

Bermudagrass Lawns

Bermudagrasses (*Cynodon* spp.) are native to Africa and are also called wiregrass, devilgrass, and couchgrass.

Bermudagrasses are well adapted to the climatic conditions in Alabama. These turfgrasses are widely used on athletic fields, bowling greens, tennis courts, golf courses, and home lawns. Bermudagrasses grow best on well-drained soils that have a soil pH between 6.0 and 6.5, but they will tolerate a wide range of soil conditions. They have a very fast growth rate and therefore establish and recover from injury quickly. This is largely due to the fact that bermudagrasses spread by stolons (aboveground stems) and rhizomes (underground stems).

Advantages of Bermudagrass

Bermudagrasses produce an aggressive-growing, dense, dark green turfgrass that is well adapted to a wide variety of soils and climatic conditions. Bermudagrasses have excellent wear and drought tolerance, fair salt tolerance, and excellent recuperative potential from injury. They will survive extended periods of low rainfall and will even survive some flooding. They establish rapidly due to their rapid growth habit and, thus, are very competitive against injury caused by pests, including diseases, insects, and weeds.

Depending on the variety of bermudagrass, they can be established by seed, sprigs, or sod.

Disadvantages of Bermudagrass

Bermudagrasses also have some disadvantages. They will not tolerate shade and require almost full sunlight. Bermudagrass lawns under shade will gradually thin out and disappear over time. Bermudagrasses grow rapidly in full sun and spread by both stolons and rhizomes, which are very difficult to control within flower beds, walkways, and borders. Due to the rapid growth rate, thatch accumulation can become a maintenance problem; therefore, these grasses require a high level of maintenance in order to create a quality lawn. Because they grow so quickly, bermudagrasses should ideally be mowed at least once per week during the peak growing season. Rotary mowers will work fine as long as the blades are kept sharp.

Bermudagrasses generally have few pest problems, but they are susceptible to nematode damage or injury. Nematode injury leads to shallow-rooted turfgrass plants that do not respond well to irrigation and fertility and, therefore, result in a thin, weak lawn that will usually become invaded by weeds. If nematodes are suspected, or if you

have sandy soil, take a soil sample to your regional Extension agent for analysis.

Bermudagrass Varieties

There are two types of bermudagrasses available: seeded bermudagrasses and vegetative bermudagrasses. Check with your local Extension office to determine the best variety for your location and use.

Seeded Bermudagrasses

Seeded bermudagrasses (*Cynodon dactylon*) can make a quality lawn with the right management. Seeded bermudagrass varieties generally are more coarse in texture and have a lower shoot density than hybrid bermudagrasses. Their leaf texture ranges from medium to fine, depending on the variety. More and more improved seeded bermudagrass varieties are becoming available, and some approach the vegetative bermudagrass varieties in color, density, and texture.

Most common bermudagrass seeds are available hulled (hull removed) or unhulled (hull remains). Hulled bermudagrass seeds germinate faster, but unhulled bermudagrass seeds will last longer during unfavorable weather before they germinate.

Vegetative Bermudagrasses

Vegetative bermudagrasses (*Cynodon dactylon* x *Cynodon transvaalensis*) are superior as turfgrasses to most seeded bermudagrasses. As the scientific name indicates, two different bermudagrasses have been crossed to create one turfgrass with improved qualities. The resulting hybrids do not produce viable seeds and, therefore, must be established by vegetative plantings such as plugging, sprigging, or sodding. Compared to seeded bermudagrasses, hybrid bermudagrass varieties have greater disease resistance, greater density, fewer seedheads, finer leaf texture, darker color, and better weed resistance. However, vegetative bermudagrasses require more maintenance, such as frequent mowings, fertilization, edging, and dethatching for the best appearance and quality.

