



# Deeply rooted in Florida

## University of Florida one of first sites for USGA turf research

BY JAMES M. LATHAM  
*USGA Agronomist & Regional Director, retired*

**D**id you know that the very first research grant on warm-season turfgrasses sponsored by the USGA Green Section was to at the University of Florida? Yep — some 74 years ago. That was only two years after the establishment of the Green Section as a source of information aimed at solving problems on golf courses in the United States.

A sum of \$25 a month was provided to the Gainesville Experiment Station, entrusted to Vice Director and Animal Industrialist John M. Scott. C. V. Piper and R. O. Oakley, who were the Green Section research team then, apparently made the contact through their USDA work with forage plants. Incidentally, a Mr. L. C. Menager of the Florida Country Club in Ortega, served on the first Green Section Committee.

The initial work involved testing sod-forming grasses for their potential use on golf courses. A couple of years later the turf work was taken over by USDA Forage

Crop Agent C. R. Enloe, who sent duplicates of the Gainesville grasses to the Everglades Station (at no extra charge). Just growing the grasses in a pasture-like setting was not enough for Piper and Oakley, so they bought and sent a brand new, \$75.00 Pennsylvania putting green mower to Enloe, to determine how the grasses withstood daily mowing at putting green height — 3/8 inch.

Mr. Enloe didn't have the time to do this grunt work, but he found a graduate student who wanted to do research on grass root development. Thus came the first post-graduate student project supported by the Green Section, with an annual grant of \$750, later raised to \$900. The money was for labor and was not like the formal scholarship or fellowship grants we see today.

Mr. Addison Shuler Laird did an excellent job of measuring and photographing the root systems of the grasses under mowed and pasture conditions, with different fertility regimes in different soils and wrote his thesis entitled "A Study of the Root Systems of Some Important Sod-Forming Grasses" in 1927.

The USGA or the Green Section weren't exactly household words then, as noted in the Preface to the thesis: "So great has been the desire for accurate information concerning golf grasses in Florida that the American Golf Club Association has financed part of this investigation."

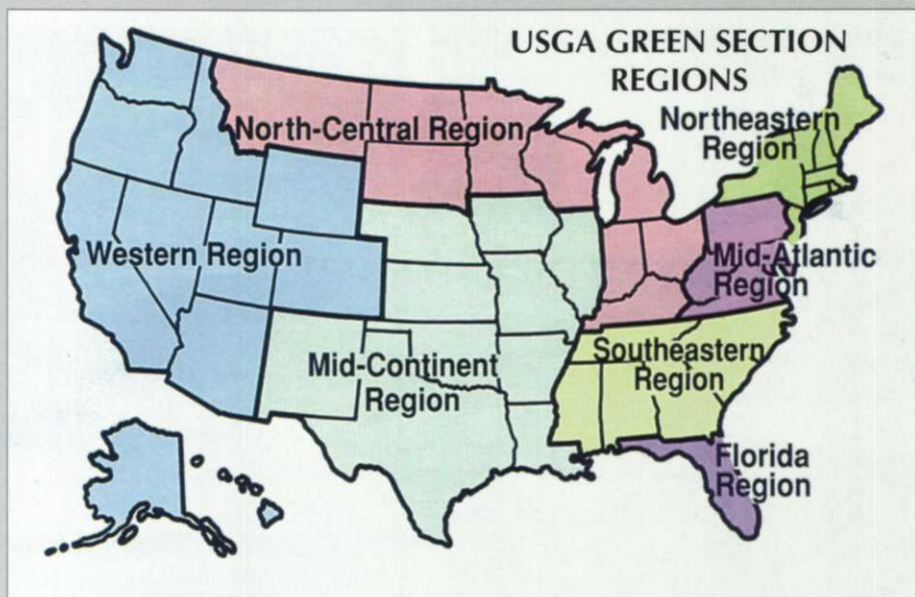
The thesis provided the basic material used in the production of Bulletin 209, published by the University of Florida Agricultural Experiment Station, entitled *Lawns in Florida* by C. R. Enloe and A. S. Laird, in 1930. Both publications are in the University Library.

In 1930, times were hard and the USGA could not continue the high-level grants, but could go for \$300. That could not support the present level of work, so the two organization mutually agreed to halt it. The connection was reestablished after World War II at the Everglades Experiment Station under the direction of Roy Bair.

