

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

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Bahiagrass (*Paspalum notatum* Flugge) was introduced from Brazil in 1914. It was originally used as a pasture grass on the sandy soils of the southeastern United States. Additional varieties have been introduced since that time for use as lawngrasses. Bahiagrass is a popular low-maintenance lawngrass for infertile soils. Although bahiagrass does not produce a high-quality, dense, dark green lawn like some other warm-season lawngrasses, it does provide a good low-maintenance lawn where slightly reduced visual quality is acceptable.

### Advantages

Bahiagrass forms an extensive root system, which makes it one of our most drought-tolerant grasses. It performs well in infertile, sandy soils and does not require high inputs of fertilizers. It does not form excessive thatch. It may be grown from seed, which is abundant and relatively cheap, or it may be established from sod, sprigs, or plugs. It has relatively few disease problems, and mole crickets are the only primary insect problem.



Bahiagrass.

### Disadvantages

Bahiagrass forms tall, unsightly seedheads throughout the spring, summer, and fall months. This necessitates mowing on a regular schedule. Because the seed stems are tough, it also makes it more difficult to mow than some other grass species. Bahiagrass does not perform well in high-pH soils and is susceptible to mole crickets. It does not have good tolerance to shade, traffic, or saltwater. With the exception of Pensacola bahiagrass, there is little tolerance for cold temperatures in this species. Leaves

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**Bahagrass drawing.**

of bahagrass may tend to turn yellow as a result of iron deficiency. This deficiency can be alleviated by modification of soil pH or application of iron fertilizer. For more information on iron deficiency, please refer to “Fertilization” in this publication.

Bahagrass displays an open growth habit, which can result in encroachment of weeds into sparse areas. In addition, bahagrass has a low tolerance for many herbicides, making chemical weed control difficult. It has a coarse leaf texture and provides less cushioning for recreational activities than some other species.

### **Varieties**

There are four cultivars of bahagrass available for home lawn or utility use. These may all be established by seed or sod.

#### **Common**

Common Bahagrass is a coarse-textured, light-colored bahagrass. It has an open and sparse growth habit and is very susceptible to cold temperatures. It is not normally recommended for use as a lawngrass.

#### **Argentine**

Argentine forms a relatively dense sod and has a dark green color, making it acceptable for lawn use in many situations. It has wider leaf blades than Pensacola bahagrass. It has good insect and disease resistance and tolerates cold temperatures well.

#### **Pensacola**

Pensacola bahagrass was selected in Pensacola, Florida in 1935 and is the most widely grown bahagrass today. It has an extensive root system, which imparts excellent drought tolerance. It also tolerates either hot or cold temperatures well. It produces an abundance of seedheads, which reduces its desirability for use as a lawngrass, but makes it suitable for roadside plantings. It has longer and narrower leaf blades than Argentine.

#### **Paraguay**

This cultivar is also known as Texas bahagrass. It has short, tough, hairy leaves that have a grayish tint to them. It does not have good cold tolerance and is susceptible to dollar spot disease. It does not perform as well in the lawn as Argentine or Pensacola.

## **Maintenance of Bahagrass**

### **Establishment**

Bahagrass can be established as sod or seed. Advantages of planting a bahagrass lawn from sod are rapid establishment of the lawn and less opportunity for weed pressure or other stresses to cause problems. The primary disadvantages of this method are the expense and the labor required to lay the sod. In contrast, Bahagrass seed is not expensive and seeding requires less labor than sodding. Scarified seed, which has been chemically treated to enable faster germination, should be used when available.

Plugging or sprigging bahagrass is not typically recommended. Because of the slow growth habit of bahagrass, the plugging method will leave open areas of soil that can be taken over by fast-growing weed species. Diligent weed control measures are needed if this method of planting is used.

The best time to establish bahagrass is during the spring or early summer months. This enables the grass to grow in before cooler weather begins, when growth is reduced. Seed may safely be sown until later in the year, but growth will again be greatly reduced in the fall. When establishing any grass, it is important to irrigate more frequently than usual. Until

a viable root system is established, turf demands for irrigation are greater. It is also important not to mow a newly established lawn until the roots have had a chance to work down into the soil and establish themselves.

Proper site preparation before planting is critical to ensure successful establishment. Refer to the Edis publication "Preparing to Plant a Florida Lawn" LH012 for complete information.

