

# Purdue Weed Science

## Authority Supreme in Enlist Programs

Trial ID: 18S-MGS-Soy-08      Location: Meigs      Trial Year: 2018  
 Protocol ID: 18S-MGS-Soy-08      Investigator: Dr. Bill Johnson  
 Project ID:      Study Director: Taylor Campbell  
 Sponsor Contact: FMC - Nick Hustedde

### General Trial Information

**Study Director:** Taylor Campbell  
**Investigator:** Dr. Bill Johnson

**Discipline:** H herbicide  
**Trial Status:** E established

### Trial Location

**City:** Lafayette      **Country:** USA United States  
**State/Prov.:** Indiana  
**Postal Code:** 47909

**Conducted Under GLP:** No  
**Conducted Under GEP:** No

### Contacts

**Study Director:** Taylor Campbell  
**Organization:** Purdue University  
**Address:** 915 W State Street  
**City+State/Prov:** West Lafayette, IN  
**Postal Code:** 47907  
**Country:** USA United States

**Investigator:** Dr. Bill Johnson  
**Organization:** Purdue University  
**Address:** 915 W State Street  
**City+State/Prov:** West Lafayette, IN  
**Postal Code:** 47907  
**Country:** USA United States

### Cooperator/Landowner

**Cooperator:** Jay Young      **Role:** Superintendent  
**Organization:** Purdue University  
**Address 1:** 8343 US 231 S  
**City:** Lafayette      **Phone No.:** 765-538-3422  
**State/Prov:** IN      **Fax No.:** 765-538-3423  
**Postal Code:** 47909  
**Country:** USA United States      **E-mail:** jayyoung@purdue.edu

### Crop Description

**Crop 1:** GLXMA      Glycine max      Soybean  
**Variety:** AG30X6  
**Description:** Xtend Roundup Ready

**Planting Rate, Unit:** 140000 S/A  
**Depth, Unit:** 1 IN  
**Row Spacing, Unit:** 30 IN

**Soil Temperature, Unit:** 69 F

**Soil Moisture:** SLIDRY slightly dry

**Planting Date:** 5/7/2018  
**Planting Method:** PLANTD planted  
**Planting Equipment:** PP plot planter  
**Emergence Date:** 5/12/2018

**Harvested Width, Unit:** 5 FT  
**Harvested Length, Unit:** 22.5 FT  
**% Standard Moisture:** 13.0

### Pest Description

**Pest 1 Type:** W      **Code:** AMATA *Amaranthus tamariscinus*  
**Common Name:** Common waterhemp

### Site and Design

**Treated Plot Width:** 6.67 FT  
**Treated Plot Length:** 25 FT  
**Treated Plot Area:** 166.75 FT<sup>2</sup>      **Treatments:** 12  
**Replications:** 4  
**Site Type:** FIELD field  
**Experimental Unit:** 1 PLOT plot  
**Tillage Type:** NOTILL no-till  
**Study Design:** RACOB� Randomized Complete Block (RCB)

### Soil Description

**Description Name:** MGS-S3  
**% Sand:** 40.7      **% OM:** 2.3      **Texture:** L loam  
**% Silt:** 38.6      **pH:** 6.5      **Soil Name:** Starks-Fincastle complex  
**% Clay:** 20.7      **CEC:** 14.3      **Fert. Level:** G good

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#### Application Description

	A	B	C
<b>Application Date:</b>	5/8/2018	6/4/2018	6/4/2018
<b>Appl. Start Time:</b>	10:35 AM	9:20 AM	9:20 AM
<b>Appl. Stop Time:</b>	11:07 AM	9:31 AM	9:31 AM
<b>Application Method:</b>	SPRAY	SPRAY	SPRAY
<b>Application Timing:</b>	PREMCR	POEMCR	POEMCR
<b>Application Placement:</b>	BROADC	BROADC	BROADC
<b>Applied By:</b>	J. Haarmann	M. Zimmer	M. Zimmer
<b>Air Temperature, Unit:</b>	69 F	68 F	68 F
<b>% Relative Humidity:</b>	69	60	60
<b>Wind Velocity, Unit:</b>	3 MPH	3 MPH	3 MPH
<b>Wind Direction:</b>	NE	SW	SW
<b>Dew Presence (Y/N):</b>	N no	N no	N no
<b>Soil Temperature, Unit:</b>	62 F	65 F	65 F
<b>Soil Moisture:</b>	SLIDRY	SLIWET	SLIWET
<b>% Cloud Cover:</b>	30	30	30

