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Range Cattle Research & Education Center

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Limpograss Management in South Florida

2023 UF/IFAS Range Cattle Research and Education Center Field Day

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Introduction

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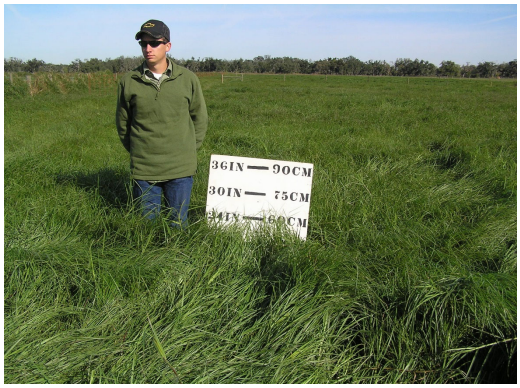
- Limpograss (*Hemarthria altissima*) is the second most cultivated forage for beef cattle production in South Florida



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Introduction

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- The first plants were brought to the USA in 1964 via the Rietondale Research Station, Pretoria, South Africa.

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Introduction

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- Floralta was among the first limpograss cultivars released by Dr. Quesenberry in the 1980's
- In 2014, two new cultivars, Gibtuck and Kenhy, were released by IFAS. They are the first and only limpograss hybrids in the world.

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Introduction

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Introduction

- Fertilization is among the most costly input in forage production
- In addition, soil and climatic conditions usually decrease fertilization efficiency in grasslands in Florida

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Experiment 1

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- The project has been conducted from 2016-2018
- Treatments were the combination of:
  - 4 limpograss cultivars/entry (Floralta, Gibtuck, Kenhy, and Entry 1)
  - 2 fertilization levels (40-10-40 or 80-20-80)
  - 2 harvest frequencies (6 or 12 weeks)

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Results - Ona

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Response variables	Herbage accumulation (lb DM/acre)	Nitrogen use efficiency (lb DM/lb N fertilized)	Crude Protein (%)	Digestibility (%)
Cultivar				
Gibtuck	4,100a	68a	8.1a	55.8a
Kenhy	2,900b	48b	8.9a	54.6a
Floralta	3,420b	56b	8.4a	54.8a
Entry 1	2,800b	46b	8.8a	54.2a
Regrowth Interval				
6 weeks	2,800b	46b	9.8a	57.6a
12 weeks	6,270a	104a	7.3b	52.2b
Fertilization				
80-20-80	5,000a	62b	8.7a	55.2a
40-10-40	4,000b	100a	8.4a	54.5a

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Results - Ona

	Root mass (lb DM/acre)	Ground cover (%)
Cultivar		
Gibtuck	4310a	88a
Kenhy	2988b	50b
Floralta	2650b	64b
Entry 1	3600ab	61b
Regrowth Interval		
6 weeks	2980b	54b
12 weeks	3900a	87a
Fertilization		
80-20-80	3900a	85a
40-10-40	2800b	58b

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Results

	Herbage accumulation (lb DM/acre)	N concentration (%)	N content (lb N/12 week harvest)
Fertilization			
80-20-80	3900a	1.4	55
40-10-40	2800b	1.4	40

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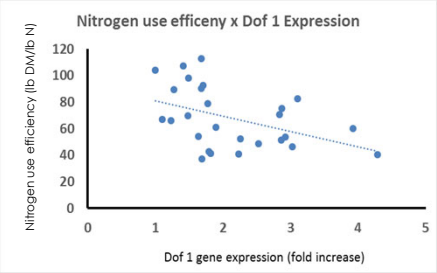
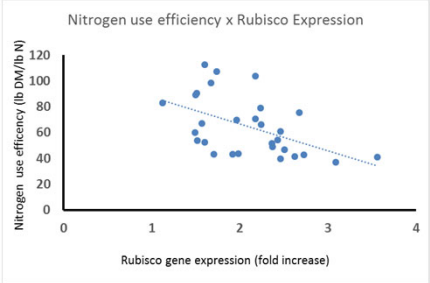
Results

Cultivar	Dof 1	Rubisco
	Fold increase	
Ona		
Gibtuck	1.9b	1.7c
Kenhy	1.5b	2.0b
Floralta	2.2a	2.1b
Entry 1	2.5a	2.5a





