

Arkansas Weed Issues and Management

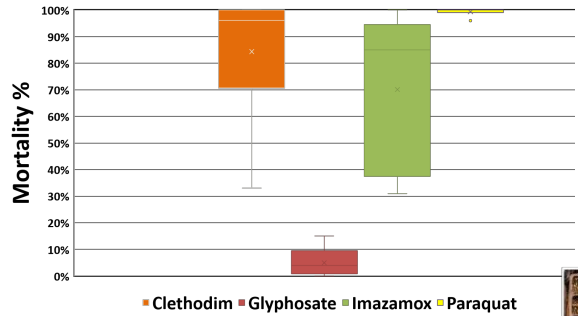
Tom Barber

Extension Weed Scientists

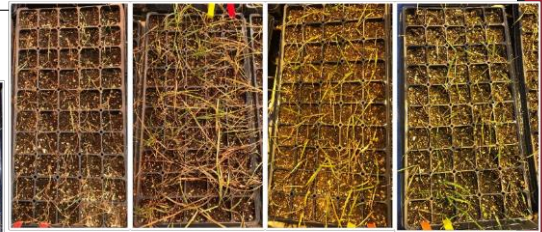
University of Arkansas System Division of Agriculture



Ryegrass Screening

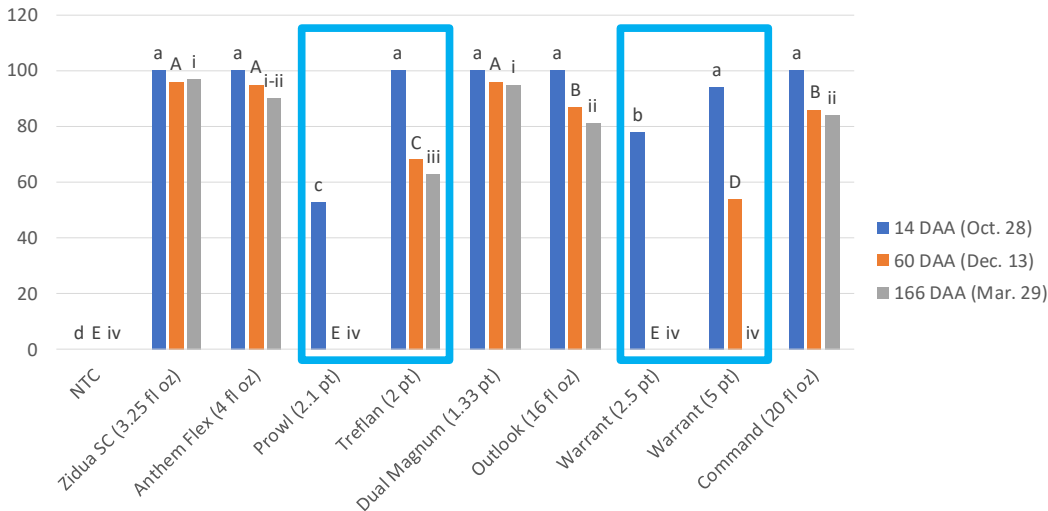


Clethodim Resistance

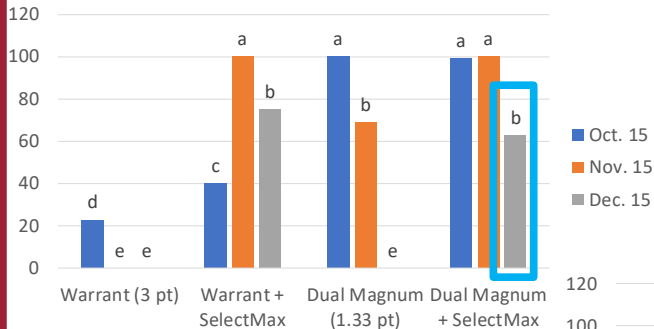


Fall Burndown Options

Applied: October 14 (82°F)