This continued until 1950, when Mr. Bair resigned to go into private consultation work. Turf research was then moved back to Gainesville where, in 1952, Dr. Gene Nutter became the guru of grasses for



John Foy has been director of the Florida Region since it was separated from the Southeast Region at the beginning of the decade.





the state and brought the program up to a leadership position in the country.

The Florida experience is not unlike many of today's state or regional turfgrass research and extension programs. Many were initiated by seed money from the Green Section and the salaries of the turf specialists were picked up by the university administrations, through the prodding of local golf associations and golf course superintendent's organizations.

Turf-oriented research today, however,

is receiving less and less governmental support, so the Green Section is again playing a major role in its fiscal support, along with that of the local, regional and national superintendents organizations and a few privately funded research foundations.

Back in the days before the Green Section was established, Piper and Oakley were besieged by requests for information on the establishment and care of golf course turf. They had some small research projects

under way, but needed a vehicle to disseminate what little scientific information they had. The organization of the Green Section of the United States Golf Association did that, in 1921.

Working from Washington, D. C., with plots in Arlington, Va., (where the Pentagon now stands), they published *The Bulletin of the USGA Green Section*, a periodical containing articles on their research and those written by other learned men, on golf course maintenance.

Remember that the chairmen of green committees made most of the decisions on golf course maintenance at that time and greenkeepers (there were no superintendents then) just did the work. Chairmen attended the few turf conferences and went home to tell the greenkeepers what to do.

With the golfboom of the 1920's, came demands by southerners to do something for the courses below the bentgrass/bluegrass zone. The Tufts family of Pinehurst fame had been experimenting with grasses for several years to get some kind — any kind — of turf cover on their fairways (they were happy with sand greens).

But until the Green Section came along, there had been no organized effort to look into producing sod-forming grasses that were suitable for use on southern golf courses.

Another USDA scientist, plant pathologist Dr. John Monteith, came to the Green Section in 1928, to continue his work on plant diseases. His research introduced the use of inorganic mercury and other compounds for disease control and prevention.

It was during his administration that many of the named vegetative bentgrasses were selected. Those selections gave rise to many commercial turf nurseries and the impetus for commercial turf supplyhouses to develop high quality products for golf course use.

The Depression years had a stifling effect on existing golf courses and new course development. The fallout was felt in research and extension conducted by the Green

Section, since the only source of funds was memberships fees and admissions to the US Open and Amateur Champion-

# HI-TECH

## LET HI-TECH IRON-ODORS AND TURF PROBLEMS

**MICRO-TECH • TECH-PLEX**  
(0-4-4) (0-5-8)

**IRONMAN**  
8% FE, 8% Sul.

Non-burning, Non-staining,  
Fully Chelated, Totally  
Compatible, pH. Buffer.

**The Most Highly  
Concentrated Iron Products  
Available!**

Long Lasting Green at a low  
rate of 1-2 oz.  
per 1,000 sq. ft.

### TECH X-3

A Natural blend of 100%  
Chelated Micro-Nutrients,  
Bio-Stimulants, and a  
Non-Burning Organic  
Wetting Agent

- Tech X-3 •
- Micro-Tech •
- Ironman •
- Tech Plex •
- Dimension Granular •
- Cool Down •
- Bio-Blend •
- Nitro-Plus • Trace •
- Tech Pak Biostimulant •
- Roots • Tech Iron •
- Citra-Kleen • Bio-Tech •
- Roots •

## THANKS FOR YOUR SUPPORT!



# HI-TECH

TURF PRODUCTS, INC.

Fort Myers, Florida 33919 • (941) 275-1820 • (800) 299-0911

ships. All of the travel costs were borne by member clubs requesting personal visits or the golf organizations and universities sponsoring conferences or short courses. The shortage of funds was made worse during WW II by the shortage of scientists to conduct the work.

Fortunately for the turf industry, the Green Section hired a plant physiologist to administer the project and continue the research and extension work—Dr. Fannie Fern Davis. Her interest in plant hormones resulted in the discovery that a compound identified as 2,4-D could selectively remove broadleaf plants from grass populations. Her dislike of administrative duties led to her resignation in 1945.