Table 1. Bermudagrass Varieties

Bermudagrass Variety	Seeded	Leaf Texture
Arizona Common	Yes	Coarse
Cheyenne	Yes	Medium
Guymon	Yes	Medium
Jackpot	Yes	Medium
NuMex Sahara	Yes	Medium
Sonesta	Yes	Medium
Sundevil	Yes	Medium
Yukon	Yes	Fine
Princess-77	Yes	Fine
Riviera	Yes	Fine
Midiron	No	Medium
MS-Choice	No	Medium
Quickstand	No	Medium
Midlawn	No	Medium
GN-1	No	Medium
Celebration	No	Medium
Patriot	No	Fine
Tifway (419)	No	Fine
Tifway II	No	Fine
TifSport	No	Fine

Establishing Bermudagrasses

Bermudagrasses can be established by vegetative propagation such as plugging, sprigging, or sodding. Some bermudagrass varieties can be established from seed. (Table 1 lists a number of varieties of bermudagrass that are available for use as home lawns. Bermudagrasses can be sodded any time of the year.) The optimum time for their establishment by sprigging, plugging or seeding is from March through August. The successful establishment of bermudagrass depends greatly on properly preparing the soil and seedbed. All construction debris, rocks, stumps, brush, and other undesired vegetation should be removed before grading the lawn site. If necessary, remove the lower limbs of trees to allow better sunlight penetration and make soil

preparation and future mowing easier. Ensure that the lawn slopes away from the house for better drainage. After establishing the final grade, take soil samples to determine the soil pH and soil fertility levels. The soil test results will provide the information to determine how much lime or fertilizer are needed. After preparing the seedbed, you can seed bermudagrass or plant it vegetatively by sprigging, plugging, or sodding. Hybrid bermudagrasses do not produce viable seed; therefore, you must sprig, plug, or sod them.

Seeding

Only common-type bermudagrasses can be established from seed. Bermudagrass seeds are available with their protective hulls either left on or removed. Hulled seeds cost more per pound, but you get more seed per pound. The seeding rate for common bermudagrass is 1 to 1½ pounds of hulled seed per 1,000 square feet, or 2 to 3 pounds of unhulled seed per 1,000 square feet. Spread the seed, and then rake the area lightly to provide good soil-to-seed contact. Mulch, such as pine straw or hay, can be spread after seeding to reduce potential soil erosion and moisture loss. If you use mulch, apply it so that at least 50 percent of the soil surface is still visible. This normally requires about 100 pounds of straw mulch per 1,000 square feet. After mulching, roll the lawn or seeded area lightly to ensure a smooth lawn and good seed-to-soil contact. Water the lawn to moisten the top 1 to 2 inches of soil. In the absence of rain, water the lawn or seeded area lightly each day to keep the seed moist for about 2 weeks or until the seeds have germinated, which is usually within 10 days after seeding.

Plugging

Plugging refers to the planting of pieces of sod. In plugging, bermudagrass sod is cut into circular or rectangular pieces that are 2 or more inches in diameter. These “plugs” are typically set or planted in rows that are spaced 12 to 24 inches apart. The distance between plugs can vary, but remember that the distance affects how long it takes for the grass to grow in and establish. Normally, if plugs are placed in 12-inch rows, it will take about 3 to 6 months for the lawn to grow in; 24-inch rows take 6 to 9 months. The row spacing also affects the amount of sod needed to plug a given area. Plugging 2-inch square plugs in a 12-inch row requires about 3 square yards of bermudagrass sod to establish a 1,000-square-foot area. Set the plugs in holes that match the size of the plugs to ensure a level surface. Roll or step on the plugs to ensure good soil contact. Water the plugs, and keep the soil moist until the turfgrass has become well rooted in the soil.

Sprigging

Sprigging refers to the planting of individual turfgrass sprigs, or “runners,” which are basically stems (stolons or rhizomes) of the bermudagrass plants. Sprigging is done either by hand, which is labor intensive, or with a mechanical sprigging machine. Sprigs should have at least two to four nodes (joints). Sprigs are usually broadcast-applied to shallow furrows or rows by hand-shaking them onto the soil surface. Approximately 5 to 10 bushels of sprigs are needed for a 1,000-square-foot area. If possible, “cut in” the sprigs, using a small disc harrow to set the sprigs in the furrow. Apply a light topdressing

of soil or sand over the sprigs, and roll it, using a roller to ensure good soil-to-sprig contact. You can also plant the sprigs mechanically in rows that are 4 to 6 inches apart but no more than 6 inches. Cover the sprigs to a depth of 1 to 2 inches, leaving a portion of the sprigs exposed above the soil surface. You will need between 2 and 4 bushels of bermudagrass sprigs per 1,000 square feet. Two square yards of bermudagrass sod should yield 2 bushels of sprigs. After sprigging, roll the lawn and water it as recommended for plugging. Keep the soil and sprigs moist until they have initiated new growth and become established.