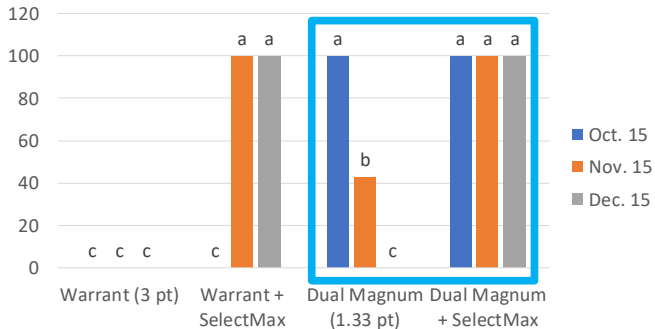
January 12th Rating Date



Applied:
October 14 (73°F)
November 15 (64 °F)
December 15 (66°F)

Fall Burndown Options

March 17th Rating Date

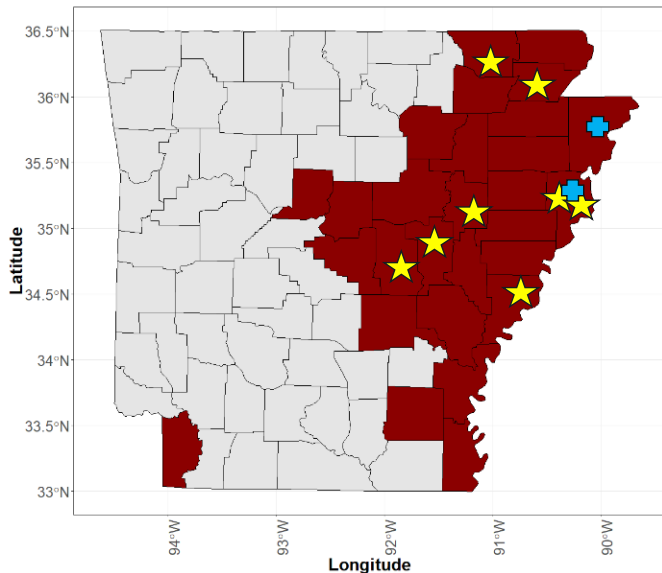


Ryegrass Control Recommendations

- Spray in the fall (prior to December 1)
- Removing first flush is critical
 - Tillage if possible
- Apply residuals for control through March
 - Dual Magnum 1.3 - 1.5pt/A
 - Zidua 3.25 oz/A
 - Anthem Flex ~ 4.0 oz/A
 - Boundary 2pt/A
 - **Command 16-24 oz/A – only option for rice**
- Tank-mix with effective POST herbicide
 - Select Max 16oz/A (no tankmixes with dicamba/2,4-D)
 - Paraquat +/- metribuzin (Boundary)



Palmer amaranth Herbicide Resistance in Arkansas



- Confirmed PPO-Inhibitor Resistance
(Flexstar, Ultra Blazer, Valor)
- Confirmed VLCFA-Inhibitor Resistance
(Dual Magnum, Warrant)
- Confirmed glufosinate Resistance
(Liberty)
- ❖ The majority of these are also resistant to: glyphosate, ALS inhibitors, and HPPD herbicides
- ❖ Scattered resistance to yellow herbicides (Prowl, Treflan)

