



# Southeastern Turfgrass Conference

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#### ATTENTION: FARMERS

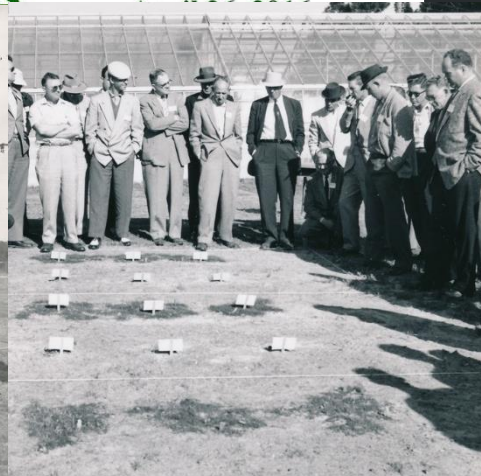
FARM BUSINESS, FINANCIAL AND PROPERTY PLANNING SESSIONS  
DURING THE  
70TH ANNUAL SOUTHEASTERN TURFGRASS CONFERENCE

This year the conference is offering a morning session covering a variety of topics on business, financial and property planning in addition to an update on the newest developments in turf and ornamental cultivars and their management during the afternoon educational sessions.



ANNUAL SOUTHEASTERN  
TURFGRASS CONFERENCE

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# **Progress at the University of Georgia's Tifton Turfgrass Breeding Program**

**April 26<sup>th</sup>, 2016**



**Brian Schwartz**

**University of Georgia**

**tifturf@uga.edu**



www.turfconf.com

Annual

# Southeastern Turfgrass Conference

## WHY CONDUCT TURF RESEARCH?

No field of agricultural research has been so completely neglected as the field of Turf Research. We are confronted daily with a multitude of turf problems for which we have no definite solution. Research can provide answers for most of these questions. We need better strains and varieties of turfgrasses. Grass breeding research can develop them. Turf research offers the best route to "Better Turf".

## THE SOUTHEASTERN TURF RESEARCH PROGRAM

Since 1936, the U.S. Department of Agriculture, in cooperation with the Georgia Coastal Plain Experiment Station, has been conducting at Tifton, Georgia, an extensive grass breeding research program designed to solve some of the Southeastern pasture problems. Some of the findings of this research have been applicable to turf problems but most of them have not. Beginning in the fall of 1946, a cooperative turf research program was begun at Tifton, Georgia, under the stimulus of Dr. F. V. Grau. Starting in a very modest way with a few hundred dollars contributed by the U.S.G.A. Green Section and a number of Southern Golf Clubs and Associations it was possible for B. P. Robinson to begin work on the project as a graduate student in January, 1948.

Space will not permit the listing of all the companies and organizations whose grants have made possible the turf work conducted at Tifton. To all of them, our very sincere thanks. We would also gratefully acknowledge the services of Dr. Homer D. Wells, other Georgia Coastal Plain Experiment Station Staff members, and all the boys who have worked on this project through the years. We are particularly grateful to Mr. James B. Moncrief, Southeastern Agronomist, U.S.G.A. Green Section, for his counsel in connection with our turf research and for his assistance in developing this Conference program. We like to think of "Monty" as a member of our turf research team.

We are currently using graduate students to help carry out our turf research work. The plan requires two men to work full time during the summer and to attend the University in alternate quarters. This gives us the equivalent of one man year around and an additional man during the summer. It enables them to complete their Master's degrees in two years and trains men for this field. Jack Hearn, who obtained his Master's degree with us and his Ph. D. at Texas A & M, is now a USDA citrus breeder at Orlando, Florida. Elwyn Deal, who completed his Ph. D. in Turf at Rutgers, is now a University of Maryland turf specialist. Ray Cooper completed his Ph. D. at VPI and is now employed by Eli Lilly, Clarence Lance, with a Ph. D. from Auburn, is employed in Arizona and Earl Elsner, who obtained his Ph. D. at the University of Illinois, will be back on the University of Georgia staff, in Athens. Troy Johnson is working on his Ph. D. at VPI. Willard Lance will be doing our turf research this summer.

Any suggestions that you may offer which will add to the effectiveness of our program will be gratefully accepted.

Glenn W. Burton, Research Geneticist  
U.S.D.A. and Georgia Coastal Plain  
Experiment Station, Tifton, Georgia

## TWENTY-THIRD ANNUAL SOUTHEASTERN TURFGRASS CONFERENCE

TIFTON, GEORGIA

April 14—16, 1969

Sponsored by

UNIVERSITY OF GEORGIA  
COASTAL PLAIN  
EXPERIMENT STATION

In cooperation with

ABRAHAM BALDWIN  
AGRICULTURAL COLLEGE

UNITED STATES  
GOLF ASSOCIATION  
GREEN SECTION

and

SOUTHERN  
GOLF ASSOCIATION



## MONDAY, APRIL 14, 1969

10:30 A.M.—REGISTRATION—Georgia Coastal Plain Experiment Station Turf Plots. Registration fee: \$12.00 (includes Banquet, Tuesday luncheon, and Proceedings).

1:30 P.M.—WELCOME—Dr. Frank P. King, Director of Georgia Coastal Plain Experiment Station.

Examination of turf experiments.

3:15 P.M.—DEMONSTRATION of turf equipment—Tift County High School football field.

7:30 P.M.—BANQUET—Abraham Baldwin College Dining Hall.

ADDRESS—Dr. Gene C. Nutter, Editor, TURF-GRASS TIMES, Jacksonville Beach, Florida.

## TUESDAY, APRIL 15, 1969

MEETING PLACE—Rural Life Building, Abraham Baldwin College.

8:55 A.M.—WELCOME—Mr. Tom M. Cordell, Academic Dean, Abraham Baldwin Agricultural College, Tifton, Georgia.

9:00 A.M.—FACTORS THAT INFLUENCE GRASS GROWTH—Dr. R. H. Brown, University of Georgia, Athens, Georgia.

9:45 A.M.—GRASSES FOR THE GOLF COURSE—Panel Discussion, Moderator: Dr. G. W. Burton, Coastal Plain Experiment Station, Tifton, Georgia.

10:30 A.M.—RECESS

10:50 A.M.—MANAGING AND FERTILIZING THE SOIL TO MEET THE NEEDS OF THE GRASS AND THE GAME—Mr. Charles Wilson, Milwaukee Sewerage Commission, Milwaukee, Wisconsin.

11:20 A.M.—Discussion.

11:35 A.M.—PROPER USE OF WATER ON TURF—Mr. Tom Mascaró, West Point Products Corporation, West Point, Pennsylvania.

12:05 A.M.—Discussion.

12:30 P.M.—LUNCH—Abraham Baldwin College Dining Hall.

1:45 P.M.—WEED CONTROL IN TURF—Dr. E. O. Burt, Plantation Field Laboratory, Fort Lauderdale, Florida.

2:15 P.M.—Discussion.

4:30 P.M.—EFFECTIVE MOWING TECHNIQUES—Dr. Jim Watson, Jr., Toro Manufacturing Company, Minneapolis, Minnesota.

3:00 P.M.—Discussion.

3:30 P.M.—RECESS.

3:50 P.M.—DISEASE AND PEST CONTROL—Panel Discussion, Moderator: Dr. Homer D. Wells, Coastal Plain Experiment Station, Tifton, Georgia.

4:30 P.M.—ADJOURN.

## WEDNESDAY, APRIL 16, 1969

9:00 A.M.—ARTIFICIAL TURF—Mr. James M. Faria, Marketing Specialist, Monsanto Company, Atlanta, Georgia.

9:30 A.M.—Discussion.

9:45 A.M.—MANPOWER ON THE MOVE—Panel Discussion, Moderator: Mr. James B. Moncrief, USGA Green Section, Athens, Georgia.

10:30 A.M.—RECESS.

10:45 A.M.—QUIZ THE "EXPERTS"—They will try to answer your questions.

12 Noon - ADJOURN.

PLEASE NOTE!—You must return the enclosed reservation card if you want to attend the Turfgrass Banquet on April 14. Places are limited to 200 and costs are so high that we can provide only for those who return the reservation card.

Due to some confusion at past Conferences, it is requested that you write direct for room reservations in Tifton. Given below are some of the places in Tifton where you might stay. It is suggested that these reservations be made as far in advance as possible. Should there be any difficulty in securing a place to stay, contact Dr. Glenn W. Burton, Georgia Coastal Plain Experiment Station, Tifton, Georgia.

