

**UF** UNIVERSITY OF FLORIDA

## Broomsedge Management in Bahiagrass Pastures: An Ongoing Study

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**Broomsedge**

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- Tufted perennials
- 3 to 5 yrs
- ~18 species present
- Extremely evident this time of year




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**Broomsedge**

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- 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
Orn	4.3	2	0	0.95
Glades	5.8	0	0	6.55
DeSoto	7.8	40	0	0.54

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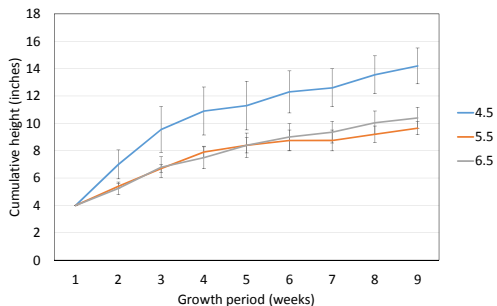
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## Cumulative Purple Bluestem Height




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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?

Location	pH	P	Cu	Zn
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Highlands	4.1	2	0	3.97
Manatee	5.6	0	0	0.43
Ona	4.3	2	0	0.95
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## Methods



- 3 locations
  - Ona (2012)
  - Arcadia (2012)
  - St. Cloud (2013)
- Annual application
  - 10-5-10
  - Frit 503-G (micros)
- Broomsedge counts annually
- Soil and tissue samples - fall

Rep	Lime DNPK Micro	Lime DNPK Micro	Lime NPK Micro	Lime NPK Micro	Lime NPK Micro	Lime DNPK Micro	Lime NPK Micro	Lime NPK Micro
Rep 4	Lime DNPK Micro	Lime DNPK Micro	Lime NPK Micro	Lime NPK Micro	Lime NPK Micro	Lime DNPK Micro	Lime NPK Micro	Lime NPK Micro
Rep 3	Lime NPK Micro	Lime DNPK Micro	Lime NPK Micro	Lime DNPK Micro	Lime NPK Micro	Lime DNPK Micro	Lime NPK Micro	Lime NPK Micro
Rep 2	Lime NPK Micro	Lime DNPK Micro	Lime NPK Micro	Lime DNPK Micro	Lime NPK Micro	Lime DNPK Micro	Lime NPK Micro	Lime NPK Micro
Rep 1	Lime NPK Micro	Lime DNPK Micro	Lime NPK Micro	Lime DNPK Micro	Lime NPK Micro	Lime DNPK Micro	Lime NPK Micro	Lime NPK Micro

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## Methods – Location Information



Location	Soil pH	P	K	Mg	Ca	Cu	Mn	Zn	Species	Density plants/m <sup>2</sup>
Arcadia	7.7	13	10	69	1879	0	2	2	Bushy bluestem	5.0
Ona	4.3	2	19	24	116	0	0	0	Purple bluestem	2.8
St. Cloud	5.5	2	22	44	281	0	0	0	Broomsedge bluestem	4.4

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## Plot Layout



	0 Lime 0 NPK 0 Micro	Lime 0 NPK 0 Micro	0 Lime NPK Micro	Lime NPK 0 Micro	0 Lime 0 NPK 0 Micro	0 Lime 0 NPK 0 Micro	Lime NPK 0 Micro	0 Lime NPK 0 Micro
Rep 4	0 Lime NPK 0 Micro	Lime 0 NPK 0 Micro	0 Lime NPK 0 Micro	Lime NPK 0 Micro	0 Lime 0 NPK 0 Micro	0 Lime 0 NPK 0 Micro	Lime NPK 0 Micro	0 Lime NPK 0 Micro
Rep 5	0 Lime NPK 0 Micro	Lime 0 NPK 0 Micro	0 Lime NPK 0 Micro	Lime NPK 0 Micro	0 Lime 0 NPK 0 Micro	0 Lime 0 NPK 0 Micro	Lime NPK 0 Micro	0 Lime NPK 0 Micro
Rep 3	0 Lime NPK 0 Micro	Lime 0 NPK 0 Micro	0 Lime NPK 0 Micro	Lime NPK 0 Micro	0 Lime 0 NPK 0 Micro	0 Lime 0 NPK 0 Micro	Lime NPK 0 Micro	0 Lime NPK 0 Micro
Rep 1	0 Lime NPK 0 Micro	Lime 0 NPK 0 Micro	0 Lime NPK 0 Micro	Lime NPK 0 Micro	0 Lime 0 NPK 0 Micro	0 Lime 0 NPK 0 Micro	Lime NPK 0 Micro	0 Lime NPK 0 Micro

• Ona = Lime (2012); Arcadia = S; St. Cloud = None

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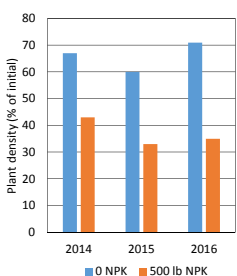
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## Results - Arcadia



- NPK response
- No response:
  - S
  - Micros




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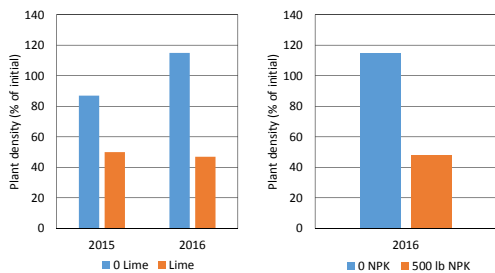
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## Results - Ona




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## Soil pH



- Arcadia: No change
- Ona: 4.3 to 4.9 (limed plots)
- St. Cloud: 5.5 to 5.0 (averaged across all plots)

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## Soil Macronutrients



- No major changes in P concentrations (4 to 6")
  - 48 lb/A in Arcadia (all years)
  - 38 lb/A (2012) to 17 lb/A (2015) in Ona
  - 40 lb/A (2012) to 23 lb/A (2015) in St. Cloud
- Differences in K only in Arcadia
  - 117 lb/A (2012) to 47 lb/A (2015) in Ona
  - 39 lb/A (2012) to 53 lb/A (2015) in St. Cloud

NPK	2013	2014	2015
lb/acre	lb/acre		
0	31 b <sup>1</sup>	22 b	19 b
500	48 a	39 a	24 a

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## Tissue P Concentrations



Year	Arcadia		Ona		St. Cloud	
	0 NPK	NPK	0 NPK	NPK	0 NPK	NPK
	%					
2012	0.07	0.13	0.15	0.17	0.09	0.12
2013	0.10	0.15	0.26	0.30	0.15	0.18
2014	0.07	0.12	0.13	0.15	NS (0.15)	
2015	0.09	0.14	0.15	0.17	0.09	0.13

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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



- Where soil pH is off, broomsedge beginning to respond
- This approach will take years
- Wiping is an alternative
- More research
  - Which macronutrient is doing the work?
  - What is the optimal glyphosate concentration for wiping?
  - Roller chopping followed by fertilization?

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## Next Webinar



- Chris Prevatt
  - September 15, 2016 at Noon

*"Should I buy Stocker Calves This Fall or a Fishing License?"*

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Questions



- [sellersb@ufl.edu](mailto:sellersb@ufl.edu)
- 863-735-1314

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