



**EMPIRE**  
**ZOYSIA®**

# EMPIRE® Zoysia White Paper

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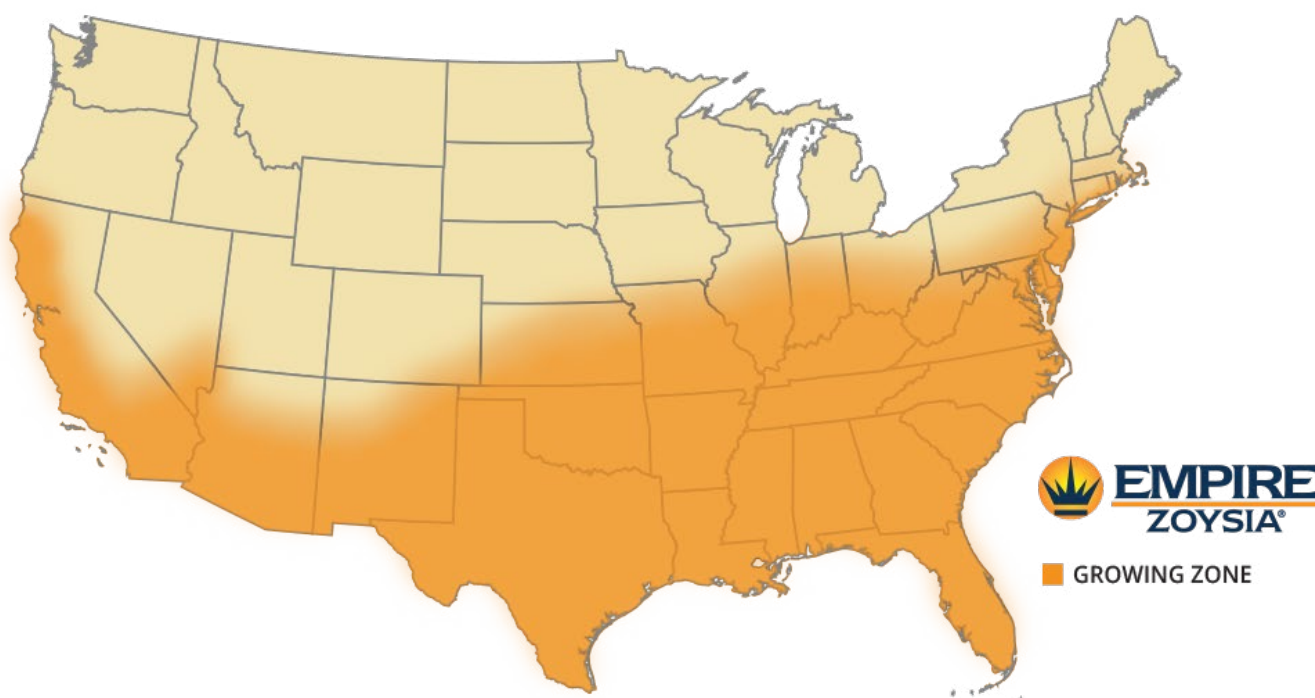
# Introduction

EMPIRE® Zoysia has changed people's mindset about zoysiagrass for the last two decades. For years, zoysiagrasses struggled to be successful in the southern states' warm-hot climates due to damage recovery times and extremely slow regrowth time. The introduction of EMPIRE Zoysia in the late 90s demonstrated a zoysiagrass that not only tolerated but thrived in these climates and was aggressive in growth and recovery time. EMPIRE succeeded where other zoysia varieties failed. Additionally, EMPIRE featured fewer maintenance requirements along with many improved features that surpassed other established zoysiagrass cultivars. As a *Zoysia japonica*, EMPIRE's medium-blades permit mowing with a rotary mower. Its ability to handle external stressors like drought, insects and heavy wear made it a practical choice for a wide variety of landscape applications including residential lawns, commercial landscapes and golf tees, roughs and fairways. EMPIRE features a soft-textured feel making it a pleasure to walk on, it has moderate-to-good shade tolerance and it's a drought-tough cultivar. Many homeowners and turfgrass professionals alike choose EMPIRE for its look in a landscape. It has more of a "northern" style grass appearance. EMPIRE is known as "The Proven Zoysia Grass®" because of its long track record of success.



## Why EMPIRE Zoysia?

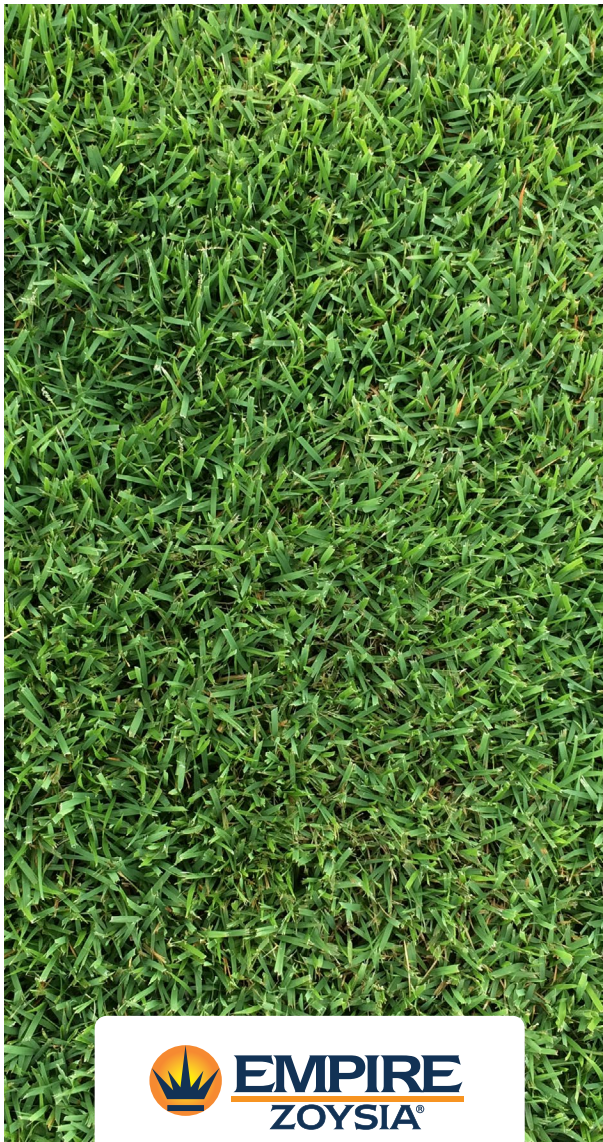
EMPIRE is a blue-green *Z. japonica* variety meaning it has a wider blade than finer-bladed zoysia cultivars such as Emerald or Zeon®. EMPIRE also thrives in a wide variety of soil conditions and climates making it an ideal option for multiple locations and various uses across the southern two-thirds of the United States. Over the years it has offered specifiers, landscapers, golf course designers and homeowners exceptional performance with low maintenance across a wide spectrum of applications.





EMPIRE was originally bred in Brazil's humid, tropical or subtropical climate so it naturally excels in hot, arid or sandy areas of the U.S. and has proven itself drought tough in many challenging applications. EMPIRE's thick canopy naturally chokes out weeds and is resistant to chinch bugs—a feature many popular St. Augustine grasses lack. However when weeds are present, EMPIRE is highly tolerant of most herbicides making it easier to control weeds during production and for the end-user.

## EMPIRE Compared to Other Common Zoysia Varieties



# Origins

EMPIRE Zoysia grew its first roots in Brazil, developed by turfgrass breeders Minoru Ito and Roberto Gurgel. EMPIRE was bred and developed in Brazil and introduced in the United States in the late 90s. EMPIRE Zoysia is a fast-growing zoysia variety selected for its wider leaf blades, thick stolons, strong rhizomes and deep roots.

Being a *Z. japonica*, it naturally grows wider blades than other zoysia types. EMPIRE breeder Roberto Gurgel recounts a story of EMPIRE's beginnings:

"I was actually shooting for something very different than EMPIRE when it was discovered. I was working with Ito Grass of Brazil at the time and was working on breeding a variety that would have a fine texture, density and slow growth. The goal was to improve the zoysiagrass, Esmeralda, a popular grass in Brazil at the time. After I did the crosses and planted the field, I noticed a zoysia that was more coarse. It was a natural cross that had happened by nature, not in the lab. I thought it was interesting, so I picked it up and began growing it.

It was very tough, disease-resistant and wear tolerant—more so than anything else we were working on. It kept beating all the other varieties, but it had a much coarser look, which we didn't like at first. Tobey Wagner, president and owner of Sod Solutions, came to Brazil to look at the grasses we were working on and spotted EMPIRE when he was looking at the other parts of the breeding program. Because of its look in the landscape, his interest peaked and after learning more, he decided that it was the grass he was looking for."