#### Crop Stage At Each Application

	A	B	C
<b>Crop 1 Code, BBCH Scale:</b>	GLXMA BSOY	GLXMA BSOY	GLXMA BSOY
<b>Stage Scale Used:</b>	BBCH	BBCH	BBCH
<b>Stage Majority, Percent:</b>	00	13 90	13 90
<b>Stage Minimum, Percent:</b>		12 10	12 10
<b>Stage Maximum, Percent:</b>		13 90	13 90
<b>Average Diameter, Unit:</b>		5 IN	5 IN
<b>Height, Unit:</b>		9 IN	9 IN
<b>Height Minimum, Maximum:</b>		8 10	8 10

#### Pest Stage At Each Application

	A	B	C
<b>Pest 1 Code, Type, Scale:</b>	AMATA W	AMATA W	AMATA W
<b>Stage Majority, Percent:</b>	00	17 80	17 80
<b>Stage Minimum, Percent:</b>		15 10	15 10
<b>Stage Maximum, Percent:</b>		19 10	19 10
<b>Diameter, Unit:</b>		3 IN	3 IN
<b>Height, Unit:</b>		3 IN	3 IN
<b>Height Minimum, Maximum:</b>		2 3	2 3
<b>Density, Unit:</b>		1 FT2	1 FT2

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#### Application Equipment

	A	B	C
<b>Appl. Equipment:</b>	CO2 BACKPACK	CO2 BACKPACK	CO2 BACKPACK
<b>Equipment Type:</b>	BACCAI	BACCAI	BACCAI
<b>Operation Pressure, Unit:</b>	28    PSI	43    PSI	43    PSI
<b>Nozzle Type:</b>	XR	TTI	TTI
<b>Nozzle Size:</b>	8002	11015	11015
<b>Nozzle Spacing, Unit:</b>	20    IN	20    IN	20    IN
<b>Nozzles/Row:</b>	4	4	4
<b>Boom Length, Unit:</b>	6.7    FT	6.7    FT	6.7    FT
<b>Boom Height, Unit:</b>	18    IN	25    IN	25    IN
<b>Ground Speed, Unit:</b>	3    MPH	3    MPH	3    MPH
<b>Carrier:</b>	WATER		
<b>Spray Volume, Unit:</b>	15    GAL/AC	15    GAL/AC	15    GAL/AC
<b>Mix Size, Unit:</b>	945    mL	945    mL	945    mL
<b>Propellant:</b>	COMCO2	COMCO2	COMCO2

#### Date    By    Notes

4/24/2018    T. Campbell    Burndown 32 oz of Roundup Power Max, 1 pt of 2,4-D Shredder (ester formulation), and 2.5% v/v N-Pak AMS @ 10 gpa, 30 psi, 5 mph, and 1102 AIXR nozzle on a 4 wheeler with a 20 ft boom with 20 inch spacings  
 5/7/2018    T. Campbell    Gramoxone sprayed morning of planting at 2 pt/a plus 1% v/v of COC @ 10 gpa, 30 psi, 5 mph, and 1102 AIXR nozzle on a 4 wheeler with a 20 ft boom with 20 inch spacings  
 6/7/2018    T. Campbell    Evening storm brought hail and slight damage occurred at Meigs field site.

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Reps: 4      Appl Code: A      Plots: 6.67 by 25 feet  
 Spray vol: 15 GAL/AC      Mix Size: 945 mL (total for 4 plots; minimum=869.4 mL)

