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Ways to Manage Smutgrass: Past, Present, and Future

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1

Overview

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- Basic smutgrass information
- Past experiments
 - Rate titration
 - Use of adjuvants
 - Sequential programs
 - Wiping studies
 - Rainfall studies
 - Glyphosate
- Current & future experiments

2

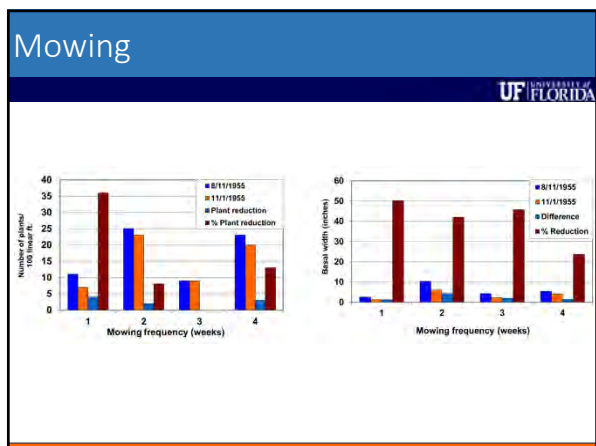
Smutgrass

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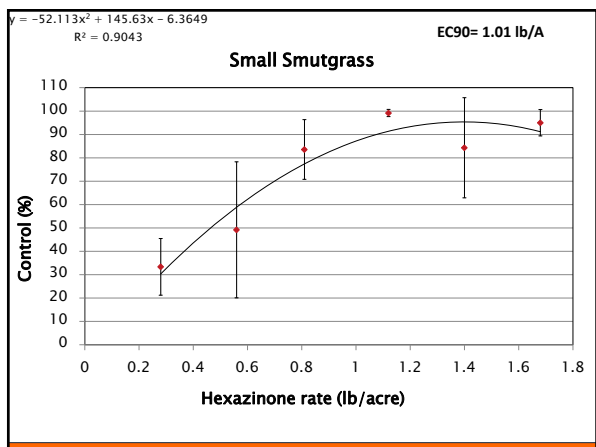
- Two species in Florida
 - Small smutgrass
 - Giant Smutgrass
- Control
 - 3-4 pt Velpar/Tide Hexar-rainy season
 - No surfactant is required
- Grazing restriction = 0; 38 d haying restriction



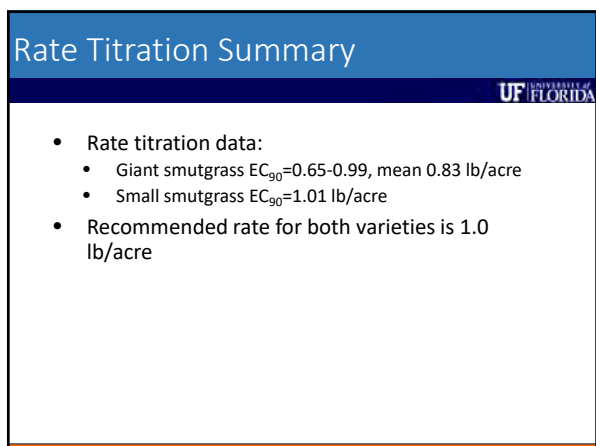
3



4



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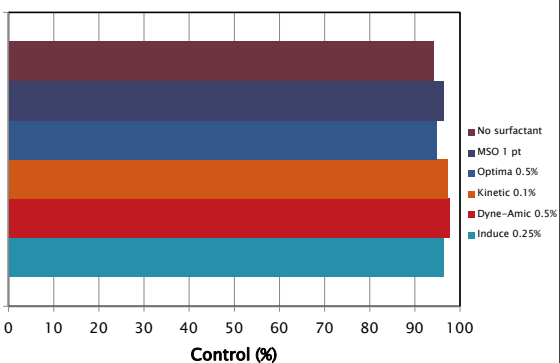
Surfactants



- Different rates of Optima and different surfactants
- Conducted in Clewiston, Florida in 2005 and in Ona, Florida in 2006, 2007
- Hexazinone applied at 3 or 4 pt/acre
- Optima: 0.125, 0.25, 0.5, 0.75, 1% v/v
- 1 pt of MSO, Optima 0.5, Kinetic 0.1, Dyne-Amic 0.5, Induce 0.25% v/v