She was replaced by Dr. Fred V. Grau, who preached strongly for the support of university training and post-graduate degrees for people interested in the turfgrass field. His efforts bore fruit with the establishment of a position at Penn State University that resulted in James R. Watson becoming the first recipient of a Ph.D. in

the turfgrass field. Many others have followed a similar route.

After W.W.II, the picture changed and golf associations felt the need for a kind of extension service not available in most states — one directly related to golf course conditions. Research carried on by the Green Section, then located in Beltsville, Md. was inadequate to answer questions from other climatic zones.

Several states had developed their own, more locally-relevant research projects with funding by the Green Section. The upshot was the creation of the regionalized Green Section Visiting Service, which took the pertinent information from regional and national research to individual clubs and help fit it into their maintenance programs.

The agronomists in each region visited member clubs and courses on a regular basis to evaluate conditions and help solve existing problems and prevent others from developing. In 1954, Mr. B. P. Robinson became the first of these agronomists to serve Florida—and six other southeastern

states. He was followed by several others, until the golf industry in Florida became so large that it became a one-state region with John Foy as its Director.

Leadership of the Green Section since Dr. Grau's departure has been vested in men who had served as regional agronomists — Dr. Marvin Ferguson, Mr. Bill Bengueyfield, and Mr. Jim Snow. Each of them has made significant contributions to golf: Ferguson by initiating the putting green construction studies, Bengueyfield by inaugurating the massive maintenance and grass development projects and Snow by broadening the program to include environmental proactivism on individual courses. There have been too many fine field agronomists to name in this article, but all have had a lasting, positive impact on golf course quality in the areas they served or serve today.

Through the years since 1921, the Green Section has grown to be the primary source of science-based golf turf information. From the \$300 spent in 1923



- Minimal damage to course.
- Minimal labor to replace bunker sand creates opportunity costs.

## Golf Agronomics Supply & Handling

Serving Central & South Florida  
Coast to Coast

2165 17th St.  
Sarasota, FL 34234  
(800) 626-1359  
(941) 955-4690 Fax

**G**olf Agronomics meets all your top dressing needs with our ability to customize your mix with a variety of soil amendments including:

**Dolomite • Hi-Cal • Wetting Agents  
Charcoal • Humic Acid  
Minor Elements • Rock Phosphate  
Gypsum • Customer Products.**

Golf Agronomics donates a % of every ton of top dressing sold to the FGCSA. To date, we have donated in excess of \$30,000 -- \$6,000 in 1997. Thank you to all of our customers!





on research outside of the DC home base, its budget for research and support of environmental improvement grew to over \$1.3 million in 1997, requiring the full-time attention of Dr. Mike Kenna.

There are now seven regional offices across the country, staffed by 16 "visiting agronomists." The interest in building or rebuilding greens or entire golf courses created the need for a Construction Education Program, directed by Mr. Jim Moore, from which the latest information on the art and science of golf course construction can be obtained.

*The Green Section Record* is the current periodical publication of the Green Section, which closely adheres to the principles established by *The Bulletin of the USGA Green Section*, in the 1920's: interesting, factual, articles by knowledgeable authors — and no advertising.

Simply gathering and disseminating turfgrass-related information is not the end of the line. There was a need to develop a central preservation facility to accumulate and catalog the thousands of books, research papers, magazines and popular articles dating from the days of yore to the present and into the future.

Dr. James B. Beard saw the need and, working with Dr. Richard Chapin, Director of Libraries at Michigan State University, found a home for the collection of the books and periodicals accumulated by O. J. Noer during his agronomic career with the Milorganite Division of the Milwaukee Sewerage Commission.

The Noer Memorial Collection proved to be the seed for the development of the Turfgrass Information File at MSU, through special grants by the Green Sec-

***From the \$300 spent in 1923 on research outside of the DC home base, its budget for research and support of environmental improvement grew to over \$1.3 million in 1997, requiring the full-time attention of Dr. Mike Kenna.***

tion. TGIF is the most complete library of turfgrass publications in the world and is accessible by any mode of communication. Mr. Peter Cookingham has done a masterful job of organizing and maintaining the files. It was he who located the Florida publications mentioned in this article.