Carson Motel, Hwy. 82 West, Ph. 382-3111.  
Danny Ross Motor Court, Hwy. 41 N., Ph. 382-4085.  
Davis Brothers Motor Lodge, Interstate 75, Ph. 382-7210.

Holiday Inn, Interstate 75, Ph. 382-6687.  
Howard Johnson's Motor Lodge, Hwy. 41 N., Ph. 382-2650.

Lankford Manor, 401 Love Avenue, Ph. 382-9172.  
Lamplighter Motel, Hwy. 41 N., Ph. 382-6565.  
Quality Courts Motel, Albany Hwy., Ph. 382-1221.

Skyline Motel, Hwy. 41 S., Ph. 382-9190.  
The Petite Motel, W. 12th St., Ph. 382-6170.

Titus Motor Lodge, 1021 Love Ave., Ph. 382-3890.  
Town Terrace Motel, W. 12th St., Ph. 382-4466.

Wilton Hotel, Love Ave., Ph. 382-9186.

## WHY HOLD A TURF CONFERENCE?

The purpose of this Turf Conference, the twenty-third of its kind for this area, may be effectively stated in two words. These words are "Better Turf" for the Southeastern United States. At this conference, we hope to bring you up to date with the new developments in the field of turf management.



www.turfconf.com

Annual

# Southeastern Turfgrass Conference

## THE SOUTHEASTERN TURF RESEARCH PROGRAM

Since 1936, the U.S. Department of Agriculture, in cooperation with the Georgia Coastal Plain Experiment Station, has been conducting at Tifton, Georgia, an extensive grass breeding research program designed to solve some of the Southeastern pasture problems. Some of the findings of this research have been applicable to turf problems, but most of them have not. Beginning in the fall of 1946, a cooperative turf research program was begun at Tifton, Georgia under the stimulus of Dr. F. V. Grau. Starting in a very modest way with a few hundred dollars contributed by the U.S.G.A. Green Section and a number of Southern Golf Clubs and Associations, it was possible for B. P. Robinson to begin work on the project as a graduate student in January, 1948.

Space will not permit the listing of all the companies and organizations whose grants have made possible the turf work conducted at Tifton. To all of them, our very sincere thanks. We would also gratefully acknowledge the services of Dr. Homer D. Wells, Dr. William A. Johnson, and all the other personnel who have worked on this project through the years. We are particularly grateful to Mr. James B. Moncrief, Southern Director, U.S.G.A. Green Section for his counsel in connection with our turf research and for his assistance in developing this Conference program. We like to think of "Monty" as a member of our turf research team.

For a number of years we trained graduate students as they helped us carry out our turf research program. We can no longer expect graduate students to do their thesis research 200 Miles from the University where they take their course work. Thus our research must be conducted by our regular grass research staff. Although much of today's turf management is based on research first conducted at Tifton, our greatest contribution to the Turfgrass Industry has been the Tifton hybrid bermuda-grasses — Tifgreen, Tifway, and Tifdwarf. We think they can be improved by plant breeding and are currently putting most of our limited resources into this effort.

Any suggestions that you may offer which will add to the effectiveness of our program will be gratefully accepted.

Glenn W. Burton, Research Geneticist  
U.S.D.A. AND Georgia Coastal Plain  
Experiment Station, Tifton, Georgia

## THIRTIETH ANNUAL SOUTHEASTERN TURFGRASS CONFERENCE

TIFTON, GEORGIA

APRIL 12-13, 1976

"Managing Turf More Efficiently"

Sponsored by

UNIVERSITY OF GEORGIA  
COASTAL PLAIN  
EXPERIMENT STATION

in cooperation with

ABRAHAM BALDWIN  
AGRICULTURAL COLLEGE

UNITED STATES  
GOLF ASSOCIATION  
GREEN SECTION

SOUTHERN  
GOLF ASSOCIATION

AND

RURAL DEVELOPMENT  
CENTER



MEETING PLACE — Georgia Coastal Plain Experiment Station Turf Plots

10:00 A.M. REGISTRATION — Registration fee: \$20.00 (Includes banquet, Tuesday luncheon, and golf at Spring Hill Country Club, April 12).

11:00 A.M. WELCOME — Dr. Broades Browne, Director of Georgia Coastal Plain Experiment Station  
Tour of Turf Research Plots

MEETING PLACE — Spring Hill Country Club

1:30 P.M. TURF EQUIPMENT DISPLAY — Practice Fairway, Mr. Ed Kincaid, Chairman; Mr. Gene Armstrong, Toro Distributing Co.; and Mr. Larry Evans, Lawn & Turf, Inc.

SPRING HILL COUNTRY CLUB TURF MANAGEMENT PROGRAM — Mr. E. R. Jensen, Southern Turf Nurseries, Tifton, Georgia.

GOLF — Free to Turf Conference Registrants

7:30 P.M. BANQUET — Abraham Baldwin Agricultural College Dining Hall, "30 Years of Teamwork", Dr. Fred V. Grau, Executive Director, Pennsylvania Turfgrass Council, Inc., College Park, Maryland.

TUESDAY, APRIL 13, 1976

MEETING PLACE — Rural Development Center

8:55 A.M. WELCOME — Mr. Tom Cordell, Dean and Coordinator of Continuing Education, Abraham Baldwin College, Tifton, Georgia

Chairman: Mr. James B. Moncrief, Southern Director, U. S. Golf Association Green Section, Athens, Georgia.

9:00 A.M. TURFGRASS MANAGEMENT AS A CAREER — Mr. Tommy Burton, Coral Ridge Country Club, Ft. Lauderdale, Florida

9:30 A.M. EVOLUTION OF THE SOUTHEASTERN TURFGRASS INDUSTRY — Panel Moderator, Dr. Fred V. Grau; Mr. Tom Mascaro, Mr. T. M. Baumgardner, Mr. Ray Jensen, and Dr. William A. Meyer

10:30 A.M. BREAK

11:00 A.M. TRENDS, TODAY IN GOLF COURSE ECONOMY — Mr. Lawrence Smith, National Golf Foundation, Tampa, Florida

11:30 A.M. USGA AND ITS ROLE IN GOLF — Mr. Thomas Meeks, U. S. Golf Association, Far Hills, New Jersey

12:00 P.M. BUILDING GOLF COURSES FOR GOOD TURF MANAGEMENT — Mr. Bill Roquemore, Patten Seed and Turfgrass Company, Lakeland, Georgia

12:30 P.M. LUNCH  
Chairman: Mr. Gene Baston, Country Club of Birmingham, Birmingham, Alabama

Intermedia Point of View, Mr. T. B. Brown, Director, and Assistants Point of View: Mr. Mark Hampton

2:30 P.M. ROLE OF EQUIPMENT IN THE TURF INDUSTRY — Mr. Ned Brinkman, Jacobsen Manufacturing Co., Racine, Wisconsin

3:00 P.M. GREENSMOWERS — TRIPLEX AFTER 10 YEARS — Panel Moderator, Mr. Tom Mascaro, Safe-T-Lawn, Inc., Miami, Florida

3:40 P.M. FUTURE OF PESTICIDES — Mr. Stan Frederiksen, Mallinckrodt, Inc., St. Louis, Missouri

PLEASE NOTE! — You must return the enclosed reservation card if you want to attend the Turfgrass Banquet on April 12. Plots are limited to 200 and costs are so high that we can provide only for those who return the reservation card.

Due to some confusion at past Conferences, it is requested that you write direct to the motel for room reservations at Tifton. Given below are some of the places in Tifton where you might stay. It is suggested that these reservations be made as far in advance as possible. Show them the any difficulty in securing a place to stay contact Dr. Glenn W. Burton, Georgia Coastal Plain Experiment Station, Tifton, Georgia

Cason Motel, Hwy. 82 W., Phone 382-3111  
Davis Brothers Motel, 1006 W. 8th St., Ph. 382-7210  
Day's Inn Motel, Hwy. 82 W., Phone 382-8100  
Holiday Inn, Interstate 75, Phone 382-6687  
Howard Johnson's, Interstate 75 North, Phone 382-2650  
Lamplighter Motel, 1604 U. S. Hwy. 41 N., Phone 382-6565  
Quality Motel, Albany Hwy., Phone 382-1221  
Ramada Inn, Hwy. 82 W., Phone 382-8600  
Skyline Motel, Albany Hwy., Phone 382-9193  
The Petite Motel, 3111 W. 12th St., Phone 382-6170  
Trumpet Motel, 1-75, Phone 382-9500  
Tifton Motor Inn, 2nd St., Phone 382-4575  
Tussock Motor Lodge, 1021 Love Avenue, Phone 382-3890  
Town Terrace Motel, 1-75, Phone 382-4466  
Travel Lodge Motel, 1-75, Phone 382-0180  
Travelers Eight Inn, Hwy. 82 W., Phone 382-1515

## THE PROGRAM

Thirty years ago we held our first Southeastern Turfgrass Conference at Tifton. Our objective was "Better Turf" for the Southeastern United States and the program was designed to achieve this objective. Golf course superintendents and people interested in turfgrass came from many states and helped to make the first conference a success. This they have continued to do. Those who can remember the kind of turf we had 30 years ago will agree that by working together we have come a long way. We still have problems and we believe that this conference can help you solve them.