7

Various Surfactants 12 MAT



8

Sequential vs Renovation vs Chopping



Treatments		Year			
2008	2009	2008	2009	2010	2011
-----No. of plants/m ² -----					
Velpar 2 qt/A	Velpar 1 qt/A	2.80 a	0.48 bc	0.13 cd	0.18 bc
Glyphosate 4 qt/A	Velpar 1 qt/A	2.88 a	5.53 a	0.23 bc	0.60 b
Fall roller chopping	Velpar 1 qt/A	2.93 a	0.33 bc	0.03 d	0.39 b

9

Sequential with Fertilization

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Treatments			2008	2009	2010	2011
2008		2009		-----No./m ² -----		
Velpar	Velpar	Nitrogen				
2 qt/A	0 qt/A	0 lb/A	2	0.2	0.2	0.6
2 qt/A	0 qt/A	50 lb/A	2	0.1	0.2	0.8
2 qt/A	1 qt/A	0 lb/A	2	0.1	0.1	0.7
2 qt/A	1 qt/A	50 lb/A	2	0.1	0	0.3

10

Sequential Applications at Various Rates

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Treatments		24 MAT	36 MAT	Cost
Year 1 Velpar rate (qt/A)	Year 2 Velpar rate (qt/A)	(No. plants/plot)		(\$/A)
0	0	11.7 a	31.2 abc	0.00
0	1	12.7 abcdef	34.8 ab	20.00
0	1.5	5.0 efg	39.6 a	30.00
1	1	1.0 fg	21.7 cd	40.00
1	1.5	1.3 fg	6.5 f	50.00
1.5	0	2.5 cdefg	22.8 cd	30.00
1.5	1	0.8 g	8.5 ef	50.00
1.5	1.5	4.7 g	6.8 ef	60.00
2	0	1.5 g	19.2 cd	40.00
2	1	4.8 bcdefg	6.3 f	60.00
2	1.5	1.2 defg	3.2 f	70.00

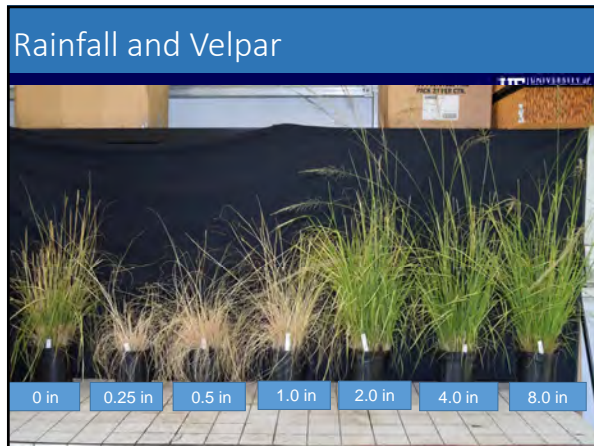
11

Smutgrass Management

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- Two-year programs vs one-year
- Renovation
 - Should occur when >70% of the pasture is infested
 - Must be followed with Velpar 1 year after planting
- Hexazinone is lethal to oaks
- Rainfall necessary, but too much is bad

