

Bermudagrass

Lawn Maintenance Calendar

The following management practices will help you care for your lawn throughout the year. Location, terrain, soil type and condition, age of the lawn, previous lawn care, and other factors affect turf performance, so adjust these management practices and dates to suit your particular lawn.

March through May

Mowing Mow when the lawn first turns green using a reel mower set at $\frac{3}{4}$ to 1 inch or a rotary mower set as low as possible without scalping. Be sure to mow before the bermudagrass gets taller than 2 inches. Leave grass clippings on the lawn; they decompose quickly and can provide up to 25 percent of the lawn's fertilizer. If grass clippings are too plentiful, collect and use them as mulch.

Fertilization Apply $\frac{1}{2}$ to 1 pound of nitrogen per 1,000 square feet several weeks after the lawn fully turns green (normally early April or May).

You need to apply $\frac{1}{2}$ pound of nitrogen per 1,000 square feet, but how much fertilizer do you need to buy? Divide 50 by the first number on the fertilizer bag. (The first number always stands for nitrogen.) For example, if you've got a 5-5-15 fertilizer, you divide 50 by 5 and you get 10. That means you need to buy 10 pounds of fertilizer for every 1,000 square feet of lawn.

Watering When bermudagrass is growing, supplement rainfall as needed so that the lawn gets 1 inch of water each week. A bluish-gray appearance or wilted, folded, or curled leaves may indicate that it is time to water. Water until the soil is wet to a depth of 4 to 6 inches (check by probing the soil with a screw driver or similar tool). It takes 3 to 5 hours to properly apply 1 inch of water. If you have sandy soils, you may need to water $\frac{1}{2}$ inch of water every third day. Proper watering helps prevent or reduce problems later in the summer.

Weed Control Apply preemergence herbicides from late February to mid-March. Apply postemergence herbicides in May as needed to control summer annual and perennial broadleaf weeds like as white clover, knotweed, spurge, and lespedeza. Products containing two or three different broadleaf weed herbicides usually control weeds more effectively. Be sure that both types of herbicides are labeled for use on bermudagrass.

Insect Control Check for and control any white grubs. (See *White Grub Control in Turf*, AG-366).

Disease Control As bermudagrass breaks dormancy, Spring Dead Spot may appear as circular patches of tan or brown sunken turf. Patches may be 2 inches to 3 feet in diameter and normally appear on 3- to 5-year-old turf. Apply nitrogen monthly from mid-May to mid-August, and map affected areas for possible fungicide treatment in the fall. Removal of excessive thatch may help avoid future problems with Spring Dead Spot.

Thatch Removal If thatch (a layer of undecomposed grass) is thicker than $\frac{1}{2}$ inch, power rake (vertical mow) in late May. Make sure to vertical mow only after the lawn has completely greened up, or recovery will be very slow.

Renovation In late May, start replanting bare or worn areas using sod or sprigs (3 to 5 bushels per 1,000 square feet). Bermudagrasses can be planted using unhulled bermudagrass seed at 1 to 2 pounds per 1,000 square feet. Keep the seedbed continually moist with light, frequent irrigation several times a day. You may continue to renovate the lawn throughout the summer months (see *Carolina Lawns*, AG-69).

June through August

Mowing Follow March through May guidelines.

Fertilization Apply 1 pound of nitrogen per 1,000 square feet every 4 to 6 weeks using the March to May fertilization guidelines.

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Watering Follow March through May guidelines.

Weed Control Apply postemergence herbicides as needed for control of summer annual and perennial broadleaf weeds like white clover, knotweed, spurge, and lespedeza. Two or three applications 7 to 10 days apart are required to control crabgrass and goosegrass. Do not apply herbicides during a drought or when grass and weeds are not actively growing.

Thatch Removal If thatch is thicker than ½ inch, remove it using a vertical mower. Thatch can be removed monthly if the lawn has sufficient time to recover.

Insect Control Check for and control any white grubs and nematodes.

September through November

Mowing Continue mowing the lawn following the March to May guidelines until several weeks before the first expected frost. *In the Piedmont:* If the lawn is not overseeded in the winter, raise the mowing height ½ inch to protect it from winter kill. Raise the mowing height ½ inch in early to mid-September in the mountains, around mid- to late September in the Piedmont, and late September to mid-October in the east.

