

# Managing Glyphosate-Resistant Italian Ryegrass

**Jason A. Bond**

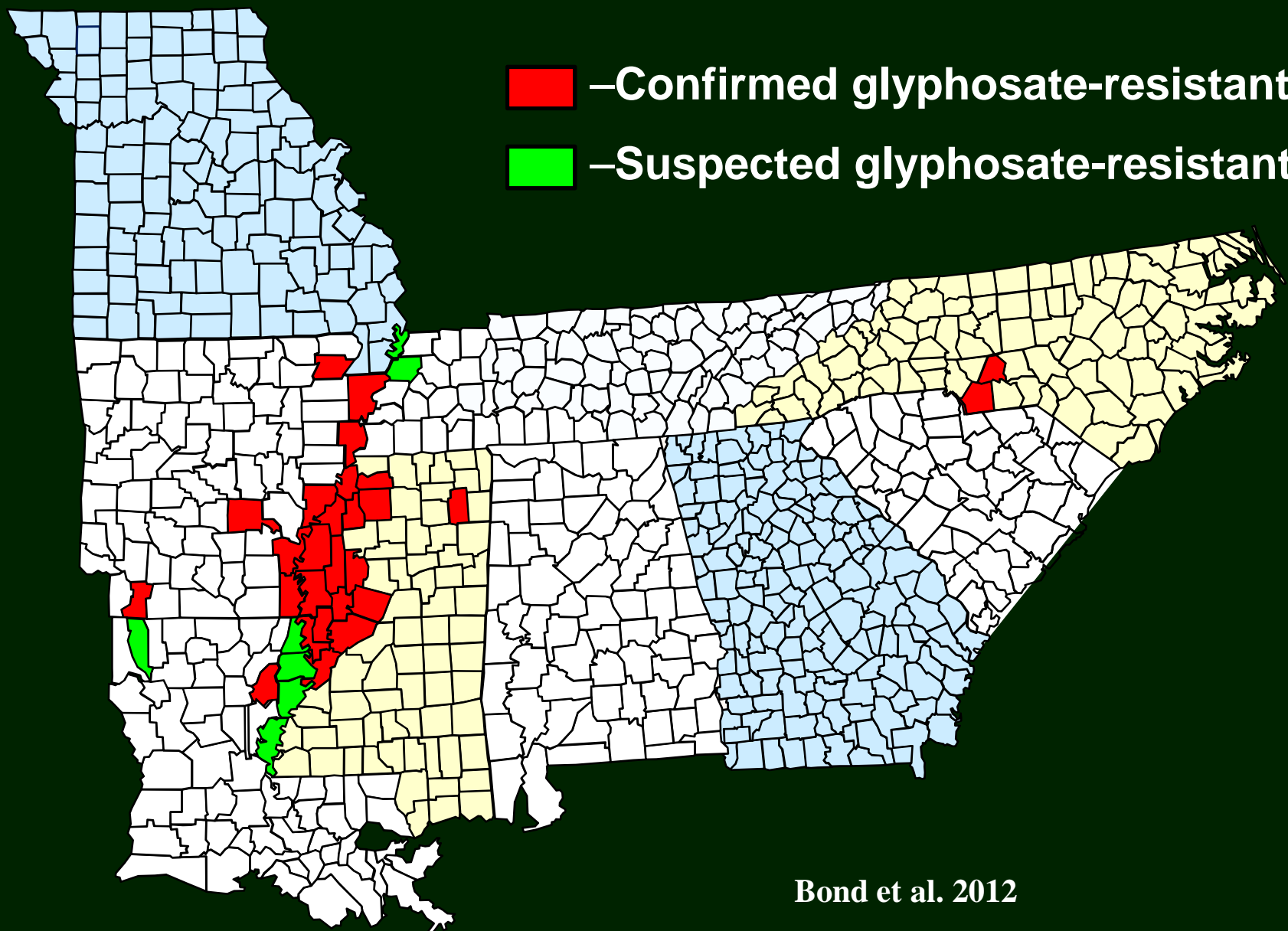
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# GR Italian Ryegrass



Bond et al. 2012







# Spring Programs



Gramoxone Inteon at  
4 PT/A applied after  
heading

- Gramoxone Inteon or Select Max followed by Select Max
- Sequential Gramoxone Inteon at 4 PT/A