Glufosinate (Liberty) Failures



Also resistant to glyphosate, ALS & PPO herbicides

Arkansas Palmer amaranth response to glufosinate



16 fl oz/A

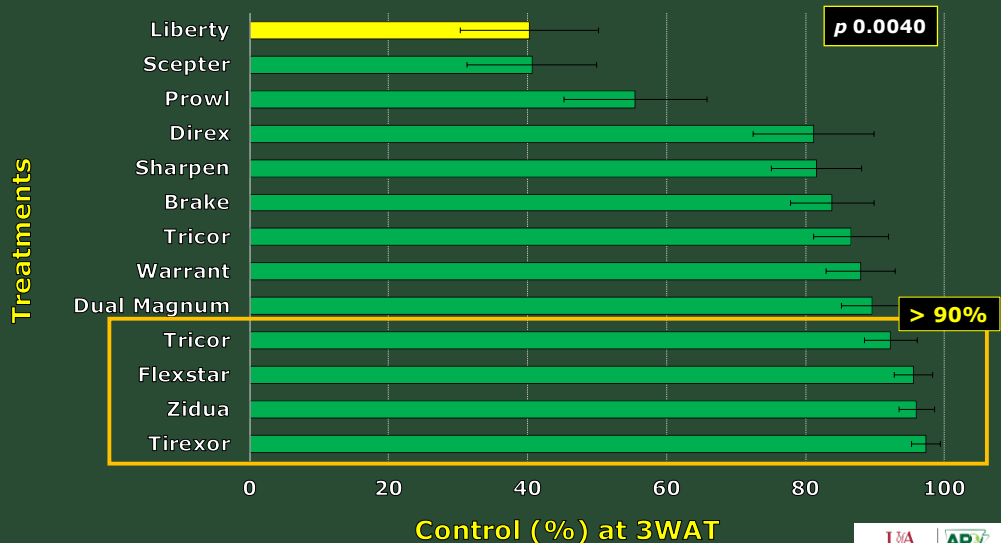
32 fl oz/A

128 fl oz/A

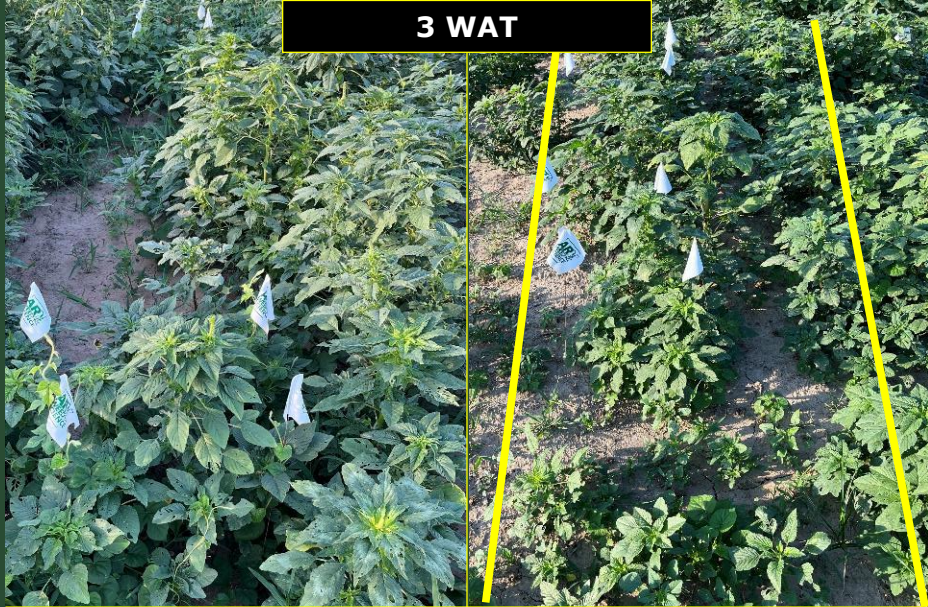
256 fl oz/A

Liberty rate

Palmer amaranth Control with Residuals



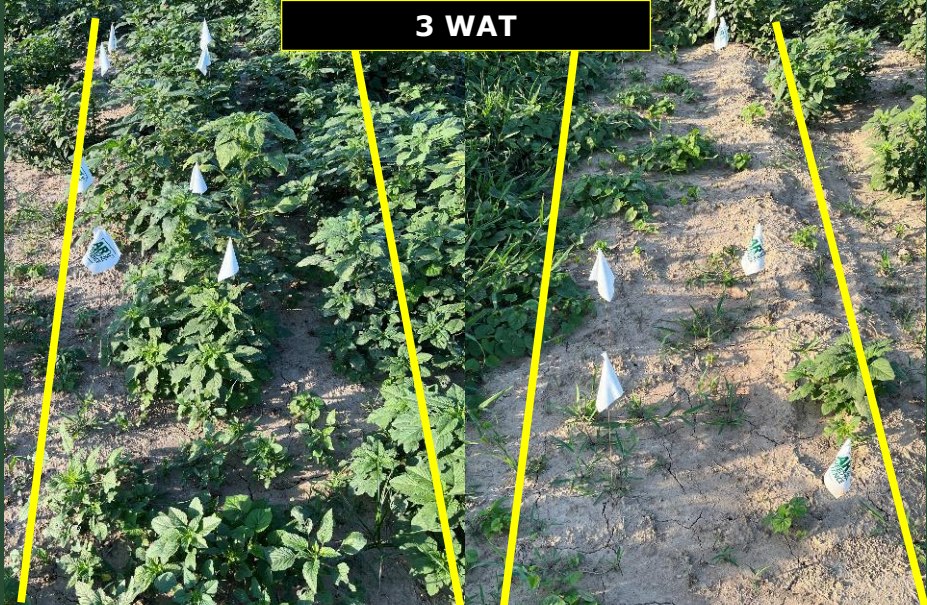
3 WAT



Nontreated

Liberty
(Glufosinate, 0.585 lbs ai/A)