Fertilization To minimize Spring Dead Spot, apply no more than ½ pound of nitrogen per 1,000 square feet in September, or 4 weeks before the first expected frost. Use a low nitrogen, high potassium fertilizer like 5-10-30, or supplement with 1 pound of potash (K₂O) per 1,000 square feet 4 to 6 weeks before expected frost using 1.6 pounds of muriate of potash (0-0-60) or 2 pounds of potassium sulfate (0-0-50). (The third number represents potassium.)

Insect Control Check for and control any white grubs. Fall is the best time to control grubs (*see White Grub Control in Turf*, AG-366).

Disease Control If Spring Dead Spot was a problem, apply a fungicide at high rates to problem area. Areas should be mapped because fungicide treatment is expensive.

Watering Although you won't have to water much, make sure the soil doesn't get powder dry.

December through February

Mowing Remove lawn debris (rocks, sticks, and leaves) to ensure proper greenup in the spring.

Fertilization DO NOT fertilize at this time. Submit soil samples for analysis every 3 years to determine nutrient requirements. (Contact your county Extension Center for details.) Based on the results of your soil test, apply lime or sulfur to adjust soil pH.

Watering Follow September through November guidelines.

Weed Control Apply broadleaf herbicides as necessary for control of winter annual weeds like chickweed and henbit. Atrazine or simazine can be applied in November or December to control annual bluegrass and winter annual broadleaf weeds.

More About Bermudagrass

Bermudagrasses range from coarse to fine in leaf texture, and form a dense durable surface under relatively low mowing heights. They tolerate drought well, require full sunlight, and grow well on all but poorly drained soils. Bermudagrass withstands wear and traffic, establishes quickly, and recovers rapidly from injury.

Bermudagrass can invade flowerbeds and other areas because they have stems that spread rapidly above and below ground. Herbicides like Vantage, Fusilade, or Roundup control bermudagrass, although maintaining a crisp straight edge with these materials is difficult.

Bermudagrass lawns perform best when maintained at ¾ to 1 inch using a reel mower; however, good performance may be achieved with a rotary mower with sharp blades set as low as possible without scalping. Uneven ground can make mowing difficult. Common bermudagrass, compared to hybrid bermudagrass (Tifway and Tifgreen), can be seeded and maintained at higher mowing heights. Common bermudagrass provides a less dense lawn (so it may have more weeds), has a wider leaf blade, and produces more seedheads, but it requires less maintenance.

Most fine-textured turf-type bermudagrasses must be planted using sod, sprigs, or plugs, but the coarser textured common bermudagrass may be planted using seed.

Tifway (419) and Tifway II are the best all-purpose hybrids, but they may require more frequent mowing and fertilization than common bermudagrass. Both hybrids are finer in leaf texture, more dense, and have fewer seedheads than common bermudagrass. They are also pollen-free. Midiron and Vamont are very aggressive, coarse-textured, cold-tolerant cultivars that must be planted vegetatively (using sprigs or plugs). Savannah, NuMex-Sahara, Princess, and Guymon are seeded varieties. They resemble common bermudagrass in that they tend to be coarser textured than hybrid bermudagrass.

Because of their aggressive nature, bermudagrasses have very few serious pest problems, but they are subject to sting-nematode damage on sandy soils. Nematode damage leads to shallow-rooted plants that do not respond to water or fertilizer. This results in thin, weak areas that are prone to weed invasion. If nematode problems are suspected, contact your county Cooperative Extension agent.

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For more information, visit the N.C. State Turf-files Web site at <http://www.ces.ncsu.edu/TurfFiles/>

Recommendations of the use of agricultural chemicals and products are included in this publication as a convenience to the reader. The use of brand names and any mention of or listing of commercial productions does not imply endorsement by the North Carolina Cooperative Extension Service nor discrimination against products or services not mentioned. Individuals who use agricultural chemicals are responsible for ensuring that the intended use complies with current regulations and conforms to the product label. Be sure to obtain current information about regulations and examine a current label before applying any chemical. For assistance, contact your county Cooperative Extension agent.



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Zoysiagrass

Lawn Maintenance Calendar

The following management practices will help you care for your lawn throughout the year. Location, terrain, soil type and condition, age of the lawn, previous lawn care, and other factors affect turf performance, so adjust these management practices and dates to suit your particular lawn.

March through May

Mowing Mow the lawn when it first turns green in the spring using a reel mower set at ½ inch or a rotary mower set as low as possible without scalping the lawn. Mow the grass before it grows taller than 1 ½ to 2 ½ inches. Leave nutrient-rich grass clippings on the lawn unless they are unsightly or in clumps.