The surge of environmentalism in the 1980s brought the golf industry under an unkind light that stirred the USGA to begin a multi-million dollar research program on golf course maintenance procedures and materials.

USGA President Grant Spaeth said that if golf was guilty of contaminating the environment, it would have to clean up its act. But if not, golf needed hard, unbiased, scientific facts to disprove the accusations.

That program is still under way through the Green Section Environmental and Research Committee, which is charged with providing funds to further an understanding of the influence of course maintenance operations on environmental conditions and to produce new grasses and procedures that require less intensive use of fertilizers, pesticides and potable water.

To help golf organizations set up formal programs of environmental stewardship, the Green Section has wholeheartedly supported the educational efforts of the Audubon Society of New York State, now Audubon International. Its Cooperative Sanctuary Programs have helped superintendents develop positive, written procedures to preserve and protect the environmental treasures on individual courses and their surroundings.

Throughout its long existence, the USGA Green Section has worked for the good of the order, by supporting good science in turfgrass research and then getting the word out. It has been a strong supporter of golf course superintendents — their continuing education and their organizations. All of this has been done with one goal in mind — to provide America's golfers with the best possible playing conditions at a reasonable cost for the greatest number of days, every year.

*Editor's Note: Jim Latham served the USGA Green Section as Southeastern Agronomist from 1957 to 1960, and as Director of the Great Lakes Region from 1984 to 1994.*

**Special  
GOLF  
COURSE  
MIXES**

Sterilization Available

Since 1948



# Florida Silica Sand Co., Inc.

Dade County  
949-3521
Broward County  
923-8323

1-800-330-3521

Complete Line Of  
LANDSCAPE  
Materials

---

Red Ball  
Diamond Clay



## Florida Plants of the Year

Landscaping on golf courses ranges from very formal annual beds and sheared hedges to the natural look of aquatic plants and clumps of native grasses. The Florida Nurserymen and Growers Association has begun a program that will identify superior plant material that performs well but is often underutilized. If you are looking for proven plant material to provide color and diversity on your course you may want to give these 1998 Florida Plants of the Year a closer look.

The program's selection committee includes horticulturists, nurserymen, educators, architects and other professional members of the horticulture industry from central, north and south Florida.

### Ground covers

#### PEACOCK GINGER

Kaempferias are a group of low herbaceous perennials usually less than one foot tall. Most have large 4- to 10-inch round or oval shaped leaves. The basic leaf color ranges from green to purple. However, most are striped or spotted with various combinations of purple, silver, white or iridescent markings that give the group their common name Peacock Ginger. Flowers are solitary, usually four-petaled and produced daily throughout the growing season. Flower color ranges from pure white to pink to purple.

Kaempferias are trouble-free, shade-loving ground covers that form thick clumps that out-complete weeds for available space. They are excellent companion plants for hostas in north Florida and competent replacements



for them in south and central Florida. Kaempferias, which are native to Southeast Asia, are naturally winter dormant, so they are hardy into Zone 8 and adaptable to all of Florida.

Commonly found varieties include: *K. rotunda* 'Asian Crocus', *K. roscoeana*, *K. masonii*, *K. pulchra* and *K. gilbertii*. New varieties include: *K.* 'Brush Strokes', *K.* 'Satin Checks', *K.* 'Shazam' and *K. pulchra* 'Silver Spot.'

**Common Name:** Peacock Ginger

**Botanical Name:** *Kaempferia* spp.

**Hardiness:** Zone 8

**Mature Height:** 12"

**Classification:** Herbaceous perennial

**Use:** Ground cover

**Characteristics:** Leaves range in color from green to purple and are spotted or striped and oval

#### AUTUMN FERN

Ferns are becoming more widely used ground covers in large drifts. *Cyrtomium falcatum* (Holly Fern) has been planted for years, but *Dryopteris erythrosora* (Autumn Fern) is quickly becoming as popular. This clumping fern has upright foliage reaching about 24" in height and spread. Also called Japanese Shield Fern, its young foliage is an eye-catching red that matures to a glossy dark green.

"Autumn Fern has fewer insect problems and seems more cold

tolerant than Holly Fern, and this makes it a more desirable selection," says P.J. Klinger of Lake Brantley Plant Corp., Longwood, Florida.