Last year we developed a different program. It was so well received by those who attended that we are following the same format again. We will start early enough that you can register and examine our turf plots before lunch. This will give you the afternoon at Spring Hill Country Club to inspect the turf equipment on the practice fairway and play a round of golf.

Spring Hill Country Club has been able to maintain a good golf course on an unusually low budget. We believe two of our hybrid bermudagrasses, Tifdwarf on the greens and Tifway on the fairways and tees, properly managed, have helped to keep maintenance costs low. Ray Jensen will describe this management program. As you play the course, you can discover first hand what this management program has done.

At 7:30 p. m., you will have another of those delightful banquets at the ABAC Dining Hall. This year we have a special treat. Dr. Fred V. Grau, the man who is responsible for starting our turf research program at Tifton will be our banquet speaker. He has done more to organize turf conferences and stimulate the development of turf research in the United States than any one I know. You will not want to miss his banquet address "30 Years of Teamwork".



# Registration Certificate

## IMPROVED CROP VARIETIES

TIFGREEN BERMUDAGRASS  
(Reg. No. 5)

*Developed by the*  
GEORGIA AGRICULTURAL EXPERIMENT STATION  
and  
CROPS RESEARCH DIVISION, ARS, USDA

*Accepted by the Committee on  
Varietal Standardization and Registration*

American Society  
of Agronomy

Agricultural  
Research Service



  
Committee member



  
In charge of register



# Outline for Today's Talk

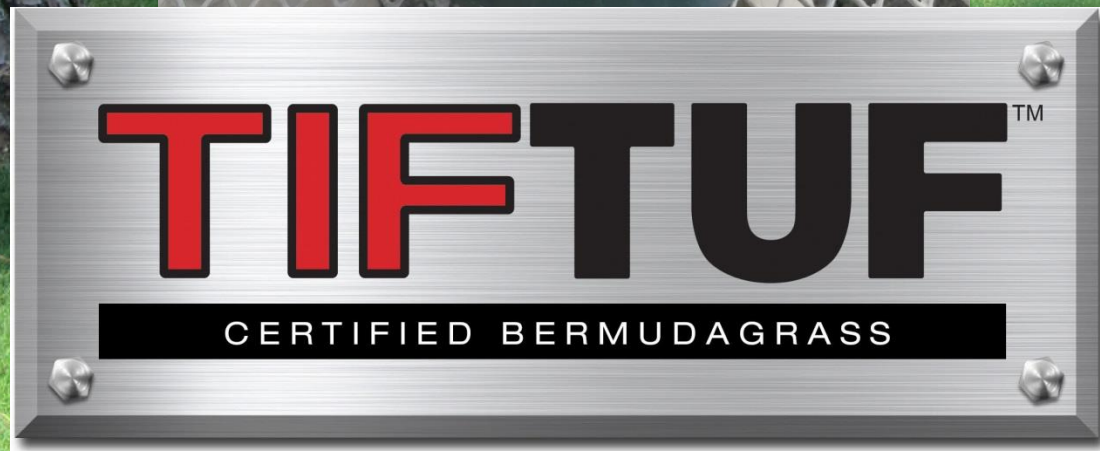
- **TifTuf**
- Research Trials Supported By:
  - University of Georgia Research Foundation (UGARF)
  - United States Department of Agriculture – Specialty Crop Research Initiative (USDA-SCRI)
  - Super-Sod (A Division of Patten Seed Company)
  - Georgia Seed Development (GSD)
  - Georgia Golf Environmental Foundation (GGEF)
  - Georgia Golf Course Superintendents Association (GGCSA)
  - United States Golf Association (USGA)
- New Hybrids
  - Zoysiagrass
  - Bermudagrass
  - Centipedegrass