3 WAT



Liberty

(Glufosinate, 0.585 lbs ai/A)

Tirexor

(Trifludimoxazin, 0.045 lb ai/A)

Metabolic Resistance in Palmer amaranth



**Must start with a robust PRE
(2 effective MOA)**



Valor SX 2oz

Metribuzin 6oz+ Verdict
5oz + Zidua 3.25oz

Pics taken 4 WAA Marion, AR

Managing pigweed with metabolic herbicide resistance is challenging

Warrant @ 3 pts/A



Dual Magnum @ 1pt/A



Outlook @ 12.8 fl oz/A



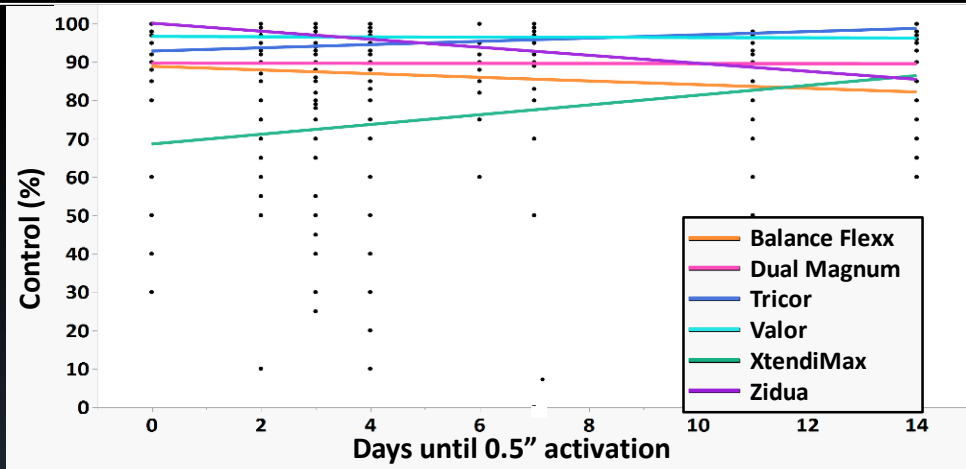
Zidua SC @ 3.25 oz/A



6-way resistant Palmer amaranth Marion, AR

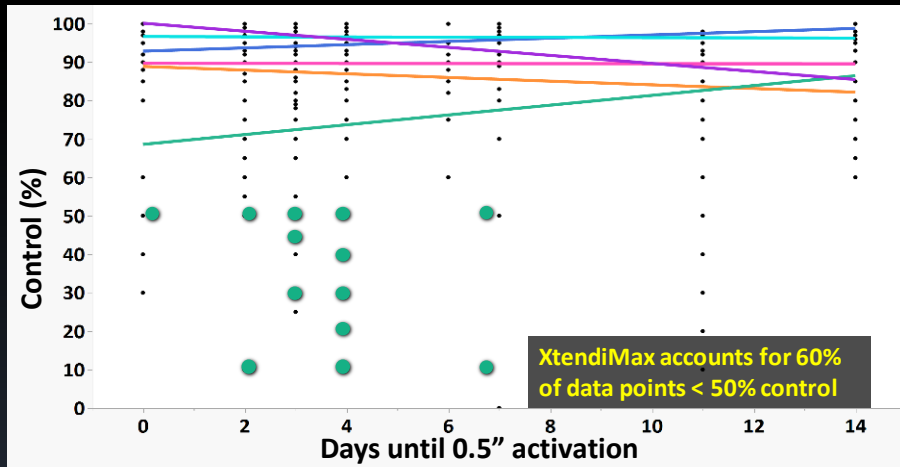
Influence of Activation Timing on Residual Activity

Data averaged across 10 trials



Influence of Activation Timing on Residual Activity

Data averaged across 10 trials



Zidua Coated Fertilizer

- Tested in cotton 2021 & 2022
- 3.25oz Zidua SC / 275 lb fertilizer
 - 100 lb Muriate potash
 - 175 lb Urea
- 5-8 leaf, or by 1 week before bloom
- Closed rotary drum or common fertilizer blender
- Mix with water to form a slurry



Zidua[®] SC
Herbicide

3. A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments if the need arises.
4. Tail water (runoff water) from chemigation that contains **Zidua SC** needs to be recirculated and/or contained in the field in a cistern or holding reservoir from the initial application and/or used only on adjacent, approved crops for which **Zidua SC** is registered for this type of application.
5. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump. It must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.

section.

