

# TURFGRASS

## Introduction

From scenic golf courses to public parks to home lawns, Florida has nearly 4 million acres of maintained turfgrass. The turfgrass industry is vital to Florida's economy, with an estimated total economic output of \$7.82 billion annually. Florida's turfgrass industry ranks second in the United States for employment and financial impacts.

Sod farms, golf courses, and home lawns drive the Florida turfgrass industry. Sod producers in Florida employ more people and produce more sod than other producers across the country. Florida has more golf courses (~1,055) and employs more people (> 50,000) in the golf course industry than any other state. The lawn care and maintenance industry is second in the nation, behind California.

Turfgrass throughout Florida grows in many different conditions under varying levels of maintenance, including roadsides, homes, and golf courses. Diseases, insects, nematodes, shade, drought, heat, and traffic all can damage turfgrass and affect its performance. Currently, many Florida residents face restrictions related to water use and nutrient application, highlighting the importance of developing and using environmentally sound cultivars.

## From the Beginning

The UF/IFAS turfgrass research program breeds, selects, evaluates, and recommends turfgrass species and cultivars. Throughout its history, UF/IFAS has been involved with the release of 17 cultivars of six different turfgrass species. In the early days, a turfgrass release meant that the cultivar had been evaluated and was recommended for use. More formal breeding programs developed in the 1950s, meaning that researchers began breeding for turfgrass quality and resistance to biotic stresses (insects, nematodes, diseases) and abiotic stresses (drought, shade, heat, nutrients).

In the 1960s and 1970s, 'Floratine' St. Augustinegrass was followed by 'Floritam' St. Augustinegrass, a cultivar developed with Texas A&M resistant to St. Augustine Decline virus and southern chinch bug. 'Floritam' remains the most popular St. Augustinegrass cultivar, accounting for 69 percent of Florida's sod production. In 1992, UF/IFAS again cooperated with Texas A&M, releasing 'FloraTeX' bermudagrass, a cultivar that performed well with limited nitrogen fertilization and irrigation.

In 1997, the warm-season turfgrass breeding program moved to the Everglades Research and Education Center in Belle Glade. Throughout the next decade, researchers studied lines of bermudagrass, zoysiagrass, centipedegrass, seashore paspalum, and St. Augustinegrass, releasing cultivars such as 'Aloha' (USPP23,333), a seashore paspalum recommended for golf courses and sports fields; Hammock 'BA-417' (USPP20,812), the only centipedegrass developed and intended for South Florida; Ultimate 'BA-189' (USPPAF), a zoysiagrass for landscape settings; Pristine 'BA-305' (USPP18,415), a zoysiagrass for high-maintenance turf areas; and Captiva® brand 'NUF-76' (USPP21,280), a semi-dwarf St. Augustinegrass with improved tolerance to southern chinch bug.

## Today and Tomorrow

UF/IFAS turfgrass breeding programs are focused on improving turfgrass quality and developing tolerance to several biotic and abiotic stresses.

The biotic stress programs are examining zoysiagrass for response to sting nematodes, hunting billbugs, and large patch disease; bermudagrass for sting nematode responses; St. Augustinegrass for response to nematodes, large patch, and chinch bugs; and seashore paspalum for responses to dollar spot and caterpillars. Of particular importance is examining experimental lines of zoysiagrass and St. Augustinegrass for their response to *Rhizoctonia solani* (the pathogen that causes large patch) under both field and growth chamber conditions.

The abiotic stress research programs are testing the shade and drought response of zoysiagrass, St. Augustinegrass, and bermudagrass. Trees, fences, and buildings create shade in landscapes, leading to inadequate light for turfgrass growth. The shade response program aims to identify lines that can persist under long-term shade. The drought program examines and identifies lines that will hold color and quality in dry conditions.

The turf-type bahiagrass program aims to enhance the turf quality of bahiagrass using traditional and mutagenic and transgenic breeding approaches. Making up 24 percent of the sod produced in Florida, this low-input turfgrass is used along highways and in reduced-value landscapes because it tolerates heat, drought, and marginal soil, and resists insects and disease. But bahiagrass's turf quality is limited. Researchers are evaluating genetically improved bahiagrass plants in controlled environments to determine modes of reproduction and identify lines with improved turf quality that still persist — like wild bahiagrass. In the future, the UF/IFAS turfgrass breeding program will continue to work closely with sod producers, golf course superintendents, and other UF turfgrass scientists to create new turfgrass cultivars that will enhance the sustainability of Florida's diverse and valuable turfgrass industry.

## Turfgrass Varieties Released from 2002

| Release Date              | Cultivar                       |
|---------------------------|--------------------------------|
| <b>Centipedegrass</b>     |                                |
| 10/31/06                  | Hammock 'BA-417' (USPP20,812)  |
| <b>Seashore Paspalum</b>  |                                |
| 5/17/2007                 | 'Aloha' (USPP23,333)           |
| <b>St. Augustinegrass</b> |                                |
| 7/20/06                   | FloraVerde '1997-6'            |
| 7/23/07                   | Captiva® 'NUF-76' (USPP21,280) |
| <b>Zoysiagrass</b>        |                                |
| 5/17/07                   | Pristine 'BA-305' (USPP18,415) |
| 5/17/07                   | Ultimate 'BA-189' (USPPAF)     |

**RESEARCHER CONTACT**

Kevin E. Kenworthy  
 Associate Professor, Turfgrass Breeding and Genetics  
 Department of Agronomy  
 352-392-6189 • kenworth@ufl.edu