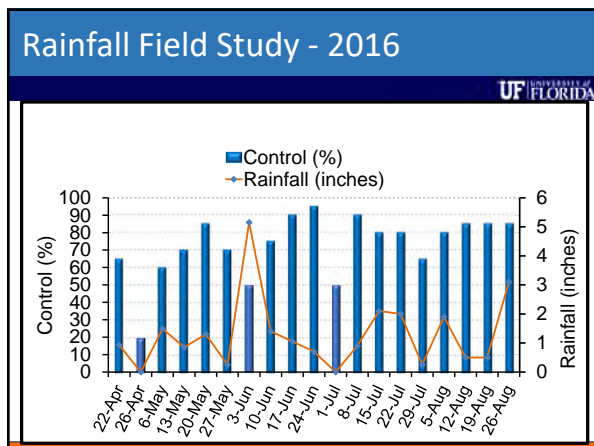
12



13



14



15

Use of Hexazinone on Forages

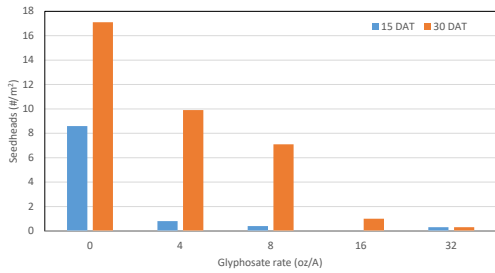


- Bahiagrass
- Bermudagrass

- BUT NOT:
 - Limpograss
 - Stargrass
 - Mulato

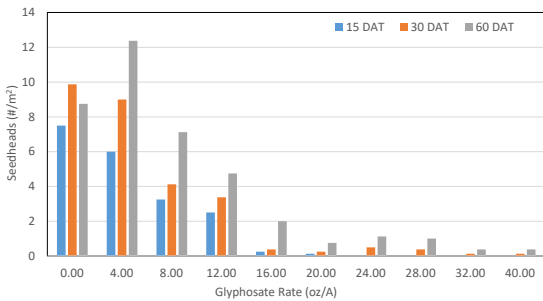
16

Smutgrass Seedhead - Brighton



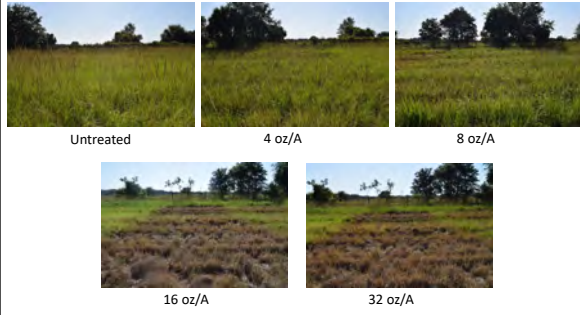
17

Smutgrass Seedhead - Hobe Sound



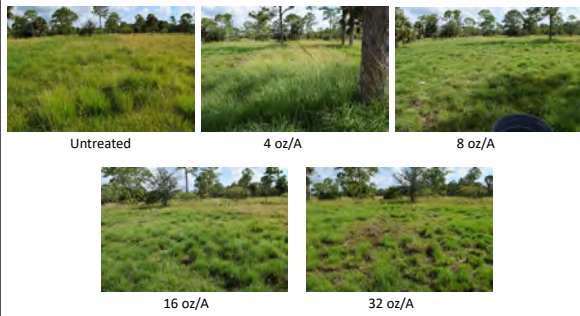
18

Brighton – 30 DAT

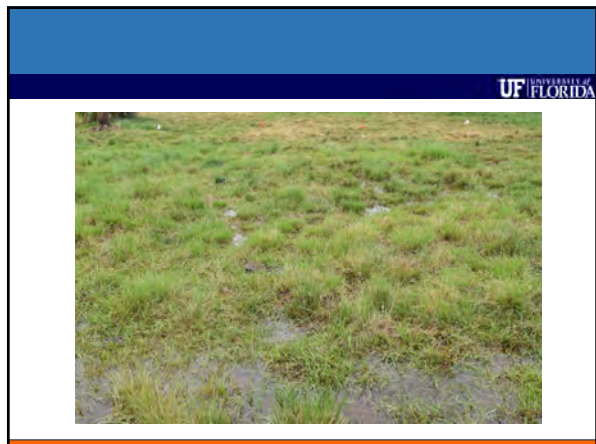


19

Hobe Sound – 30 DAT

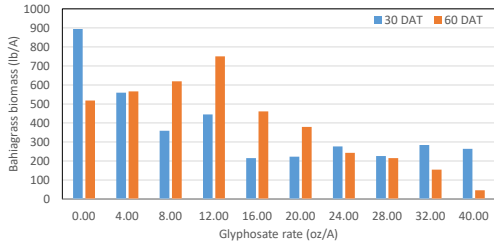


20



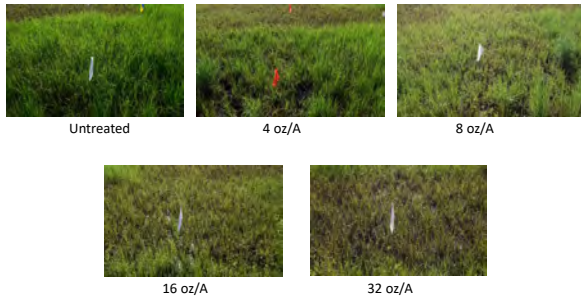
21

Bahiagrass Response



22

Bahiagrass Injury– 30 DAT

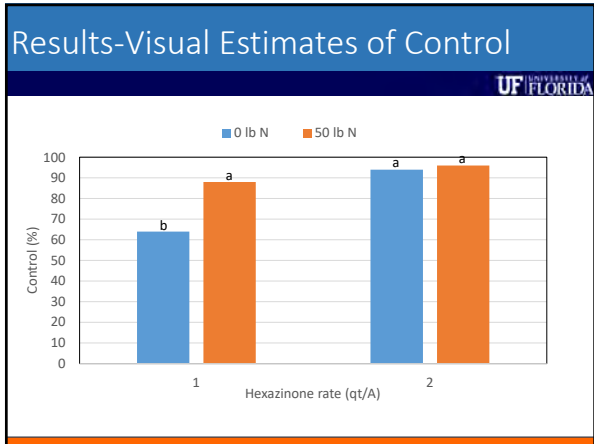


23

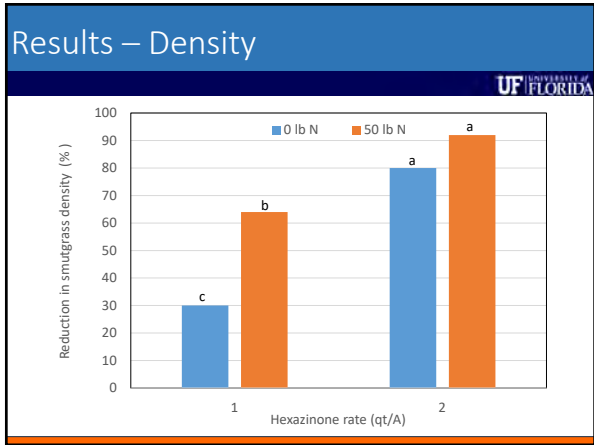
Wiping Smutgrass



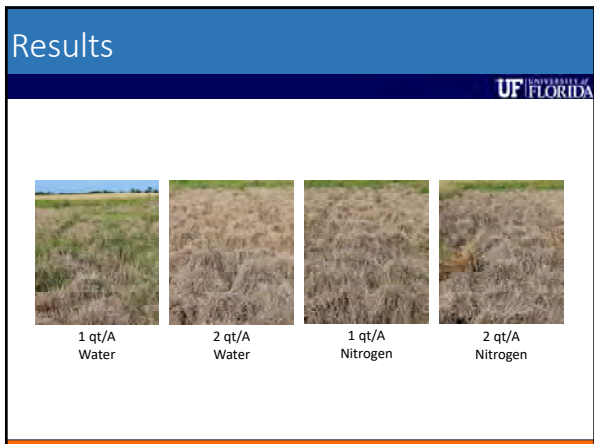
24



28



29




30

Impregnating Dry Fertilizer

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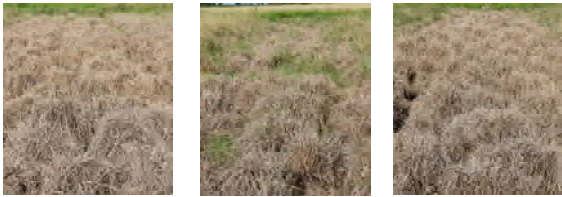
- 10-5-10 fertilizer at 500 lb/A
- Hexazinone at 1 and 2 qt/A
- 20 x 50 ft plots; 4 replications
- Vicon™ pendulum spreader



31

Results

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Broadcast
2 qt/A

10-5-10
1 qt/A

10-5-10
2 qt/A

32

Smutgrass Management Today