Ground Application (Dry Bulk Fertilizer)

Zidua SC may be impregnated or coated onto dry bulk granular fertilizer carriers for residual soil surface (fall, pre-plant surface, preplant incorporated) applications. Impregnation or coating may be conducted by in-plant bulk or on-board systems. Perform the mixing operation in well-ventilated areas.

All individual state regulations relating to dry bulk granular fertilizer blending, registration, labeling, and application are the responsibility of the individual and/or company selling the herbicide/fertilizer mixture.

Zidua SC may be impregnated on many commonly used dry fertilizers. **DO NOT** impregnate on ammonium nitrate, fertilizers containing ammonium nitrate, potassium nitrate, sodium nitrate, or powdered limestone.

11

Fertilizer application rates of at least 200 lbs to 700 lbs per acre of herbicide and fertilizer blend will provide adequate distribution or coverage of **Zidua[®] SC herbicide** across the soil surface. Application of impregnated fertilizer must be made uniformly to the soil to prevent possible crop injury and offer satisfactory weed control. Impregnated fertilizer spread at half rate and overlapped to obtain a full rate offers a more uniform distribution. A shallow (less than 2 inches) incorporation is desirable for improved weed control. Deeper incorporation dilutes the herbicide layer near the soil surface and may result in unsatisfactory weed control.

Additives

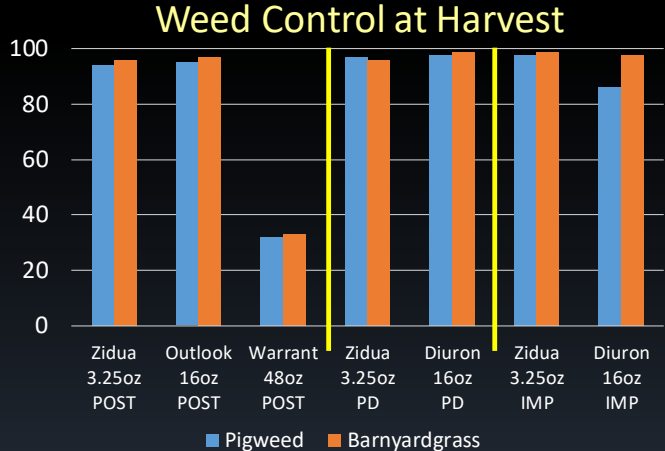
Zidua SC is formulated to provide optimal residual pre-emergence weed control. However, several tank mixes with **Zidua SC** may require an adjuvant to improve burn-down of emerged weeds. Therefore, an adjuvant may be used with **Zidua SC** tank mixes that are applied fall, pre-plant, preemergence, or early postemergence. Follow the adjuvant directions for the tank mix partner of **Zidua SC**.

Tank Mixing Information

It is the pesticide user's responsibility to ensure that all

Weed Control with Impregnated Fertilizer

- Timing 8 leaf cotton
- PD apps made with single drop nozzle
- 275lb total fertilizer blend
- Compared to broadcast POST
- 10-20% injury with Zidua OT POST
- Diuron caused ~10% injury