– Roberto Gurgel, EMPIRE Zoysia Breeder





# Characteristics and Research



**Drought  
Tough**



**Disease  
Resistant**



**Soft  
Texture**



**Wear  
Tolerant**

EMPIRE Zoysia		
Aesthetics	Uses	Home, Commercial, Golf, Sports
	Blade Width	5.0–7.0 mm
	Feel	Very Soft
	Fall Color Retention	Very Good
	Spring Green-Up	Good
Function	Growth	Rapid Horizontal Growth from Stolons/Rhizomes
	Wear/Injury Recovery	Very Good
	Insect Resistance	Chinch Bugs
Climate	Cold	Very Good
	Shade	Good
	Drought	Very Good
	Salt	Good
Care	Mower	Standard Rotary
	Height	1.0–2.0 Inches

Table 1

## EMPIRE Zoysia is a Water-Saver

One of the key reasons EMPIRE Zoysia was selected was for its great ability to survive during long periods of drought or keep an acceptable color and quality with minimum water supply. This is mostly a result of EMPIRE's deep root system, rhizomes and leaf blades that help preserve and conserve during drought.

### EMPIRE Zoysia's Deep Root System

Roots are the major factor in determining how much water and nutrients any plant receives. They also play a huge role in drought injury. EMPIRE's deep rooting system allows for it to survive during extended periods of drought by reaching far beneath the soil's surface to draw out water where such moisture is available. EMPIRE also has the ability to shift the respiration rate and the carbon allocation from its roots close to the drying soil surface during drought to its roots in deeper and wetter soil. This adjustment helps sustain deep root growth, which in turn helps to maintain water uptake and prolong turf growth under drying conditions.



EMPIRE's root system



EMPIRE's lengthy roots



## Further Research and Studies on EMPIRE Zoysia's Drought Tolerance

### 2005 San Antonio Water System - Drought Study

In the 2005 study conducted by the San Antonio Water System (SAWS), Texas A&M and Turf Producers of Texas, EMPIRE was the top-rated zoysiagrass after a 60-day period of no water and a 60-day recovery period. This study not only compared EMPIRE with other zoysiagrasses—it compared different cultivars of zoysiagrass with different cultivars of St. Augustine, bermudagrass and buffalograss.

In the study done with a rainout shelter, each grass was established in small plots and then irrigation was completely turned off for 60 days to test summer drought tolerance and resistance. The non-irrigated period ran from July 23 through September 20, 2006. Coincidentally, this happened to be the hottest 60-day period on record in San Antonio, TX at the time. After the 60 days were finished, a 60-day recovery period was established from September 21 until November 19 when daily irrigation was resumed to monitor recovery. EMPIRE Zoysia demonstrated “summer dormancy” during the drought simulation but was the top-rated zoysia variety after the recovery period. EMPIRE beat other current zoysia varieties on the market today including Jamur®, El Toro, Emerald, Zeon and Zorro.

		11/22/06		11/22/06
Cultivar		% Recovery	Stat. Grouping	Uniformity
Celebration	BM	100.0	a	9.00 a
Grimes EXP	BM	100.0	a	9.00 a
Common Bermuda	BM	98.8	ab	9.00 a
GN1	BM	98.8	ab	9.00 a
Tifway 419	BM	98.8	ab	9.00 a
Tex Turf	BM	97.5	ab	9.00 a
TifSport	BM	97.5	ab	9.00 a
Buffalograss	BU	95.0	abc	9.00 a
Floritam	SA	88.8	abcd	8.50 a
Empire	Z	71.3	abcde	8.50 a
Palisades	Z	71.3	abcde	8.50 a
Jamur	Z	68.8	abcdef	8.25 a
El Toro	Z	62.5	abcdefg	8.50 a
Premier	BM	57.5	bcdefgh	7.25 ab
SA Common	SA	55.0	cdefghi	6.00 abc
Palmetto	SA	51.3	defghi	4.75 bc
Amerishade	SA	42.5	efghij	4.50 bc
Delmar	SA	37.5	efghij	4.75 bc
Cavalier	Z	27.5	fghij	6.75 ab
Raleigh	SA	25.0	ghij	4.50 bc
Emerald	Z	25.0	ghij	7.25 ab
Sapphire	SA	17.5	hij	3.00 c
Zeon	Z	17.5	hij	6.75 ab
Zorro	Z	15.0	ij	6.00 abc
Y-2	Z	4.3	j	3.00 c

Table 2

View the Full  
SAWS Study:

[VIEW STUDY](#)

## 2019 National Turfgrass Evaluation Program - 2019 National Zoysia Grass Test (2020 Data)

The National Turfgrass Evaluation Program (NTEP) is “designed to develop and coordinate uniform evaluation trials of turfgrass varieties and promising selections in the United States and Canada. Test results can be used by national companies and plant breeders to determine the broad picture of the adaptation of a cultivar. Results can also be used to determine if a cultivar is well adapted to a local area or level of turf maintenance.”

In the below table, several zoysiagrass cultivars were tested under drought conditions for drought tolerance determined by its wilting in Manhattan, KS (KS1) during the 2019 National Zoysiagrass Test.

Drought tolerance assessed as either wilting, leaf firing, dormancy or recovery. A 1 to 9 visual rating scale is used with 1 being complete wilting, 100 percent leaf firing, complete dormancy or no plant recovery; and 9 being no wilting, no leaf firing, 100 percent green-no dormancy, or 100 percent recovery.

From: [A Guide to NTEP Turfgrass Ratings](#)

EMPIRE Zoysia scored an exemplary drought tolerance rating of “9.0”. Emerald Zoysia scored an “8.0”, Zeon Zoysia a “7.0” and Meyer Zoysia a “3.3”.

Drought Tolerance (Wilting) Ratings of Zoysiagrass Cultivars - 2020 NTEP Data	
Drought Tolerance (Wilting) Ratings 1–9; 9 = No Wilting	
Turfgrass Name	KS1
EMPIRE	9.0
Emerald	8.0
Zeon	7.0
Meyer	3.3

Table 3



The same zoysiagrass cultivars were tested under drought conditions for drought tolerance determined by its wilting in Dallas, TX. EMPIRE Zoysia scored a rating of “5.3”. Emerald Zoysia scored an “4.0”, Zeon Zoysia a “4.0” and Meyer Zoysia a “2.3”.

Wilting Ratings of Zoysiagrass Cultivars - 2020 NTEP Data	
Wilting Ratings 1-9; 9 = Best	
Turfgrass Name	Wilting
EMPIRE	5.3
Emerald	4.0
Zeon	4.0
Meyer	2.3

Table 4

*The above tables are summaries of some of the more common zoysiagrasses on the market. For a full version of the drought studies, visit the NTEP website at [NTEP.org](https://www.ntep.org).*





## EMPIRE Zoysia is Brown Patch Resistant

EMPIRE has an improved brown patch (*Rhizoctonia solani*) resistance, one of the leading turfgrass diseases in the U.S. EMPIRE is the first zoysia to demonstrate improved tolerance to brown patch as compared to Meyer Zoysia and El Toro Zoysia in side-by-side plantings. EMPIRE was bred in subtropical Brazil and it performs well in tropical, warm climates that receive a lot of rainfall.



El Toro Zoysia (Left) with brown patch vs. EMPIRE Zoysia (Right)



## EMPIRE's Blade Width and Soft Texture

EMPIRE is a medium coarse-bladed zoysiagrass cultivar that has a soft-to-the-touch feel. Its blades measure about 5–7 mm in length, which is slightly wider than most other zoysias. EMPIRE combines a soft texture with lush green color and fine, tight blade growth. EMPIRE develops a deep green color with more widely-spaced blades, almost similar to the visual texture of a fine St. Augustine grass.

Tobey Wagner, President and Owner of Sod Solutions, goes on to say:

**“While the Brazilian guys were looking for something finer-bladed for Brazil, I saw EMPIRE and its wider blades and knew it was a grass that would be sought after in Florida. For Floridians, St. Augustine was the primary grass with huge, thick blades. EMPIRE was much smaller than St. Augustine and actually looked a lot like the northern grass, tall fescue. I figured it would be a hit if it worked and it did. Here we are over two decades later and EMPIRE is still flourishing not only in Florida but across the southern U.S., Australia, South America and other locations around the world.”**



– Tobey Wagner, President and Owner of Sod Solutions

## EMPIRE's Wear Tolerance and Injury Recovery

Similar to its drought tolerance, EMPIRE has a very good wear tolerance and injury recovery. A turfgrass's wear tolerance can be described as its ability to withstand foot and vehicle traffic without being permanently damaged. Injury recovery, on the other hand, is a turfgrass's ability to recover from injury caused by weather, traffic, insect damage and other environmental stressors. EMPIRE's very good wear tolerance and injury recovery are a result of its deep root system and tough runners and rhizomes. EMPIRE is often used in both residential and commercial landscapes as well as golf tees, roughs and fairways for this reason.