Source: R. C. Bond et al. 2008

**Nontreated**



**Command 2 PT/A**



**Zidua 2.77 OZ/A**



**Dual Mag. 1.33 PT/A**



**Source: R. C. Bond et al. 2008**

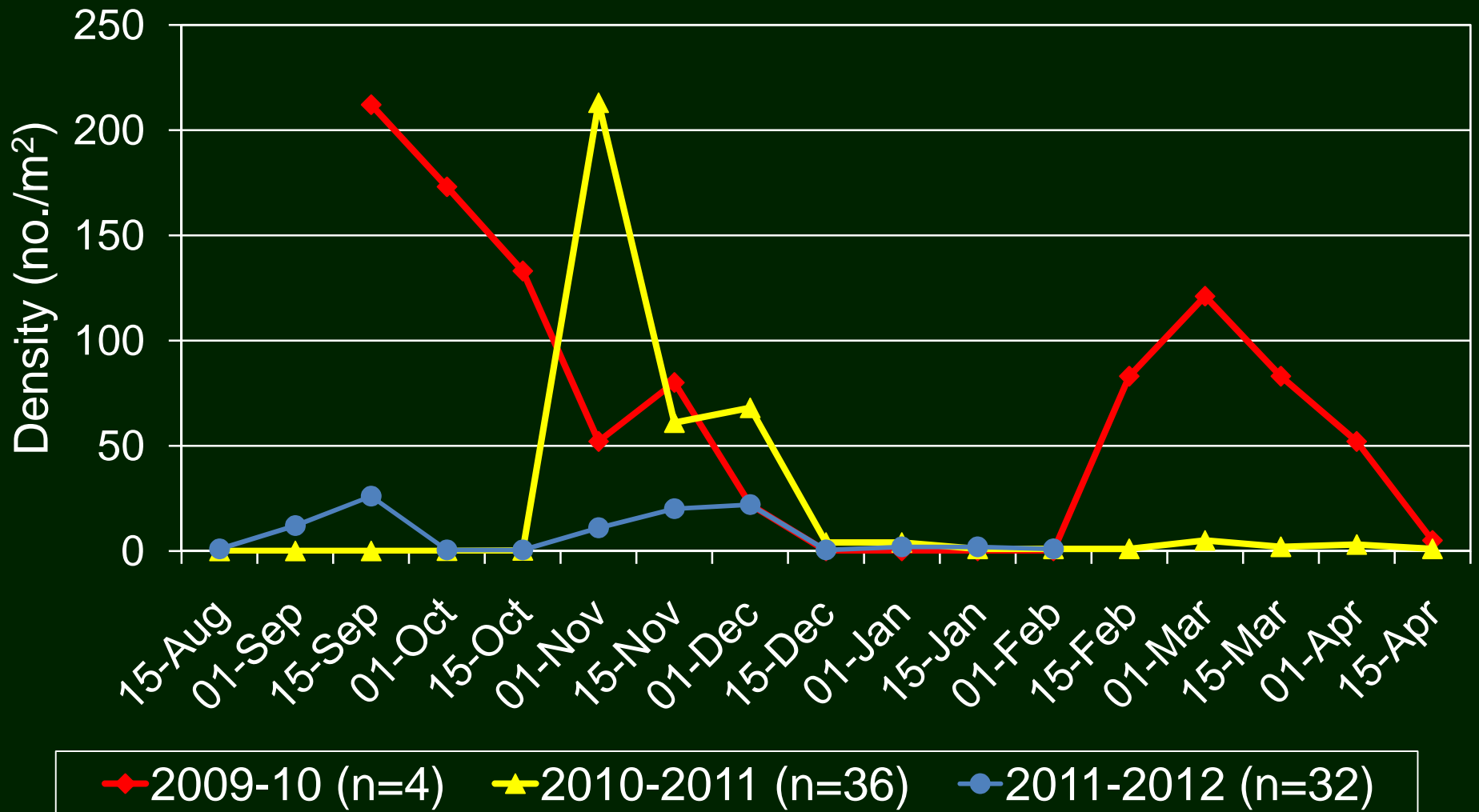
# Current Research





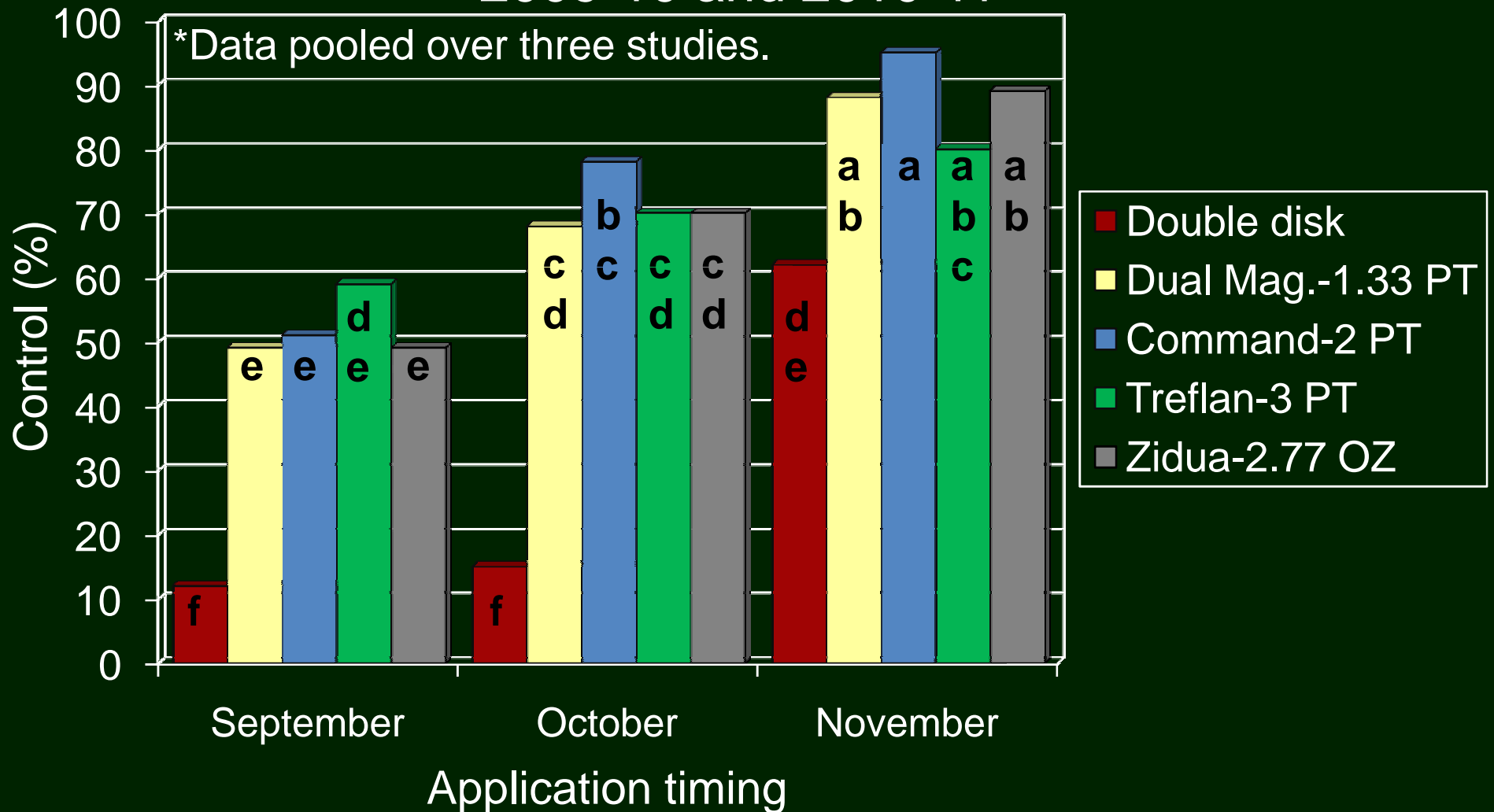
# Emergence Patterns

## GR Italian Ryegrass Emergence in Mississippi



# Residual Herbicide Timing

## GR Italian Ryegrass Control in Early-March 2009-10 and 2010-11



September