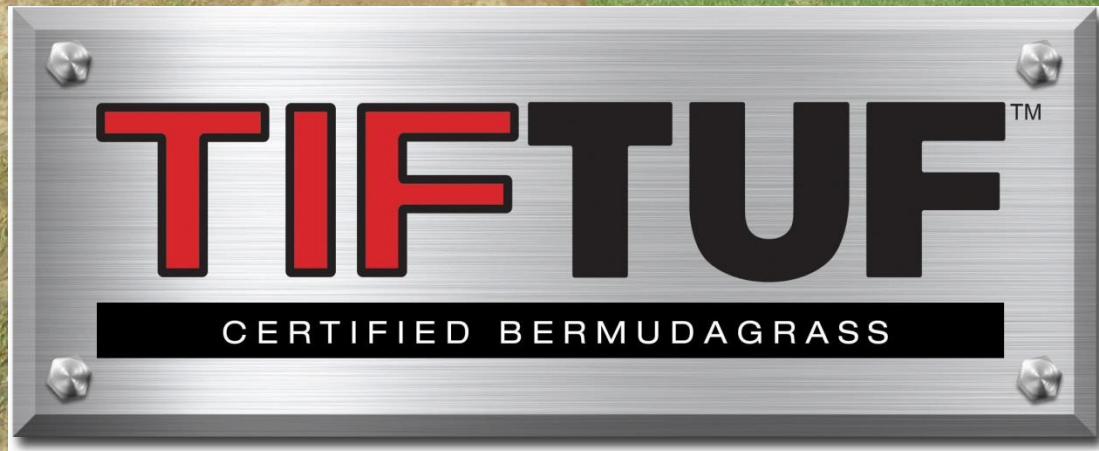


September 30<sup>th</sup>  
2013



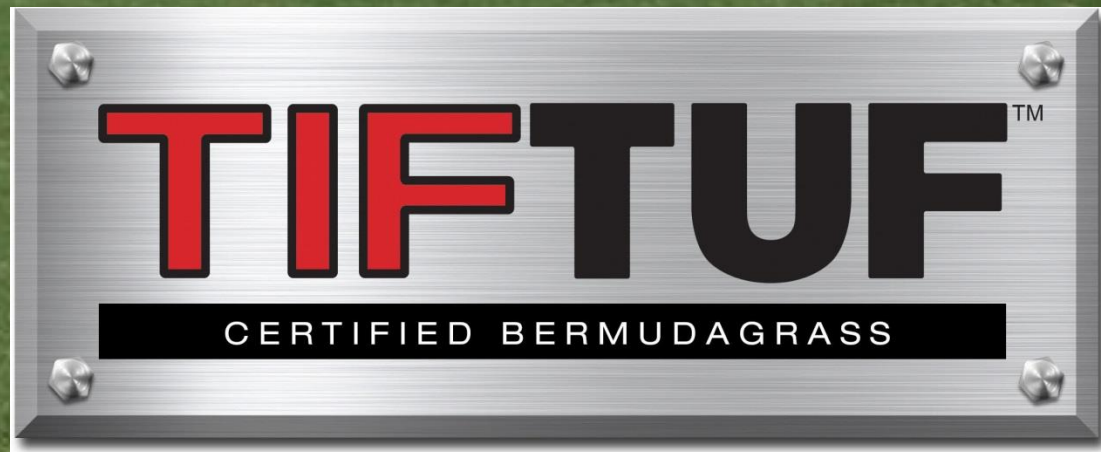


August 19<sup>th</sup>  
2014



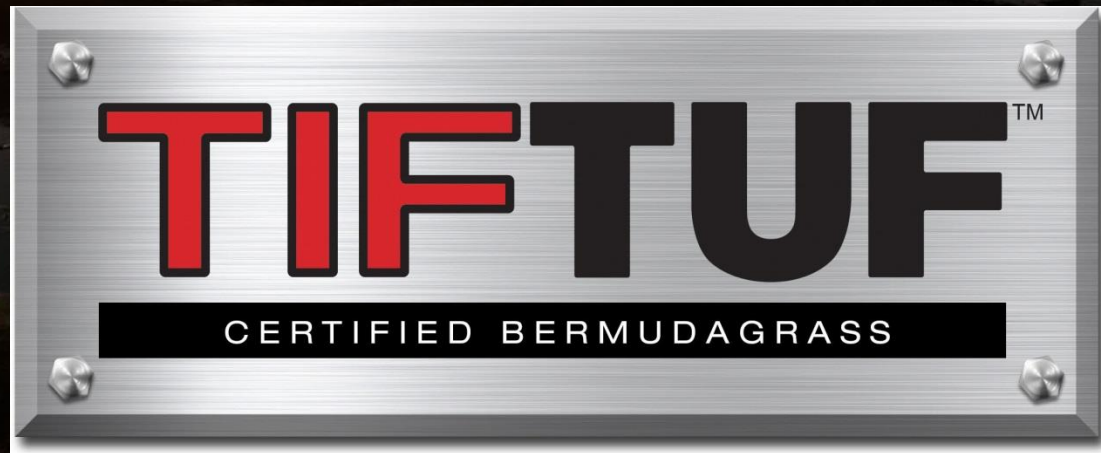


October 17<sup>th</sup>  
2014



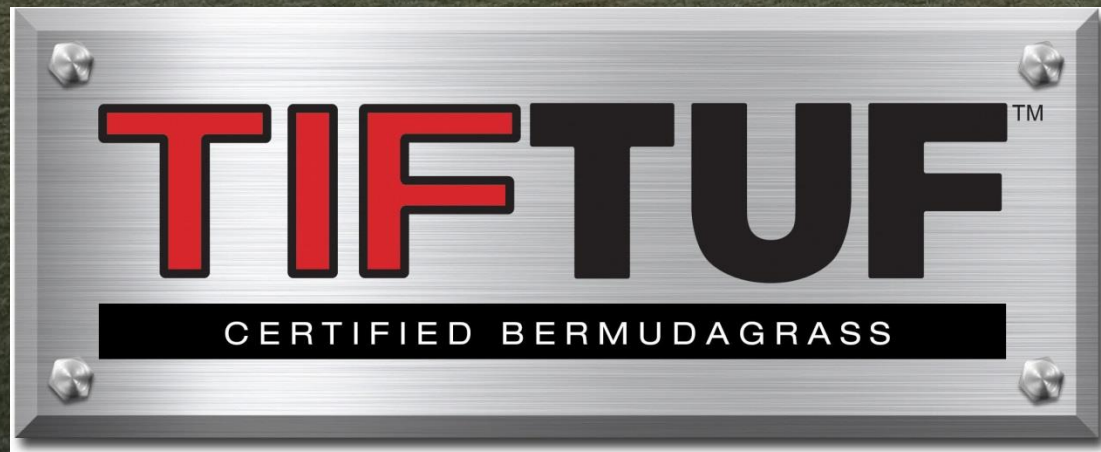


October 28<sup>th</sup>  
2015





December 21<sup>st</sup>  
2015





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- TifTuf
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- New Hybrids
  - Zoysiagrass
  - Bermudagrass
  - Centipedegrass



# Paint “Trials”





# Paint “Trials”





# Paint “Trials”



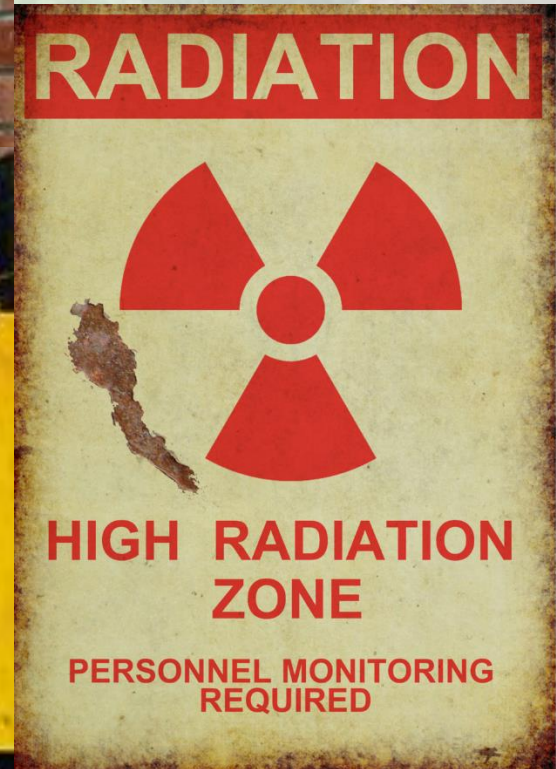


# Point "Trials"





# Radiation “Trials”





# Radiation "Trials"

## TW-72: A Potential New Bermudagrass For Golf Greens

*A bermudagrass for golf greens that can be mowed at 1/8-inch may be released soon!*

by DR. WAYNE W. HANNA

THERE HAS BEEN a growing concern about the existing hybrid bermudagrasses used for putting greens in the Southern portions of the United States. Historically, bermudagrass has been the dominant putting green turfgrass for Southern courses, given its superior heat, traffic, and disease tolerance. Tifgreen and Tifdwarf, released by Dr. Glenn Burton in 1956 and 1965, respectively, initially provided acceptable putting surfaces when Southern greens were mowed at 3/16-inch or higher. But as demands on bermudagrass greens have increased in an effort to provide putting green quality comparable to bentgrass, problems with bermudagrass have become serious. Tifgreen won't hold up at mowing heights lower than 3/16-inch and is practically never used on greens in the Southeast today. Tifdwarf is the present industry standard, but this variety cannot tolerate today's lower mowing heights, demanded by golfers, for any extended period of time without decline. Mutation, contamination, and a lack of reliable planting stock also

genotypes would lessen the threat of the industry not having a suitable grass to plant if either Tifgreen or Tifdwarf suddenly became susceptible to a pest. By focusing on the development of new dwarf varieties and protecting their purity through new tougher certification standards, better bermudagrass greens for golf would result.

### Breeding Program Objectives

In the mid-1980s, a bermudagrass breeding program was started at the Tifton, Georgia, Experiment Station to develop a new dwarf bermudagrass that would maintain good putting green quality at a 1/8-inch (or less) cutting height. After considering the possibilities for developing such a putting-green bermudagrass, we arrived at three alternatives: 1) select or induce (with radiation) finer-textured types in Tifdwarf; 2) make new *Cynodon transvaalensis* x *C. dactylon* crosses to produce new triploid hybrids; or 3) induce fine-textured mutants in an established cultivar such as Tifway 2 (released in

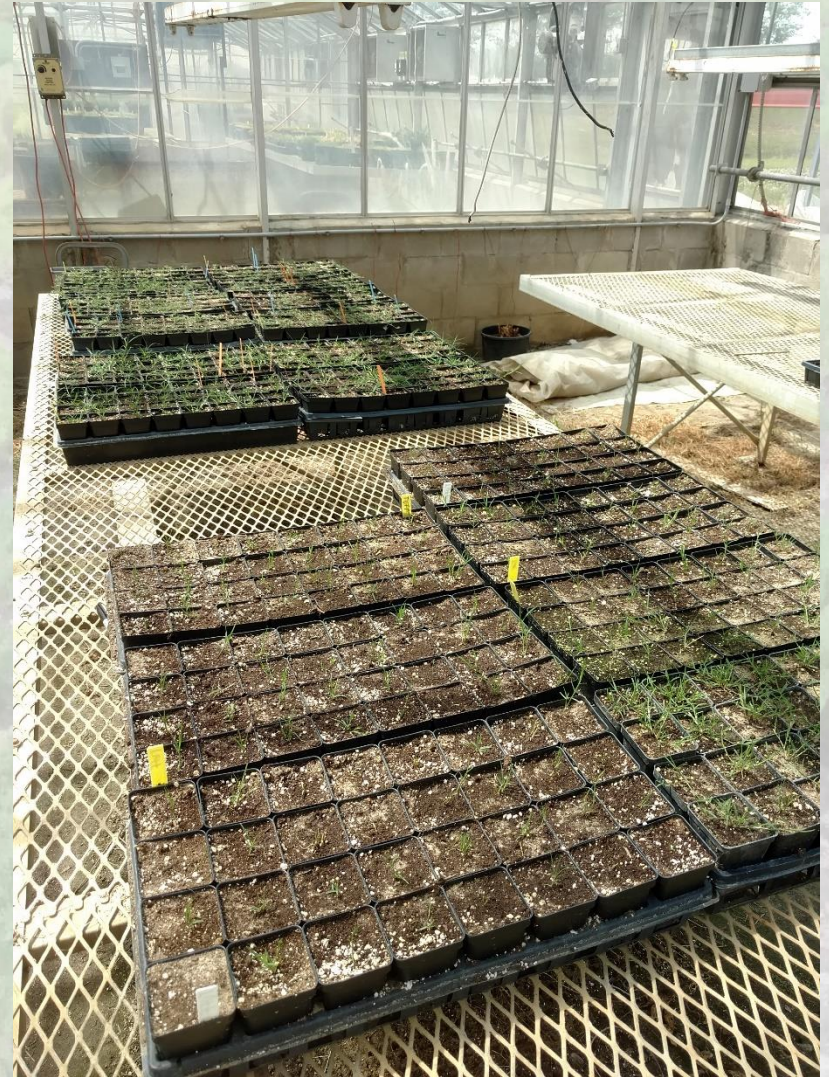
Tifway 2 with 7000 rads of gamma radiation. Sixty-five mutants were induced, 25 of which appeared more dwarf than Tifway 2. One of these, the most dwarf, we named TW-72.