**Wear tolerance** is a turfgrass's ability to withstand foot and vehicle traffic without being permanently damaged.

**Injury recovery** is a turfgrass's ability to recover from injury caused by weather, traffic, insect damage and other environmental stressors.





## EMPIRE Zoysia Strengthens Soil Almost 40 Percent More Than Bermuda and Kikuyu

EMPIRE has more rhizomes. This study compared EMPIRE with bermudagrass and kikuyu grass. Increased soil strength directly impacts erosion. Having more strength holds the soil together and allows for the grass to be used in inclined landscapes more effectively.

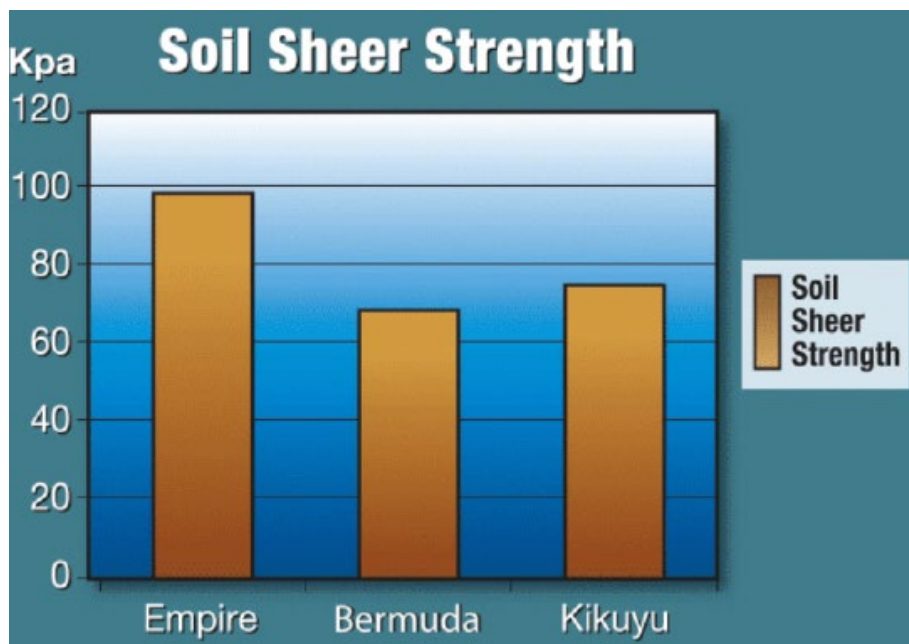


Table 5

\*kPa = kilopascal (a unit of pressure). 1 kPa is approximately the pressure exerted by a 10-g mass resting on a 1-cm<sup>2</sup> area. 101.3 kPa = 1 atm. There are 1,000 pascals in 1 kilopascal.

Results: The EMPIRE had underground roots and rhizomes weighing 290 grams, while Kikuyu had 220 grams, and Bermuda had 200 grams per 0.9 of a square meter. The extra amount of underground mass explains why EMPIRE is superior in strengthening the soil.

## EMPIRE is Resistant to the Southern Chinch Bug

One of the main reasons EMPIRE is often the top choice as a grass replacement for St. Augustine is its resistance to the Southern chinch bug. Chinch bugs are known for their ability to completely demolish an entire lawn or landscape when given the appropriate window of time. Chinch bugs feed on grass blades as a food source by sucking on the blades of grass and then injecting the blades with poison found in their saliva. The poison stops water movement within the grass blade causing it to yellow and die. Chinch bug damage is often confused with drought damage for this reason. The chinch bug then moves on to the next nearby grass blade and the cycle begins again.

**Chinch bugs** feed on grass blades as a food source by sucking on the blades of grass and then injecting the blades with poison found in their saliva. The poison stops water movement within the grass blade causing it to yellow and die.



The Southern chinch bug, in particular, favors St. Augustine grass, making them a huge nuisance in the states of Florida and Texas and the Gulf Coast. EMPIRE's resistance to the Southern chinch bug is in part due to its strong rhizomes, or underground runners, that continue to grow beneath the soil's surface. This allows it to survive even the worst of insect invasions caused by more than just chinch bugs. The Southern chinch bug also doesn't seem to prefer the "taste" of EMPIRE and tends to gravitate to St. Augustine grass instead. If, in few cases, an EMPIRE landscape is damaged by chinch bugs, the grass will continue to survive and grow as a result of its strong rhizomes.



## EMPIRE's Genetic Color

A turfgrass's genetic color is the natural color of the plant while it is actively growing and not under any forms of biotic or abiotic stress. In general, the darker green the turfgrass is, the better genetic color. This is important if you value having a lush, vibrant, green landscape.

NTEP evaluates turfgrass genetic color by using a visual rating scale with 1 being light green and 9 being dark green. As described by NTEP, a turfgrass's genetic color "reflects the inherent color of the genotype...genetic color ratings are collected when the turf is actively growing and is not under stress. Chlorosis and browning from necrosis are not a part of genetic color."

A range of zoysiagrass cultivars were tested in a series of locations including Auburn, AL (AL1), Fayetteville, AR (AR1), Riverside, CA (CA3), Gainesville, FL (FL1) Jay, FL (FL3), Griffin, GA (GA1), West Lafayette, IN (IN1), Stillwater, OK (OK1) and Knoxville, TN (TN1).

Scores for each turfgrass were then averaged to calculate an overall mean of individual scores in the various testing locations.

Genetic Color Ratings of Zoysiagrass Cultivars - 2020 NTEP Data										
Genetic Color Ratings 1-9; 9 = Dark Green										
Turfgrass Name	AL1	AR1	CA3	FL1	FL3	GA1	IN1	OK1	TN1	Mean
EMPIRE	7.3	5.7	7.0	8.7	7.0	6.7	6.7	6.7	7.7	7.0
Emerald	6.0	7.0	6.7	7.7	7.0	6.7	7.0	7.0	7.3	6.9
Meyer	6.0	6.7	7.0	7.7	7.0	6.0	7.0	7.0	7.7	6.9
Zeon	6.3	6.7	5.0	8.0	6.0	6.7	6.0	6.3	7.7	6.5

Table 6

In summary, EMPIRE Zoysia scored a higher rating than the other three zoysiagrass cultivars in Auburn, AL and Gainesville, FL, as well as a superior overall mean rating. Emerald Zoysia scored a higher rating in Fayetteville, AR. EMPIRE Zoysia ranked equally with Meyer in Riverside, CA, with Emerald and Meyer in Jay, FL, with Emerald and Zeon in Griffin, GA, and with Meyer and Zeon in Knoxville, TN.

The above table is a summary of some of the more common zoysiagrass cultivars on the market. For a full version of the most up to date studies, visit the NTEP website at [NTEP.org](https://www.ntep.org).

For the latest Sod Solutions research, visit [SodSolutionsPro.com/Turf-Research](https://SodSolutionsPro.com/Turf-Research)

[VIEW VIDEO HIGHLIGHT](#)

# EMPIRE Zoysia Comparisons with Other Turfgrass Varieties

## How Does EMPIRE Compare to Finer-Bladed Zoysia Varieties?

Fine-bladed zoysia cultivars such as Zeon and Emerald make one gorgeous looking landscape, so it's no surprise homeowners and landscape professionals select a *Zoysia matrella* or *Zoysia pacifica* (formerly known as *Zoysia tenuifolia*). However, coarse-bladed varieties of *Z. japonica*, like EMPIRE, have characteristics that make them superior to *Z. matrella* varieties. For example, EMPIRE's coarser blades provide advantages from a maintenance perspective over finer-bladed zoysia varieties. EMPIRE can be mowed with a standard rotary mower and being wider-bladed, it hides many of the imperfections (when they come) that finer-bladed cultivars will not, such as weed pressure.