Zidua impregnated fertilizer applied to 8 node cotton

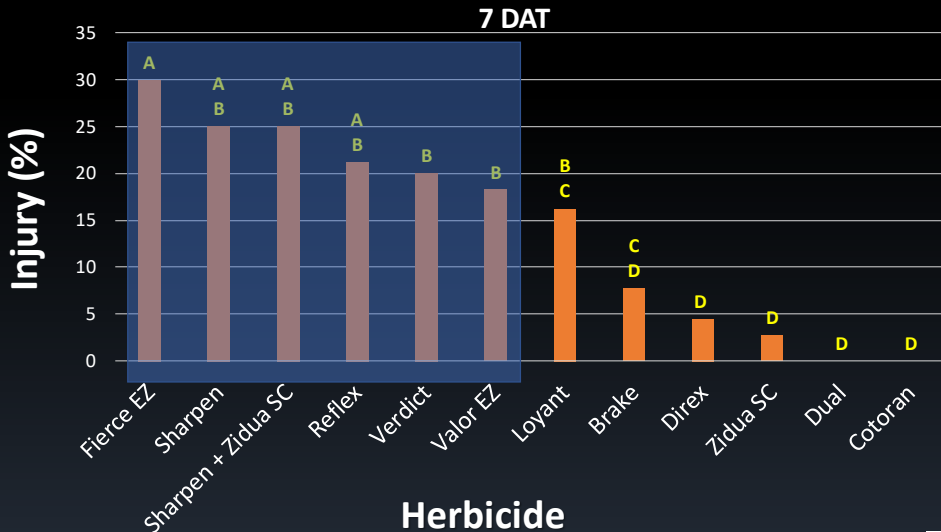


No residual applied



Zidua 3.25 oz

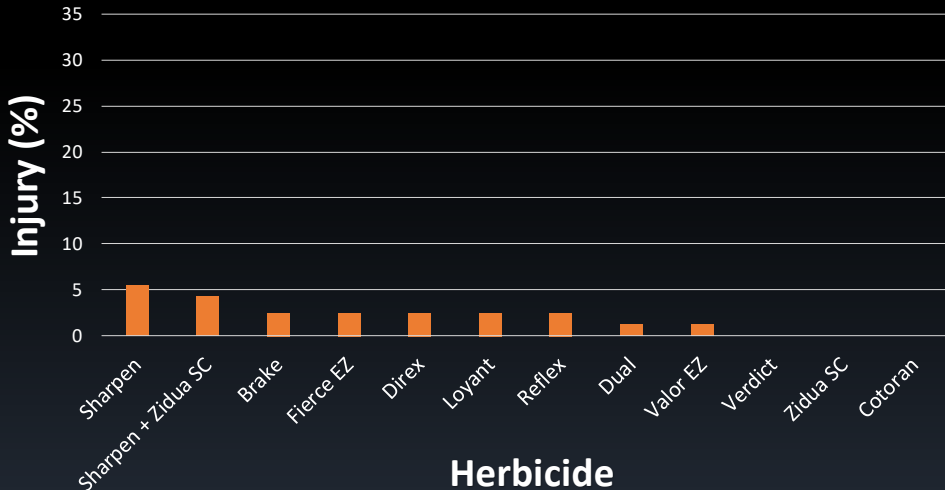
Cotton Injury Based on Coated Herbicide Treatment



Cotton Injury Based on Coated Herbicide Treatment

28 DAT

P-value= 0.227



Injury at 7 DAT



When herbicides don't work...then what?

Zero Tolerance								No Zero Tolerance							
Moldboard Plow				No Deep Tillage				Moldboard Plow				No Deep Tillage			
No Cover Crop		Rye Cover Crop		No Cover Crop		Rye Cover Crop		No Cover Crop		Rye Cover Crop		No Cover Crop		Rye Cover Crop	
-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+



Cotton Incorporated

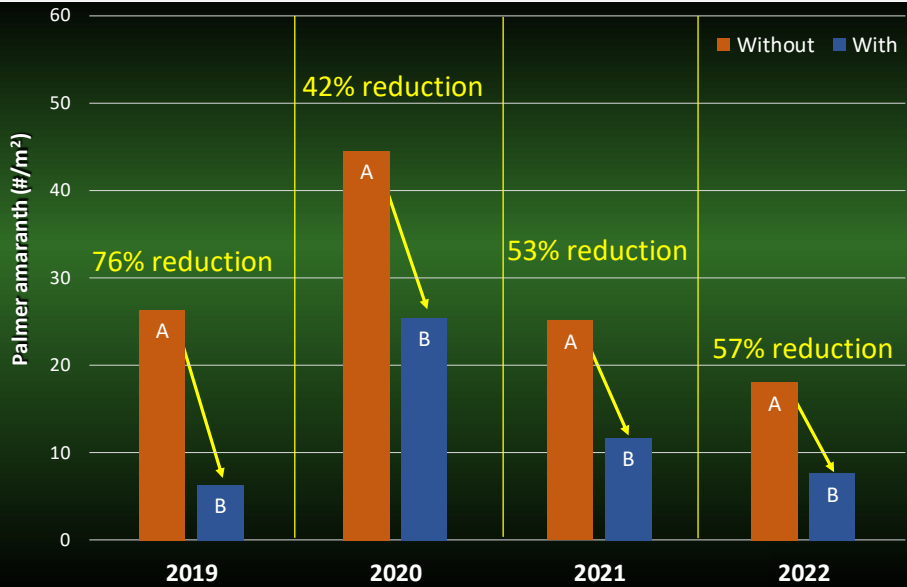
- = Non-Dicamba Program
 + = Dicamba Program