Autumn Fern is hardy to Zone 8 and evergreens without frost. The best growth is achieved in an organic, well-drained soil in light shade to shade. Though

the water requirements are moderate, Autumn Fern will signal a water stress with wilting and a change in foliage color.

**Common Name:** Autumn Fern

**Botanical Name:** *Dryopteris erythrosora*

**Hardiness:** Zone 8

**Mature Height x Spread:** 24" x 24"

**Classification:** Herbaceous perennial

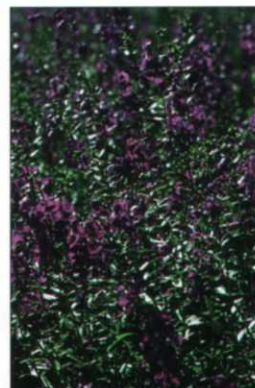
**Landscape Use:** Masses in shade

**Characteristics:** Clumping fern growing to 24"; new growth is coppery red, maturing to deep green

### Masses and Borders

#### HILO PRINCESS ANGELONIA

*Angelonia* is a great new plant for Florida. A bushy perennial from



Mexico and the Caribbean, it grows well in our climate. 'Hilo Princess' reaches a mature height up to 24 inches and the stems support groupings of

deep violet-blue flowers that are present throughout the warm months. When planted in a moist, rich, well drained area, *Angelonia* will thrive in a wide range of light levels. It makes quite an impact as a mass planting or in combination with other flowers in decorative containers. Although some say to treat 'Hilo Princess' as an annual in colder areas, it tends to come back reliably as far north as Gainesville.

**Common Name:** Hilo Princess Angelonia

**Botanical Name:** *Angelonia angustifolia* 'Hilo Princess'

**Hardiness:** Zone 8

**Mature Height x Spread:** 24" x 24"



**Classification:** Perennial

**Landscape Use:** Mass planting accent in perennial borders or in containers with other flowers

**Characteristics:** Deep violet-blue flowers; lance shaped leaves; blooms through warm months

**FIREPOWER DWARF NANDINA**

A plant long known for its fall color, but underutilized in the landscape is *Nandina Domestica* 'Fire power.'

Also called dwarf heavenly bamboo, this dense, low-growing cultivar is usually tinged with orange or red, but becomes an intense red mound in the fall and winter. Firepower,



with its rounded habit, reaches a mature height and spread of about two feet.

When planted in groupings or drifts behind low ground covers, Firepower creates an impressive impact. It is adaptable to a wide range of conditions, but prefers moist, fertile and well-drained soils.

**Common Name:** Firepower Dwarf Nandina

**Horticultural Name:** *Nandina domestica* 'Firepower'

**Hardiness:** Zone 6

**Height x Spread:** 2' x 2'

**Classification:** Low growing shrub

**Landscape Use:** Masses or borders

**Characteristics:** Dense, dwarf growing variety; intense fall color of red

**Shrubs**

**FIREBUSH**

When designing a landscape in south

or central Florida, be sure to give *Hamelia patens* (Firebush) some thought as a small accent tree.

Reaching 10 feet in height and six feet in spread in warmer areas, its

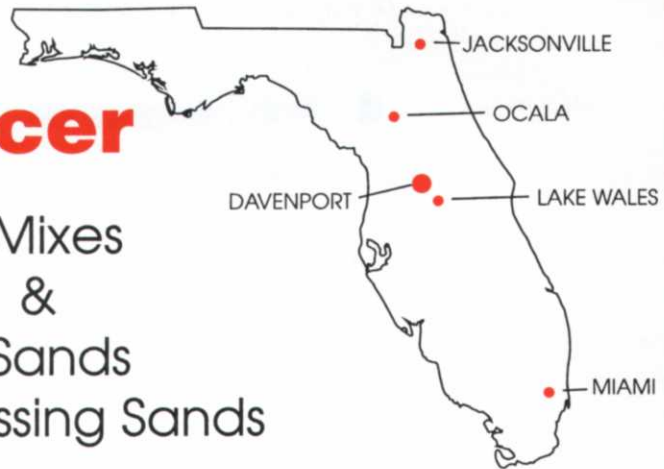


showy orange tubular flowers (March-November) are a big attraction to butterflies and hummingbirds. The leaves of

this evergreen shrub are reddish for much of the year, turning green as they mature. Foliage damage will occur in the upper 20s with die back in the upper teens. When knocked to the ground by cold, Firebush has been known to bounce back quickly the following spring. This variety

