



The Proven Zoysia Grass®

## Description

EMPIRE Turf is a Brazilian *Zoysia japonica* developed by turfgrass breeders Minoru Ito and Roberto Gurgel that offers specifiers, landscapers, golf course designers, sportsturf managers and homeowners exceptional performance with low maintenance across a wide spectrum of applications. EMPIRE is a blue-green turfgrass that has a wider blade than most other zoysias (slightly broader than Meyer Zoysia) and grows in a wide variety of soil and climate conditions. EMPIRE performs well in sandy and clay type soils throughout the southern U.S. and has tough runners, rhizomes, and deep roots that provide excellent sod strength, wearability, and improved drought tolerance. EMPIRE performs well in hot, arid, sandy areas of the southwest U.S., and has proven itself drought tolerant in many challenging applications. Shade tolerance research is ongoing, as EMPIRE has performed well in field and homeowner sites, and exhibits shade tolerance typical of most Zoysias. EMPIRE is the first Zoysia to demonstrate improved tolerance to brown patch as compared to Meyer Zoysia in side-by-side plantings. Additionally, EMPIRE is highly tolerant of most herbicides making it easier to control weeds during production and for the end user.

## Production and Quality Control

Genetic purity and preservation of the EMPIRE Turf variety is of primary importance. Only licensed turfgrass producers are authorized to grow EMPIRE for sale. All licensed EMPIRE production is monitored through ongoing quality control and quality assurance programs. Additionally, producers can choose to certify their EMPIRE through local state crop certification agencies that provide rigid standards and regulations for production, harvesting, and handling, that when adhered to, ensure a genetically pure, high quality, “certified” product.

## Best Management Practices

### Installation and Establishment

Installation and the care taken during the initial days that follow are the most critical factors in determining the long-term quality and performance of EMPIRE Turf. Harvesting and transplantation are extremely stressful to any turfgrass and precautionary measures should be taken to help reduce further cultural and environmental stresses. EMPIRE is a tough, hardy turfgrass that once established, produces a beautiful lifetime lawn, landscape, sports turf or golf course.

**Proper care, including pre-installation soil preparation and limiting time on the pallet to less than 24 hours, yields positive results. Improper care, however, can cause death of the turfgrass or damage that results in lengthy recovery and additional expense.**

**Irrigating Newly Installed EMPIRE:** Proper watering upon installation is essential to successful establishment:

- Prior to installation, ensure irrigation systems are working properly and covering all areas to be planted
- Water thoroughly upon installation ensuring that both the EMPIRE is wet and the soil is moist to a depth of 3”, which is approximately 1” of water per day
- In hot weather, water within a few hours of installation to mitigate severe damage or loss due to heat / dehydration stress
- To promote root establishment, water as needed to maintain moist soil to a depth of 3” for the first 2-3 weeks, which is approximately 1” of water per day
- Shaded areas and heavy soils require less water than full-sun areas and sandy soils
- When proper rooting is evident, alter irrigation program accordingly (see Post Establishment Irrigation on page 2)

**Mowing:** New installations are often uneven and care should be taken not to scalp high spots:

- Mow within 10 days of installation and bag clippings for the first few mowings
- See Post Establishment Mowing on page 2 for more information

**Fertility:** Use a transplant-friendly regimen that will help reduce shock and minimize disease:

- Use a starter fertilizer that is low in Nitrogen and higher in Phosphorous and Potassium

## Post Establishment

**Mowing:** Mowing is a critical and often under appreciated cultural practice:

- Maintain EMPIRE at 1-2" (1" is optimal)
- Heights above 2" will reduce quality
- Can be maintained at heights of ½" if regularly mowed with a reel mower
- Rotary mowers are preferred for heights 1" or higher
- Reel mowers are preferred for heights below 1"
- Mow every 7-10 days during the active growing season
- Mow every 10-14 days, or as needed, during cooler weather
- Never cut more than 1/3 of the total length of the blade at any one mowing
- If a scheduled mowing is missed and clippings clump on top of the EMPIRE, bag or vacuum clippings to reduce shade-out
- Vertical mowing (verticutting) may be performed to renovate EMPIRE
- Mow EMPIRE down tight to 1.5" before winter. The tight mowing will help with spring green up and reduce disease issues
- In early spring, mow EMPIRE tight, bagging all clippings to remove excess thatch. This will help EMPIRE recover from winter dormancy. Don't worry about scalping (removing more than 1/3 of the leaf blade) at this time as this is a beneficial maintenance practice for spring green-up and growth.