Sodding

Sodding is a common method of establishing bermudagrass and produces an instant lawn. It is recommended where immediate ground cover is needed and expense is not a concern. Sod areas that have a severe slope or are exposed to potential erosion problems. Lay the sod horizontally across the sloped areas, and alternate the seams of the sod like bricks to ensure stability. For best results, ensure that the bermudagrass sod is of good quality, free of weeds, and watered immediately to ensure its survival.

Maintaining Bermudagrass

For the first 2 weeks after establishment, water the newly planted bermudagrass lightly ($\frac{1}{4}$ inch) every day in the absence of rain to ensure the survival of the turfgrass plants. After the first 2 weeks, water less frequently and apply greater amounts of water during each irrigation to saturate (moisten) the soil. This promotes deeper rooting

of the newly established turfgrass. After mowing the newly established bermudagrass three times, water it once or twice weekly only if needed.

Fertilizing

To look their best, bermudagrasses require a properly planned fertilization program. Soil-test every 1 to 2 years to determine when and how much lime and fertilizer are needed. This will help maintain the proper soil pH between the desired range of 6.0 to 6.5 and keep the phosphorous and potassium at recommended levels.

Bermudagrasses generally require more fertilizer than other turfgrasses used for lawns in Alabama to maintain their appearance, durability, and growth. Fertilizers containing nitrogen stimulate bermudagrass growth and result in a darker green lawn. Ammonium sulfate, urea, and other water-soluble nitrogen fertilizers are often used on bermudagrass lawns; however, these “fast-release” nitrogen fertilizers will burn turfgrasses if they are applied too heavily or applied to wet turf. To avoid burning the turf, do not apply more than 1 pound of actual nitrogen per 1,000 square feet of turf per fertilizer application. Consult a soil-test recommendation to determine the amount of phosphorus and potassium needed.

Since fertilizers vary in their nitrogen content, the amount needed to supply 1 pound of nitrogen depends on the source used. To determine the amount of a particular fertilizer needed to supply 1 pound of actual nitrogen per 1,000 square feet, divide the percentage of nitrogen in the fertilizer into 100. For example, ammonium nitrate contains 34

Table 2. Suggested Fertilization Schedule for Bermudagrass Lawns

Desired Quality	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec
Lowest Maintenance				C ¹			C					
Moderate Maintenance				C ¹		C		C	K ²			
Highest Quality			C ¹		C	C	C	C	K ²			

Shading represents application timing window.

¹Complete fertilizer containing nitrogen, phosphorous, and potassium (C) applied at 1 pound of nitrogen per 1,000 square feet.

²Fertilizer containing both nitrogen and potassium (K) applied at 1 pound of potassium per 1,000 square feet.

percent nitrogen (34-0-0), so approximately 3 pounds of ammonium nitrate would be needed per 1,000 square feet to apply 1 pound of nitrogen ($100 \div 34 = 2.94$).

Always apply fertilizers to dry turf to prevent burning, and water the turf immediately after application to dissolve the fertilizer. “Slow-release” nitrogen fertilizers do not dissolve readily in water and usually are more expensive than fast-release fertilizers. However, slow-release fertilizers can be applied at higher application rates and not burn the turf because the nitrogen is released slowly. Also, the turf will maintain its green color over a longer period of time with slow-release fertilizers. The amount and frequency of fertilizer applications are largely based on the amount of wear the lawn experiences, the level of desired quality, and the type of fertilizer used.

See table 2 for recommendations on fertilization amounts and timing.

Mowing

Proper mowing practices are critical to maintaining a beautiful bermudagrass lawn. Mowing height and the frequency of mowing are related to the desired level of quality and to the time of year. Mowing frequency (the length of time

between mowings) should be based on the rate of growth of the bermudagrass. Bermudagrass should be mowed before its height exceeds 1½ times the mowing height set on the mower. Never mow or cut off more than ⅓ of the height of the leaves at any single mowing. Cutting more than ⅓ of the height of the leaves scalps the lawn and puts additional stress on the bermudagrass turf.

