Description
Geo Zoysia is a cross between a *Zoysia japonica* and a *Zoysia tenuifolia* that offers specifiers, landscapers, golf course designers, sportsturf managers and homeowners exceptional performance with low maintenance across a wide spectrum of applications. Geo is a dark-green turfgrass with fine-textured leaf blades that grows in a wide variety of soil and climate conditions. Geo 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. Geo performs well in hot, arid, sandy areas of the southwest U.S., and has proven itself drought tolerant in many challenging applications. Geo has very good shade tolerance and has performed well in field and homeowner sites. Its shade tolerance is better than that of most Zoysias and it performs well into the transition zone. Additionally, Geo 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 Geo Zoysia variety is of primary importance. Only licensed turfgrass producers are authorized to grow Geo for sale. All licensed Geo production is monitored through ongoing quality control and quality assurance programs. Additionally, producers can choose to certify their Geo 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 Geo Zoysia. Harvesting and transplantation are extremely stressful to any turfgrass and precautionary measures should be taken to help reduce further cultural and environmental stresses. Geo 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 Geo: 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 Geo is wet and the soil is moist to a depth of 3"
- 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 1-2 weeks
- 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 Geo at .5"-1.5" (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 5-7 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 Geo, bag or vacuum clippings to reduce shade-out
- Vertical mowing (verticutting) may be performed to renovate Geo
- Mow down tight one month before winter

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 may also reference the University of Florida's *Pest Control Guide for Turfgrass Managers* and/or the University of Georgia's *Turfgrass Pest Control Recommendations for Professionals* for more detailed recommendations.

Herbicides: Proper mowing, irrigation and fertilization of Geo 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 Geo**
- Make routine observations of the landscape being aware of seasonal weeds
- Identify the type of weed causing the problem before using any chemical controls
- Geo is tolerant of most commonly used herbicides
- Consult with local experts for herbicide recommendations
- If necessary you may also reference the University of Florida's *Pest Control Guide for Turfgrass Managers* and/or the University of Georgia's *Turfgrass Pest Control Recommendations for Professionals* for more detailed recommendations.

Fungicides: Geo 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 in late fall/early winter
- For best results with any fungicide, you must make 2-3 applications 14-21 days apart
- Ask your Geo grower to apply fungicide 1-2 weeks prior to harvest during times of high, disease-inducing stress
- Consult with local experts for fungicide recommendations
- If necessary you may also reference the University of Florida's *Pest Control Guide for Turfgrass Managers* and/or the University of Georgia's *Turfgrass Pest Control Recommendations for Professionals* for more detailed recommendations.

Irrigation: Established Geo 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 Geo
- 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, Geo 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 Geo:
- Perform soil tests to understand your soil type(s) and condition and best determine your specific fertility needs
- Generally Geo requires 3 fertilizer applications/year: spring, summer and fall
- Try to use an organic fertilizer at least once per year, such as Milorganite
- 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
- A total of 3 pounds of Nitrogen per 1000 square feet per year is a proper application rate for Geo

- 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 Geo
- Apply balanced fertilizers with lower rates of Nitrogen in the summer and fall