**Fertilization**

Proper fertilization of any lawngrass is an important component of the best management practices for your home lawn. Fertilization and other cultural practices influence the overall health and quality of your lawn and will reduce its vulnerability to numerous stresses, including weeds, insects, and disease.

It is advisable for homeowners to have soil tests done annually. Your local Cooperative Extension Service office has instructions and supplies for taking soil samples and submitting them to the Extension Soil Testing Laboratory for analysis. 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 lawn growth after establishment.

Established bahiagrass lawns have relatively low fertility requirements. As with any lawngrass, do not apply more than 1/2 lb of water-soluble nitrogen per 1000 square feet at any one time. Up to 1 lb of nitrogen per 1000 square feet may be applied at one time, but at least 50% of that nitrogen should be in a slow-release form.

In general, two weeks following spring regrowth, apply a complete fertilizer such as 16-4-8 at the rate of 1/2 (water-soluble) to 1 (slow-release) pound of nitrogen per 1000 square feet. The three numbers on the fertilizer bag refer to the percentages of nitrogen, phosphorus, and potassium, respectively. 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.

University of Florida guidelines for lawngrass fertility show a range of fertilizer rates over which a particular species may be successfully grown for various areas of the state. These ranges are included to account for individual homeowner preferences for low-, medium-, or high-input grass. Additionally, localized microclimatic effects can have a tremendous effect on turfgrass growth, and 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 should receive lower rates of fertilizer than that growing in full sun. The guidelines are also separated into three geographical locations statewide as indicated in the table below. All rates are in pounds of nitrogen per 1000 square feet. For questions on how and when to apply these amounts, refer to the Edis publication EP055, "Fertilizer Recommendations for Your Florida Lawn."

**Table 2.** Recommended Fertility Rates for Bahiagrass throughout Florida

Location*	N fertility guideline
North Florida	2-3
Central Florida	2-4
South Florida	2-4
*North Florida in this example is considered the area north of Ocala. Central Florida is defined as the area south of Ocala to a line extending from Vero Beach to Tampa. South Florida includes the remaining southern portion of the state.	

Fertilizer should be applied to bahiagrass in two to four 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 you apply 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 you apply a slow-release fertilizer form.

One of the disadvantages of bahiagrass is its tendency to yellow because of iron deficiency. This problem can be overcome by using a complete

**Table 1.** Calendar Guide to Annual Bahiagrass Fertilization \*\* \*\*\*

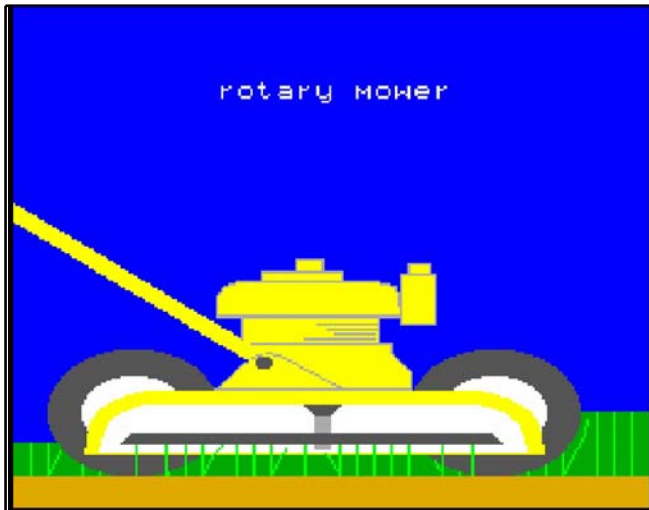
Maintenance Level	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>North Florida</b>												
<b>Basic</b>			C					C				
<b>Moderate</b>			C		SRN			C				
<b>High</b>			C		SRN		Fe	C				
<b>Central Florida</b>												
<b>Basic</b>			C		Fe			C				
<b>Moderate</b>			C			N	Fe		C			
<b>High</b>			C	N		SRN	Fe		C			
<b>South Florida</b>												
<b>Basic</b>		C				Fe				C		
<b>Moderate</b>		C		N		Fe				C		
<b>High</b>		C		N		SRN				C		
**For initial spring application, particularly in north Florida, the recommended time to fertilize is after the last frost rather than on a specific calendar date. ***C = complete fertilizer application (NPK); N= nitrogen application only; SRN= nitrogen only in a slow-release form; Fe= iron application only.												