If you mow when the lawn is dry and before its height exceeds 1½ times the desired mowing height, there is no need to collect the clippings. They should fall into the turf where they will decay over time and recycle some of their nutrients. Occasionally, it may not be possible to mow on schedule due to rainy weather or other reasons, so there may be more clippings when the lawn is mowed. If there are a lot of clippings and they are clumping on the lawn, you should remove them. If clippings are not collected when they are excessive like this, they will contribute to the accumulation of thatch.

Mow bermudagrass to a height between 1 to 1½ inches one to three times a week during the peak growing season. Bermudagrass grown at mowing heights greater than 1 inch can be mowed using a rotary mower as long as the blades are sharp

and adjusted correctly. Dull mower blades will shred the leaf blades instead of cutting them and will give the lawn a brownish-to white-colored appearance.

Irrigation

Irrigation on an as-needed basis is an excellent way to schedule watering of any turfgrass, as long as the proper amount of water is applied when needed and not at a later or more convenient time. When using this approach, water at the first sign of drought stress or wilt, and apply 1 inch of water. Nonirrigated bermudagrass will survive drought, but it will go dormant and turn brown as it does in the winter. Irrigate early in the morning while dew is still on the grass.

Controlling Thatch

Bermudagrasses typically develop a layer of organic material called thatch between the green leaves of the grass and the soil surface. Thatch accumulates over time if not controlled and can harbor insects and disease-causing organisms. If thatch is allowed to accumulate to a thickness greater than ¾ inch, it can also create a barrier to air and water movement and raise the living turfgrass plant away from the soil. Check the thickness of the thatch layer in September or October by cutting a small triangle or square in the turfgrass, using a knife or shovel. Remove this “plug,” and look at the soil under the green turfgrass plants. The thatch will be brown to black in color and have a different appearance than the native soil beneath. If the thatch layer is thicker than ¾ inch, mechanically dethatch the lawn in the spring or

Table 3. Bermudagrass Home Lawn Maintenance Calendar for South Alabama

Month	Fertilization (per 1000 sq ft) ¹	Mowing height ²	Irrigation ³	Aeration ⁴	Dethatching/ topdressing ⁵	Weed control ⁶
January		1–2"	As needed			Postemergent if needed for broadleaf and grassy weeds
February		1–2"	As needed			Pre-emergent for summer annual weeds
March		1–2"	½" twice per week			NO HERBICIDES during spring green-up
April	1 lb N	1–2"	½" twice per week			Postemergent if needed for broadleaf and grassy weeds
May	1 lb N	1–2"	½" twice per week			Postemergent if needed for broadleaf and grassy weeds
June	1 lb N	1–2"	½" twice per week	If needed	If needed	Postemergent if needed for broadleaf and grassy weeds
July	1 lb N	1–2"	½" twice per week	If needed	If needed	Postemergent if needed for broadleaf and grassy weeds
August	1 lb N	1–2"	½" twice per week	If needed	If needed	Postemergent if needed for broadleaf and grassy weeds
September	1 lb N (Optional)	1–2"	½" twice per week			Postemergent if needed for broadleaf and grassy weeds Pre-emergent for winter annual weeds
October	1 lb N (Optional)	1–2"	½" twice per week			Postemergent if needed for broadleaf and grassy weeds
November		1–2"	As needed			Postemergent if needed for broadleaf and grassy weeds
December		1–2"	As needed			Postemergent if needed for broadleaf and grassy weeds

NOTES

¹ Applying nitrogen more often will produce a darker green color and more growth. However, skipping nitrogen applications listed as optional will still result in a good quality lawn. Fertilizer applications may be suspended during droughts if no irrigation is available.

Annual or every-other-year soil testing will help determine the need for lime and P and K fertilizer. The ideal pH range for a bermudagrass lawn is between 6.0 and 6.5. Lime usually is not needed if the pH is above 5.5. Use a complete fertilizer if both P and K are called for by a soil test, or a fertilizer such as 15-0-15 if only K is required. If only P is required, use a nitrogen-only fertilizer supplemented with triple-super phosphate.

² When mowing any turfgrass, do not cut off more than ⅓ of the leaf blade at one time.

