

Empire Zoysia Lawn Maintenance Calendar

General Information for Empire Zoysia grass

Empire Zoysia grass is a native proprietary selection of *Zoysia japonica*. It is said to be dark green in color with a wide leaf blade and open growth habit. It has performed well in sandy and clay soil types with aggressive growth from its stolons and rhizomes, but can be mowed with a standard rotary mower due to its broader leaf and open growth habit.

Fertilizing

Proper fertilization is an important component of the best management practices of your turf. Fertilization and other cultural practices influence the overall health of the turf and can reduce or increase its vulnerability to many stresses, including weeds, insects and disease.

Having soil tests done annually to determine the exact fertility need is advisable. Your local UF Cooperative Extension Service county office has instructions and bags for taking soil samples and submitting to the UF Extension Soil Testing Lab for analysis. These tests form the basis for your turf fertility program and recommendations from the soil tests should take precedence over recommendations given in publications or on fertilizer bags. In particular, phosphorous levels are best determined by soil testing. Since many Florida soils are high in phosphorous, little or no phosphorous may be needed for satisfactory turf growth. The exception to this may be during establishment.

In general, two weeks following complete spring green-up, apply fertilizer at the rate of $\frac{1}{2}$ (water-soluble) to 1 (slow-release) pound of nitrogen per 1000 square feet. The three numbers on a fertilizer bag refer to percent nitrogen, phosphorus, and potassium, respectively, in the bag. For example, a 50-pound bag of 16-4-8 contains 16% nitrogen or 8 pounds total nitrogen. This bag will fertilize 8000 square feet at the rate of 1 pound of nitrogen per 1000 square feet. To look their best, Zoysia grass requires frequent fertilization. They should receive 3 to 6 lbs of nitrogen during the growing season in most situations. Additionally, localized microclimate effects can have a tremendous effect on turf growth, and a range of rates provides more opportunity to allow 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 should receive lower rates of fertilizer than that growing in full sun. All rates are in pounds of nitrogen per 1000 square feet.

Fertilizer should be applied to Zoysia in 3 to 6 applications from spring green up through fall. Do not apply nitrogen too early in the growing season, particularly in North Florida, or subsequent frosts may damage the grass. Likewise, don't fertilize too late in the year, as this can slow regrowth the following spring. If applying water-soluble forms at the lower application

rate, it will take more applications to apply the total amount of fertilizer needed for the year than if applying a slow-release fertilizer form.

Mowing

If fertilized as recommended, Zoysia will require frequent mowing (e.g. weekly) during the summer to look their best. Zoysia should be mowed every 7 to 10 days, or when it reaches a height of 3 to 4 inches. It should be mowed at a height of 2 to 3 inches with a rotary mower. A sharp, well-adjusted rotary or reel mower should be used.

Watering

Zoysia requires watering especially if parasitized by nematodes, which greatly restrict the root system. During prolonged droughts, watering Zoysia every other day may be necessary. Irrigation on an as-needed basis is an excellent way to water any grass, provided the proper amount of water is applied when needed; not at a later or more convenient time. When using this approach, water at the first sign of wilt and apply $\frac{3}{4}$ inch water per application.

Thatch Control

Zoysia typically develops a thick thatch layer in the years after establishment. This thatch must be controlled or removed mechanically to maintain a uniform grass appearance. This is most often done using a vertical mower or core aerator. Research on some of the newer fine-textured Zoysia has shown good results with alternating conventional mowing and vertical mowing.

Pest Problems

Zoysia is troubled by several insects, diseases and nematodes. Periodic control of one or more of these problems will be necessary to grow a high quality turf.

Insects

The most serious insect is the hunting billbug. Billbugs destroy and feed on roots and the grass dies in irregular shaped patches. Billbugs may require periodic chemical control. Lawn caterpillars may also damage Zoysia.

Nematodes

Probably the most serious pests on Zoysia are nematodes. These soil borne, microscopic worms attack the grass roots, and if not controlled, can ultimately kill the entire turf.

Diseases

Disease problems of Zoysia include dollar spot, brown patch and rust. These are generally suppressed in properly fertilized and watered turf.

Spring (March – May)

Mowing – Always keep a very sharp mower blade for maintaining Empire Zoysia lawns. Initial mowing should be in mid to late April at about 1 inch when grass has greened up and is less than 2” tall. Mow as needed throughout the spring months being mindful that if you have to mow frequently, the grass may have too much fertilizer. Mowing about every 7-10 days is normal. Never remove more than one third of the leaf blade at one time. Mowing heights above 2” will reduce turf grass density and increase weed problems. If a scheduled mowing is missed and clippings clump on top of the turf, bag or vacuum clippings to reduce shade-out and excessive thatching.