Trt No.	Treatment Name	Form Conc	Form Unit	Form Type	Rate	Appl Code	Amt Product to Measure	Rep			
								1	2	3	4
2	AUTHORITY SUPREME	4.16	LBA/GAL	SC	6 fl oz/a	A	2.953 mL/mx	102	303	506	706
3	AUTHORITY SUPREME	4.16	LBA/GAL	SC	8 fl oz/a	A	3.937 mL/mx	103	401	601	802
4	AUTHORITY SUPREME	4.16	LBA/GAL	SC	8 fl oz/a	A	3.937 mL/mx	104	301	502	701
5	AUTHORITY SUPREME	4.16	LBA/GAL	SC	6 fl oz/a	A	2.953 mL/mx	105	406	505	705
	SPARTAN CHARGE	3.5	LBA/GAL	SC	4 fl oz/a	A	1.969 mL/mx				
6	AUTHORITY SUPREME	4.16	LBA/GAL	SC	6 fl oz/a	A	2.953 mL/mx	106	402	603	803
	SPARTAN CHARGE	3.5	LBA/GAL	SC	6 fl oz/a	A	2.953 mL/mx				
7	AUTHORITY SUPREME	4.16	LBA/GAL	SC	6 fl oz/a	A	2.953 mL/mx	201	405	501	704
	TRICOR	75 %		DF	6 oz/a	A	2.831 g/mx				
8	ZIDUA PRO	4.09	LB/GAL	SC	6 fl oz/a	A	2.953 mL/mx	202	306	503	703
9	FIERCE MTZ	2.64	LB/GAL	SC	1 pt/a	A	7.875 mL/mx	203	302	604	801
10	BOUNDARY	6.5	LB/GAL	EC	29 fl oz/a	A	14.27 mL/mx	204	305	602	805
11	ANTHEM MAXX	4.3	LBA/GAL	SC	4 fl oz/a	A	1.969 mL/mx	205	404	605	702
12	ANTHEM MAXX	4.3	LBA/GAL	SC	4 fl oz/a	A	1.969 mL/mx	206	304	504	804
	TRICOR	75 %		DF	6 oz/a	A	2.831 g/mx				

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Reps: 4      Appl Code: B      Plots: 6.67 by 25 feet  
 Spray vol: 15 GAL/AC      Mix Size: 945 mL (total for 4 plots; minimum=869.4 mL)

Trt No.	Treatment Name	Form Conc	Form Unit	Form Type	Rate	Rate Unit	Appl Code	Amt to Measure	Product	Rep 1	Rep 2	Rep 3	Rep 4
2	ROUNDUP POWERMAX	4.5	LBAE/GAL	SL	32 fl oz/a	B		15.75 mL/mx		102	303	506	706
	XTENDIMAX	2.9	LBAE/GAL	SL	22 fl oz/a	B		10.83 mL/mx					
	CLASS ACT RIDION	100 %		L	1 % v/v	B		9.449 mL/mx					
	INTACT	100 %		L	0.5 % v/v	B		4.724 mL/mx					
3	ROUNDUP POWERMAX	4.5	LBAE/GAL	SL	32 fl oz/a	B		15.75 mL/mx		103	401	601	802
	XTENDIMAX	2.9	LBAE/GAL	SL	22 fl oz/a	B		10.83 mL/mx					
	CLASS ACT RIDION	100 %		L	1 % v/v	B		9.449 mL/mx					
	INTACT	100 %		L	0.5 % v/v	B		4.724 mL/mx					
5	ROUNDUP POWERMAX	4.5	LBAE/GAL	SL	32 fl oz/a	B		15.75 mL/mx		105	406	505	705
	XTENDIMAX	2.9	LBAE/GAL	SL	22 fl oz/a	B		10.83 mL/mx					
	CLASS ACT RIDION	100 %		L	1 % v/v	B		9.449 mL/mx					
	INTACT	100 %		L	0.5 % v/v	B		4.724 mL/mx					
6	ROUNDUP POWERMAX	4.5	LBAE/GAL	SL	32 fl oz/a	B		15.75 mL/mx		106	402	603	803
	XTENDIMAX	2.9	LBAE/GAL	SL	22 fl oz/a	B		10.83 mL/mx					
	CLASS ACT RIDION	100 %		L	1 % v/v	B		9.449 mL/mx					
	INTACT	100 %		L	0.5 % v/v	B		4.724 mL/mx					
7	ROUNDUP POWERMAX	4.5	LBAE/GAL	SL	32 fl oz/a	B		15.75 mL/mx		201	405	501	704
	XTENDIMAX	2.9	LBAE/GAL	SL	22 fl oz/a	B		10.83 mL/mx					
	CLASS ACT RIDION	100 %		L	1 % v/v	B		9.449 mL/mx					
	INTACT	100 %		L	0.5 % v/v	B		4.724 mL/mx					
8	ROUNDUP POWERMAX	4.5	LBAE/GAL	SL	32 fl oz/a	B		15.75 mL/mx		202	306	503	703
	XTENDIMAX	2.9	LBAE/GAL	SL	22 fl oz/a	B		10.83 mL/mx					
	CLASS ACT RIDION	100 %		L	1 % v/v	B		9.449 mL/mx					
	INTACT	100 %		L	0.5 % v/v	B		4.724 mL/mx					
9	ROUNDUP POWERMAX	4.5	LBAE/GAL	SL	32 fl oz/a	B		15.75 mL/mx		203	302	604	801
	XTENDIMAX	2.9	LBAE/GAL	SL	22 fl oz/a	B		10.83 mL/mx					
	CLASS ACT RIDION	100 %		L	1 % v/v	B		9.449 mL/mx					
	INTACT	100 %		L	0.5 % v/v	B		4.724 mL/mx					
10	ROUNDUP POWERMAX	4.5	LBAE/GAL	SL	32 fl oz/a	B		15.75 mL/mx		204	305	602	805
	XTENDIMAX	2.9	LBAE/GAL	SL	22 fl oz/a	B		10.83 mL/mx					
	CLASS ACT RIDION	100 %		L	1 % v/v	B		9.449 mL/mx					
	INTACT	100 %		L	0.5 % v/v	B		4.724 mL/mx					
11	ROUNDUP POWERMAX	4.5	LBAE/GAL	SL	32 fl oz/a	B		15.75 mL/mx		205	404	605	702
	XTENDIMAX	2.9	LBAE/GAL	SL	22 fl oz/a	B		10.83 mL/mx					
	CLASS ACT RIDION	100 %		L	1 % v/v	B		9.449 mL/mx					
	INTACT	100 %		L	0.5 % v/v	B		4.724 mL/mx					
12	ROUNDUP POWERMAX	4.5	LBAE/GAL	SL	32 fl oz/a	B		15.75 mL/mx		206	304	504	804
	XTENDIMAX	2.9	LBAE/GAL	SL	22 fl oz/a	B		10.83 mL/mx					
	CLASS ACT RIDION	100 %		L	1 % v/v	B		9.449 mL/mx					
	INTACT	100 %		L	0.5 % v/v	B		4.724 mL/mx					