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Experiment 2

- The project has been conducted from 2022-2023
- Treatments were the combination of:
  - 2 limpograss cultivars/entry (Floralta and Gibtuck)
  - 3 phosphorus fertilization levels (0, 20, and 40 lb P_2O_5/acre)

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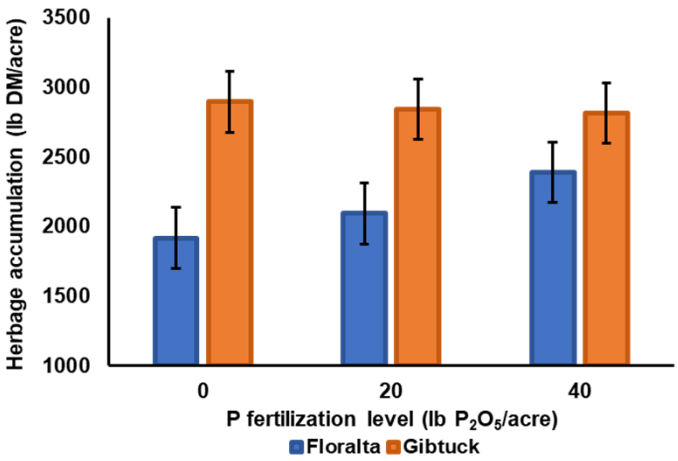
Results - Ona



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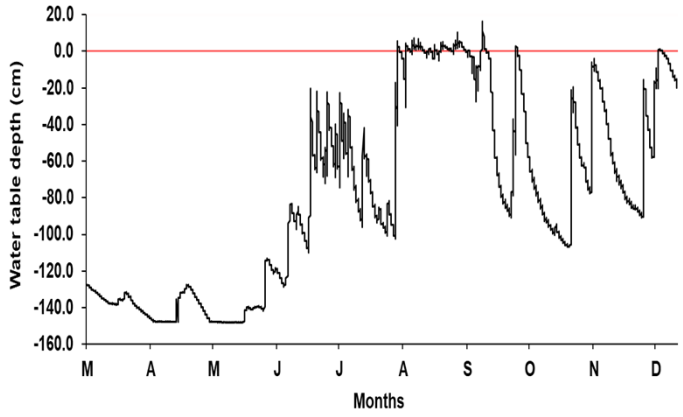
Results - Ona



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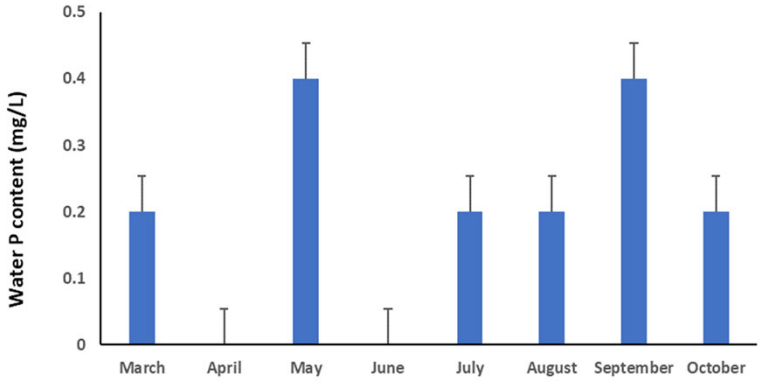
Results - Ona



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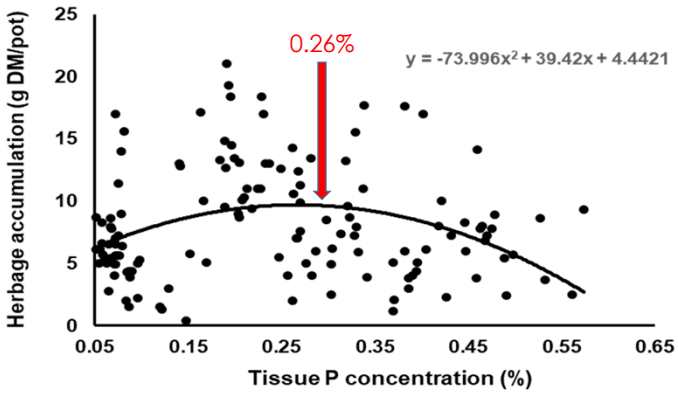
Results - Ona