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- Hexazinone
 - 1.5 to 2 qt/A
 - Sequential annual applications
 - Rainy season
- Glyphosate
 - 16 oz/acre (3 lb ae formulations)
 - Post clipping in bermudagrass, stargrass
- Prevention
 - Clean mowing equipment
 - Spot-treatment

33

The Future



- Expand on using liquid UAN as a carrier
 - Timing
 - Different rates
- Use of soil surfactants
- PRE herbicides
 - Rezilon

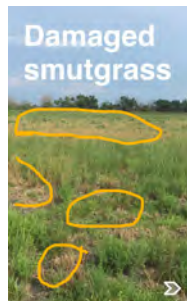
34

Biological Control?



35

Biological Control?



36

Acknowledgements

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- FCEB
 - Rainfall studies
 - Liquid UAN studies
- Past students
 - Barton Wilder
 - Neha Rana
 - Jose Dias

37

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“A recurring theme is the importance of a competitive, well managed pasture sward to minimise gaps within the pasture throughout the year thus preventing giant rats tail grass seedling establishment from the long-lived soil seed bank. Without a vigorous, competitive pasture being present, any attempts to control giant rats tail grass will be futile.”

*Slide from Dr. Wayne Vogler
Tropical Weeds Research Centre
Charters Towers, Queensland

38