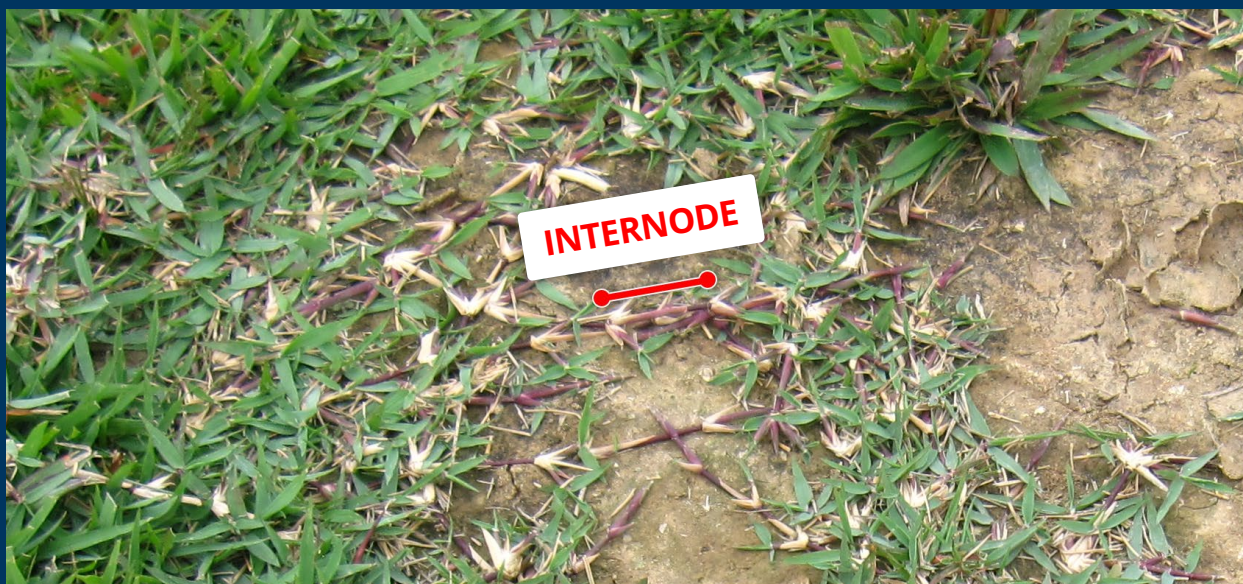
Finer-bladed zoysia cultivars are more likely to accumulate a heavy thatch layer than EMPIRE. Although a little thatch isn't usually a problem and all zoysiagrasses have a thatch layer to some extent, it can become harmful if excessive thatch builds up over time and should be removed.

**Thatch is a thin layer of organic matter that accumulates around the base of grass blades.**

Once the accumulation of thatch buildup reaches half an inch or more, it will need to be removed as it keeps nutrients, water and oxygen from reaching the root zone. Thatch is more difficult to control with finer-bladed zoysiagrasses. Thatch buildup is a natural thing finer-bladed zoysia cultivars experience and there's not much one can do to reduce it other than dethatching when appropriate. Although there are steps to take that reduce thatch buildup such as applying less nitrogen-rich fertilizers, finer-bladed zoysias will still accumulate an increased amount of thatch compared to coarser-bladed grasses like EMPIRE Zoysia.

Although finer-bladed zoysias are generally known to have better shade tolerance, cold tolerance, are better with winter-kill and have a faster spring green-up, coarse-bladed zoysia varieties have plenty of advantages in comparison.





*EMPIRE stolons with longer internodes*

EMPIRE will recover from damage faster than finer-bladed zoysias. This is especially useful when recovering from divots on golf courses or when filling in bare or damaged spot with grass plugs. Because of its rhizomes and stolons and its overall aggressive nature, EMPIRE recovers from damage quickly so much so that it can be used on professional golf tee boxes. Coarse-bladed zoysias including EMPIRE grow faster laterally than finer-bladed zoysias as they have longer internodes that take less time to grow from point A to point B. The flowering stems, or stolons, of grasses are made of nodes, where more grass blades grow, and internodes, the stem between each node.



*Innovation stolons with shorter internodes*

Coarse-bladed zoysias such as EMPIRE also typically have a better, more robust root system that allow them to bounce back from biotic and abiotic stressors such as insect pressure, disease pressure, harsh weather environments, heavy foot traffic, etc. Although finer-bladed zoysias are typically more cold tolerant, EMPIRE is quicker to bounce back from damage caused by colder weather when damage occurs.

This is why it can be argued that certain finer-bladed zoysias are a little more maintenance intensive for the homeowner or landscape professional compared to coarse-bladed EMPIRE.

EMPIRE Zoysia vs. Finer-Bladed Zoysias			
Characteristic	EMPIRE Zoysia	Emerald Zoysia	Zeon Zoysia
Leaf Blade	5.0–7.0 mm	2.0 mm	2.0 mm
Feel	Soft	Medium	Soft
Mowing Height	1.0–2.0 inches	1.0–2.0 inches	0.5–1.5 inches
Shade Tolerance	Moderate	Very Good	Very Good
Wear Tolerance	Excellent	Excellent	Excellent
Wear Recovery	Excellent	Good	Excellent
Disease/Insect Resistance	Good	Good	Good
Weed Pressure	Excellent	Good	Excellent
Drought Recovery	Excellent	Good	Good
Maintenance	Low	High	High
Cold Tolerance	Very Good	Very Good	Very Good
Heat Tolerance	Very Good	Moderate	Moderate

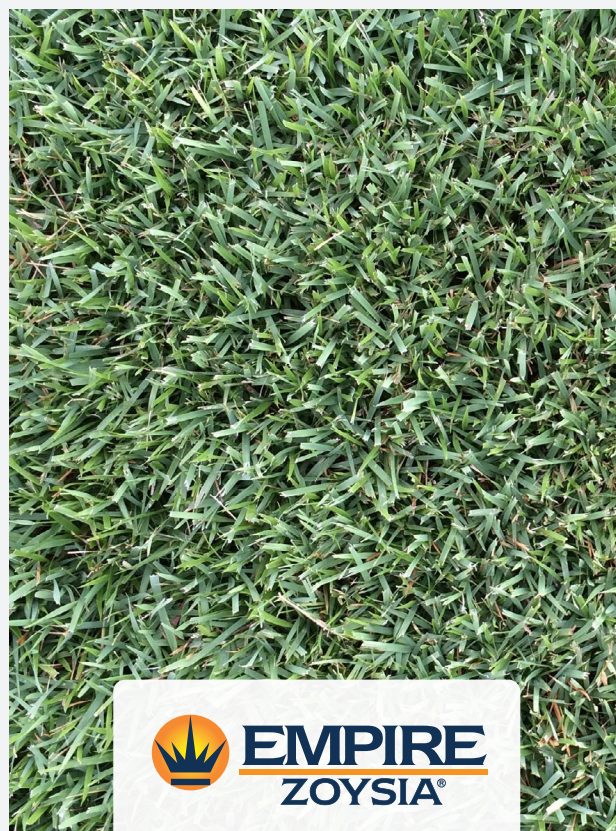
Table 7



## How Does EMPIRE Compare to Zeon Zoysia?

EMPIRE Zoysia, with a blade width of 5–7 mm, is a wider-bladed zoysia variety compared to Zeon Zoysia's grass blades that measure 2 mm in width. Although both are soft underfoot, they have very different appearances. EMPIRE's blades more closely resemble a fescue or centipede grass while Zeon's resembles the blades of bermudagrass. Zeon's finer-blades are visually appealing and have a fine texture. As a finer-bladed zoysia, Zeon outperforms EMPIRE in shady applications. However, EMPIRE far surpasses Zeon's drought tolerance and is easier to maintain.

Although both grasses have underground rhizomes and recover quickly enough to be used in golf settings, EMPIRE tends to grow in faster than Zeon—especially when installed in the form of grass plugs. One big difference in blade width comes in weed and damage appearance. EMPIRE will hide weed growth and damage much better than Zeon or other finer-bladed zoysia varieties. With a fine-bladed grass, slight imperfections are very noticeable to the naked eye and are one of the reasons that those grasses are more maintenance intensive.



For maximum success, finer-bladed varieties like Zeon need to be kept on the lower end of the mowing spectrum; the lower the better. EMPIRE can be kept taller, though it is still recommended to keep EMPIRE below 2 inches. The comparisons between EMPIRE and Zeon Zoysia roughly depend on the location each cultivar is grown in.

EMPIRE vs. Zeon Zoysia		
Characteristic	EMPIRE Zoysia	Zeon Zoysia
Leaf Blade	5.0–7.0 mm	2.0 mm
Feel	Soft	Soft
Mowing Height	1.0–2.0 inches	0.5–1.5 inches
Shade Tolerance	Moderate	Very Good
Wear Tolerance	Excellent	Excellent
Wear Recovery	Excellent	Excellent
Disease/Insect Resistance	Good	Good
Weed Pressure	Excellent	Excellent
Drought Recovery	Excellent	Good
Maintenance	Low	High
Cold Tolerance	Very Good	Very Good
Heat Tolerance	Very Good	Moderate

Table 8



## How Does EMPIRE Compare to Meyer Zoysia?

In comparison to similarly wider-bladed zoysias, EMPIRE is known as “The Proven Zoysia Grass” as it has solidified itself as being a turfgrass leader with over 20 years of real-world examples throughout the country and around the world. EMPIRE has been so successful that it was named an NTEP standard variety in which all new experimental lines of zoysia are compared against. It is the most selling, proprietary zoysia variety in the world since the late 90s.

EMPIRE and Meyer Zoysia are both coarse-bladed zoysia cultivars. As previously stated, EMPIRE has a blade width of 5–7 mm while Meyer has a blade width of 4–5 mm, which isn’t all that much smaller. However, Meyer and EMPIRE still have significant differences. In comparison to EMPIRE, Meyer has a better cold tolerance. EMPIRE, on the other hand, is easier to maintain and has a much better drought tolerance. Both are fairly similar in their ability to withstand disease pressure.