Fertilization Apply nutrients based on soil testing. In absence of a soil test, apply ½ pound of nitrogen per 1,000 square feet 3 weeks after greenup. Use a complete nitrogen-phosphorus, potassium (N-P-K) turf fertilizer with a 3-1-2 or 4-1-2 ratio (for example, 12-4-8 or 16-4-8). Do not apply more than 2 pounds of nitrogen a year.

You need to apply ½ pound of nitrogen per 1,000 square feet, but how much fertilizer do you need to buy? Divide 50 by the first number on the fertilizer bag. For example, if you've got a 5-5-15 fertilizer, you divide 50 by 5 and you get 10. That means you need to buy 10 pounds of fertilizer for every 1,000 square feet of lawn.

Watering Zoysiagrass needs 1 to 1 ¼ inches of water a week. If you don't get enough rain, water your lawn. A dark bluish-gray appearance, footprinting, or wilted, folded, or curled leaves indicate that it is time to water. Irrigate the soil to a depth of 4 to 6 inches; this can be determined by probing the soil with a screwdriver or similar tool. On sandy soils, zoysiagrass may require ½ inch of water every third day. It is often necessary to water an area for 3 to 5 hours to apply 1 inch of water.

Proper irrigation now will help reduce problems later in the summer.

Weed Control Apply preemergence herbicides late February to mid-March. Apply postemergence herbicides in May as needed to control summer annual and perennial broadleaf weeds like white clover, knotweed, spurge, and lespedeza. Products containing two or three different broadleaf herbicides are more effective in controlling broadleaf weeds in a lawn. Be sure the product you choose is labeled for use on zoysiagrass. Wait 3 weeks after the grass has turned green, and then use it only if weeds are present. (See *Pest Control Recommendations for Turfgrass Managers*, AG-408).

Insect Control Check for and control any white grubs.

Disease Control Circular patches of tan or brown sunken turf 2 to 10 feet in diameter may appear as zoysia greens up, especially if there is extended rainy or overcast weather. Turf within the affected area thins, and most of the shoots die. As temperatures increase, recovery begins but is slow. DO NOT apply nitrogen until you see that the lawn has started to improve. Control Brown (Large) Patch Disease by mowing to the proper height, mowing when the lawn is dry, and controlling thatch. Applying a fungicide in the spring is not recommended.

Thatch Removal After the grass has turned green, use a vertical mower (power rake) to remove thatch (a layer of undecomposed grass stems) if it is more than ½ inch thick. Do not attempt to remove too much thatch at one time because zoysiagrass recovers slowly. Several thatch removals over several seasons may be needed.

Renovation Replant large areas using zoysiagrass sod or plugs. Plugs should be planted on 6- or 12-inch centers (see *Carolina Lawns*, AG-69). After plugging, apply a preemergence herbicide that does not interfere with zoysiagrass root growth to help prevent weeds.

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June through August

Mowing Follow March through May guidelines.

Fertilization Apply ½ pound of nitrogen per 1,000 square feet in late June or early July. Repeat in mid-August.

Watering Follow March through May guidelines.

Weed Control Apply postemergence herbicides as needed to control summer annual and perennial broadleaf weeds. Do not apply postemergence herbicides unless weeds are present, grass is actively growing, and the lawn is not suffering >from drought. Crabgrass species, goosegrass, dallisgrass, purple and yellow nutsedge, annual sedges, and sandbur can be controlled with postemergence herbicides. However, two or three applications will be necessary for satisfactory control. Zoysiagrass is sensitive to these compounds, so select the herbicide carefully.

Insect Control Follow the March through May guidelines. August is the best time to control grubs because they are small and feeding near the soil surface. (See *White Grub Control in Turf*, AG-366.)

Thatch Removal Vertically mow in June or July as needed using the March through May guidelines.

September through November

Mowing Follow March through May guidelines.

Fertilization DO NOT apply nitrogen at this time. DO apply 1 pound of potassium (potash K₂O) using 1.6 pounds of muriate of potash (0-0-60), 2 pounds of potassium sulfate (0-0-50), or 5 pounds of sul-po-mag (0-0-22) per 1,000 square feet.