4th year evaluating cultural practices that improve pigweed control

- Zero Tolerance
 - Reduced pigweed emergence 60% by year 4
- Deep Tillage
 - 79% pigweed reduction 1st year
 - 57% reduction in year 4
- Cover Crop
 - Not significant first year
 - 49% pigweed reduction in year 4
- Herbicide effect PRE and Early Post
 - Dicamba reduced pigweed 75% in 4th year

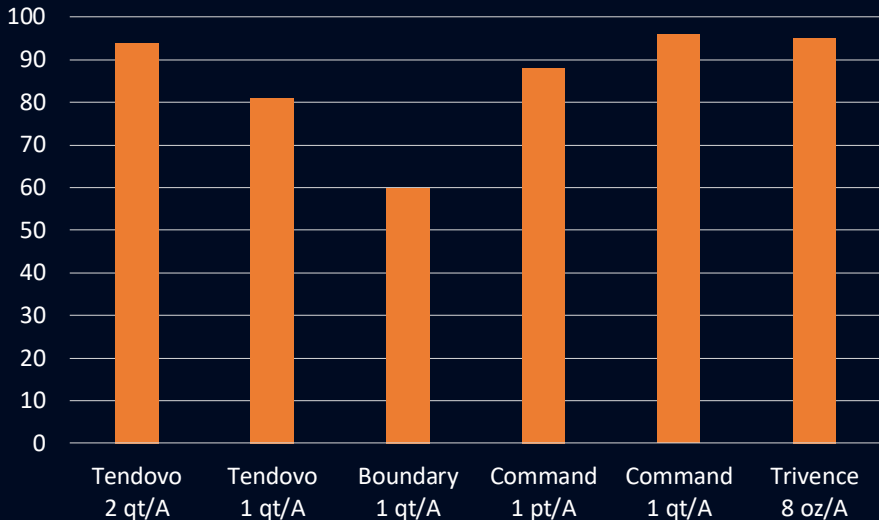
Deep Tillage Effect



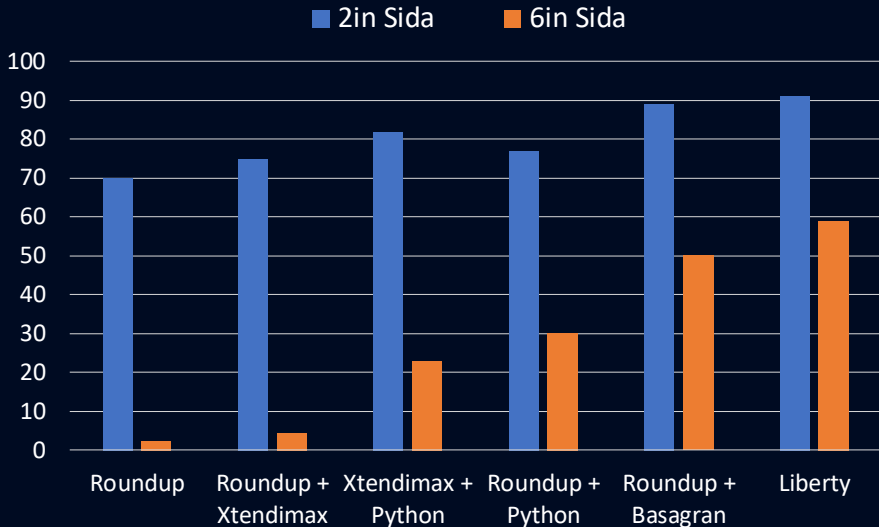
Success in 2023: Capitalize on Residual Herbicide Activity