October



November



Double disk



Dual Magnum at 1.33 PT/A

March 7, 2011

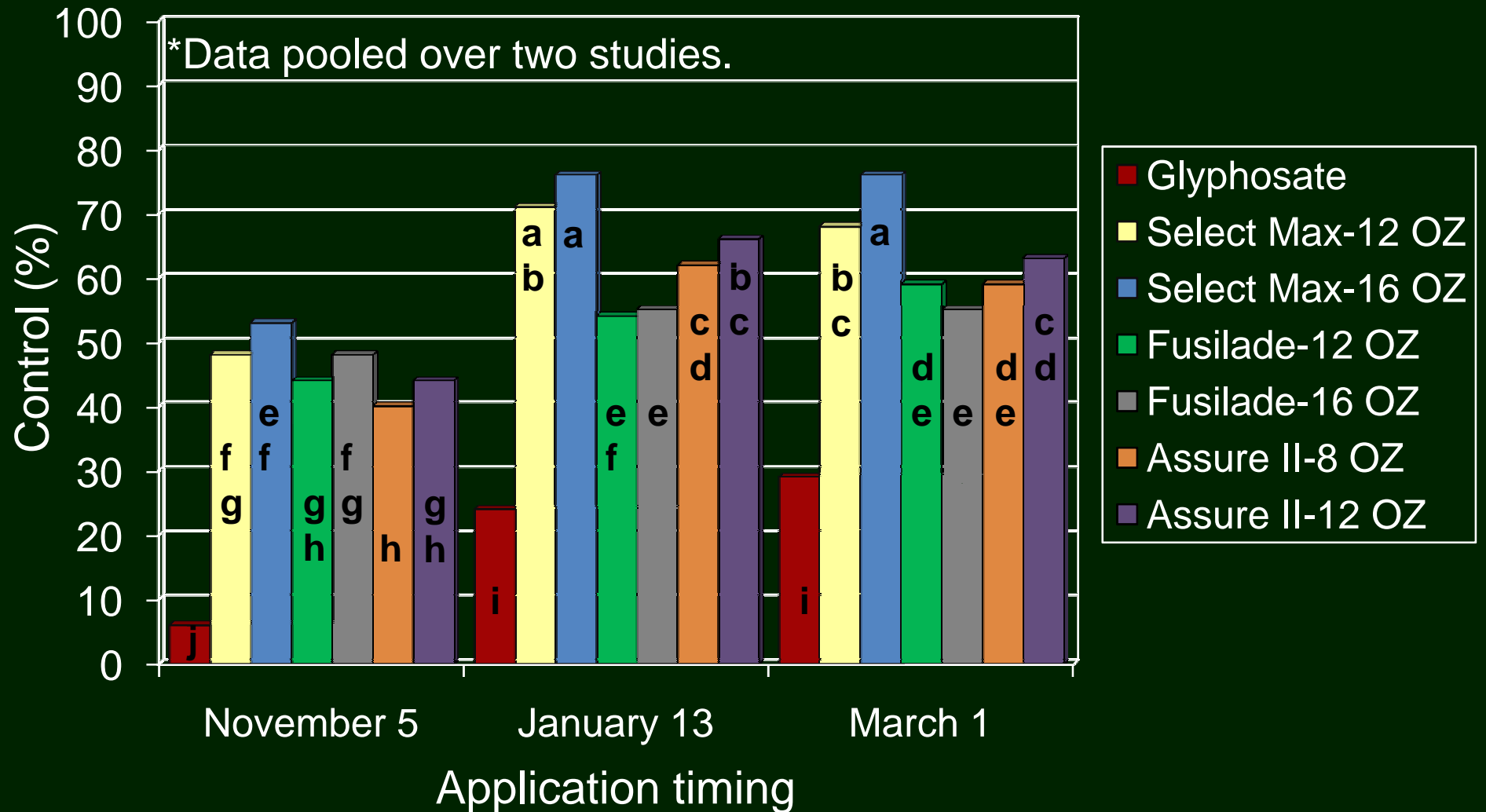
# POST Control + Residuals



Dual Magnum at 1.33 pt/A + Gramoxone Inteon at 3 pt/A

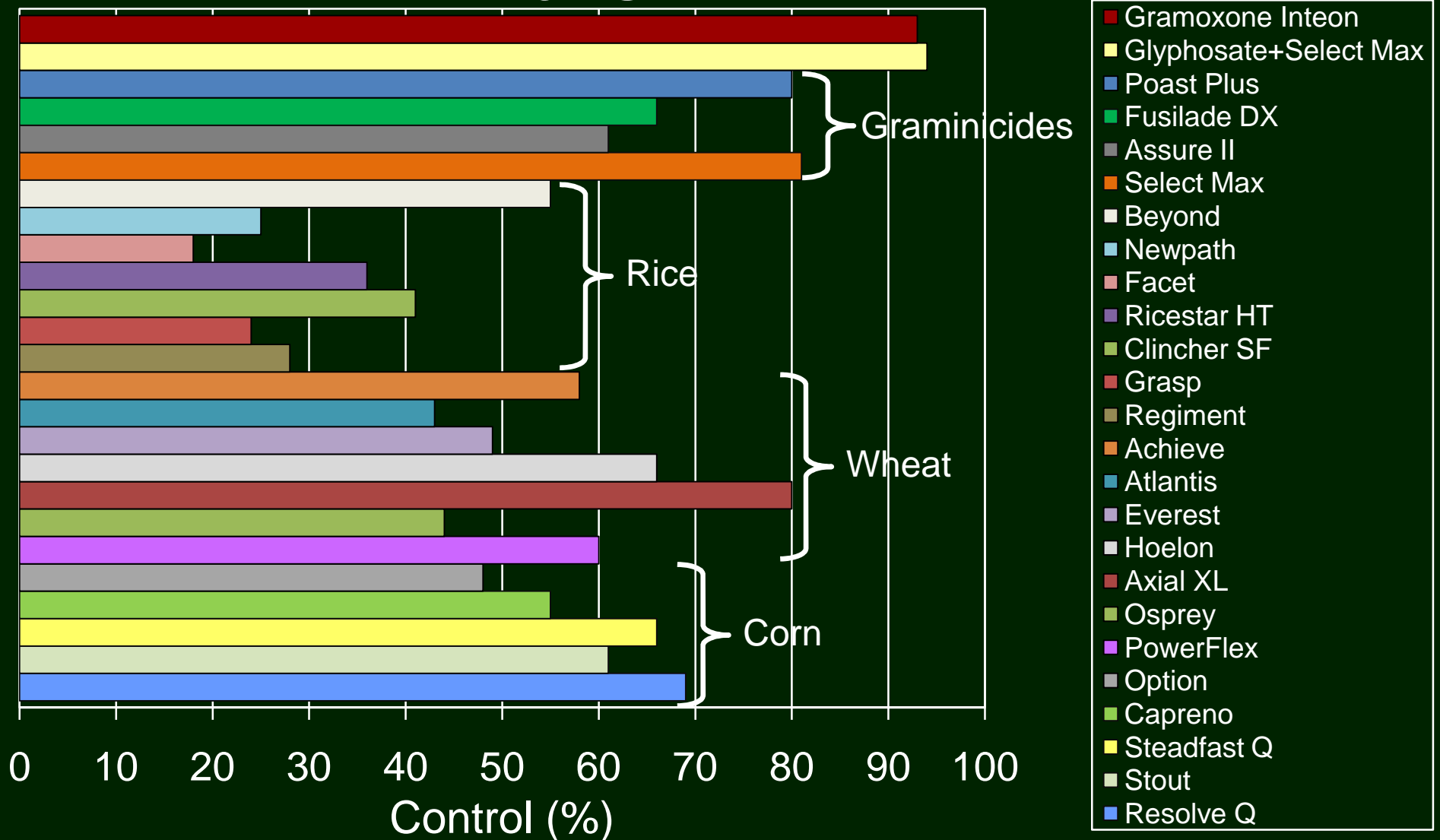
# Early-spring Applications

## GR Italian Ryegrass Control on April 12, 2010



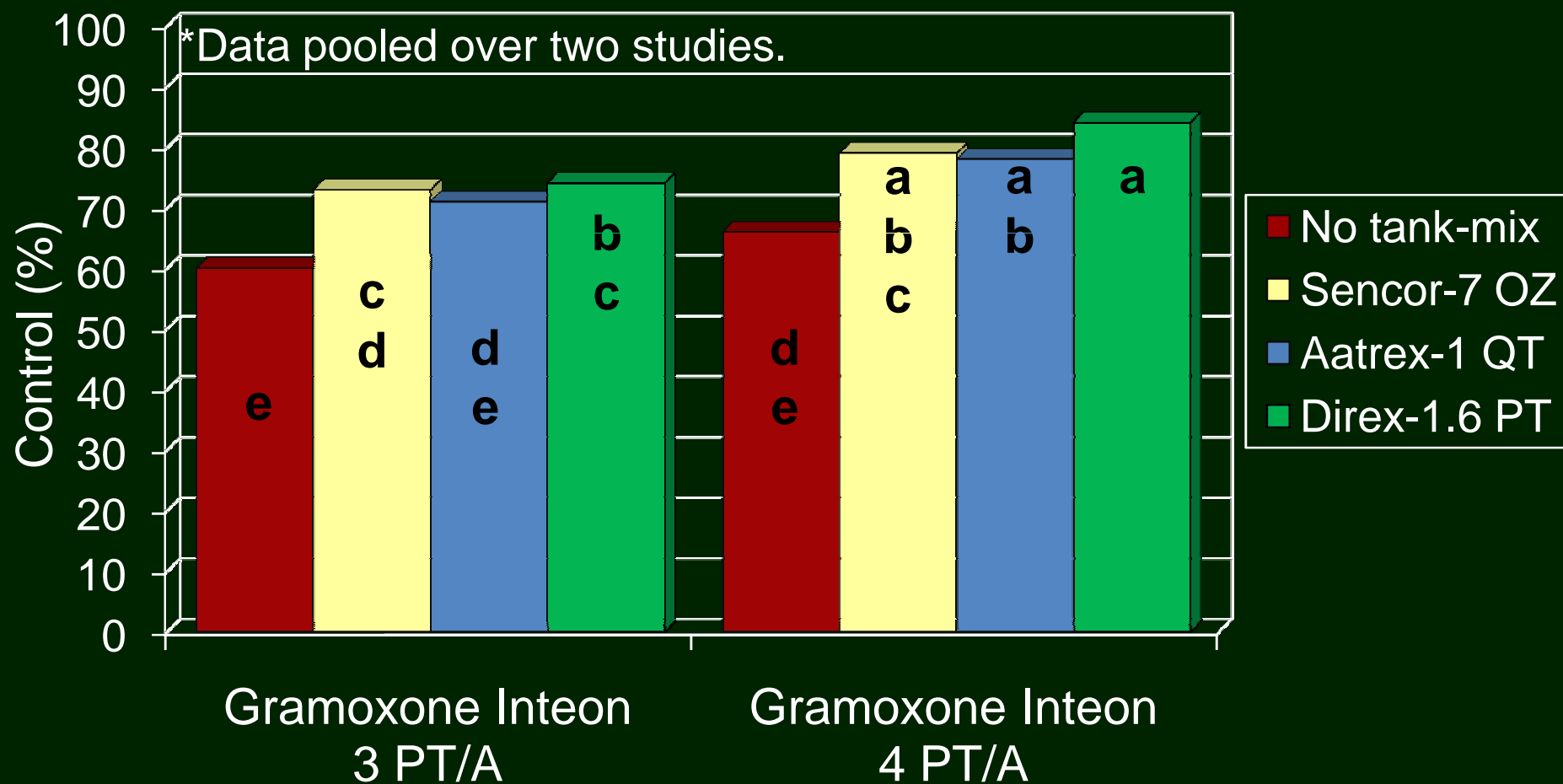
