

Maintenance of Zoysiagrass

Nutrient Management

Florida Rule (5E-1.003) mandates that the fertilizer application rates cannot exceed 1 lb. of nitrogen per 1000 square feet for any application. Based on the percentage of nitrogen that is in a slowly available or slow-release form in a fertilizer, UF/IFAS recommendations call for applying a ½ pound (water-soluble nitrogen source) to 1 lb. (slow-release nitrogen source) of nitrogen per 1000 square feet of turfgrass.

As a general rule, the first fertilizer application of the year should be early April in Central Florida and mid-April in North Florida. In South Florida, fertilizer applications may be made throughout the year since growth is year-round. UF/IFAS guidelines for lawn grass fertilization offer a range of fertilizer rates over which a particular species may be successfully maintained in the various regions of the state. These ranges account for individual homeowner preferences for low-, medium-, or higher-input grass. Additionally, localized microclimatic effects can have a tremendous impact on turfgrass growth. A range of rates allows for these environmental variations. An example of this would be a typical home lawn that is partially shaded and partially sunny. The grass growing in the shade needs less fertilizer than that growing in full sun. Fertilization is also affected by soil type, organic matter in soils, and practices such as clipping management. Recycled clippings provide some nutrients back to the turfgrass and may reduce the need for fertilizer inputs. Additionally, a newly-sodded lawn on a sand soil with no organic matter requires more fertilizer than a lawn that has been fertilized for years. In Florida, new homes and new developments may be next to much older-developed landscapes, and a one-size-fits-all approach to fertilization is not reasonable. Thus, the guidelines provide a base range from which the end user can begin a fertilization program. The homeowner is encouraged to initiate a program based on these guidelines and to adjust it over time based on how the turfgrass responds.

Zoysiagrass responds better to a “spoon-feeding” fertilizer regimen (smaller quantities applied more frequently) rather than supplying larger quantities infrequently. Current UF/IFAS recommendations state that zoysiagrass should receive 3 (North Florida) to 6 (South Florida) applications per year in most situations. Research suggests that new cultivars of zoysiagrass can persist on less nitrogen, and the UF/IFAS recommendations for zoysiagrass are under review. Avoid applying nitrogen fertilizer simply to promote green color. Instead, monitor

growth and apply only when the growth rate has dramatically declined. Potassium nutrition also is important and should be applied at rates equal to nitrogen. During excessively rainy periods, potassium may need to be applied more frequently due to its leaching ability.

Since zoysiagrass is very slow to green-up in the spring, avoid applying fertilizer until after the turf has become fully green to avoid premature green-up, which is prone to frost injury. This is especially important in North Florida, where late spring frosts may damage the grass. Delaying spring fertilization until the turf is actively growing and can use the fertilizer also reduces the potential for nitrogen leaching from fertilizer. Likewise don't fertilize too late in the year, as this can slow re-growth the following spring. An application of iron can enhance spring green-up. Apply nitrogen on zoysiagrass in early spring and late fall significantly increases the risk of large (brown) patch disease.

On high-pH (>7.0) soils or where high pH is applied, yellow leaf blades may be an indication of iron or manganese deficiency. Application of soluble or chelated sources of these micronutrients can provide a green-up due to elevated pH.

For iron deficiency, spray ferrous sulfate (2 ounces in 3-5 gallons of water per 1000 square feet) or a chelated iron source (refer to the label for rates) to temporarily enhance color. Iron applications every 6 weeks help maintain green color and, unlike nitrogen, do not promote excessive top growth.

Mowing

If fertilized as recommended, zoysiagrasses require frequent mowing during the summer to look their best. Medium- to coarse-textured zoysiagrasses should be mowed weekly, or when they reach a height of 3-4 inches. They should be mowed at a height of 2-2.5 inches with a rotary mower. Fine-textured zoysiagrasses maintained at heights below 1 inch require more frequent mowing. Because zoysiagrass leaves are very coarse, they can be quite difficult to mow. Clippings should be left on the ground after mowing. They do not contribute to thatch buildup, as is often assumed, but are actually readily degraded by microorganisms. A sharp, well-adjusted rotary or reel mower should be used.

Watering

Zoysiagrass responds to drought by turning brown and going dormant in a short period of time (within a week under typical drought conditions). In the absence of rain or irrigation, zoysiagrass stays dormant for extended periods of time. Once irrigation or rainfall resumes, zoysiagrass will regain its green color.

Irrigating on an “as-needed” basis is the best way to water any established, mature grass as long as the proper amount of water is applied when needed. Irrigation is needed when leaf blades begin to fold up, wilt, or turn a blue-gray color, or when footprints remain visible after walking on the grass. Apply $\frac{1}{2}$ - $\frac{3}{4}$ inch of water per application. This applies water to roughly the top 8 inches of soil, where the majority of the roots are. Be sure to follow any local watering restrictions.

Pest Management

Like other lawn grasses grown in Florida, zoysiagrass lawns encounter pest problems. Periodic control of one or more of these problems is necessary to grow a healthy turf. The local County Extension Office can help identify pest problems and provide current control recommendations.

Weeds – One of the best attributes of zoysiagrass is its ability to resist weed invasion due to its thick, dense growth habit. Insect and disease problems can damage zoysiagrass, creating voids in this dense mat where weeds can invade. Fortunately, unlike St. Augustinegrass and centipedegrass, zoysiagrass is very tolerant to many effective pre-and post-emergence herbicides, giving a wide range of options to the turf manager.

Insects – The most serious insect on zoysiagrass is the Hunting billbug. Billbugs feed on roots, causing the turf to die in irregular-shaped patches. The damage most often occurs in the fall and spring when populations are high and when damage may be misdiagnosed as dormancy. Stems and rhizomes break easily, have irregular feeding marks, and the turf will not hold together if cut. Most damage occurs on infertile or dry soil. If 10-12 billbugs are seen per square foot, control may be necessary.

Mole crickets and white grubs can also negatively impact zoysiagrass. Mole crickets feed on grass roots and leaf blades, and their tunneling activity dislodges plants from the soil, causing them to dry out. White grubs, like billbugs, feed on roots, causing the turf to turn yellow, wilt, and eventually die. Both of these insect pests often attract raccoons, skunks, armadillos and birds, which may actually cause more damage than the insect itself.

Sod webworms can cause periodic cosmetic injury but are not believed to severely damage the turf. These insects mine the green tissue from the leaf tips, but they do not “notch” the leaf blades.