fertilizer, which contains iron, or by addition of a separate iron material. Soluble iron sources that can be used include ferrous ammonium sulfate, ferrous sulfate, and various iron chelates. Avoid oxide forms of iron, as they will be much less effective than sulfates or chelated forms in alleviating iron deficiency. Apply ferrous sulfate at the rate of 2 ounces in 3 to 5 gallons of water per 1000 square feet. This can be applied evenly and easily with a hose-end applicator. Follow chelated iron label directions if using one of these materials. Iron applications every 6 weeks will help maintain green color and, unlike nitrogen, will not promote excessive top growth. Many cases of iron deficiency occur in soils with pH greater than 7.0. An alternative method of alleviating iron deficiency is to lower the soil pH to 6.0. This can be done by use of ammonium nitrogen fertilizer sources (e.g., ammonium nitrate or ammonium sulfate) or by application of elemental sulfur *before* bahiagrass establishment. Elemental sulfur applied at 10 pounds per 1000 square feet will provide a short-term pH reduction. Once the grass is established, up to 5 pounds of elemental sulfur may be added per 1000 square feet if it is immediately irrigated in to prevent burn.

### Mowing

Proper mowing practices are necessary to keep any lawn healthy and attractive. During times of active growth, bahiagrass should be mowed every 7 to 14 days at 3 to 4 inches of height. Higher mowing heights promote a deeper, more extensive root system that enables the grass to better withstand drought stress. Remove no more than 1/3 of the height of the leaf blades with any mowing (e.g., for a lawn to be maintained at 3 inches in height, mow when the turf reaches 4 to 4 1/2 inches). It is important not to mow bahiagrass at lower heights, as that will reduce the tolerance of the grass to heat, drought, and other stresses. It will also suppress root growth. As bahiagrass does not grow extremely tall, mowing cycles are often dictated by seedhead production. 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. They also provide a source of nutrients to the lawn and can reduce fertility requirements if regularly left on the lawn.

A sharp, heavy-duty *rotary mower* blade is needed to cut bahiagrass. Because bahiagrass leaves are very tough, the mower blade will have to be sharpened frequently to ensure a good, clean cut. If this is not done, the leaves may be torn by the mower



**Rotary mower.**

blades, which can compromise both the health and the appearance of the lawn.

### **Watering**

Irrigating as needed 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 blue-gray in color, or when footprints remain visible after walking on the grass. Apply  $\frac{3}{4}$  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 the amount of irrigation supplied by a sprinkler system, place several coffee cans throughout the irrigation zones to find out how long it takes to apply the recommended amount of water. During prolonged droughts, irrigation may be needed more often. Bahagrass has the best drought tolerance of all lawngrasses grown in Florida and will usually recover from severe drought injury soon after rain or irrigation. It is very important not to overwater Bahagrass lawns as this weakens the turf and encourages weeds. During extended periods of drought, bahagrass may go dormant if left without irrigation. The grass will turn brown and stop growing during this dormant period, but will revive and resume growth upon regular application of water. Refer to the Edis publication LH025, "Watering Your Florida Lawn," for additional information.

## **Pest Problems**

Although bahagrass is generally less troubled by insects, diseases, and nematodes than other Florida lawngrasses, it is still not completely pest-free. Following are some of the major problems encountered in a bahagrass lawn. For more information on turfgrass pests and their control, refer to Edis publication LH080, "Integrated Pest Management Strategies," or purchase a copy of the Florida Lawn Handbook, SP-45, at your county extension office.

### **Weed Control**

The best method of weed control is to maintain a healthy, vigorous turf. Following UF/IFAS recommendations for fertility, irrigation, and mowing will ensure a healthy lawn that is able to out-compete most weeds. Nevertheless, the following chemical treatments may be used on bahagrass for weed control when needed.

Preemergence herbicides are used before a weed germinates and grows. Preemergence chemicals inhibit germination or form a barrier at the soil line to inhibit weed growth after germination. To effectively use preemergence chemicals, knowledge of weed problems from the previous year is needed. To control areas where crabgrass, sandbur, annual bluegrass, goosegrass, or crowfootgrass have been problems in previous years, apply benefin, bensulide, prodiamine, dithiopyr, pendimethalin, oryzalin, or dacthal prior to their germination. Timing of application is important for successful control. As a general rule of thumb, apply February 1 in South Florida, February 15 in Central Florida, and March 1 in North Florida.