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	Sponsor Contact: FMC - Nick Hustedde	

Reps: 4      Appl Code: C      Plots: 6.67 by 25 feet  
 Spray vol: 15 GAL/AC      Mix Size: 945 mL (total for 4 plots; minimum=869.4 mL)

Trt No.	Treatment Name	Form Conc	Form Unit	Form Type	Rate	Appl Unit	Appl Code	Amt Product to Measure	Rep			
									1	2	3	4
4	ANTHEM MAXX	4.3	LBA/GAL	SC	2.5 fl oz/a	C		1.23 mL/mx	104	301	502	701
	ROUNDUP POWERMAX	4.5	LBAE/GAL	SL	32 fl oz/a	C		15.75 mL/mx				
	XTENDIMAX	2.9	LBAE/GAL	SL	22 fl oz/a	C		10.83 mL/mx				
	CLASS ACT RIDION	100 %		L	1 % v/v	C		9.449 mL/mx				
	INTACT	100 %		L	0.5 % v/v	C		4.724 mL/mx				

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Reps: 4      Appl Code: \_      Plots: 6.67 by 25 feet  
 Spray vol: 15 GAL/AC      Mix Size: 945 mL (total for 4 plots; minimum=869.4 mL)

Trt No.	Treatment Name	Form Conc	Form Unit	Form Type	Rate	Appl Unit	Code	Amt Product to Measure	Rep				
									1	2	3	4	
1	UNTREATED							101	403	606	806		

Sort Order: Application Code, Replicate 1

Product quantities required for listed treatments and applications of trials included in this table:

Amount*	Unit	Treatment Name	Form Conc	Form Unit	Form Type	Lot Code
24.609	mL	AUTHORITY SUPREME	4.16	LBA/GAL	SC	
216.562	mL	ROUNDUP POWERMAX	4.5	LBAE/GAL	SL	
148.887	mL	XTENDIMAX	2.9	LBAE/GAL	SL	
129.923	mL	CLASS ACT RIDION	100	%	L	
64.962	mL	INTACT	100	%	L	
6.460	mL	ANTHEM MAXX	4.3	LBA/GAL	SC	
6.152	mL	SPARTAN CHARGE	3.5	LBA/GAL	SC	
7.077	g	TRICOR	75	%	DF	
3.691	mL	ZIDUA PRO	4.09	LB/GAL	SC	
9.844	mL	FIERCE MTZ	2.64	LB/GAL	SC	
17.842	mL	BOUNDARY	6.5	LB/GAL	EC	

\* 'Per area' calculations based on spray volume= 15 GAL/AC, mix size= 945 mL (mix size basis).