To determine the amount of product needed to apply 1 pound of potash per 1,000 square feet, Divide 100 by the THIRD number on the fertilizer bag. For example, if you've got a 6-6-12 fertilizer, divide 100 by 12 and you get 8.3. That means you need to apply 8.3 pounds of product for every 1,000 square feet of lawn.

Watering You won't have to water much once the lawn is dormant (has turned brown), but do water if the soil is powder dry.

Weed Control Apply preemergence herbicides to control winter annual and perennial broadleaf weeds like chickweed and henbit. Apply postemergence herbicides only when weeds are present.

Insect Control Check for and control any white grubs.

Disease Control If Brown (Large) Patch Disease is a chronic problem, apply a fungicide as a preventive. (See *Pest Control Recommendations for Turfgrass Managers*, AG-408.)

December through February

Mowing It is not necessary to mow, but do remove rocks, sticks, and leaves.

Fertilization DO NOT fertilize zoysiagrass at this time. Soil should be tested every 3 years; contact your county Cooperative Extension agent for details. Apply lime or sulfur as suggested to modify soil pH.

Watering Water occasionally if a drought occurs.

Weed Control Apply broadleaf herbicides as necessary to control winter annual weeds like chickweed. Apply a nonselective herbicide in December or January to control annual bluegrass and various broadleaf weeds.

More About Zoysiagrass

Zoysiagrasses are low-growing, very slow-growing, sod-forming grasses that make a very dense, wear-resistant lawn, but it is slow to recover from injury. Zoysia grows best in full sun or partial shade and is well adapted to the piedmont and coastal plain. It requires less mowing but is tougher to mow than bermudagrass. It is easier to keep out of ornamental beds than bermudagrass.

Zoysiagrass is normally vegetatively planted (sod or plugs), but seeded varieties like "Zenith" are available. Establishment from plugs is very slow (typically 2 to 4 years). Once established, zoysiagrass may become "thatchy" (puffy due to an accumulation of decomposing plant residue at the soil surface). This most frequently occurs when it is mowed too high or too infrequently or is excessively fertilized. Thatch may need to be carefully removed every 2 to 3 years; recovery is slow.

Vegetative Types. "Emerald" zoysiagrass has very fine leaves, good winter hardiness, shade tolerance, and wear resistance, a moderate spreading rate, and a dark green color. "Meyer" zoysiagrass has a medium leaf texture, is less shade tolerant, and is a lighter green color than "Emerald". Little research information is available for newer varieties like "Empress" or "Empire".

Zoysiagrasses are subject to diseases, such as Rust, Brown (Large) Patch, and Dollar Spot. (See *Diseases of Warm-Season Grasses*, AG-360). They are also susceptible to damage by nematodes, particularly in the coastal plain.

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Tall Fescue

Lawn Maintenance Calendar

These suggested management practices will help you care for your lawn throughout the year. Location, terrain, soil type and condition, age of lawn, previous lawn care, and other factors affect turf performance, so adjust the following management practices and dates to suit your particular lawn.

March through May

Mowing Mow to 2 ½ to 3 ½ inches. Mow often enough so that no more than one-third of the grass height is cut; this may be every 5 to 7 days in late spring. Leave grass clippings on the lawn where they decompose quickly and can provide up to 25 percent of the lawn's fertilizer needs. If prolonged rain or other factors prevent mowing and clippings are too plentiful to leave on the lawn, collect them and use them as mulch. DO NOT bag them for trash collection; grass clippings do not belong in landfills.

Fertilization DO NOT fertilize tall fescue after March 15.

Watering Tall fescue needs 1 to 1 ¼ inches of water every week, ideally NOT all at once. A dark bluish-gray color and wilted, folded, or curled leaves indicate that it is time to water. Water until the soil is wet to a depth of 4 to 6 inches. Use a screwdriver or similar implement to check. Sandy soils require more frequent watering (about ½ inch of water every third day). Because clay soils accept water slowly, irrigate just until runoff occurs, wait until the water has been absorbed, and begin watering again. Continue until the desired depth or amount is applied. Proper irrigation may prevent or reduce problems later in the summer. Watering between 2 and 8 a.m. decreases the incidence of certain diseases.

Weed Control Apply preemergence herbicides to control crabgrass, goosegrass, and foxtail. Apply by the time dogwoods are in bloom. (See *Pest Control Recommendations for Turfgrass Managers*, AG-408).

Insect Control Check for and control white grubs in April and May. (See *White Grub Control in Turf*, AG-366).