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Experiment 3

- The project has been conducted from 2016-2018
- Treatments were Floralta or Gibtuck stockpiled for 3 months (October to January)
- Pastures were grazed from January to March
- The variation in forage mass and nutritive value was evaluated

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Results - Ona

	Weight Gain lbs	Calf Weight lbs	Preg Rates %
Limpograss	-115	547	91.6
Bahia + hay	-88	535	92.2

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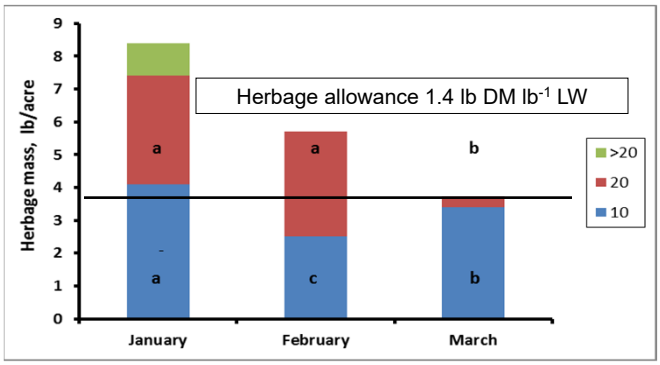
Results - Ona



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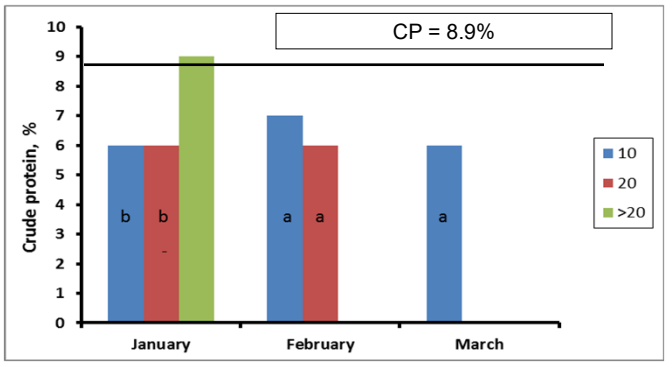
Results - Ona



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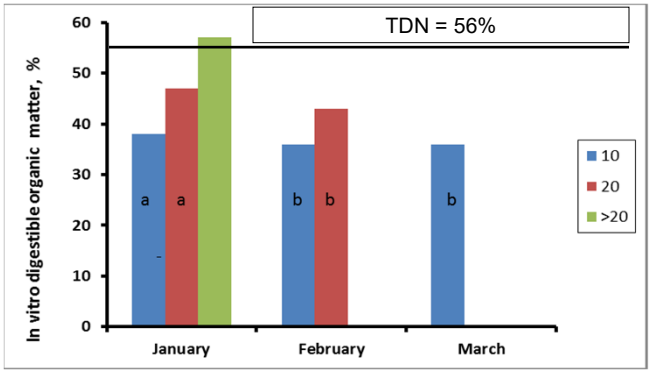
Results - Ona



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Results - Ona

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Results - Ona

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Results - Ona

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Results - Ona

Nutrient	Supplement (lb/d)		
	January	February	March
DM	No	Yes	Yes
CP	No	1.0	1.0
TDN	No	2.8	3.7

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Implications

- There are evidences that Gibtuck is a superior limpograss cultivar in South Florida. Gibtuck had the greatest root mass and ground cover and it is more persistent than other cultivar under adverse management practices.
- Greater regrowth intervals consistently resulted in greater herbage yield and ground cover, indicating that limpograss management should be slightly different from other warm-season perennial grasses. As expected, longer regrowth intervals resulted in slightly lesser nutritive value; however, the magnitude of the increase is not justified by the decrease in herbage yield and stand.

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Implications

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- It is perceived that lower fertilization levels may be used in situation of unfavorable cattle market conditions or grazing; however, there may be a decrease in persistence if lower fertilization levels are used for an extended period of time for hay or haylage production
- There was no effect of P_2O_5 fertilization level on herbage accumulation; however, Gibtuck had greater herbage accumulation than Floralta There was no effect of P_2O_5 fertilization level on water P content

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Implications

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- Stockpiling limpograss is a viable management practice to supply forage for mature cows during the winter in South Florida
- The decrease in forage nutritive value during the grazing season needs to be considered to determine the supplementation program to optimize cattle performance

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Joe What? Podcast

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