\* Product amount calculations increased 25 % for overage adjustment.

\* 'Per volume' calculations use spray volume= 15 GAL/AC, mix size= 945 mL.

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Pest Type			W Weed			W Weed		
Pest Code			AMATA			AMATA		
Pest Name			Common waterhe>			Common waterhe>		
Crop Code	GLXMA		GLXMA		GLXMA			GLXMA
Crop Name	Soybean		Soybean		Soybean			Soybean
Part Rated	PLOT C		PLOT C		PLOT C			PLOT C
Rating Date	5/22/2018		5/22/2018		6/4/2018			6/19/2018
Rating Type	PHYGEN		CONTRO		PHYGEN			PHYGEN
Rating Unit	%		%		%			%
Sample Size, Unit								
Number of Subsamples	1		1		1			1
Assessed By	T. Campbell		T. Campbell		T. Campbell			T. Campbell
Days After First/Last Applic.	14 14		14 14		27 27			42 15
Trt-Eval Interval	14 DA-A		14 DA-A		27 DA-A			15 DA-C
Days After Emergence	10 DE-1		10 DE-1		23 DE-1			38 DE-1
ARM Action Codes								
Number of Decimals	0		0		0			0
Trt Treatment	Rate	Appl						
No. Name	Rate Unit	Code	1	2	3	4	5	
1 UNTREATED			0	0	0	0	0	
2 AUTHORITY SUPREME	6 fl oz/a A		0 -	100 -	0 -	98 a	0 -	
ROUNDUP POWERMAX	32 fl oz/a B							
XTENDIMAX	22 fl oz/a B							
CLASS ACT RIDION	1 % v/v B							
INTACT	0.5 % v/v B							
3 AUTHORITY SUPREME	8 fl oz/a A		0 -	100 -	0 -	100 a	0 -	
ROUNDUP POWERMAX	32 fl oz/a B							
XTENDIMAX	22 fl oz/a B							
CLASS ACT RIDION	1 % v/v B							
INTACT	0.5 % v/v B							
4 AUTHORITY SUPREME	8 fl oz/a A		0 -	100 -	0 -	100 a	0 -	
ANTHEM MAXX	2.5 fl oz/a C							
ROUNDUP POWERMAX	32 fl oz/a C							
XTENDIMAX	22 fl oz/a C							
CLASS ACT RIDION	1 % v/v C							
INTACT	0.5 % v/v C							
5 AUTHORITY SUPREME	6 fl oz/a A		0 -	100 -	0 -	99 a	0 -	
SPARTAN CHARGE	4 fl oz/a A							
ROUNDUP POWERMAX	32 fl oz/a B							
XTENDIMAX	22 fl oz/a B							
CLASS ACT RIDION	1 % v/v B							
INTACT	0.5 % v/v B							
6 AUTHORITY SUPREME	6 fl oz/a A		0 -	100 -	0 -	99 a	0 -	
SPARTAN CHARGE	6 fl oz/a A							
ROUNDUP POWERMAX	32 fl oz/a B							
XTENDIMAX	22 fl oz/a B							
CLASS ACT RIDION	1 % v/v B							
INTACT	0.5 % v/v B							
7 AUTHORITY SUPREME	6 fl oz/a A		0 -	100 -	0 -	99 a	0 -	
TRICOR	6 oz/a A							
ROUNDUP POWERMAX	32 fl oz/a B							
XTENDIMAX	22 fl oz/a B							
CLASS ACT RIDION	1 % v/v B							
INTACT	0.5 % v/v B							
8 ZIDUA PRO	6 fl oz/a A		0 -	100 -	0 -	98 a	0 -	
ROUNDUP POWERMAX	32 fl oz/a B							
XTENDIMAX	22 fl oz/a B							
CLASS ACT RIDION	1 % v/v B							
INTACT	0.5 % v/v B							

Means followed by same letter or symbol do not significantly differ (P=.05, LSD)  
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.  
 Untreated treatment(s) 1 excluded from analysis.  
 Could not calculate LSD (% mean diff) for columns 1,2,3,5 because error mean square = 0.