Aeration Delay aeration until fall.

Thatch Removal It is generally not necessary to remove thatch.

June through August

Mowing Mow to 3 ½ inches and mow before the grass gets taller than 5 inches.

Fertilization DO NOT fertilize tall fescue at this time.

Watering Either water as needed to prevent drought stress or allow the lawn to go dormant. Dormant lawns must be watered once every 3 weeks during a drought.

Disease Control Tall fescue is highly susceptible to Brown (Large) Patch Disease, which appears as irregularly shaped patches of dead or dying turf. Brown Patch likes high humidity and temperatures above 85° F. It becomes extremely severe during prolonged, overcast wet weather with evening air temperatures above 68° F. and daytime temperatures in the mid- to upper 80s. Do not apply nitrogen fertilizer when the disease is active, keep the mowing height above 3 inches, and water between 2 and 8 a.m. Apply fungicide during severe Brown Patch outbreaks. (See *Diseases of Cool-Season Grasses*, AG-361.)

Weed Control DO NOT use herbicides at this time.

Insect Control Check for and control white grubs in July and August.

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Aeration DO NOT aerate tall fescue lawns at this time.

Renovation *Western Region Only!* Overseed thin, bare areas as weather cools (August 15 to September 1). Use a blend of “turf-type” tall fescue cultivars at 6 pounds of seed per 1,000 square feet, and apply a starter-type (high phosphorous) fertilizer. Keep the seedbed moist with light watering several times per day. Do not let the seedlings dry out.

September through November

Mowing Mow to 2 ½ to 3 inches in height.

Fertilization Have your soil tested. Ask your county Cooperative Extension agent about a free soil test. Then apply the nutrient your lawn needs. If you don't test, apply a complete nitrogen-phosphorus-potassium (N-P-K) turf-grade fertilizer with a 3-1-2 or 4-1-2 ratio (that is, 12-4-8 or 16-4-8). Fertilize with 1 pound of actual nitrogen (N) per 1,000 square feet in mid-September and again in November (about the time the grass is green but not actively growing).

You need to apply 1 pound of nitrogen per 1,000 square feet, so how much fertilizer do you need to buy? Divide 100 by the FIRST number of the fertilizer bag. (The first number always represents nitrogen content.) For example, if you've got a 10-10-10 fertilizer, divide 100 by 10 and you get 10. That means you need to buy 10 pounds of fertilizer for every 1,000 square feet of lawn.

Watering Water following guidelines for March through May.

Weed Control Apply broadleaf herbicides to control broadleaf weeds like chickweed, henbit, and other weeds as necessary. Caution: Some herbicides may affect newly seeded turf. Follow label directions. (See *Pest Control Recommendations for Turfgrass Managers*, AG-408.)

Insect Control Check for white grubs in September and October; fall is the ideal time to control white grubs. (See *White Grub Control in Turf*, AG-366.)

Aeration Aerate lawns that are subject to heavy traffic or on clay soils. Remove plugs and break them up to put the soil back into the lawn.

Renovation *Piedmont and Coastal Plain Regions Only!* Overseed thin, bare areas as weather cools (August 15 to September 1). Use a blend of “turf-type” tall fescue cultivars at 6 pounds of seed per 1,000 square feet, and apply a starter-type (high phosphorus) fertilizer. Keep the seedbed moist with light watering several times per day. Do not let the seedlings dry out.

December through February

Mowing Mow to 3 inches and remove leaves and other debris.

Fertilization Fertilize with 1 pound of actual nitrogen per 1,000 square feet in February.

Watering Water following guidelines for March through May.

Weed Control Apply broadleaf herbicides as necessary for control of chickweed, henbit, or other weeds.

More About Tall Fescue

Tall fescue is a moderate- to coarse-bladed grass that can be grown in the shade and in many soil types. It tolerates heat and drought. It is subject to Brown (Large) Patch, especially in prolonged periods of warm, wet conditions. Tall fescue grows rapidly and requires frequent mowing but does not tolerate close mowing. It does not recover well from excessive wear or pest injury, so it must be re-seeded if damage is excessive. Many new “turf-type” tall fescues are available at many home and garden centers. Improved fescues tolerate more shade and closer mowing. They have a finer leaf texture, better shoot density, and a darker green color than the old standard Kentucky-31.

Professional lawn care companies may use a maintenance schedule that differs from what is described in this publication, and it may be equally effective.

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