Because of EMPIRE’s vigorous root system, EMPIRE is a lot more wear tolerant and faster to recover than Meyer Zoysia. EMPIRE is also more heat tolerant than Meyer, and is more resistant to weed pressure due to its dense growing habit.



EMPIRE vs. Meyer Zoysia		
Characteristic	EMPIRE Zoysia	Meyer Zoysia
Leaf Blade	5.0–7.0 mm	4.0–5.0 mm
Feel	Soft	Soft
Mowing Height	1.0–2.0 inches	1.0–1.5 inches
Shade Tolerance	Moderate	Good
Wear Tolerance	Excellent	Good
Wear Recovery	Excellent	Good
Disease/Insect Resistance	Good	Good
Weed Pressure	Excellent	Moderate
Drought Recovery	Excellent	Moderate
Maintenance	Low	Medium
Cold Tolerance	Very Good	Very Good
Heat Tolerance	Very Good	Good

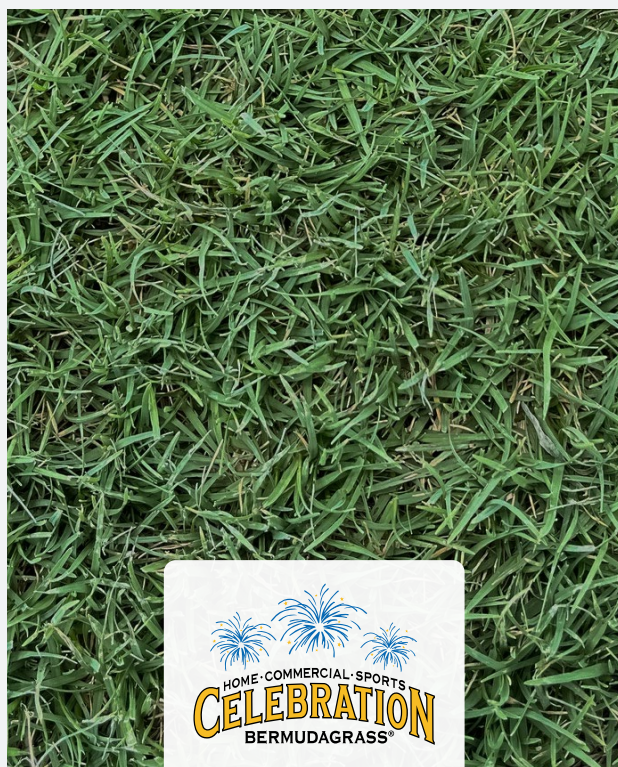
Table 9



## How Does EMPIRE Compare to Bermudagrass?

There are multiple characteristics EMPIRE has that make it vastly different from bermudagrass cultivars. EMPIRE Zoysia is an aggressive turfgrass but not as aggressive as bermudagrass varieties. This reduces the need for mowing and the maintenance-intensive nature of bermudas in keeping away from flower beds and other non-desirable areas of a landscape.

On the same note, in professional and collegiate sports venues, bermudagrass often performs better as it recovers faster due to the aggressive growth habit. When a lot of heavy foot traffic occurs during games, bermudagrass is one of the most ideal choices as it recovers quickly.



In other applications, EMPIRE is going to recover at a slower rate and grow in slower with plugs, but once fully established, EMPIRE requires less maintenance than any bermudagrass cultivar. EMPIRE builds up less thatch over time and doesn't need to be mowed as often. Bermudagrasses also require more fertilizer inputs to look appealing.



Finally, zoysias, including EMPIRE, have a much better shade tolerance than any bermudagrass variety. If the landscape is located in partial or full shade, EMPIRE is the better option as it requires less sunlight to grow. The table below demonstrates some of EMPIRE Zoysia's main characteristics in comparison with Celebration®, 419, Latitude 36® and NorthBridge® Bermudagrass.

EMPIRE Zoysia vs. Bermudagrass					
Characteristic	EMPIRE Zoysia	Celebration	419	Latitude 36	NorthBridge
Leaf Blade	5.0–7.0 mm	1.5–1.7 mm	1.5–1.7 mm	1.67 mm	1.67 mm
Feel	Soft	Soft	Soft	Soft	Soft
Mowing Height	1.0–2.0 inches	0.5–1.5 inches	0.5–1.0 inches	0.5–1.5 inches	0.5–1.5 inches
Shade Tolerance	Moderate	Moderate	Moderate	Moderate	Moderate
Wear Tolerance	Excellent	Excellent	Excellent	Excellent	Excellent
Wear Recovery	Excellent	Excellent	Excellent	Excellent	Excellent
Disease/Insect Resistance	Good	Good	Good	Good	Good
Weed Pressure	Excellent	Excellent	Excellent	Excellent	Excellent
Drought Recovery	Excellent	Excellent	Excellent	Excellent	Excellent
Maintenance	Low	Medium*	High	High	High
Cold Tolerance	Very Good	Moderate	Moderate	Excellent	Excellent
Heat Tolerance	Very Good	Very Good	Very Good	Very Good	Very Good

Table 10

\*Celebration is high maintenance with mowing but not irrigation inputs

## How Does EMPIRE Compare to St. Augustine Grass?

EMPIRE Zoysia and various cultivars of St. Augustine are widely sought out throughout different regions of the world. Both grasses have superior characteristics including heat tolerance, gorgeous aesthetic appeal and many other favorable traits for both residential and professional landscapes. However, there are many distinct differences that set the grasses apart.

Although EMPIRE has wider blades than finer-bladed zoysias, its blade width is still smaller than most St. Augustines making it softer in texture. EMPIRE's blade width typically falls within 5–7 mm while most St. Augustines have a blade width somewhere within the 8–9 mm range. These differences in blade widths can make a major difference in the landscape if visual aesthetic is a priority. Both EMPIRE and various St. Augustine cultivars are for the end-user who enjoys the wider-bladed, tropical looking landscapes.



EMPIRE has a tight, compact canopy that cuts down on weed pressure while St. Augustine grasses are more open, allowing weeds to find footing more easily.

Along with the difference in blade widths comes the difference in spreading habits. As two totally different varieties of grass, zoysiagrasses use both underground rhizomes and above-the-ground stolons to cover surface area whereas St. Augustine only uses above-the-ground stolons. Combined with EMPIRE's robust root system, this monumentally increases the damage recovery speed.

EMPIRE's deep roots also allow for it to survive during extended periods of drought by reaching far beneath the soil's surface to draw out water where such moisture is available. EMPIRE typically goes dormant from a low-water situation faster than St. Augustine grasses because it uses dormancy as a defense mechanism. Once EMPIRE starts to receive regular irrigation again, it quickly returns to its vibrant dark green color. St. Augustine cultivars don't have this built in self defense mechanism. Although St. Augustines hold color longer during drought, once they start to turn brown from a lack of water, they're typically dying. EMPIRE Zoysia is more resilient than St. Augustine grass.

St. Augustines are known for their superior shade tolerance when compared to other warm season turf varieties. They are some of the most shade tolerant grasses around and perform extremely well in shady landscapes. EMPIRE performs well in shade but is not as good as certain improved varieties of St. Augustine like Palmetto®.

Lastly, a very important feature for homeowners and landscape professionals alike, particularly those located in the Southeast, is EMPIRE's resistance to the Southern chinch bug. As discussed in the Characteristics & Research section of this publication, this is one of the main reasons EMPIRE is often the top choice as a grass replacement for St. Augustine in the majority of the Southeast. The Southern chinch bug tends to strongly prefer St. Augustine grass more than any other grass type with the ability to completely destroy entire landscapes given the right amount of time. The Southern chinch bug also seems to prefer the taste of St. Augustine grass as opposed to other turf varieties. This makes them a costly nuisance in the states of Florida, Texas and the Gulf Coast. EMPIRE's resistance to the Southern chinch bug is in part due to its strong rhizomes, or underground runners, that continue to grow beneath the soil's surface.





EMPIRE Zoysia vs. St. Augustine Grass					
Characteristic	EMPIRE Zoysia	Palmetto	Floritam	CitraBlue	Raleigh
Leaf Blade	5.0–7.0 mm	8.0–9.0 mm	9.0 mm	8.0–9.0 mm	8.0–9.0 mm
Feel	Soft	Coarse	Coarse	Coarse	Coarse
Mowing Height	1.0–2.0 inches	2.0–4.0 inches	3.0–5.0 inches	2.0–3.0 inches	3.0–5.0 inches
Shade Tolerance	Moderate	Very Good	Moderate	Very Good	Good
Wear Tolerance	Excellent	Medium	Medium	Medium	Medium
Wear Recovery	Excellent	Moderate	Moderate	Moderate	Moderate
Disease/Insect Resistance	Good	Good	Moderate	Good	Good
Weed Pressure	Excellent	Good	Moderate	Good	Good
Drought Recovery	Excellent	Good	Good	Good	Good
Maintenance	Low	Medium	Low	Medium	Medium
Cold Tolerance	Very Good	VeryGood	Moderate	Moderate	Very Good
Heat Tolerance	Very Good	Very Good	Very Good	Very Good	Very Good

Table 11



## How Does EMPIRE Compare to Floratam St. Augustine?

Floratam St. Augustine is one of the most common types of turfgrass found in home lawns and other commercial landscapes in the Southeastern U.S. Like most St. Augustines, Floratam is a very coarse turfgrass that does well in heat and humidity. EMPIRE Zoysia was bred in Brazil's subtropical, humid climates, therefore it is as equally tolerant of heat and humidity.

