

## Bermudagrass for Florida Lawns<sup>1</sup>

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Bermudagrasses (*Cynodon* spp.) are among the most widely used warm-season grasses. Improved, fine-textured bermudagrasses are used throughout the south on golf courses, athletic fields, and in high-profile residential and commercial landscapes where a fine-textured, dense ground cover is desired. Because of the high maintenance requirements of the improved bermudagrasses, however, they are not generally recommended for use as a home lawngrass. Common bermudagrass varieties are often found as pasture and roadside grasses; these coarse-leaved varieties do not provide the high quality nor do they require the high maintenance of the fine-textured types.

### Advantages

Bermudagrass produces a vigorous, medium green, dense turf that is well adapted to most soils and climates found in Florida. Bermudagrass has excellent wear, drought, and salt tolerance. It establishes rapidly and is able to outcompete most weed species. It is readily available as sod or plugs, and some improved cultivars are available as seeded varieties. Common varieties are available as seed, sod, or plugs.



Figure 1. Bermudagrass.

### Disadvantages

Improved bermudagrasses require high levels of maintenance. They have poor tolerance to many insect, disease, and nematode pests, which limits their use in home lawn sites. They grow very aggressively from stolons (aboveground stems) and rhizomes (belowground stems) and can rapidly invade flower and landscape beds. This aggressive growth also fosters thatch buildup. Bermudagrasses generally have poor to medium cold tolerance and relatively poor shade tolerance. Since bermudagrass performs best with higher levels of fertilizers and chemicals

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than other Florida lawngrasses, a professional lawn care company may best handle maintenance of this species.

## Cultivars

### 'Common'

'Common' bermudagrass is a coarse-textured, low-density cultivar often found in pastures or on roadsides. It has a lighter green color and overall lower visual quality than the improved cultivars. It is available by seed or as sod, and is often mixed with bahiagrass for low-utility usage.

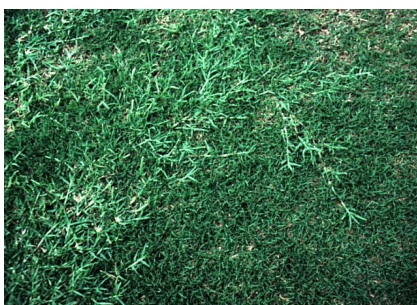


Figure 2. Common Bermudagrass.

### Other Seeded Varieties -- 'Cheyenne', 'Sahara', 'Sundevil', 'Jackpot', and Others

These newer seeded varieties have a darker green color, deeper roots, more shoot density, and a less coarse leaf texture than common bermudagrasses. While these varieties are suited for lawns, sports turf, parks, or roadsides, their performance and overall quality are comparable to common bermudagrass.

### 'FloraTex™'

'FloraTex™' was a joint release from the University of Florida and Texas A & M University in 1993. It is generally of intermediate quality and maintenance between the seeded varieties and the improved cultivars. It has lower fertility and water requirements than other hybrid varieties and remains green for more of the year. It is medium in leaf texture and shoot density. It produces numerous seedheads but is less susceptible to dollar spot disease and bermudagrass stunt mite.

## Maintenance of Bermudagrass Lawns

### Establishment

Bermudagrasses are established vegetatively by planting sprigs, sod, or plugs. Each of these methods can be equally successful if the site is properly prepared before planting and if correct establishment practices are followed. For detailed information on lawn establishment, refer to the Edis publication LH013, "Establishing Your Florida Lawn." The best time to plant bermudagrass is when plants are actively growing, normally April through September. Other times may be suitable if sufficient care is given to prevent desiccation and cold damage in North or Central Florida.

### Sprigging

The most common method of planting bermudagrass is by sprigging. This is done mechanically over large areas or by hand in small areas. Fresh sprigs are rhizomes and stolons that have at least two nodes or joints. Sprigs are usually broadcast over an area at a rate of 200 to 400 bushels per acre, or 5 to 10 bushels per 1000 square feet, then pressed into the soil. Sprigging is less expensive than sodding, but does not produce an instant lawn as does sodding. An alternative method of establishment is to plant sprigs end-to-end in furrows 6 to 12 inches apart, but this will take longer to establish.