# Alternative Herbicides

## GR Italian Ryegrass Control 28 DAT



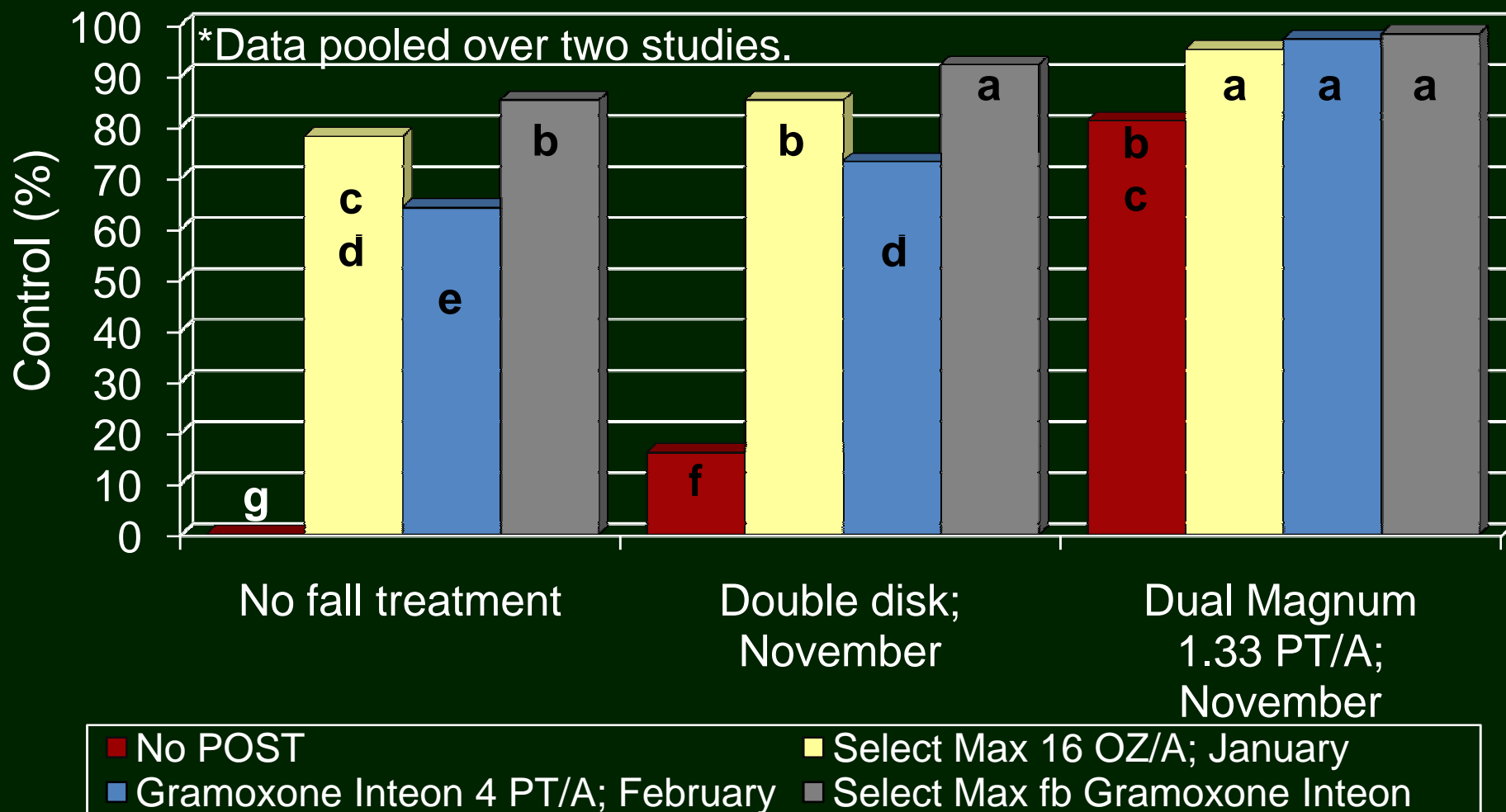
# Late-spring Applications

## Gramoxone Inteon Tank-mixtures GR Italian Ryegrass Control 28 DAT



# Fall-Spring Programs

## GR Italian Ryegrass Control on March 24, 2011





# No fall treatment



**No POST**



**Select Max 16 OZ/A; Jan.