³ Irrigate with a total of around 1 inch of water per week, split into two applications for mature lawns. Decrease irrigation amount or frequency to account for natural rainfall. For example, if it has rained ¼" since the last irrigation event, only apply ¼" of irrigation. If it has rained ½" or more, skip the next irrigation.

⁴ Aerify with a core aerator when the soil shows signs of compaction or excessive hardness. Only aerify during the summer when the grass is actively growing. If the soil is not compacted, aeration may be skipped.

⁵ Dethatch when the thatch layer exceeds ½" in thickness. Only dethatch during the summer when the grass is actively growing. Use a rake or vertical mower with blades 1 inch apart to dethatch. Topdressing with ¼" to ¼" of sand or soil may be done after dethatching, or alone if dethatching is not necessary. Topdressing can help to prevent the buildup of a thick thatch layer.

⁶ **Always read weed control product labels carefully and follow all directions and rates.** Some herbicides are not safe for use on bermudagrass. Do not apply any herbicide to a lawn during the spring greenup transition from dormancy, or if any seeding, sprigging, or sodding is planned within a few weeks. Many pre-emergence herbicides require watering to be activated.

Use caution when applying herbicides when the air temperature is above 90 degrees F, as some discoloration of the turf may result. Postemergence herbicides should not be used on drought-stressed lawns.

summer, from May through August. However, you should not dethatch until the grass has completed green-up after winter dormancy and begun to show good spring growth. Use vertical mowers, power rakes, or spring attachments for mowers to remove thatch.

Soil Compaction

Soil compaction is often overlooked, but it is one of the most common problems in Alabama lawns. Diseases, insects, improper watering, and lack of fertilizer are often blamed for a lawn's decline when the real problem is soil compaction. It starts when the soil particles in the top few inches are compressed from traffic and overuse, reducing air space between them and, thus, impeding the flow of air, nutrients, and water to the turfgrass roots. This causes stress to the plants, making the lawn less able to compete with weeds and recover from damage and stress. In time, a compacted lawn will require some form of renovation. Soil compaction also contributes to other lawn problems such as thatch accumulation and weed invasion.

With a soil compaction problem, the solution is very straightforward—initiate soil aeration as part of your lawn maintenance program. The most effective type of soil aeration is called *core aeration*, in which cores

of soil are removed mechanically, leaving holes in the lawn. This aerification procedure loosens compacted soil and increases the flow of water into the soil. Some other benefits include enhancing the oxygen levels in the soil and stimulating new turfgrass growth.

Soil aeration is generally used to correct a soil compaction problem rather than as a routine maintenance practice. However, if the desired quality for the lawn is quite high, consider implementing soil aeration as a routine maintenance practice every year. Aerify bermudagrass lawns in the summer when the grass is actively growing.

Controlling Pests

Insects

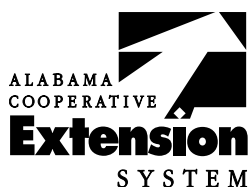
The most serious insect pests on bermudagrass lawns are white grubs, sod webworms, armyworms, cutworms, and bermudagrass mites. Mole crickets can also be a major insect pest in certain areas of Alabama. High levels of fertilizer containing nitrogen encourage lush bermudagrass growth and, consequently, insect problems. There are several insecticides you can use to control these pests.

Diseases

Bermudagrass lawns are susceptible to several diseases, the most common being dollar spot, brown patch, and leaf spot. A good maintenance program, in particular avoiding overirrigation, will minimize most diseases on bermudagrass. If the grass does become infected, there are several fungicides you can use to kill the diseases.

Weeds

Bermudagrasses typically do not have many weeds because the grass is so dense and naturally prevents weeds from establishing. However, if weeds become a problem, the lawn has probably become thin and weakened by improper maintenance or damage from other pests.



Your Experts for Life

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The pesticide rates in this publication are recommended **only** if they are registered with the Environmental Protection Agency and the Alabama Department of Agriculture and Industries. If a registration is changed or cancelled, the rate listed here is no longer recommended. Before you apply any pesticide, fungicide or herbicide, check with your county Extension agent for the latest information.

For more information, call your county Extension office. Look in your telephone directory under your county's name to find the number.

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