As seen in the image below, EMPIRE is more dense than Floratam. Floratam's open canopy gives weeds the opportunity to germinate, access sunlight and grow without competing for space as much as it would with EMPIRE. The image below demonstrates the difference in texture between the two varieties.





As mentioned in the previous section, EMPIRE is resistant to the Southern chinch bug—a huge costly nuisance for Floratam St. Augustine lawns. Floratam was highly sought after in the state of Florida because of its original resistance to chinch bugs in the 1970s. Overtime, Floratam’s resistance to the chinch bug disappeared as the bugs adapted. Chinch bugs now love Floratam St. Augustine. Being the second most popular grass in the Southeast, EMPIRE became the top choice for replacing a Floratam St. Augustine lawn damaged beyond repair by the Southern chinch bug. The Southern chinch bug tends to strongly prefer St. Augustine grass more than any other grass type. This makes them a costly nuisance in the states of Florida, Texas and the Gulf Coast—areas where Floratam St. Augustine is widely used.

EMPIRE vs. Floratam St. Augustine		
Characteristic	EMPIRE Zoysia	Floratam St. Augustine
Leaf Blade	5.0–7.0 mm	9.0 mm
Feel	Soft	Coarse
Mowing Height	1.0–2.0 inches	3.0–5.0 inches
Shade Tolerance	Moderate	Moderate
Wear Tolerance	Excellent	Moderate
Wear Recovery	Excellent	Moderate
Disease/Insect Resistance	Good	Moderate
Weed Pressure	Excellent	Moderate
Drought Recovery	Excellent	Good
Maintenance	Low	Low
Cold Tolerance	Very Good	Moderate
Heat Tolerance	Very Good	Very Good

Table 12



Lastly, it's important to know that Floratam St. Augustine is the only turfgrass susceptible to Lethal Viral Necrosis, a viral turfgrass disease that infects leaves and roots in turfgrass (LVN). LVN outbreaks start as another disease: mosaic disease caused by Sugarcane Mosaic Virus (SCMV). SCMV has the capability to infect various grass types including but not limited to St. Augustine, zoysia and bermuda grass cultivars. SCMV also has the capability to infect some paspalum varieties, certain breeds of crabgrass, crop grasses or maize, but so far it only progresses to Lethal Viral Necrosis (LVN) in Floratam St. Augustine. Currently, SCMV in particular is identified in home lawns and commercial landscapes located in the state of Florida and spreading. Once LVN has infected a Floratam St. Augustine lawn, there is no method of treatment for it. It will die 100 percent of the time.

A lot of homeowners and landscape professionals want to completely deviate from St. Augustine after an experience with LVN and choose to install zoysiagrass instead. Combined with EMPIRE's resistance to the Southern chinch bug, EMPIRE is a top replacement option for those who've lost a lawn or landscape to LVN.

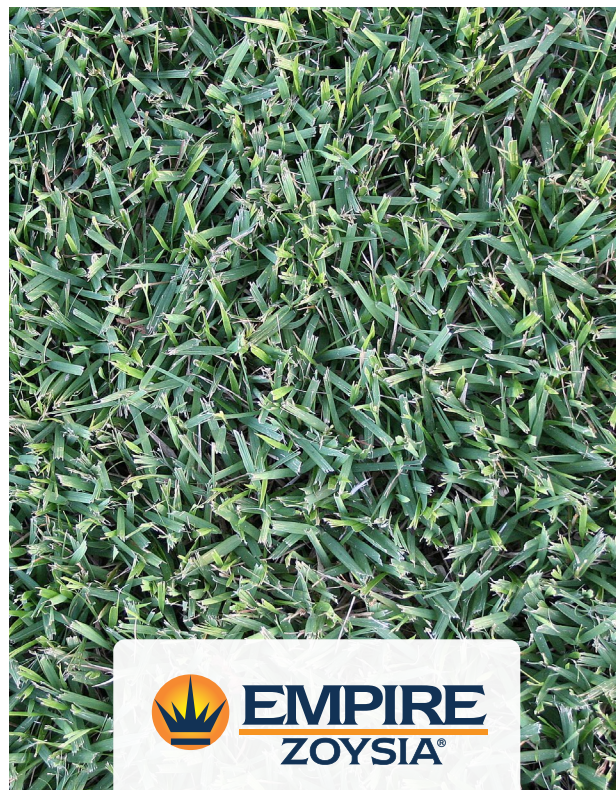
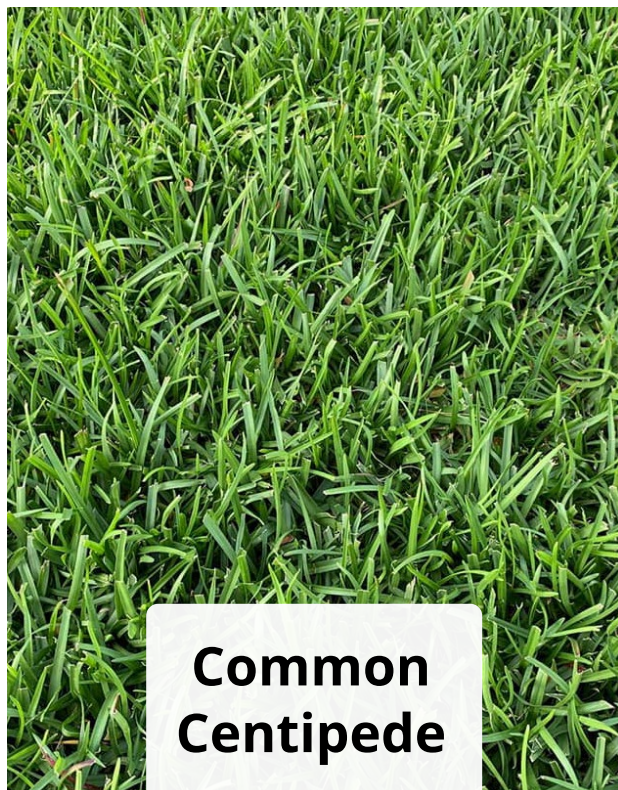
[Click here to learn more about LVN:](#)

[LEARN MORE](#)



## How Does EMPIRE Compare to Centipede Grass?

Centipede grass is another common grass found in the Southeast. EMPIRE is much tougher and resilient than centipede grass. This is mostly because centipede cultivars spread above the ground with stolons only. EMPIRE spreads above the soil's surface and also under the ground with rhizomes which increases the damage recovery speed.



While EMPIRE has a tight, compact canopy that cuts down on weed pressure, a healthy centipede lawn will keep weeds at bay pretty well. However, once damage occurs in the lawn or landscape, the centipede doesn't recover very quickly if at all. It will typically need to be patched with new centipede slabs, plugs or seed. Although EMPIRE doesn't get damaged as easily, when it does occasionally get injured, it will either grow back quicker than centipede or can be filled with EMPIRE Zoysia plugs.



Lastly, centipede will keep its color slightly longer in the fall before going dormant than EMPIRE, however, it has a dark brown hue in dormancy whereas EMPIRE showcases a light straw color in colder months.



Centipede in Dormancy

EMPIRE in Dormancy

EMPIRE vs. Centipede Grass		
Characteristic	EMPIRE Zoysia	Centipede Grass
Leaf Blade	5.0–7.0 mm	5.5 mm
Feel	Soft	Soft
Mowing Height	1.0–2.0 inches	1.0–2.0 inches
Shade Tolerance	Moderate	Moderate
Wear Tolerance	Excellent	Moderate
Wear Recovery	Excellent	Moderate
Disease/Insect Resistance	Good	Moderate
Weed Pressure	Excellent	Good
Drought Recovery	Excellent	Very Good
Maintenance	Low	Low
Cold Tolerance	Very Good	VeryGood
Heat Tolerance	Very Good	Very Good

Table 13



# EMPIRE Zoysia Versatility

EMPIRE not only thrives in a wide variety of soil conditions and climates—it's also a very diverse turfgrass. Over the years EMPIRE has offered both homeowners and landscape professionals a gorgeous lawn and landscape. Sought by specifiers, landscapers, golf course designers and homeowners for its exceptional performance and low maintenance, EMPIRE flourishes in a wide spectrum of applications across the globe.