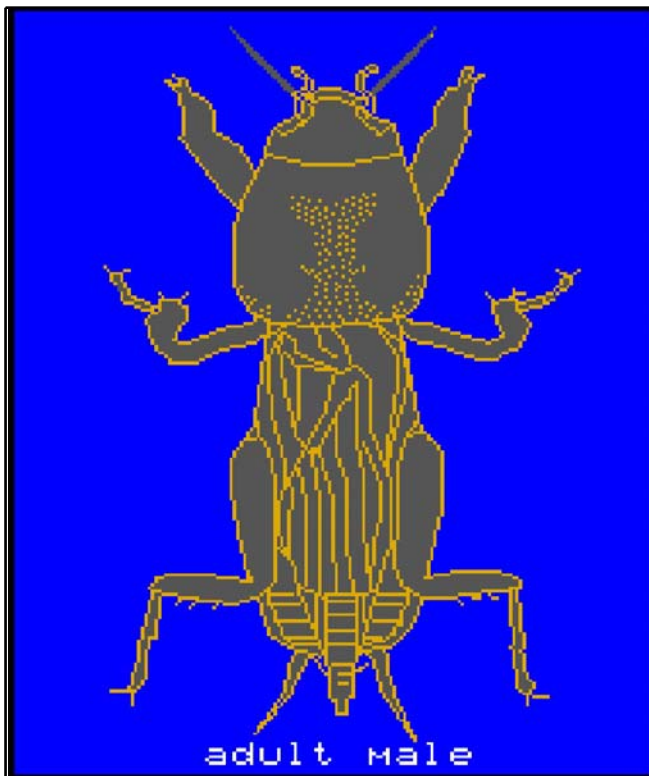
Apply postemergence herbicides (e.g., 2,4-D, dicamba, and/or MCPP) in May as needed for control of annual and perennial broadleaf weeds such as knotweed, spurge, and lespedeza. Selective control of emerged grass weeds such as goosegrass, crabgrass, or alexandergrass is only by hand pulling. Bahagrass is severely damaged by postemergence grass herbicides such as DSMA or MSMA. Check with your county Cooperative Extension Service office for positive identification of weeds and exact herbicide recommendations. Apply herbicides only when



adequate soil moisture is present, air temperatures are between 60°F and 85°F, and the turf is not suffering from water or mowing stress. Failure to follow these precautionary statements will result in damaged turf.

*Note:* Many popular “weed-n-feed” type fertilizers for home lawns contain the herbicide atrazine. Atrazine will result in some damage to bahia grass; therefore, it is not recommended for use on this grass.

### Insects



**Mole cricket.**

The most serious insect threat to bahia grass is the mole cricket. These insects burrow through the soil and damage roots, causing rapid wilting of the grass. Check for mole crickets by: (1) looking for their tunneling and mounds; or (2) applying 2 gallons of water with 1 to 2 ounces of detergent soap per 2 square feet of turf in suspected damaged areas. If present, the mole crickets will surface in a few minutes.

Recently, several bait-type insecticides have been introduced and show real promise as a control measure. However, insecticides available for mole

crickets are constantly changing. Check with your county Cooperative Extension Service office for the latest control recommendations.

### Diseases

The only serious disease of bahia grass is dollar spot. This is expressed as spots several inches in diameter scattered across the turf. A light application of nitrogen ( 1/2 pound nitrogen per 1000 square feet) should encourage the grass to outgrow these symptoms. If nitrogen application does not provide satisfactory results, refer to the Edis publication LH045, "Dollar Spot," for more information.

### Nematodes

Nematodes are not typically as damaging to bahia grass as to other species. Because of bahia grass's deep, extensive root system, nematode damage seldom becomes noticeable. However, if grass becomes thin, grows less vigorously, and develops a weak root system, nematode presence should be suspected. Take a representative soil sample to your county Cooperative Extension Service office to be analyzed, and if nematodes are found, ask for control recommendations. Proper cultural factors to encourage bahia grass root growth will lessen nematode stress. These include applying less nitrogen, providing less frequent but deep watering, and ensuring ample soil potassium and phosphorus. Please refer to the Edis publication NG039, "Nematode Management in Florida Lawns," for additional information.