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Pest Type		W Weed		W Weed	
Pest Code		AMATA		AMATA	
Pest Name		Common waterhe>		Common waterhe>	
Crop Code	GLXMA		GLXMA		GLXMA
Crop Name	Soybean		Soybean		Soybean
Part Rated	PLOT C	PLOT P	PLOT C	PLOT P	PLOT C
Rating Date	5/22/2018	5/22/2018	6/4/2018	6/4/2018	6/19/2018
Rating Type	PHYGEN	CONTRO	PHYGEN	CONTRO	PHYGEN
Rating Unit	%	%	%	%	%
Sample Size, Unit					
Number of Subsamples	1	1	1	1	1
Assessed By	T. Campbell	T. Campbell	T. Campbell	T. Campbell	T. Campbell
Days After First/Last Applic.	14 14	14 14	27 27	27 27	42 15
Trt-Eval Interval	14 DA-A	14 DA-A	27 DA-A	27 DA-A	15 DA-C
Days After Emergence	10 DE-1	10 DE-1	23 DE-1	23 DE-1	38 DE-1
ARM Action Codes					
Number of Decimals	0	0	0	0	0
Trt Treatment	Rate	Appl			
No. Name	Rate Unit	Code	1	2	3
9 FIERCE MTZ	1 pt/a A		0 -	100 -	0 -
ROUNDUP POWERMAX	32 fl oz/a B				100 a
XTENDIMAX	22 fl oz/a B				
CLASS ACT RIDION	1 % v/v B				
INTACT	0.5 % v/v B				0 -
10 BOUNDARY	29 fl oz/a A		0 -	100 -	0 -
ROUNDUP POWERMAX	32 fl oz/a B				100 a
XTENDIMAX	22 fl oz/a B				
CLASS ACT RIDION	1 % v/v B				
INTACT	0.5 % v/v B				0 -
11 ANTHEM MAXX	4 fl oz/a A		0 -	100 -	0 -
ROUNDUP POWERMAX	32 fl oz/a B				94 b
XTENDIMAX	22 fl oz/a B				
CLASS ACT RIDION	1 % v/v B				
INTACT	0.5 % v/v B				0 -
12 ANTHEM MAXX	4 fl oz/a A		0 -	100 -	0 -
TRICOR	6 oz/a A				99 a
ROUNDUP POWERMAX	32 fl oz/a B				
XTENDIMAX	22 fl oz/a B				
CLASS ACT RIDION	1 % v/v B				
INTACT	0.5 % v/v B				0 -
LSD P=.05					3.1
Standard Deviation	0.0	0.0	0.0	2.2	0.0
CV	0.0	0.0	0.0	2.19	0.0
Levene's F	0.00	0.00	0.00	2.524	0.00
Levene's Prob(F)	0.00*	0.00*	0.00*	0.022*	0.00*
Skewness	.	.	.	-1.9714*	.
Kurtosis	.	.	.	3.4634*	.
Replicate F	0.000	0.000	0.000	1.269	0.000
Replicate Prob(F)	1.0000	1.0000	1.0000	0.3028	1.0000
Treatment F	0.000	0.000	0.000	2.961	0.000
Treatment Prob(F)	1.0000	1.0000	1.0000	0.0104	1.0000

Means followed by same letter or symbol do not significantly differ (P=.05, LSD)  
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.  
 Untreated treatment(s) 1 excluded from analysis.  
 Could not calculate LSD (% mean diff) for columns 1,2,3,5 because error mean square = 0.

## Purdue Weed Science

### Authority Supreme in Enlist Programs

Trial ID: 18S-MGS-Soy-08      Location: Meigs      Trial Year: 2018  
 Protocol ID: 18S-MGS-Soy-08      Investigator: Dr. Bill Johnson  
 Project ID:      Study Director: Taylor Campbell  
 Sponsor Contact: FMC - Nick Hustedde

