

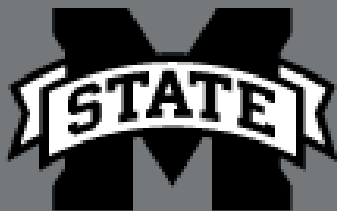
Herbicide Programs in Mississippi Row Crops

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DELTA RESEARCH AND EXTENSION CENTER

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- ADAMA USA
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2019 Weed Control Issues

- Delayed field prep, burndown, and large weeds
- Terminating failed stands of all crops
- Off-target Group 4 (auxin) herbicide on Xtend cotton
- Prickly sida control in Xtend crops
- Poor grass control in all crops



Delayed Field Prep/Burndown



Have you ever had anyone burn-down into standing cotton stalks? I have a guy who needs to kill ryegrass and winter weeds.

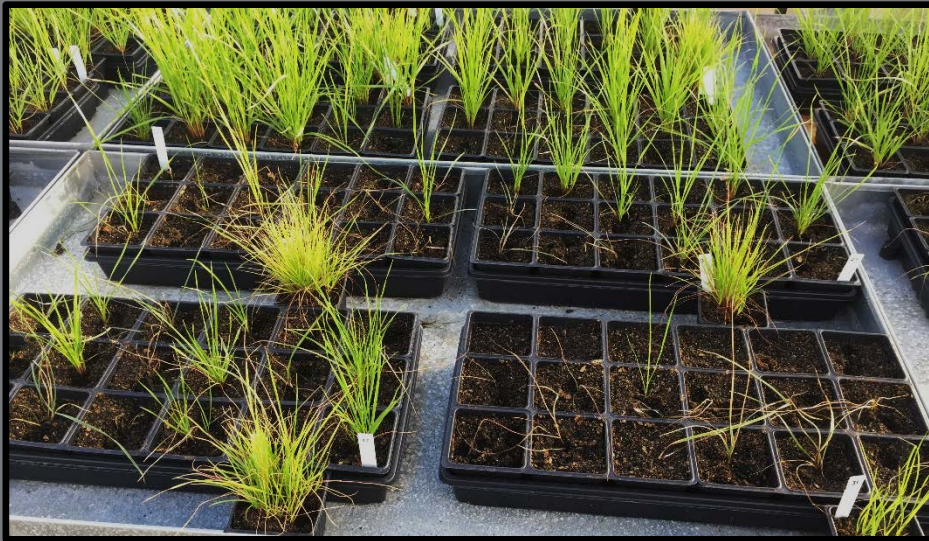
If I have deep ruts in my field what do I need to do about applying a residual herbicide?



Delayed Field Prep/Burndown



GR Italian Ryegrass



GR Italian Ryegrass

- Two MS populations of Italian ryegrass were 10- and 4-fold resistant to clethodim.
- In a random sampling in Delta counties, 14% of Italian ryegrass populations had plants survive clethodim at 1X.
- Counties with confirmed clethodim resistance:
Bolivar, Coahoma, Humphries, Leflore, Sunflower, Washington, Yazoo

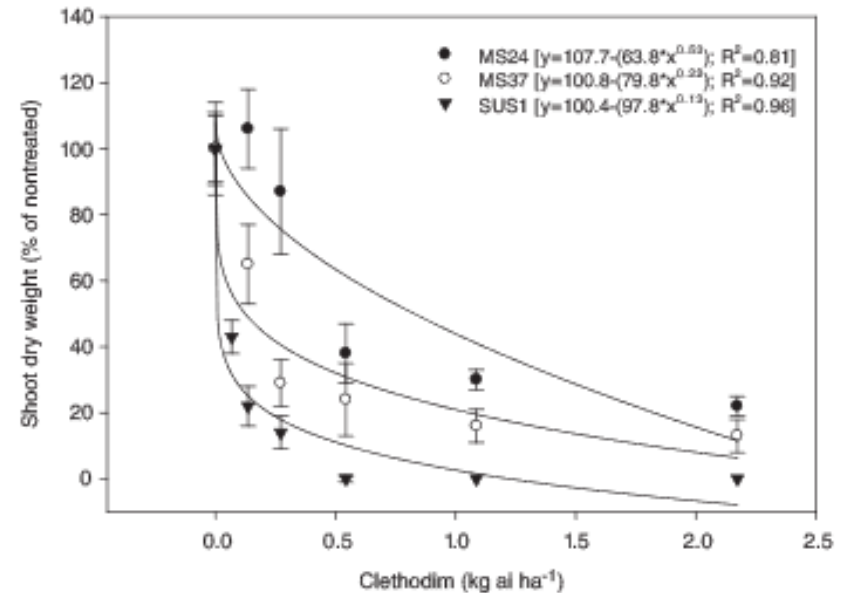


Figure 2. Clethodim dose response on shoot dry weight reduction of clethodim-resistant and -susceptible biotypes from Mississippi 3 weeks after treatment. GR_{50} (dose required to reduce shoot dry weight by 50%) values for MS24, MS37, and SUS1 biotypes were 0.4, 0.18, and 0.045 kg ai ha⁻¹ of clethodim, respectively. Vertical bars represent standard error of mean.