Fertilization – Empire Zoysia Turf responds best to moderate fertility rates. Never apply more than 1 lb of Nitrogen at a time. In early May the initial 1 lb of Nitrogen per 1000 square feet should be applied. (Consult Fertilizer Calculator for exact amount) It is always recommended to obtain a soil test through your County Extension Service to determine the exact amounts of fertilizer needed. Zoysia loves iron and it will turn the grass a whole shade darker green without an unhealthy flush of growth. Iron products like Ironite liquid or granular can be used throughout the growing season. Follow label directions. Remember that Iron will stain concrete drives and walks so be sure to remove granules prior to watering in.

Insect Control – In general Empire Zoysia turf has few problems with insects. Possible damage could be from infestations of mole crickets, sod web worms, white grubs, spittle bugs, bill bugs, cutworms or fall army worms. We have observed more injury from spittle bugs while bill bug injury has been reported in more southern parts of South Carolina and Georgia. Spittle bug injury generally occurs in the later part of the summer and can be attributed to over fertilization and overwatering. Grass will gradually lose color and become lime green and straw colored. Look closely for stripes of discoloration in the leaf blades. Spittle bugs are piercing sucking insect and will draw the color out of the blades leaving a striped pattern of discoloration. If treatment is necessary it will usually take two applications and about 10 days apart. This is because the insecticide will have little to no effect on the spit sac like egg clusters found in the thatch. If injury is visible from any of these pests it is safe to use any product available to the homeowner to treat Empire. **For any insecticide application read and follow label directions carefully.**

Weed Control – Proper mowing, irrigation, and fertilization of Empire will reduce weed problems. If a weed problem persists and herbicide use is necessary be sure to read and follow label directions carefully. Improper use of herbicides can severely damage or kill Empire. Empire is tolerant of many commonly used herbicides but consult with experts if you are unsure of how to control your problem. **For any herbicide applications read and follow label directions carefully.**

Aeration – None at this time

Irrigation – Established Empire Zoysia exhibits drought resistance but will appreciate regular irrigation like other grasses. The telltale signs of a dry lawn are rolled leaf blades, wilting and footprints that remain on the lawn after walking on it. At these signs of water deficit apply ½ to ¾ inches of irrigation (or a depth of 3-4 inches) to the entire lawn. Typical irrigation would be 60 minutes per run on a rotor zone and 30 minutes on a spray zone. **Do not apply light infrequent amounts of water (example: 15 minutes every other day) as this will not encourage root growth and will promote insect and disease activity. Proper irrigation is crucial to lawn health.**

Summer (June – August)

Mowing – Keeping mower blades sharp, mow as needed at 1” to 2”. If grass appears scalped and brown after mowing, mow more frequently and sharpen blades. Empire Zoysia does not like to be scalped. Mow as needed throughout the summer months being mindful that if you have to mow frequently, the grass may have too much fertilizer. Mowing about every 7-10 days is normal. Avoid mowing when grass is wet or the soil is soggy. If the lawn is under stress from drought, shade, insects, disease or nutrient deficiencies it is a good idea to raise the height until the stress pressure is relieved. Mulching mowers with mulching blades will help minimize thatch by making similar blades that will decompose faster. Returning clippings to the lawn rather than collecting them can reduce the amount of Nitrogen fertilizer needed by the plant by up to 25 %.

Fertilization – Avoid heavy applications of nitrogen in the summer by applying ½ lb of Nitrogen per 1000 square feet of lawn each month through August. Use a balanced fertilizer like a 10-10-10 for best results. (Consult Fertilizer Calculator for exact amount) Apply other nutrients as suggested by soil testing. Empire loves iron and it will turn the grass a whole shade darker green without an unhealthy flush of growth. Iron products like Ironite liquid or granular can be used throughout the growing season. Follow label directions. Remember that Iron will stain concrete drives and walks so be sure to remove granules prior to watering in.

Insect Control – In general Empire turf has few problems with insects. Possible damage could be from infestations of mole crickets, sod web worms, white grubs, spittle bugs, bill bugs, cutworms or fall army worms. We have observed more injury from spittle bugs while bill bug injury has been reported in more southern parts of South Carolina and Georgia. Spittle bug injury generally occurs in the later part of the summer and can be attributed to over fertilization and overwatering. Grass will gradually lose color and become lime green and straw colored. Look closely for stripes of discoloration in the leaf blades. Spittle bugs are piercing sucking insect and will draw the color out of the blades leaving a striped pattern of discoloration. If

treatment is necessary it will usually take two applications and about 10 days apart. This is because the insecticide will have little to no effect on the spit sac like egg clusters found in the thatch. If injury is visible from any of these pests it is safe to use any product available to the homeowner to treat Empire. **For any insecticide application read and follow label directions carefully.**

Disease Control – If nutrient levels are properly maintained there should be little disease pressure on Empire. Large patch may occur under hot humid conditions and dollar spot is known to affect seashore paspalum. Helminthosporium disease may also occur under high humidity or compacted soil conditions. If these diseases occur first identify the disease then treat as directed on fungicide product label. **For any fungicide application always read and follow label directions carefully.**