### Detailed Description of TW-72

TW-72 has several new agronomic qualities compared to Tifdwarf that should make it very popular with golfers and golf course superintendents. Although TW-72 has a lighter green color than Tifdwarf, it doesn't become as purple or red when nights become cool, since it lacks the red pigment of Tifdwarf. It produces a tighter and denser turf than Tifdwarf, especially at the 1/8-inch mowing height. Its close mowing tolerance produces a smoother, faster surface, and one with less algae growth. TW-72 had a Stimp-meter reading approximately 12 inches faster than Tifdwarf at The Landings Golf Club (Savannah, Georgia) test site last summer. At 1/8-inch, there may be less difference in turf quality between TW-72 and Tifdwarf, but our recommendation will be to mow TW-72 at



# Radiation “Trials”





- Zoysiagrass - Georgia Selection



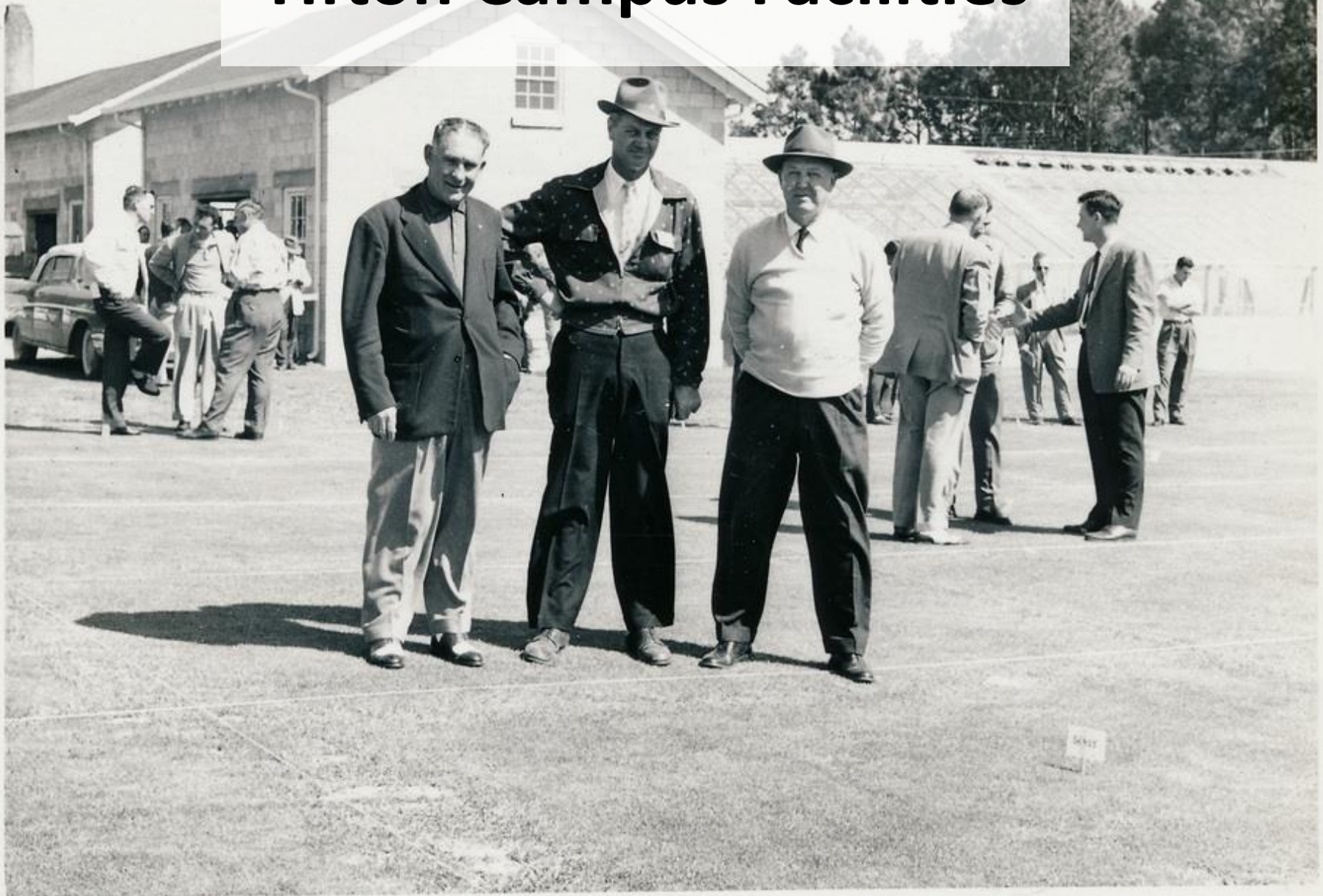


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# Tifton Campus Facilities





# Tifton Campus Facilities





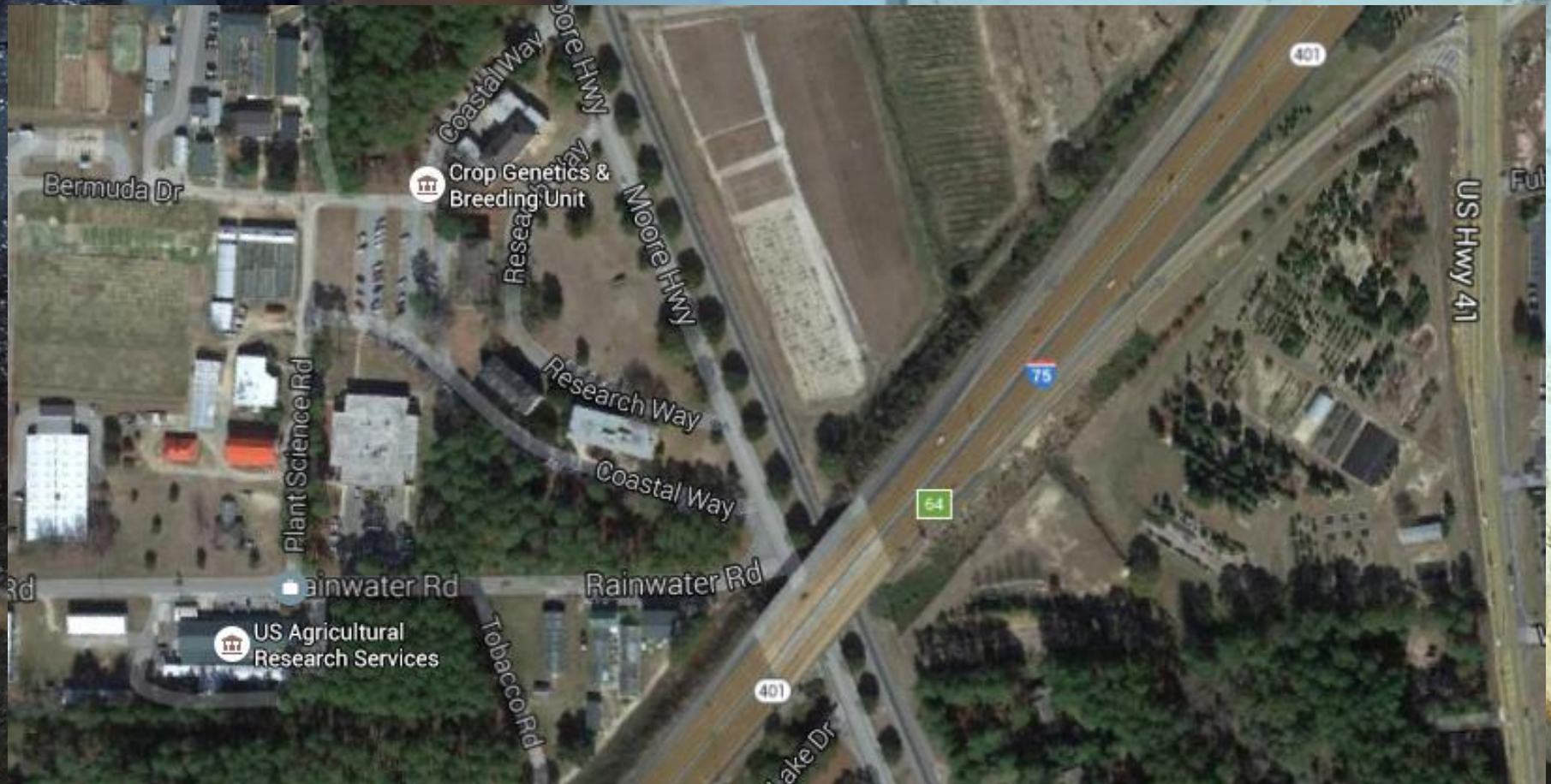






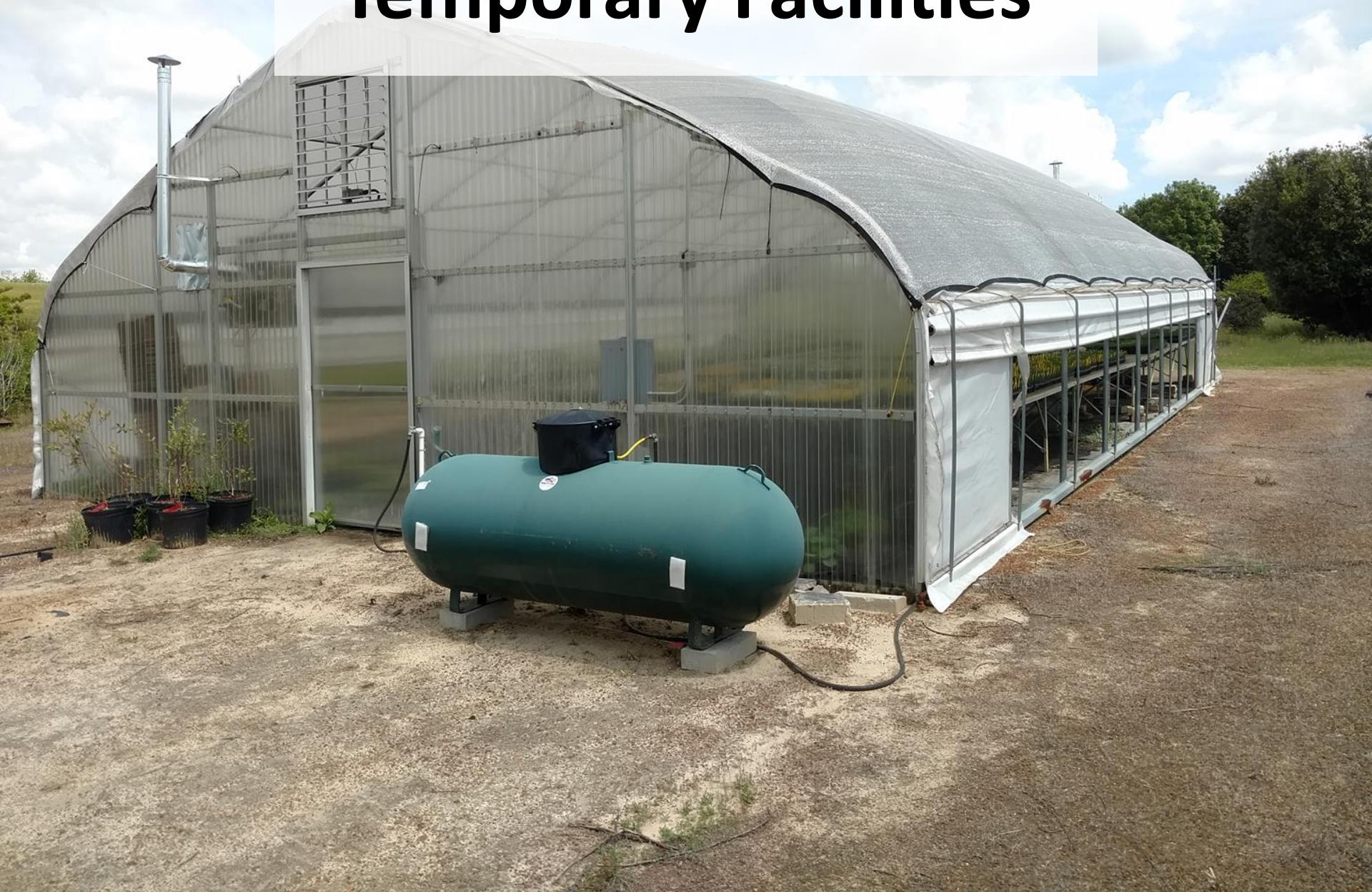