**



**Gramoxone Inteon 4 PT/A; Feb.**



**Select Max fb Gramoxone Inteon**

March 24, 2011

# Double disk; November



**No POST**



**Select Max 16 OZ/A; Jan.**



**Gramoxone Inteon 4 PT/A; Feb.**



**Select Max fb Gramoxone Inteon**

March 24, 2011

# Dual Magnum at 1.33 PT/A; November



**No POST**



**Select Max 16 OZ/A; Jan.**



**Gramoxone Inteon 4 PT/A; Feb.**



**Select Max fb Gramoxone Inteon**

March 24, 2011

# GR Italian Ryegrass

Crop	Fall	Winter	Spring
Corn	Dual Mag. at 1.33 pt/A or double disk	Select Max at 12 to 16 oz/A or equivalent of 2-lb clethodim	1 or 2 applications of paraquat at 0.75 to 1 lb ai/A
Cotton	Dual Mag. at 1.33 pt/A, Treflan at 3 pt/A, double disk	Select Max at 12 to 16 oz/A or equivalent rate of 2-lb clethodim	1 or 2 applications of paraquat at 0.75 to 1 lb ai/A
Soybean	Dual Mag. at 1.33 pt/A, Treflan at 3 pt/A, Boundary at 2 pt/A or double disk	Select Max at 12 to 16 oz/A or equivalent rate of 2-lb clethodim	1 or 2 applications of paraquat at 0.75 to 1 lb ai/A
Rice	Command at 2 pt/A or double disk	Select Max at 12 to 16 oz/A or equivalent rate of 2-lb clethodim	1 or 2 applications of paraquat at 0.75 to 1 lb ai/A

