

USDA Funding for Collaborative Turfgrass Research



Outline

- Why are these universities working together?
- What have we done?
- What are our current activities?
- Future prospects?



Rationale

(Why are these universities working together?)

- Water resources are becoming more limited
 - Droughts: frequency and severity
 - Population growth
- Turfgrass Industry: multi-billion \$ economic impact
- Estimated 40-50 million acres of turf in the US
- Potentially 3X more acres of turf than irrigated corn in the US



Rationale

(Why are these universities working together?)

FLORIDA-FRIENDLY LANDSCAPING™ YARD TOUR



Participants learning about Florida-Friendly Landscaping™ during the yard tour at John's house



Master Gardeners staffing the information booths



"John" (pseudonym) spent thousands of dollars trying to maintain and "save" his grass, until he spoke to a Master Gardener at a Home Depot plant clinic, who introduced him to Florida-Friendly Landscaping™. He discovered that he can still have a good-looking yard without having grass. However, he was concerned about how his homeowner's association would react to removing his grass. The Master Gardener told him about the Florida-Friendly landscaping ordinance (FS 373.185), which gave him backing when he approached the homeowner's association. After some research about drought-tolerant plants requiring little maintenance, he replaced his front yard with mainly ornamental grasses and pine straw.

Sometime later, John received a letter from the Master Gardeners, who were trying to identify some homes to use for the 9th annual Florida-Friendly Landscaping Yard Tour. Shortly after, John got FFL yard recognition from the Master Gardeners and was one of four

homes featured in the FFL yard tour. In his yard description he wrote about Florida-Friendly Landscaping™: "It has been a positive change, using less water, therefore less expensive."

During the tour, John stood like a proud father in his yard as nearly 150 participants came to look at his landscaping and find out how they can do the same thing. He was amazed at the sheer number of participants. He said that his experience was very positive and that he is a true advocate of Florida-Friendly Landscaping™.

The Florida-Friendly Landscaping™ Yard Tour is a self-guided tour with maps and yard descriptions. Attendees were able to tour landscapes with labeled plants and Master Gardener volunteers were on hand to answer their horticulture questions. At each tour location, a teaching station (totaling 10) was set up to demonstrate one of the principles of Florida-Friendly Landscaping™, such as right plant

right place, mulching, managing pests, attracting wildlife, and watering appropriately. The Alachua County Environmental Protection Department was also there to discuss irrigation and fertilizer ordinances.

In a post-survey following the Florida-Friendly Landscaping™ Yard Tour, participants indicated a 34% increase in knowledge of FFL principles.

Participants indicated that after the FFL yard tour they wanted to make changes to reduce turf, more mulch (73%), look for and remove invasive plants (43%), and pay closer attention to when and how to water (30%). Nine homes received FFL yard recognition and 4 of those were on the tour. Attendees to the tours and seminars are often close to making changes in their landscapes, and by providing local examples of landscapes and education, they will have the tools to move forward with their intentions of having a Florida-Friendly Landscape™.

Rationale

(Why are these universities working together?)

FLORIDA-FRIENDLY LANDSCAPING™ YARD TOUR



Participants during the yard tour.



Why this project is more than turfgrass breeding...

- Collaborative Network of Scientists
 - Drought Responses
 - Physiology
 - Molecular components
- Surveys
 - Homeowners
 - Industry
- Education/Extension efforts