GR Italian Ryegrass

Dual Magnum at 1.33 PT/A; November



No POST



Select Max 12 OZ/A; Jan.



Gramoxone SL 4 PT/A; Feb.



Select Max fb Gramoxone SL

GR Italian Ryegrass

Clethodim Labeling:

- CDMS lists 27 clethodim products.
- Concentrations = 0.97 to 3 lb ai/gallon.
- Rate = 0.094 to 0.125 lb ai/A.
- Adjuvant requirement varies with product, but most labels list crop oil at 1% v/v plus ammonium sulfate.
- Spray volume = 15 GPA by ground; 5 GPA by air.
- “**Do not** apply to grasses that have tillered, formed seedheads, or exceeded recommended stage.”
- Targeted Italian ryegrass size = 2 to 6 inches.



GR Italian Ryegrass

Clethodim and Water Quality:

- Clethodim uptake and translocation in treated plants can be reduced due to poor water quality.
- Clethodim antagonism due to poor water quality often caused by carbonates.
- $\text{pH} > 7.0$ indicates a possibility carbonates are present.
- Carbonates can occur in hard and soft water.
- **Spray water to be utilized with clethodim should be treated with a conditioner such as spray grade AMS prior to adding herbicide.**

Source: Michael Kenty, Helena Products Group



GR Italian Ryegrass

Gramoxone SL at 4 PT/A



GR Italian Ryegrass

Paraquat Regulations:

- Closed system packaging for all non-bulk (<120 gallons) containers.
- Only certified pesticide applicators may use paraquat.
- Applicators, mixers, loaders, or tank cleaners must be certified applicators.
- Applicators, mixers, loaders, or tank cleaners must complete paraquat training (www.usparaquattraining.com)
- Training must be completed every 3 years with 100% score on applicator test.

Source: Syngenta



GR Italian Ryegrass

Management Suggestions:

- Spring tillage will require multiple passes due to root volume of Italian ryegrass.
- Ensure good POST treatment...weed size, herbicide rate, spray volume, spray mixtures, sprayer speed.
- Target 100% control prior to planting.
- Budget for minimum two burndown treatments.
- Manage field borders to prevent encroachment.
- Grass crops are most susceptible to interference from GR Italian ryegrass.



Grass Control



Grass Control



Grass Control

Barnyardgrass ranking among the most **common** and **troublesome** weeds in Midsouth

Crop	Arkansas		Louisiana		Mississippi	
Corn	1	5	7	--	3	5
Cotton	2	6	4	--	2	4
Grain sorghum	1	2	7	5	4	5
Rice	1	1	1	8	1	1
Soybean	3	8	6	--	1	4

Source: T.M. Webster 2012, 2013;

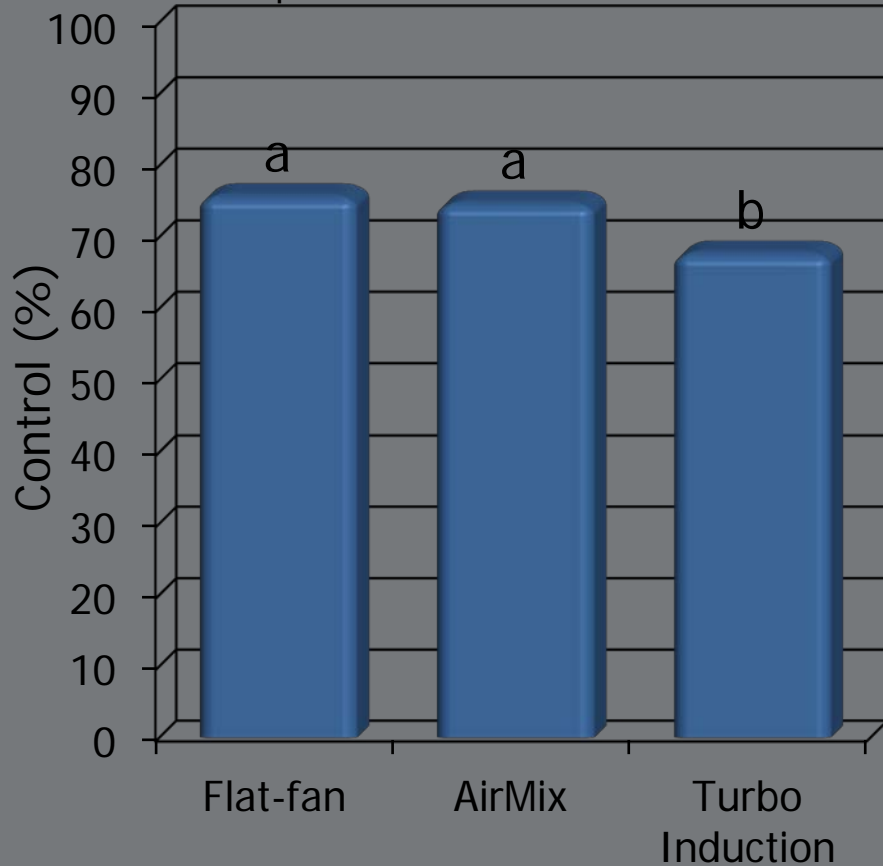
E.P. Webster and D.O. Stephenson, personal communication



