Broomsedge Management in Bahiagrass Pastures

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Broomsedge

- Tufted perennials
- 3 to 5 yrs
- ~19 species
- Extremely evident in the fall

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Broomsedge vs. Sedge

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Previous Research

- Broomsedge disappeared from NPK fertilized fescue plots over a 5-yr period (Peters and Lowance 1974)
- Tillage (3” depth) + 100 lb N/A decreased broomsedge density in bermudagrass
- Most research has indicated that broomsedge infestation is a result of low fertility
- Many have implicated soil pH

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Broomsedge

- Soil pH is not necessarily the reason

Location	pH	P	Cu	Zn
		----------ppm----------		
Hardee	5.9	42	0	1.46
Polk	5.1	1	0	0.74
Polk**	6.0	105	1.37	19.39
Polk	4.5	3	0	7.34
Okeechobee	5.4	0	0	3.38
Highlands	4.1	2	0	3.97
Manatee	5.6	0	0	0.43
Ona	4.3	2	0	0.95
Glades	5.8	0	0	6.55
DeSoto	7.8	40	0	0.54

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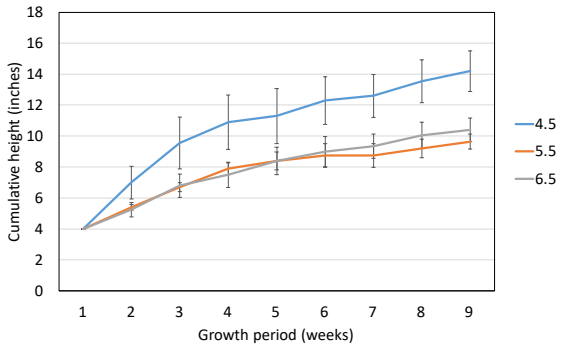
Cumulative Purple Bluestem Height



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Circumstantial Evidence

- Optimize soil pH
- Does P have a role?
- Does Cu have a role?
- Does something else have a role?

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Methods

- 3 locations
  - Ona (2012)
  - Arcadia (2012)
  - St. Cloud (2013)
- Annual application
  - 10-5-10
  - Frit 503-G (micros)

Rep 4	0 Lime 0 NPK Micro	Lime 0 NPK 0 Micro	0 Lime NPK Micro	Lime NPK 0 Micro	Lime 0 NPK Micro	0 Lime 0 NPK 0 Micro	Lime NPK Micro	0 Lime NPK 0 Micro
Rep 3	0 Lime NPK 0 Micro	Lime 0 NPK Micro	Lime NPK Micro	0 Lime 0 NPK 0 Micro	0 Lime NPK Micro	0 Lime) NPK Micro	Lime 0 NPK 0 Micro	Lime NPK 0 Micro
Rep 2	0 Lime NPK Micro	0Lime 0 NPK Micro	0 Lime NPK 0 Micro	0 Lime 0 NPK 0 Micro	Lime NPK Micro	Lime 0 NPK 0 Micro	Lime NPK 0 Micro	Lime 0 NPK Micro
Rep 1	Lime NPK Micro	0 Lime NPK Micro	Lime 0 NPK Micro	0Lime 0 NPK Micro	Lime NPK 0 Micro	0 Lime NPK 0 Micro	0 Lime 0 NPK 0 Micro	Lime 0 NPK 0 Micro

- Broomsedge counts annually
- Soil and tissue samples – fall
- Ona = Lime (2012, 2018); Arcadia = S; St. Cloud = None

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Methods – Location Information

Location	Soil pH	P	K	Mg	Ca	Cu	Mn	Zn	Species
		——————PPM——————							
Arcadia	7.7	13	10	69	1879	0	2	2	Bushy bluestem
Ona	4.3	2	19	24	116	0	0	0	Purple bluestem
St. Cloud	5.5	2	22	44	281	0	0	0	Broomsedge bluestem

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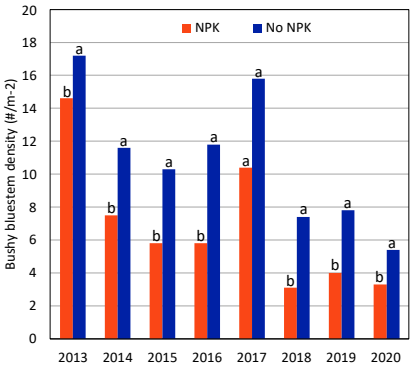
Results - Arcadia

- NPK response
- No response:
  - S
  - Micros



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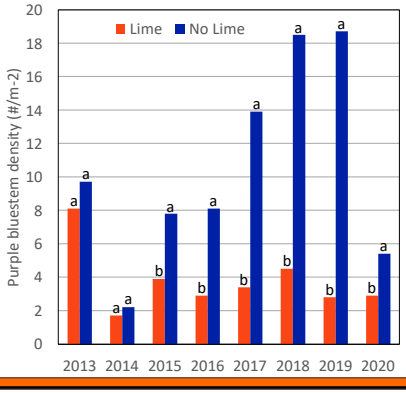
Results - Ona

- Lime response
- No response:
  - NPK
  - Micros



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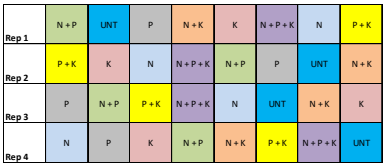
Macronutrient Study - 2017

- Lime applied as needed
- Rates:
  - N – 50 lb/A
  - P – 25 lb/A
  - K – 50 lb/A
- Locations
  - Ona
  - Buck Island



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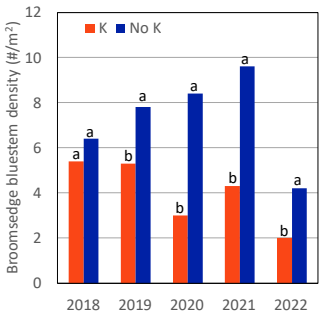
Results – Buck Island

- K response
- No response:
  - P
  - N



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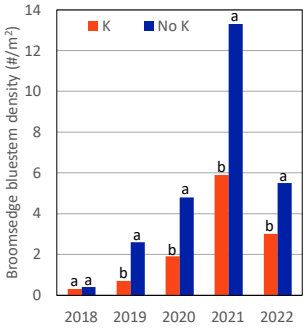
Results - Ona

- K response
- No response:
  - P
  - N
- Hexazinone in 2017



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Discussion

- St. Cloud location: why no impact?
- Why is P having an impact in other states, but not here?
- Liming: soil test first!
- Multi-pronged approach:
  - Fertility
  - Defoliation
  - Tillage?
  - Herbicide (spot-treat or wiping)

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Using a Wiper

- Usually a 10% v/v solution (glyphosate)
- Wipe in two directions
- Practice makes perfect
  - Use of foam marker solution

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Wiping Broomsedge

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Wiping Broomsedge – 2 years

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Summary

- In some respects, increasing soil fertility will help – SOIL TEST
- This approach will take time and doesn't eliminate
- Wiping is an option
- More research
  - Roller chopping followed by fertilization?
  - Multiple mowing cycles?
  - Increased grazing pressure?

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Questions

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