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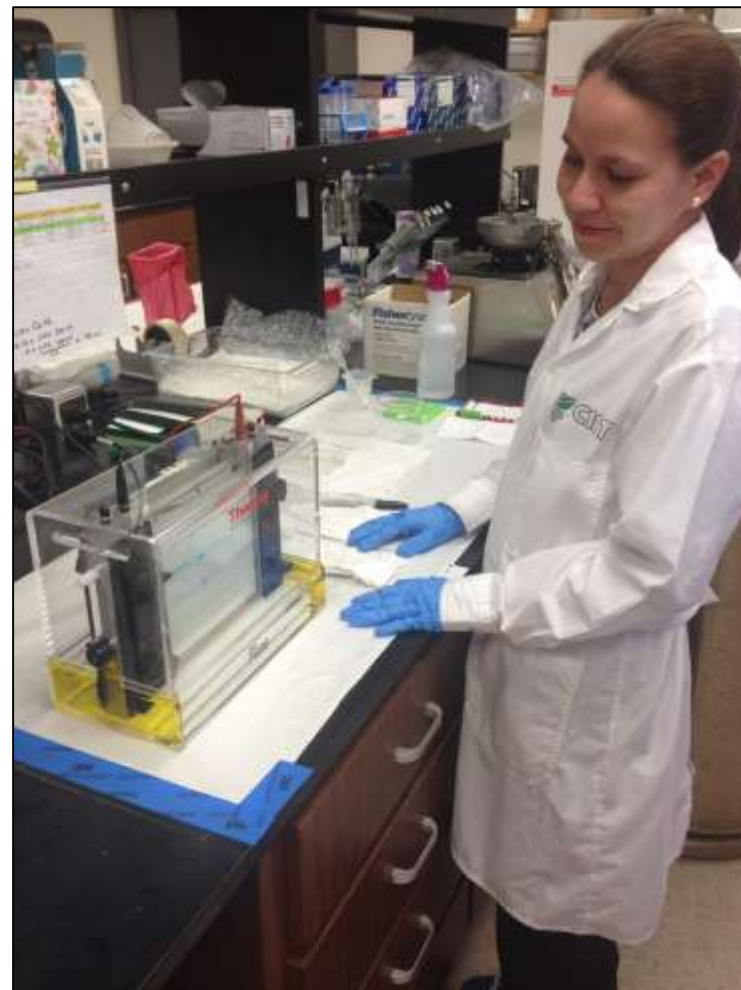
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What have we done?



What have we done?

- 2010 Project Initiated, led by TX A&M
- 5 Universities – USDA-SCRI grant
 - Study and improve drought and salinity response of warm-season turfgrass
- Completed 2015



What have we done?

2010-2015 Accomplishments

- Collaborative Group
 - Meet 2X per year
 - Established an industry based advisory panel
- Breeding
 - Identified 140 Advanced lines for short-term drought stress
 - 40 each of bermudagrass, zoysiagrass and St. Augustinegrass
 - 20 seashore paspalum
 - Screened the majority of advanced lines for salinity responses
 - Pilot study for shade responses
 - 2 Released Cultivars:
 - TamStar St. Augustinegrass
 - TifTuf bermudagrass



What have we done?

2010-2015 Accomplishments

- Surveys
 - Homeowner trait preferences
 - Factors that influence what a homeowner is willing to pay for
- Education
 - Communicated results:
 - Scientific community at international meetings
 - With industry at numerous field days and industry events



Current Activities

2015 – New Project Awarded, led by UF

- 24 Scientists
- Further evaluate the 140 advanced lines
- Surveys
- Education/Extension



Irrigation/Drought Research

3 Studies

Approach A

- Impose all stages of water restrictions
- Top 3 lines from all programs
- 2016 planted
- Year 2 and 3: impose 5 stages of irrigation restrictions
 - S1= 2x/week
 - S2= 1x/week
 - S3 = 1x/14 days
 - S4 = 1x/ month
 - S5 = No irrigation
- Year 4 recovery.

Approach B

- Incremental water stages by year
- Top **20** lines from each breeding program
- Year 1: Establishment
- Year 2: Stage 2 (1x per week)
- Year 3: Stage 3 (1x per 14 days)
- Year 4: Stage 4 (1x per month)

Approach C

- Incremental water stages by year
- Top **20** lines from each breeding program
- Year 1: Establishment
- Year 2 and 3: No supplemental irrigation
- Year 4: Recovery



Shade Evaluations

- Top 20 lines from each program
- Citra, FL; Tifton, GA; Stillwater, OK; and Raleigh, NC

Salinity Evaluations

- Top 20 lines from each program
- Griffin, GA

Sod and Herbicide Trials

- Top 20 lines from each program
- Dallas, TX; Jay, FL; Griffin, GA; Stillwater, OK; and Jackson Springs, NC

Socio-Economic Analysis (Surveys)

- OK State
- Estimate social and economic values of drought resistance turfgrass in southern states.
 - Producers/breeders
 - Consumers
- Factors affecting price
- Traits of most value
- Demand for water conservation certified turf (i.e. Watersense)



Education/Extension

- Educate, Promote and Inform end-users of the environmental and economic impacts of newly developed cultivars.
- Demonstration Landscapes will be installed in each state through partnering extension specialists with industries and government agencies.
 - Example: Florida planned communities with requirement to utilize Florida-Friendly landscapes (FFL)
 - New FFL will be installed using the two cultivars from the previous grant: TifTuf and TamStar.
- Demonstrations will have signage for BMPs, water use and illustrate economic savings.
- Social media, extension releases and field days.





Thank You!
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