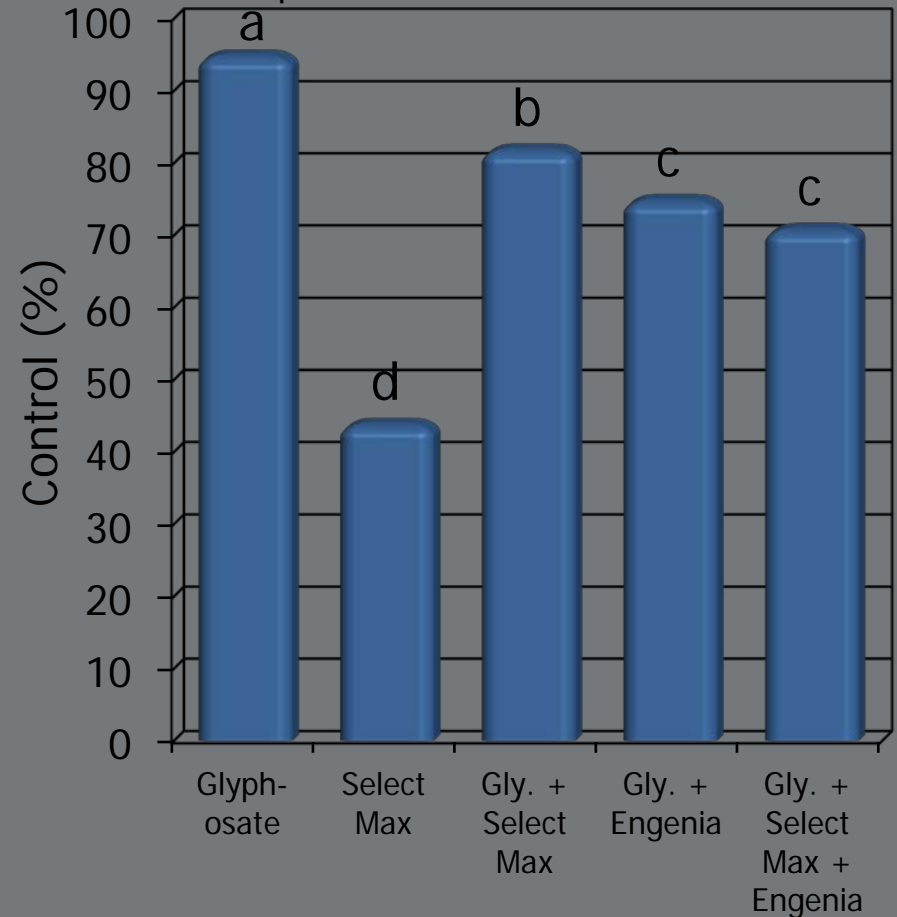
Grass Control

Barnyardgrass control 14 days after application of herbicide treatments applied with different nozzles

*Data pooled over five herbicide treatments.



*Data pooled over three nozzles.