## EMPIRE Zoysia in Residential Lawns

EMPIRE is recognized as the “The Proven Zoysia Grass” for a reason—it continues to demonstrate a long track record of success in home lawns and landscapes.



### Low Maintenance

One of its most favored features is its low maintenance. It doesn't require a lot of water once it's established, it's traffic tolerant, shade tolerant, sun tolerant, it roots faster and easy to maintain. It can be mowed at a shorter height without damaging it, which gives a nice, clean look.

"It's easy to take care of, it uses less water, it sustains drought conditions better than a lot of the grasses we have. It'll come back because of its rhizomatous root growth. It'll recover from stress and drought when other grasses won't." - Paul Grose, King Ranch

"It doesn't require as much fertilization—especially with nitrogen. The second thing is it doesn't grow as fast so it needs a lot less mowing. Third thing is it's pretty drought tolerant so it needs less water in stressful times of the year." - Dave Dymond, H&H Sod Company

One of the main reasons EMPIRE is often the top choice as a grass replacement for St. Augustine is its resistance to the Southern Chinch Bug, a huge nuisance in Florida lawns.

"Chinch bugs have been a huge issue in Florida lawns and with EMPIRE, you just don't have that issue with chinch bugs. It has a great, lovely dark green color, and when maintained right, it's probably the best looking turfgrass you can install in this part of the world."

- Daniel Whittles, Leo's Sod



## EMPIRE "Real World" Applications

▶ WATCH VIDEO 1

▶ WATCH VIDEO 2

## Aesthetics

In addition to its maintenance requirements, EMPIRE is an overall good looking lawn. EMPIRE is dark green in color and combines soft-to-the-touch feel with lush dark green color and fine, tight blade growth.

"It presents a thicker, lusher looking lawn with a unique dormant color as opposed to other turfgrasses that are common in the marketplace." - Gary Youmans, Green Acres

EMPIRE elevates the standard and expectations of homeowners for their lawns.

"If you want something to make your lawn pop and make your neighbor jealous of you, you should go with EMPIRE just to kind of stand out in the neighborhood." - Tanner Hinson, Green Acres

"It definitely stands out if you're driving by a neighborhood and there's an EMPIRE lawn." - Tiffany Bailey, Bayside Sod



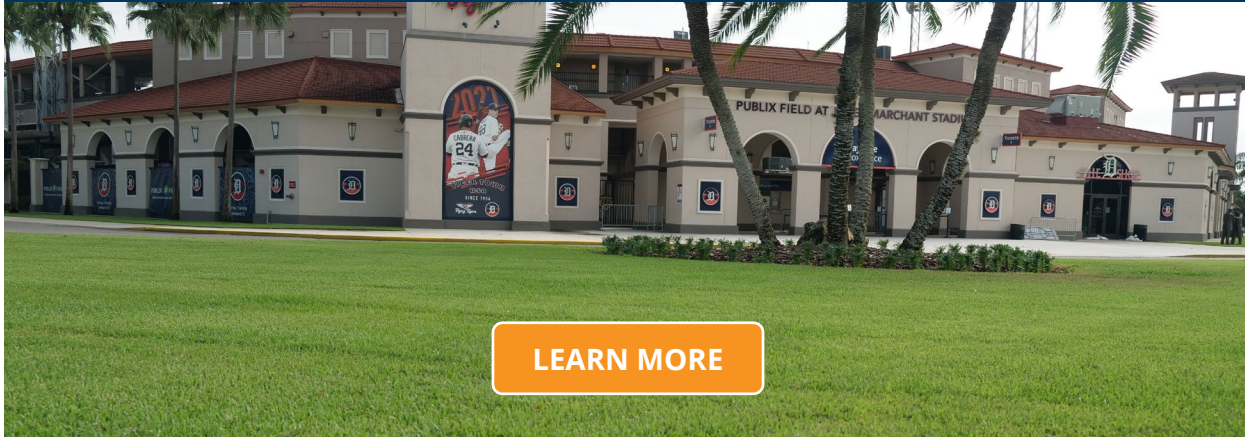
## EMPIRE Zoysia in Commercial Landscapes

For commercial landscapes, EMPIRE provides the best of both worlds: the finer, soft appearance of a landscape of distinction but also the rugged disposition of a traffic tolerant surface. EMPIRE Zoysia is a grass perfect for parks and outdoor venues trafficked by large, frequent crowds. EMPIRE stands out in neighborhood entrances and in grassy, picnic areas. While not typically used on sports fields, EMPIRE is a great grass for outdoor games and events. Its damage recovery is rapid in the active growing season. EMPIRE offers the ideal commercial landscape package for businesses and communities everywhere.



# Case Studies

## Joker Marchant Complex



### Municipal Baseball Complex | Lakeland, FL

Surrounding Publix Field in Lakeland, FL is over an acre of EMPIRE Zoysia welcoming fans to the Lakeland Flying Tigers minor league stadium. Superintendent Bryan French needed a grass that was durable, able to withstand the foot traffic of thousands of fans over the course of a season while at the same time, being relatively simple to manage. EMPIRE Zoysia is denser than Florida's common grass varieties like Floratam St. Augustine helping stop weeds before they get started. It provides a picturesque "front door" to the complex.

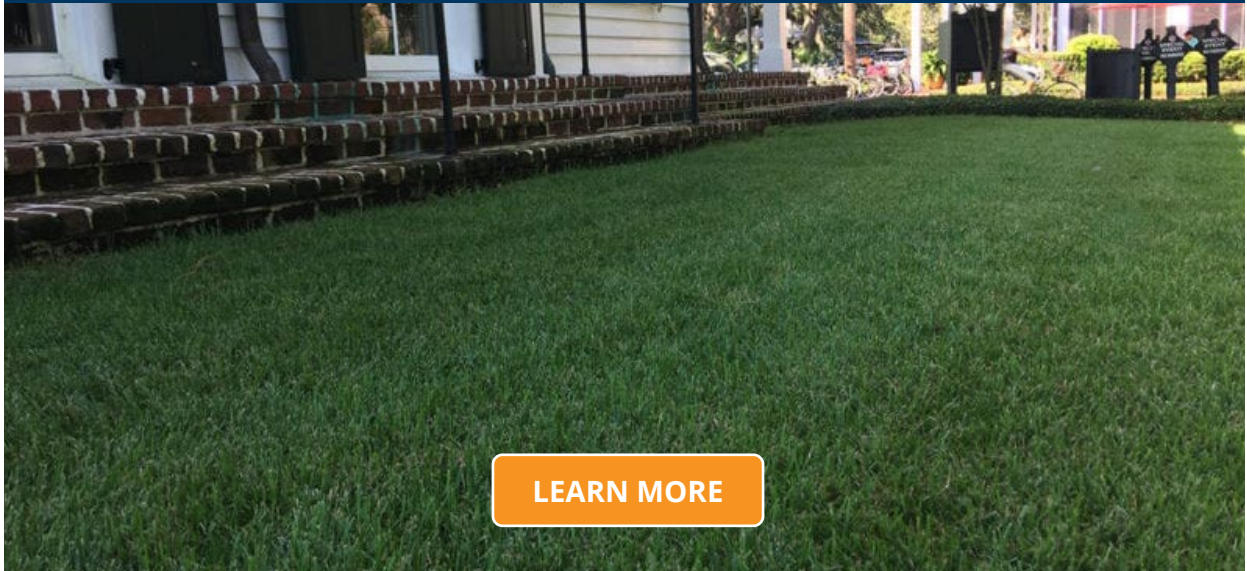
**"It looks good. It's really kind of maintenance-friendly and you can spray more things on it than Floratam (St. Augustine). The front entrance is my doorway so it's got to look good."**

— Bryan French,  
Northside Athletics





## Palmetto Bluff



### Coastal South Carolina | Bluffton, South Carolina

For almost two decades, EMPIRE Zoysia has been flourishing in the Palmetto Bluff community of coastal Bluffton, SC. EMPIRE gave developers the solution to a myriad of landscape issues while providing a look that exemplifies this natural, seaside neighborhood.

**"It has good shade tolerance. It has good sun tolerance. It's the most diverse grass we have found that we can use on a project of this size that will work anywhere we put it."**

— Ike Hill,  
The Lindsay Company





# Summary

EMPIRE Zoysia elevates expectations and has been doing so for more than two decades in the US and around the world in places as far away as Australia and South Africa. EMPIRE has proven itself as a relatively low-maintenance grass with many improved features for homeowners, commercial enterprises and golf courses. From its damage recovery and durability to its drought toughness and its soft-to-the-touch feel, EMPIRE has set the standard as for how zoysiagrass should perform. While there is no “perfect” grass out there, EMPIRE checks more boxes than most other grass varieties.





# Sod Solutions Pro

Sod Solutions has been researching, developing and releasing to the market new turfgrass varieties for the past 27 years. Our new professionally focused arm of the company, Sod Solutions Pro takes that industry knowledge and puts it to use, facilitating large-scale turfgrass projects from beginning to end.