### Sodding

Establishment of bermudagrass by sodding produces an instant turf surface. Sod should only be laid over bare moist soil, with pieces laid in a staggered bricklike pattern and the edges fitted tightly together to avoid any open cracks. Rolling and watering thoroughly will ensure good contact with the soil for fast rooting. Sodded areas should be watered two or more times per day with 1/4 inch of water until the sod is held fast to the soil by roots (usually 2 to 3 weeks). After the root system has established itself, watering should be reduced to longer, less frequent waterings on an as-needed basis.

## Plugging

Sod can be cut into round plugs with a golf green cup cutter or into small squares with a machete. Spacing of plugs varies from 12 to 24 inches, with the closer spacing covering in 3 to 6 months and the farther spacing covering in 6 to 9 months.

## Seeding

Only common-type bermudagrasses can be established from seed. Bermudagrass seed should be planted at a rate of 1 to 2 pounds of hulled seed per 1000 square feet.

## Fertilization

Proper fertilization is very important for sustaining a healthy lawn. Fertilization and other cultural practices influence the overall health and quality of the lawn and reduce its vulnerability to numerous stresses, including weeds, insects, and disease. It is very important that anyone fertilizing their lawn be familiar with and follow the Florida-Friendly Landscaping™ Best Management Practices (FFL BMPs). These practices are designed to maintain healthy lawns and reduce any potential nonpoint source pollution of water resources that might result from lawn and landscape fertilization and other cultural practices. There are now state and local regulations that cover lawn fertilization, so be aware of city and county guidelines and always follow the directions on the fertilizer bag. For more information on BMPs, please refer to ENH979, *Homeowner Best Management Practices for the Home Lawn* (<http://edis.ifas.ufl.edu/ep236>).

A soil test should be done to determine what nutrients are available to the lawn and what the soil pH is. The local Extension office has instructions and supplies for taking soil samples and submitting them to the Extension Soil Testing Laboratory for analysis. In particular, phosphorus levels are best determined by soil testing. Since many Florida soils are high in phosphorus, it is often not necessary to add phosphorus to a lawn once it is established.

Florida Rule (5E-1.003) mandates that fertilizer application rates cannot exceed 1 pound 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 recommendations call for applying a 1/2 pound (water-soluble nitrogen source) to 1 pound (slow-release nitrogen source) of nitrogen per 1000 square feet of turfgrass. For information on determining how much fertilizer this equals, please refer to ENH962, *Figuring out Fertilizer for the Home Lawn* (<http://edis.ifas.ufl.edu/ep221>).

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. University of Florida 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 effect 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.

The fertilizer guidelines divide the state into three geographical locations as indicated in Table 1. All rates are in pounds of nitrogen per 1000 square feet per year. For how to apply the correct amounts, refer to ENH962, *Figuring out Fertilizer for the Home Lawn* (<http://edis.ifas.ufl.edu/ep221>).

Fertilizer should be applied to bermudagrass in 2–6 applications from spring green-up through fall. Do not apply too early in the growing season, particularly in North Florida, because late-season frosts may damage the grass. Likewise, do not fertilize too late in the year after growth has subsided. In South Florida, year-round fertilization is acceptable.

On high-pH (> 7.0) soils or where high-pH water 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 in these cases.

Note that iron is not a substitute for nitrogen, which provides the building blocks for turfgrass growth and is required for turf health. While both iron and nitrogen deficiencies result in turfgrass yellowing, they are distinctly different deficiencies in plants. Applying iron does not cure yellowing due to nitrogen deficiency, and iron fertilizer is not a substitute for nitrogen fertilizer. Foliar iron fertilizers, such as iron sulfate or chelated iron solutions, help cure iron deficiencies, and nitrogen fertilizers applied according to BMPs cure nitrogen deficiencies.

### Mowing

Proper mowing practices are necessary to keep any lawn healthy and attractive. Both height and frequency of cut need to be adjusted for the level of turf management and season of the year. Under low to moderate levels of management, bermudagrass should be cut at a height of 3/4 to 1 1/2 inches, which may require mowing one to three times per week. Common bermudagrass should be mowed at the highest recommended heights. This will help the grass develop a deep root system and give it a better appearance. Under higher levels of management, bermudagrass can be maintained at a height of 1/2 inch if the turf is mowed daily during the growing season. Mowing at this height and frequency requires more fertilizer and water to maintain an attractive and durable turf. It should be noted that low cutting heights and high maintenance levels predispose the turf to many weed and pest problems. Under low to moderate management practices, mowing frequency should be adjusted to the amount of growth. Remove

no more than 1/3 of the total leaf blade with any mowing.