**Insecticides:** Avoid stress from insects by performing insecticidal applications as needed:

- **For any insecticide application, always read and follow label directions carefully**
- Early identification and treatment of insect stress minimizes inputs and injury
- Make routine observations of the landscape, and be aware of seasonal pests like billbugs, armyworms and webworms
- Preventatively apply Bayer Advanced Lawn® Season-Long Grub Control Ready-to-Spread Granules annually to control billbug larvae/grubs. For better results, make a spring and fall application to break the pest cycle.
- Control armyworms and webworms with Sevin, Orthene, Diazinon or Pyrethroid-based products
- Control billbugs with Sevin (adults), Talstar (adults), DeltaGuard (adults), Merit (larval/grub form), Mach2 (larval/grub form). To ensure complete control, you must apply 2-3 applications of the larval/grub form insecticide.
- Consult with local experts for insecticide recommendations
- If necessary, you can also reference the *University of Florida's Pest Control Guide for Turfgrass Managers* and/or *University of Georgia Turfgrass Pest Control Recommendations for Professionals* for more detailed information

**Herbicides:** Proper mowing, irrigation and fertilization of EMPIRE will reduce weed problems. If a weed problem persists:

- **For any herbicide application, always read and follow label directions carefully**
- **Improper use of herbicides can severely damage or kill EMPIRE**
- Make routine observations of the landscape being aware of seasonal weeds
- Identify the type of weed causing the problem before using any chemical controls
- EMPIRE is tolerant of most commonly used herbicides
- Consult with local experts for herbicide recommendations
- If necessary, you can also reference the *University of Florida's Pest Control Guide for Turfgrass Managers* and/or *University of Georgia Turfgrass Pest Control Recommendations for Professionals* for more detailed information

**Fungicides:** EMPIRE has shown resistance to most fungal problems and controls should be used only as needed:

- **For any fungicide application, always read and follow label directions carefully**
- Early identification and treatment of disease stress minimizes inputs and injury
- Make routine observations of the landscape being aware of unusual symptoms
- Consider a broad-spectrum fungicide application if predictable seasonal problems are noted
- For best results with any fungicide, you must make 2-3 applications 14-21 days apart
- Consult with local experts for fungicide recommendations
- If necessary, you can also reference the *University of Florida's Pest Control Guide for Turfgrass Managers* and/or *University of Georgia Turfgrass Pest Control Recommendations for Professionals* for more detailed information

**Irrigation:** Established EMPIRE exhibits drought tolerance due to improved plant genetics and growth characteristics:

- Watering requirements are greatly dependent on soil type, season, geography and other factors
- Ensure irrigation systems are working properly and covering all areas covered by EMPIRE
- Make routine observations of the landscape and learn the signs (i.e., wilting) that indicate when irrigation is required
- Shaded areas and heavy soils require less water than full-sun areas and sandy soils
- Encourage deep root growth by watering until the soil is moist to a depth of 3", shallow watering encourages shallow roots
- As a general rule, EMPIRE should receive ¾-1" of water once a week from irrigation or rainfall
- Infrequent deep watering maximizes drought resistance and tolerance



**Fertility:** Proper fertility practices will encourage healthy, disease and insect free EMPIRE:

- Perform soil tests to understand your soil type(s) and condition and best determine your specific fertility needs
- Generally EMPIRE requires 3 fertilizer applications/year: spring, summer and fall (1 lb of Nitrogen per 1000 square feet per seasonal application)
- A total of 3 lbs of Nitrogen per 1000 square feet per year is proper application rate for EMPIRE
- A fertilization of a 1-0-1 ratio, such as a 15-0-15 is recommended for EMPIRE
- Make routine observations and fertilize according to what the landscape indicates
- Understand what and how much fertilizer you are applying
- Avoid disease and insect inducing growth flushes by reducing Nitrogen rates
- Improve color and limit growth surges by utilizing Iron sources
- Higher Nitrogen rates should only be applied in the spring, for injury recovery, or for planned “peaking” of EMPIRE
- Apply balanced fertilizers with lower rates of Nitrogen in the summer and fall



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