From our decades in the industry, we know that choosing a grass for a variety of landscape challenges can make or break a project. Different landscapes, geographies, applications and even soil pH levels could call for different grass varieties. Each cultivar has specific features (like shade tolerance) that make them more suitable for certain applications than others. Our mission is to make sure the right grass is being used in the right location to produce the best long-term success for our clients.

## SELECTION CONSULTING:



Our team of turf experts will help inform you of the turfgrass options suitable for your project location, educate you on the pros and cons of each product, answer your technical questions, and connect you with real professional users to provide a complete understanding and confidence in the product you choose to specify. We also offer lunch and learns onsite as well as online webinars to educate your staff on turfgrass options.



## SPECIFICATION WRITING:

We will create specifications for submission with the project scope and the grass variety that you have selected.



## PRODUCT SOURCING:

No job is too large or too small. Sod Solutions Pro has a dedicated network of over 250 turf farms worldwide. From small parks to entire communities and golf courses, we can source projects from one or multiple farms if need be. Whether you are in the initial budgeting stage or need to order grass immediately, the Sod Solutions Pro team will provide you with availability data and pricing for your project.



## DELIVERY / INSTALLATION LOGISTICS:

Sod Solutions Pro will find the farm, schedule the delivery and manage the installation of the grass when you need it. Door to door, we take the burden of grass logistics to a new technological level with our proprietary farm management software, Turf Logistics.



## FINANCING:

We work with banking infrastructure to take on the financial strain of financing large grassing projects. Our fees are minimal and worth the headaches it reduces for your team.



## MAINTENANCE CONSULTING:

Having issues with the health and vitality of your existing grass? Let our team of experts assist with on-site visits, problem diagnosis, and solutions. We will get to the bottom of the issues and lay out a plan to fix the problems.

## Request a Free Lunch & Learn

Our team endorses the use of natural grass whenever possible due to its environmental benefits. But to be successful, the “right grass” needs to be used in the “right place”. We can be an asset in this education and would be happy to come out to your offices or virtually host a “lunch and learn” seminar to discuss the different factors that go into finding the right grass. We will share with you both knowledge and widely adopted strategies that can be helpful in your future projects. Also, as part of our “lunch and learn” we will assign one of our team members at Sod Solutions Pro to be your personal consultant for any future grass questions you may encounter during upcoming projects. Always feel free to reach out to them.



### WHAT'S INCLUDED

- 1–2 hour webinar on various grass specific topics
- The benefits of grass and how to select the right grass for the right application
- The options of different grasses such as commodity vs. proprietary grasses
- Grass Growing Zone Map - where grasses can grow

### KEY BENEFITS

- Keep you and your colleagues up to date on the latest from the turfgrass industry
- Understand trends and what to look for when specifying a grass
- Make sure you get the right grass for the right application

[SodSolutionsPro.com/Lunch-and-Learn](https://SodSolutionsPro.com/Lunch-and-Learn)

## Request a Free Quote

The Sod Solutions Professionals team delivers sod and installation services for commercial landscape projects, golf courses, sports fields and housing developments across the globe. Our team can help you select the right products and methods for your project, coordinate delivery and logistics and offer financing options. Our deep industry experience and network of farms and installers ensure that your project is done right the first time with the highest level of quality and service.

[SodSolutionsPro.com/Quote-Request](https://SodSolutionsPro.com/Quote-Request)



## Golf Grasses

From the tee box to the green, Sod Solutions Pro turfgrass varieties cover courses around the world; grasses developed to play at a championship level.



Developed in Australia in the 1990s, Celebration has become one of golf's premiere grasses worldwide. Celebration's pedigree features a two-decade proven track record of success. Its strengths are highlighted in its exceptional root system and rapid recovery time. Celebration has the best documented shade tolerance for a bermuda variety and features a unique, dark blue-green color.



Developed for its cold tolerance by breeders at Oklahoma State University, Latitude 36 is one of the most striking bermudagrasses on the planet. Latitude 36 has a very fine texture and outstanding quality making it a favorite for golfers for ball roll and overall playability. Latitude 36 is found on courses from South Florida to the upper reaches of the transition zone.



Released in 2011, NorthBridge is a tough bermudagrass cultivar known for its cold tolerance and especially its early spring green-up. Its tensile strength and aggressive rooting make it a durable choice for golf courses where rapid damage recovery is important. NorthBridge exhibits a tight, fine-textured appearance and dark green color. Like Latitude 36, NorthBridge will also grow upwards into the transition zone.



Known for its cold tolerance, Innovation Zoysia is a finer bladed zoysia variety that is quick to recover from damage. Innovation was developed to challenge the upper regions of zoysia adaptability to cold temperatures while maintaining exceptional quality and appearance. Innovation is resistant to the bluegrass billbug and is dark green in color.



A staple of the commercial and golf world since the early 2000s, EMPIRE Zoysia has set the standard for a course bladed zoysia variety for golf courses. EMPIRE can be cut down at fairway and tee box heights, but used at taller heights in the roughs to create beautiful, yet challenging links. EMPIRE features drought and heat tolerance that make it a perfect fit for the southern U.S.



If you need a grass for a putting surface, Sunday fits the bill with some of the best genetic stability on the market, meaning that genetic grass mutations won't happen. Getting a consistent look and roll on a green is key and Sunday has proven stable for over 30 years. Its root density and length are hallmark features allowing this grass to survive some low temperatures. Sunday is an ultra-dwarf variety, but can be managed like a dwarf bermuda, which allows for use from low to high end facilities. It can be cut and maintained as low as .080 inches to deliver quick speeds on a stimpmeter.

## Sports Grasses

Fields around the country and across the globe have used Sod Solutions Pro grass brands to cover championship events for the past three decades. Exceptional surfaces, impeccable performance and a beautiful appearance elevate our grasses to the forefront of any sports discussion, from the smallest fields to the largest stadiums.



Aussie origins explain why Celebration is one of the toughest bermudagrasses on the market today for sports. Celebration features some of the most rapid recovery on the market today. It also has the highest level of shade tolerance for a bermuda variety, which makes play possible with shade from stadium overhangs. Celebration features an exceptional root system and a unique dark, blue-green color. Celebration has been featured in the Olympics and on fields of the World Cup.



A favorite of college stadiums across the U.S., Latitude 36 was developed for its cold tolerance and texture. Its fine, compact growth habit makes Latitude 36 one of the most striking bermudagrass varieties in the world, both from the field level and in the stands. Latitude 36 is found on fields from balmy South Florida to Pennsylvania and everywhere in-between.



Longer green seasons were in mind when NorthBridge Bermudagrass was released in 2011 by Oklahoma State University. NorthBridge cuts down on overseeding needs thanks to an early spring green-up. But its cold tolerance is only one trait that has made this popular in professional sports stadiums. The tensile strength and aggressive rooting make NorthBridge a durable choice for football or horse racing, where rapid damage recovery is important. NorthBridge exhibits a tight, fine-textured appearance and dark green color.





## Commercial and Residential Grasses

For almost three decades, Sod Solutions Pro has focused on research and development of superior turfgrasses for commercial, residential, golf and sports uses. We have found that putting the right grass in the right landscape is the most important factor in its long-term success. Our varieties were developed to solve the needs of end-users across the spectrum.



Palmetto is the most sold patented turfgrass in the world with more than two billion sq. ft. sold. Selected for better color and finer texture, Palmetto demonstrates superior shade, cold, frost, heat and drought tolerance.



CitraBlue, the newest grass from the University of Florida was developed to solve lawn disease issues and to be a dramatic improvement over Florida's most common grass, Floratam St. Augustine. Not only is its disease resistance improved, but it also may be one of the top grasses for shady landscapes and it features a distinct blue color.



Celebration is a deep blue-green turfgrass that has finished best in numerous university research studies for wear tolerance and recovery, drought resistance and tolerance and bermudagrass shade tolerance.



Latitude 36 was developed to stretch the limits of bermudagrass adaptability in the North and is a top quality rated bermudagrass nationally. Latitude 36 shows resistance to spring dead spot and is one of the most cold-hardy bermudagrasses on the market.



NorthBridge is tough. Its tensile and root strength can handle heavy amounts of traffic and recover from damage quickly. NorthBridge features outstanding cold tolerance and early spring green-up. It is fine textured and dark green in color.



EMPIRE is a revolutionary medium-bladed, dark green zoysiagrass. It features excellent wear tolerance, requires less mowing and chemical applications and is chinch bug resistant. EMPIRE truly is "The Proven Zoysia®".



Innovation is a versatile zoysia. Developed by researchers at Kansas State and Texas A&M University, Innovation is very cold tolerant. It is a finer bladed zoysia and is incredibly soft. This grass is suitable for the southern two-thirds of the United States.