# A Deal With The Devil



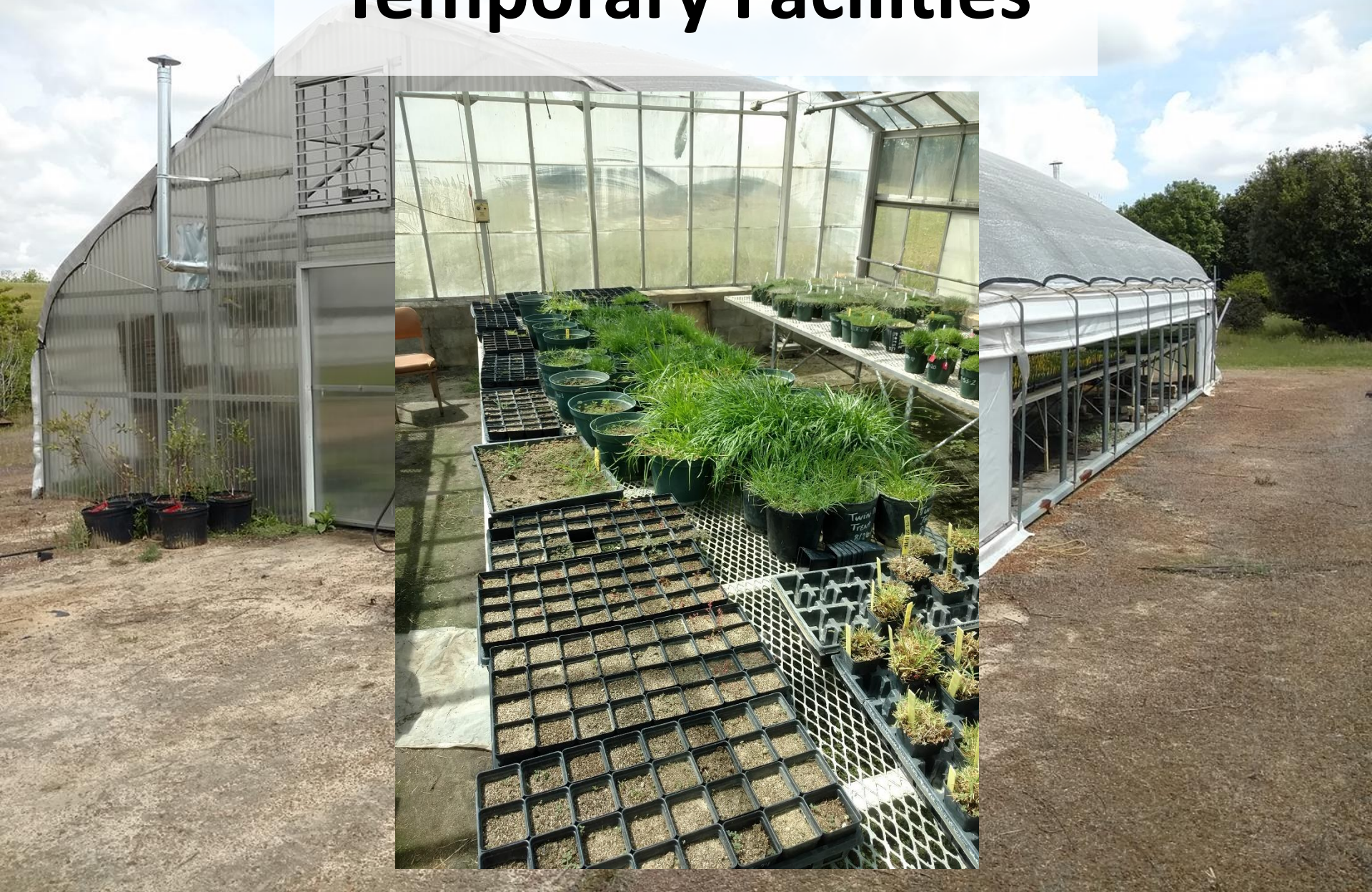


# Temporary Facilities





# Temporary Facilities





# Zoysiagrass Hybrids





# Bermudagrass Hybrids



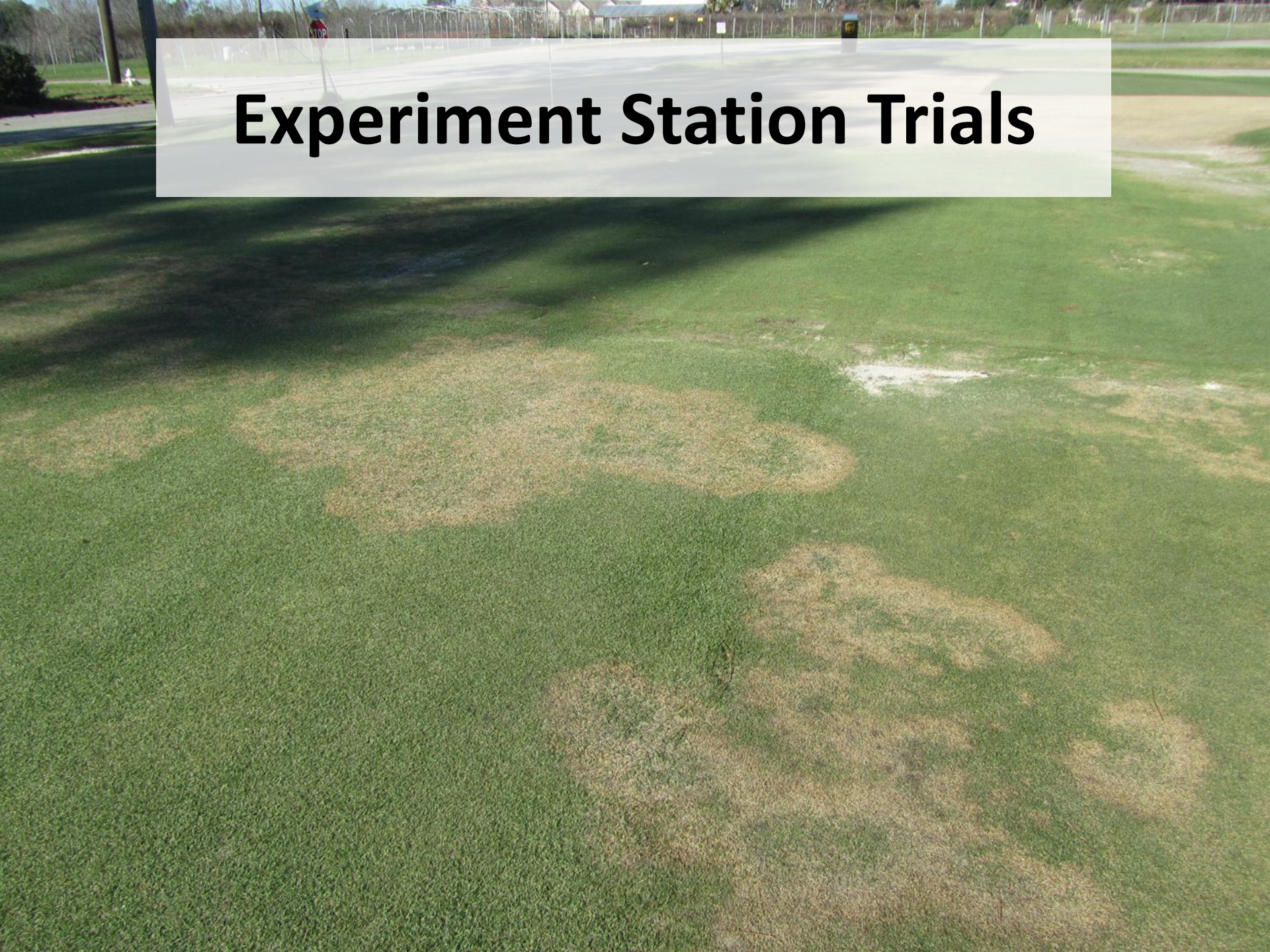


# Centipedegrass Hybrids



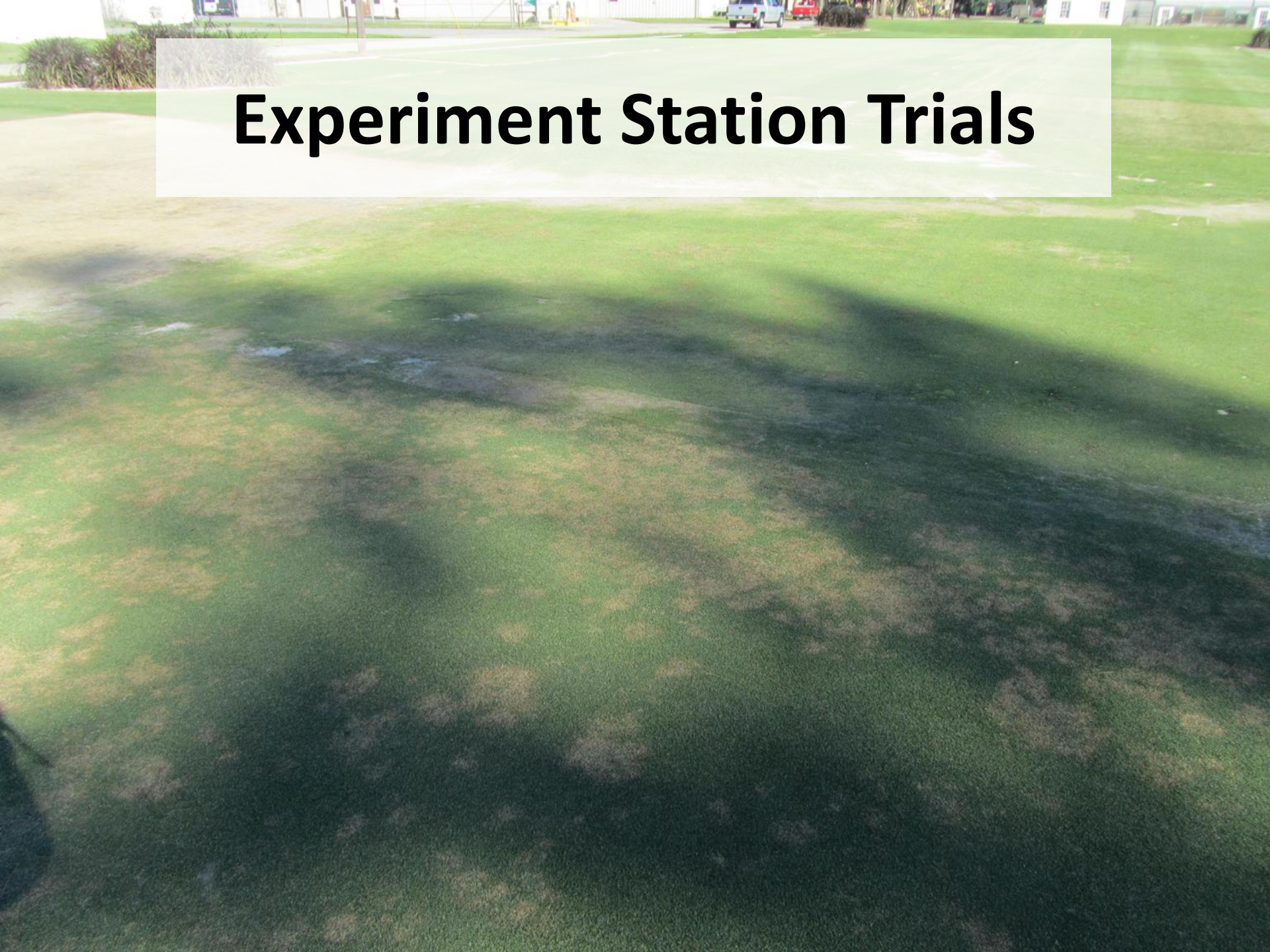


# Experiment Station Trials





# Experiment Station Trials





# Experiment Station Trials



- Bermudagrass



# Experiment Station Trials



- **Bermudagrass**



- Zoysiagrass - Georgia



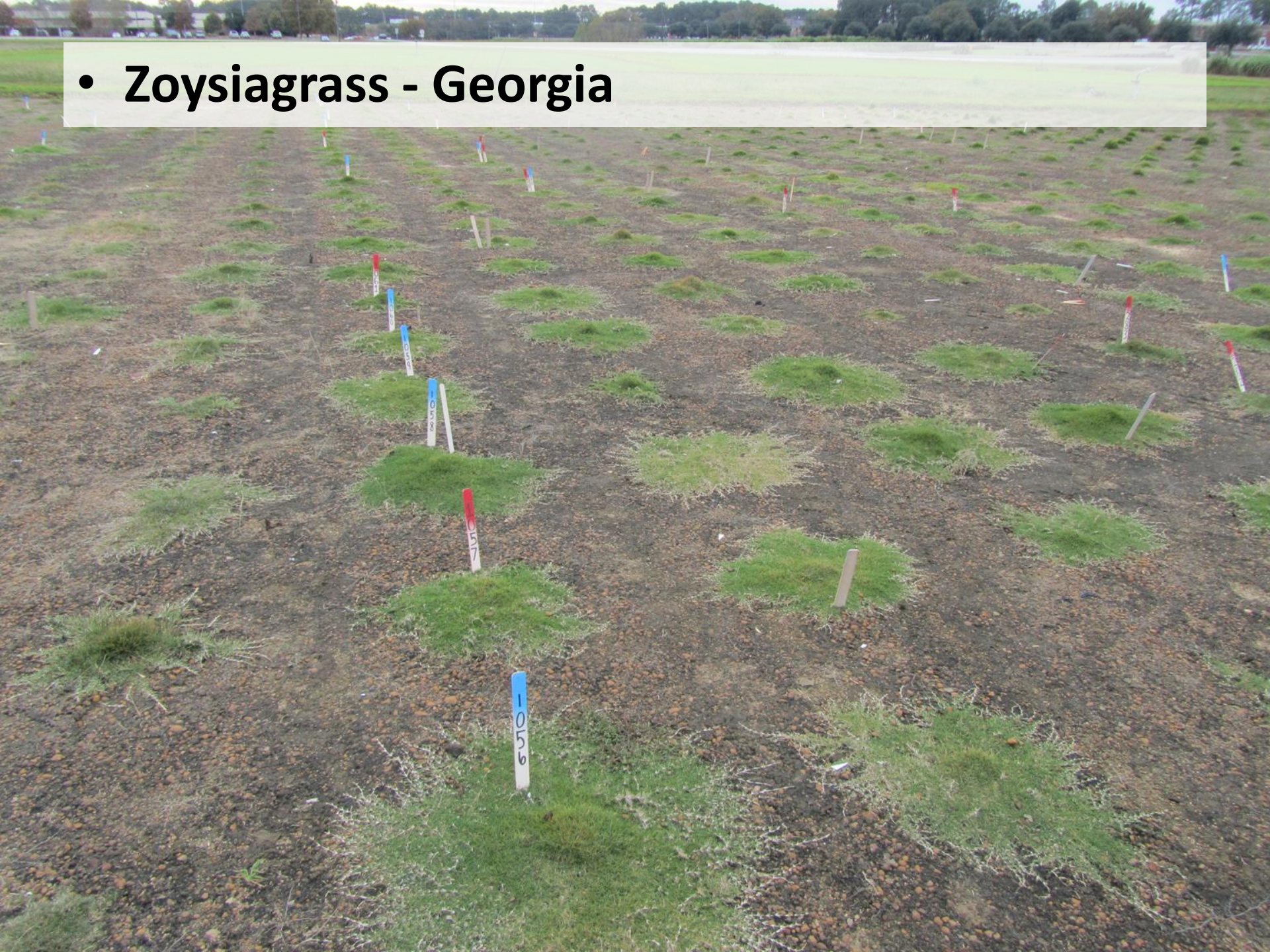


- Zoysiagrass - Georgia