# Florida's Premier Producer

- Custom Blended Soil Mixes
- White Trap Sand &
- Premium Greens Mix Sands
- Dry, Sterilized Top Dressing Sands
- USGA Gravels



*Call today for prices • test information • free demonstration.*



**Standard Sand & Silica Co.**

1-800-475-SAND (7263) or 941-422-1171

prefers moist conditions and is tolerant of full sun to partial shade. Because it is not drought tolerant, be sure to plant near water loving plants in the garden.

**Common Name:** Firebush

**Botanical Name:** *Hamelia patens*

**Hardiness:** Zone 8

**Mature Height x Spread:** 10' x 6'

**Classification:** Large shrub to small tree

**Landscape Use:** Specimen shrub in partial shade

**Ornamental:** Red leaves with showy orange

**Characteristics:** tubular flowers attracting butterflies and hummingbirds

**PINK LOROPETALUM**

A plant that seems to be sweeping the industry is *Loropetalum*. Many of the new popular cultivars are being

developed from *Loropetalum chinense* var. *Rubrum*, which has red



foliage. Cultivars may reach 10 feet; others are easily maintained at four to six feet. Also called fringe flower, *Loropetalum* is tolerant of full sun to shade in moist, well-drained acid soils. Young

leaves are burgundy, maturing to green in the center of the plant. Some cultivars stay redder than others. The pink bloom of the fringe flower is heavy in the spring and then continues sporadically until fall.

Some of the cultivars available in the market today are:

- **Blush** - dense compact growth habit to at best six feet
- **Burgundy** - height will be six to

eight feet with drooping branches; expect this cultivar to bloom several times during the year

- **Zhuzhou** - taller, more open growing form; can be trained like Ligustrum as a multi-trunked small tree
- **Monraz' Razzleberri TM** - a Monrovia Nursery (California) introduction with a low-growing weeping form reaching four to six feet in height and spread.

**Common Name:** Pink loropetalum

**Horticultural Name:** *Loropetalum chinense* var. *Rubrum*

**Hardiness:** Zones 7 & 8

**Mature Height:** 6' to 10'

**Classification:** Shrub

**Landscape Use:** Accent plant or hedge plant

**Characteristics:** Red foliage, pink flowers



**SERVICES**

DESIGN, SALES, INSTALLATION AND SERVICE OF ALL TYPES OF GOLF COURSE AND COMMERCIAL IRRIGATION PUMP SYSTEMS.

FULLY STOCKED WAREHOUSE WITH SPECIFIC EQUIPMENT TO MEET YOUR IRRIGATION NEEDS.

FULLY EQUIPPED, RADIO DISPATCHED TRUCKS PROVIDE 24 HOUR EMERGENCY SERVICE.

COMPLETE CRANE SERVICE.

INHOUSE PUMP REPAIR FACILITY.

MOTOR REPAIR AND REWIND FACILITY.

PREVENTATIVE MAINTENANCE PROGRAMS.

TOTAL LIGHTNING PROTECTION AND INTERFACES SYSTEMS. ULL LISTED INSTALLER.

UNDER WATER WETWELL AND INTAKE CLEANING AND REPAIR.

LICENSED & INSURED ELECTRICAL CONTRACTORS.

**PRODUCTS**

- SYNCROFLO IRRIGATION PUMPING SYSTEMS
- OTTERBINE AERATORS
- EPS LANDSCAPE PUMP STATIONS.
- EPS HYDRAULIC PUMP STATIONS.
- WESCO FOUNTAINS.
- CLAYTON VALVES & PARTS.
- WESSELS HYDROPNEUMATIC TANKS.
- SELF CLEANING INTAKE SCREENS.
- THOMPSON LIGHTNING PROTECTION EQUIPMENT.
- VERTICAL TURBINE PUMPS.
- CENTRIFUGAL PUMPS.
- REPLACEMENT MOTORS.
- CUSTOM CONTROL PANELS, ETL LISTED

*"Servicing South Florida"*