A reel mower is preferred for cutting bermudagrass. This gives a cleaner cut, and these mowers can also be more accurately adjusted to low heights. In a home lawn situation, a rotary mower may be used if the blades are sharp and well-adjusted to get a clean, smooth cut and if the cutting height is high enough for the mower. Grass clippings can be left on turf maintained with low to moderate fertility levels if mowed at the proper height and frequency. The clippings do not contribute to thatch, and they provide supplemental sources of nutrients. Remove the clippings only if the amount is so excessive that clumps form, or if appearance is important.

### Watering

An established bermudagrass turf should be watered as needed. Irrigation is needed when leaf blades begin to fold up, to actually wilt, to turn blue-gray in color, or when footprints remain visible after walking on the grass. Apply 3/4 to 1 inch of water per application. This will apply water to roughly the top 8 inches of soil, where the majority of the roots are. To determine how much water a sprinkler system is providing, place several coffee cans throughout the irrigation zones to find out how long it takes to apply this amount of water. This is how long your irrigation system should run for each application.

During prolonged droughts, bermudagrass may go dormant if it does not receive irrigation. The grass will turn brown and stop growing during this dormant period, but it will revive and resume growth upon irrigation with sufficient amounts of water.

### Pest Problems

Several severe pest problems can affect bermudagrass. Diagnosis and recommendations for treatment of pest problems are available from your county Cooperative Extension Service office. Refer to the pest sections of the *Florida Lawn Handbook* for additional information.

## Nematodes

The most serious pests of bermudagrasses in Florida are nematodes. Nematodes cause yellowing and general thinning of older turf, especially during hot, dry periods. These pests cause extensive turf damage, particularly to turf grown on sandy soils or under high-maintenance regimes. Although some cultivars tolerate nematodes better than others, no cultivar is resistant to nematode infestation. Chemical nematode control is extremely limited for home lawns and usually requires commercial applicators. Following the cultural and fertilization recommendations in the Florida Lawn Handbook or Edis publication NG039, "Nematode Management in Residential Lawns," can help to alleviate some nematode damage.

## Insects

Mole crickets are a major insect pest of bermudagrass. Other insects that cause damage in bermudagrass are sod webworms, armyworms, cutworms, grass loopers, and bermudagrass mites. High levels of nitrogen fertilizer encourage insect problems. There are several chemical controls available to treat insect pests, but these should be used only when necessary in conjunction with sound cultural and fertility practices.

## Diseases

Bermudagrass is subject to many diseases, including dollar spot, brown patch, and *Helminthosporium*. A sound cultural program can minimize most disease problems, and fungicides can be used to cure major disease outbreaks.

## Weeds

Weed problems in bermudagrass turf are a sign that the turf has become weakened by improper management practices or damage from pests. Refer to the Edis publication LH033, "Weed Control Guide for Florida Lawns," for more information. Proper management practices can eliminate most weed problems. If weeds are a persistent problem, herbicides labeled specifically for bermudagrass can be used for preemergent or postemergent weed control.

## Other Problems

A number of other things can damage turf quality. Among these are excessive thatch production, shade, and problems resulting from improper cultural practices. *To ensure a good bermudagrass area, refer to the Edis publications referenced in this document for recommended management practices, and follow label directions when applying fertilizers and pesticides.*

**Table 1.** Annual fertilization recommendations for bermudagrass in three regions of Florida

Location <sup>1</sup>	N fertility guideline <sup>2</sup> (lbs N/1000 sq ft/year)
North Florida	3–5
Central Florida	4–6
South Florida	5–7

<sup>1</sup>North Florida in this example is considered to be anything north of Ocala. Central Florida is defined as anything south of Ocala to a line extending from Vero Beach to Tampa. South Florida includes the remaining southern portion of the state.  
<sup>2</sup>Common bermudagrass requires less nitrogen annually.