- Narrow the row spacing with soybeans 15in where possible
- **2 Residuals at planting better than one – Include a knockdown, Paraquat or Engenia/Xtendimax, Enlist One**
- **3 better than 2 : Dicamba at planting provides increased residual control**
- Cotton = Brake + Cotoran, Cotoran + Caparol, Brake + Warrant
- Soybean = **Boundary 1qt/A, Authority Edge 7oz, Trivence, Fierce**
 - Can add: **Classic or Firstrate Metribuzin Zidua Metribuzin**
- **Timely POST and overlap residuals: REGARDLESS OF TECHNOLOGY!**
 - 2 POST apps needed for pigweed –add residuals
 - Outlook and Anthem/Zidua POST (Impregnate in cotton) better group 15's for some pigweed
 - Cotton: Layby with Diuron included in mix

Prickly Sida (tea weed) Residual Control: 4 WAA



Prickly Sida POST Control: 1 application



Prickly Sida

PRE Soybean

- Premixes containing: Valor, Metribuzin, Authority, Command, Firstrate, Classic etc.
- Combinations with above + **group 15 for pigweed**
 - Tendovo, Trivence + Zidua, Fierce MTZ

POST Soybean

- Glufosinate, Basagran, Python
- Enlist (2,4-D) a little better than Engenia/Xtend.

PRE Cotton

- Cotoran + Brake, Cotoran + Staple

POST Cotton

- Glufosinate + Roundup
- Staple early
- Envoke past 5th true leaf



2020: Twin Mill RedeKop™ Seed Destructor, JD S680



Twin Mill RedeKop™ Seed Destructor Installed on JD S680



Soybean Rotation Enables Seed Destruction

- Based on initial results, reduces viable pigweed by ~70%
- Still some kinks to work out
- Will become option on new combines
- Can also use narrow wind-row burning or chaff lining



2021 Chaff Plantings Following Seed Destructor Studies

RedeKop Seed Destructor **Off**



RedeKop Seed Destructor **On**



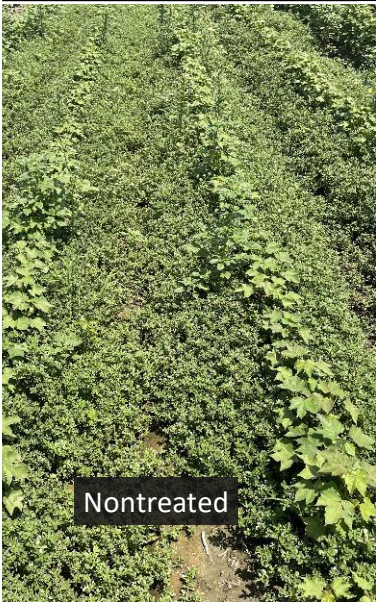


See & Spray Ultimate



- Commercial launch in 2022
- Technology available with 1,000 and 1,200-gal capacity
- Uses proprietary detection systems to allow for targeted broadcast applications
- Current detection models:
 - Fallow (bareground)
 - Cotton
 - Corn
 - Soybean

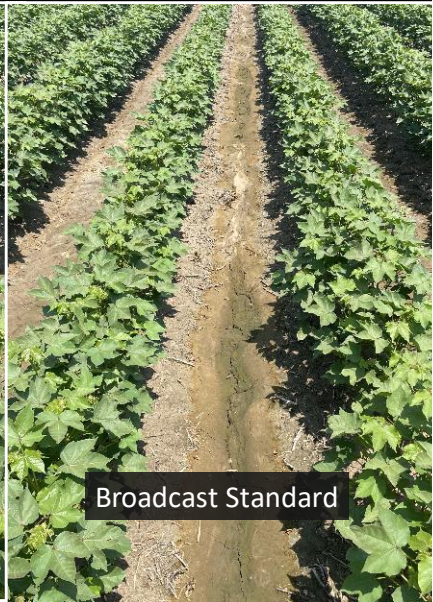
7 Days after Mid-POST



Nontreated



See and Spray Standard



Broadcast Standard

ARKANSAS
**ROW
CROPS**
R A D I O



Providing up-to-date
information and timely
recommendations on row crop
production in Arkansas.

Thanks!

Tom Barber: Extension Weed Scientist

tbarber@uada.edu

(501) 944-0549

@AR_TomBarber

Get weed control updates directly on
your phone.

Opt-in to our UAEX Field Crop
Extension Specialist Text Service!

Text "weeds" to (501) 300-8883.