Source: Hunter Bowman



Grass Control



Glyphosate; flat-fan (FF)



Glyphosate + Select Max; FF



Glyphosate + Engenia; FF



**Glyphosate + Select Max +
Engenia; FF**

Grass Control



Nontreated



**Glyphosate + Select Max +
Engenia; flat-fan**



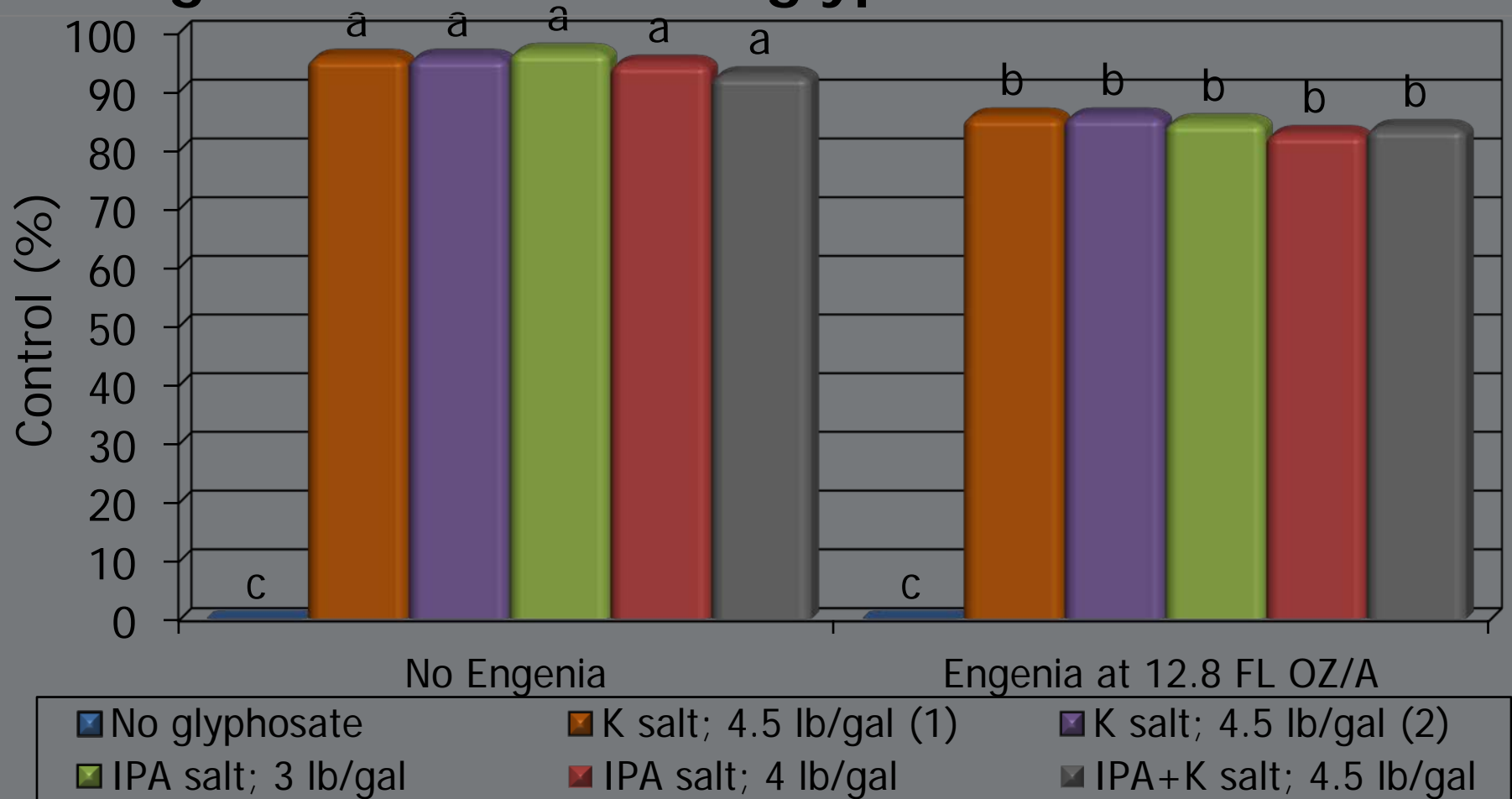
**Glyphosate + Select Max +
Engenia; AirMix**



**Glyphosate + Select Max +
Engenia; Turbo Induction**

Grass Control

Barnyardgrass control 14 days after application of Engenia with different glyphosate formulations



Source: Hunter Bowman



Grass Control



K salt; 4.5 lb/gal



K salt; 4.5 lb/gal + Engenia



IPA salt; 3 lb/gal



IPA salt; 3 lb/gal + Engenia

Key Points to Remember

- Italian ryegrass resistant to glyphosate, clethodim, and ALS-inhibiting herbicides is common in the Delta.
- Complete control of dense populations of Italian ryegrass requires multiple herbicide applications.
- Clethodim is sensitive to spray water quality and choice of adjuvant.
- Summer annual grass control can be influenced by nozzles, spray mixtures, and application volume.
- Severe infestations of summer annual grasses should be managed as a primary target.



Questions?

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