Weed Control – Proper mowing, irrigation, and fertilization of Empire will reduce weed problems. If a weed problem persists and herbicide use is necessary be sure to read and follow label directions carefully. Improper use of herbicides can severely damage or kill Empire. Empire is tolerant of many commonly used herbicides but consult with experts if you are unsure of how to control your problem. **For any herbicide applications read and follow label directions carefully.**

Irrigation – Established Empire exhibits drought resistance but will appreciate regular irrigation like other grasses. The telltale signs of a dry lawn are rolled leaf blades, wilting and footprints that remain on the lawn after walking on it. At these signs of water deficit apply $\frac{1}{2}$ to $\frac{3}{4}$ inches of irrigation (or a depth of 3-4 inches) to the entire lawn. Typical irrigation would be 60 minutes per run on a rotor zone and 30 minutes on a spray zone. **Do not apply light infrequent amounts of water (example: 15 minutes every other day) as this will not encourage root growth and will promote insect and disease activity. Proper irrigation is crucial to lawn health.**

Thatch Control – Thatch is the layer of dead and decomposing leaf blades and stems on top of the soil surface. Thatch occurs naturally but can become excessive due to over fertilization and poor mowing practices. Vertical mowing is the proven remedy for thatch lawns. Thatch accumulations greater than 1 inch should be removed as excessive thatch is breeding ground for harmful insects and diseases. It is possible to harm the grass during this process so it is recommended to have a turf professional who has experience with the equipment perform this task. Vertical blades should be spaced 2-3 inches apart for best results on Empire Turf. Vertical mowing should only take place when the grass is actively growing to minimize recovery time. Vertical mowing should only be performed on healthy non stressed grass.

Aeration – If soil is compacted and or thatch is becoming an issue, this is a good time of year to aerate. Aeration should only be done when the grass is actively growing and free from environmental stresses like disease, drought or long periods of rain.

Fall (September – November)

Mowing – Keeping mower blades sharp, mow as needed at 1” to 2”. If grass appears scalped and brown after mowing, mow more frequently and sharpen blades. Empire does not like to be scalped. Avoid mowing when grass is wet or the soil is soggy. If the lawn is under stress from drought, shade, insects, disease or nutrient deficiencies it is a good idea to raise the height until the stress pressure is relieved. Mulching mowers with mulching blades will help minimize thatch by making similar blades that will decompose faster. Returning clippings to the lawn rather than collecting them can reduce the amount of Nitrogen fertilizer needed by the plant by up to 25 %.

Fertilization – It is a good idea to apply a light application of a complete fertilizer or one with a more heavy Potassium analysis at this time of year. Empire likes to grow into the fall but tends to run out of fertilizer in the late summer months. ½ lb of Nitrogen in a 10-10-10 turf type fertilizer in the middle of September will help the Empire hold its color beyond that of most other lawn grasses. Consult Fertilizer Calculator for exact amounts to apply to your yard.

Insect Control – Look closely for stripes of discoloration in the leaf blades. Spittle bugs are piercing sucking insect and will draw the color out of the blades leaving a striped pattern of discoloration. If treatment is necessary it will usually take two applications and about 10 days apart. This is because the insecticide will have little to no effect on the spit sac like egg clusters found in the thatch. If injury is visible from any of these pests it is safe to use any product available to the homeowner to treat Empire. **For any insecticide application read and follow label directions carefully.**

Disease Control – Same as Summer

Weed Control – Apply winter weed preemergent in late September to early October. Be mindful that does not use a nitrogen based fertilizer (such as most Weed & Feed products) as the carrier agent. These products contain far too much nitrogen to apply at this time of year. Check with your local store for a better selection of winter preemergent products. **For any herbicide application always read and follow label directions carefully.**

Irrigation – Irrigate as needed

Winter (December – February)

Mowing – Keep lawn free of leaves and debris throughout the winter months. Mow Empire lawn to a 1” height in late February. Bag, collect or rake excess dead leaf tissue generated from this mowing. This will help the grass break dormancy and eliminate a source of thatch.

Fertilization – Do not fertilize at this time. This is a perfect time to test your soil.

Insect Control – There should be no need for insect control at this time.

Disease Control – There should be no need for disease control at this time.

Weed Control – After mowing the tops of the dormant grass off the lawn and removing clippings, apply preemergent herbicide **labeled for Zoysia**, for the control of summer grassy weeds. Apply broadleaf herbicides as necessary to control winter annual weeds such as chickweed and clover. **For any herbicide application always read and follow label directions carefully.**

Irrigation – **Do not allow Empire lawns to completely dry out through the winter months. Dormant grass needs water roughly once a week. It is a good idea to run the irrigation if no rain fall has occurred, especially during periods of low humidity and high wind.**