[http://msucares.com/pubs/infosheets\\_research/i1355.pdf](http://msucares.com/pubs/infosheets_research/i1355.pdf)



**\$28/A**

**No fall program fb Select Max fb  
Gramoxone Inteon**



**\$44/A**

**Double disk in fall Select Max fb  
Gramoxone Inteon**



**\$32/A**

**Dual Mag. in fall fb  
Gramoxone Inteon; Feb.**



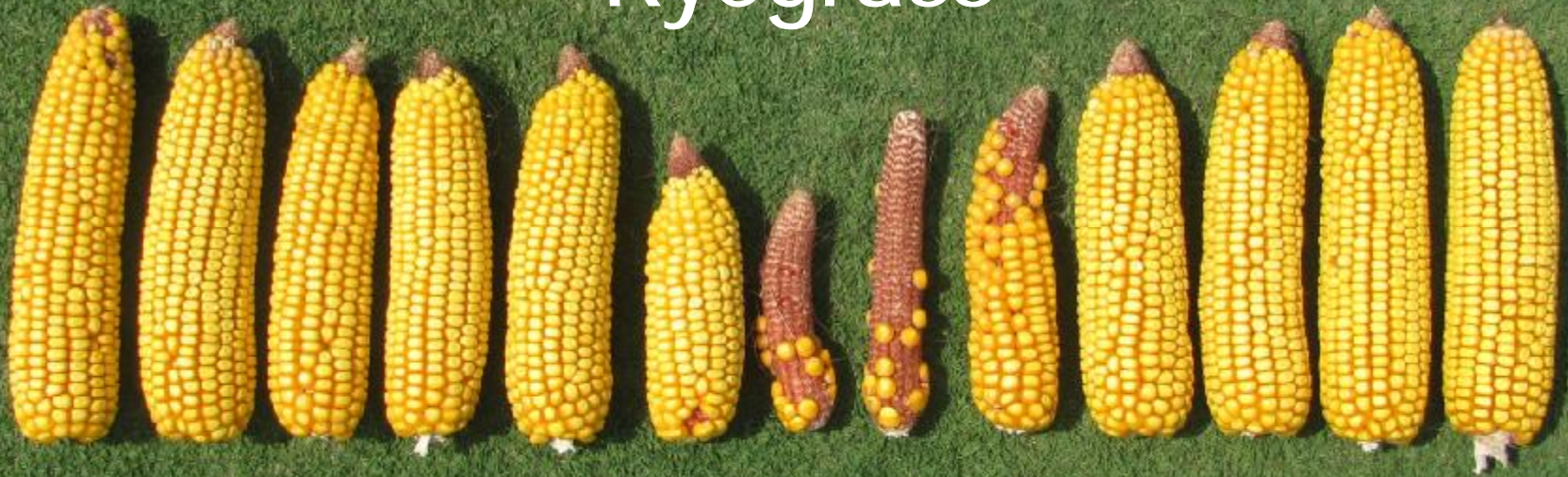
**\$28/A**

**Dual Mag. in fall fb  
Select Max; Jan.**

# Italian Ryegrass in Corn



Ryegrass



No ryegrass



Source: Erick Larson, MSU Corn Verification Program

# Misery Loves Company



Source: T.W. Eubank



# Can We Get Ahead?

- Road ditch treated with Select Max in 2011.
- No treatment in 2012.



Source: Joe Townsend

# Other Things to Consider

- Spring tillage will require multiple passes due to root volume of Italian ryegrass
- Spot treatments can be effective
- Target 100% control prior to planting
- Budget for minimum two burndown treatments
- **Avoid multiple applications of clethodim**
- Italian ryegrass in Mississippi is resistant to ACCase (Hoelon) and ALS herbicides (Steadfast, Accent, etc.)
- Italian ryegrass in western U.S. is resistant to chloracetamides (Dual Magnum family)

# Questions?

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