- Zoysiagrass - Georgia





- Zoysiagrass - Georgia



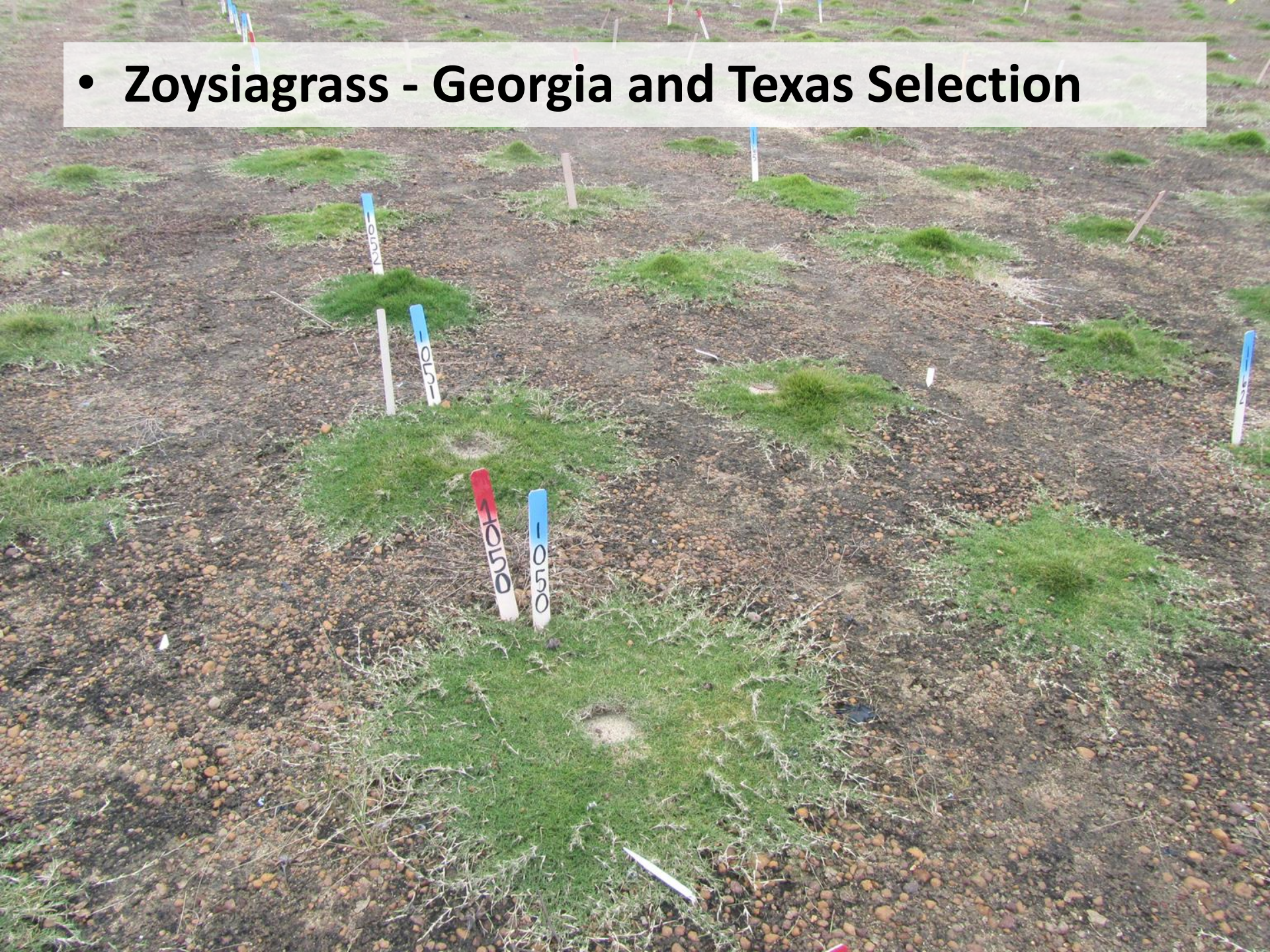


- **Zoysiagrass - Texas**





- Zoysiagrass - Georgia and Texas Selection





An aerial photograph of a golf course. A large, irregularly shaped green is in the center, surrounded by a light-colored path or fairway. The green has several sand traps (bunkers) around its perimeter. The overall scene is a lush green landscape with some brown patches, likely from dry grass or sand.

# Questions???

**Brian Schwartz**  
[tifturf@uga.edu](mailto:tifturf@uga.edu)