with various measurements and labels. The text 'Engineering Better Turfgrass One Blade at a Time' is prominently displayed in the center, with a 'LEARN MORE' button below it. A rolled-up turf roll is visible on the right side of the image.

Find a Certified Grower (Zip Code) Search

Contact us: (770) 207-1500

THE TURFGRASS GROUP, INC.

Home | About Us | Varieties | Growers | News | Links & Resources | Contact

THE TURFGRASS GROUP, INC.

Engineering Better Turfgrass
One Blade at a Time

LEARN MORE

Naming 'DT-1' Bermudagrass

• **Tif**

- Send your favorite name to my email address: tifturf@uga.edu



Thanks

Credit Where Credit is Due

Collaboration



Industry Partnership



TEAM UGA



Future

**Around Here, However, We Don't
Look Backwards For Very Long.
We Keep Moving Forward, Opening
Up New Doors and Doing New
Things, Because We're Curious...and
Curiosity Keeps Leading Us Down
New Paths.**

Walt Disney



Questions???

Brian Schwartz

tifturf@uga.edu