Pest Type	W Weed	W Weed	W Weed				
Pest Code	AMATA	AMATA	AMATA				
Pest Name	Common waterhe>	Common waterhe>	Common waterhe>				
Crop Code				GLXMA	GLXMA		
Crop Name				Soybean	Soybean		
Part Rated				PLOT C	PLOT C		
Rating Date	PLOT P	PLOT P	PLOT P	10/3/2018	10/3/2018		
Rating Type	6/19/2018	7/2/2018	8/2/2018	YIELD	MOICON		
Rating Unit	CONTRO	CONTRO	CONTRO	lb/plot	%		
Sample Size, Unit	%	%	%	1 PLOT			
Number of Subsamples	1	1	1	1	1		
Assessed By	T. Campbell	T. Campbell	T. Campbell	T. Campbell	T. Campbell		
Days After First/Last Applic.	42 15	55 28	86 59	148 121	148 121		
Trt-Eval Interval	15 DA-C	28 DA-C	59 DA-C				
Days After Emergence	38 DE-1	51 DE-1	82 DE-1	144 DE-1	144 DE-1		
ARM Action Codes							
Number of Decimals	0	0	0	1	1		
Trt Treatment	Rate	Appl					
No. Name	Rate Unit	Code	6	7	8		
1 UNTREATED			0	0	0	8.3	14.4
2 AUTHORITY SUPREME	6 fl oz/a A		99 ab	96 a	96 ab	8.0 -	14.5 -
ROUNDUP POWERMAX	32 fl oz/a B						
XTENDIMAX	22 fl oz/a B						
CLASS ACT RIDION	1 % v/v B						
INTACT	0.5 % v/v B						
3 AUTHORITY SUPREME	8 fl oz/a A		100 a	100 a	99 a	9.5 -	13.4 -
ROUNDUP POWERMAX	32 fl oz/a B						
XTENDIMAX	22 fl oz/a B						
CLASS ACT RIDION	1 % v/v B						
INTACT	0.5 % v/v B						
4 AUTHORITY SUPREME	8 fl oz/a A		99 ab	100 a	100 a	8.9 -	14.1 -
ANTHEM MAXX	2.5 fl oz/a C						
ROUNDUP POWERMAX	32 fl oz/a C						
XTENDIMAX	22 fl oz/a C						
CLASS ACT RIDION	1 % v/v C						
INTACT	0.5 % v/v C						
5 AUTHORITY SUPREME	6 fl oz/a A		100 a	100 a	100 a	8.0 -	13.6 -
SPARTAN CHARGE	4 fl oz/a A						
ROUNDUP POWERMAX	32 fl oz/a B						
XTENDIMAX	22 fl oz/a B						
CLASS ACT RIDION	1 % v/v B						
INTACT	0.5 % v/v B						
6 AUTHORITY SUPREME	6 fl oz/a A		100 a	100 a	99 a	8.9 -	13.6 -
SPARTAN CHARGE	6 fl oz/a A						
ROUNDUP POWERMAX	32 fl oz/a B						
XTENDIMAX	22 fl oz/a B						
CLASS ACT RIDION	1 % v/v B						
INTACT	0.5 % v/v B						
7 AUTHORITY SUPREME	6 fl oz/a A		100 a	100 a	99 a	9.4 -	13.7 -
TRICOR	6 oz/a A						
ROUNDUP POWERMAX	32 fl oz/a B						
XTENDIMAX	22 fl oz/a B						
CLASS ACT RIDION	1 % v/v B						
INTACT	0.5 % v/v B						
8 ZIDUA PRO	6 fl oz/a A		94 bcd	87 c	87 cd	9.0 -	14.1 -
ROUNDUP POWERMAX	32 fl oz/a B						
XTENDIMAX	22 fl oz/a B						
CLASS ACT RIDION	1 % v/v B						
INTACT	0.5 % v/v B						

Means followed by same letter or symbol do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Untreated treatment(s) 1 excluded from analysis.

Could not calculate LSD (% mean diff) for columns 1,2,3,5 because error mean square = 0.

# Purdue Weed Science

## Authority Supreme in Enlist Programs

Trial ID: 18S-MGS-Soy-08      Location: Meigs      Trial Year: 2018  
 Protocol ID: 18S-MGS-Soy-08      Investigator: Dr. Bill Johnson  
 Project ID:      Study Director: Taylor Campbell  
 Sponsor Contact: FMC - Nick Hustedde

Pest Type	W Weed	W Weed	W Weed		
Pest Code	AMATA	AMATA	AMATA		
Pest Name	Common waterhe>	Common waterhe>	Common waterhe>		
Crop Code				GLXMA	GLXMA
Crop Name				Soybean	Soybean
Part Rated	PLOT P	PLOT P	PLOT P	PLOT C	PLOT C
Rating Date	6/19/2018	7/2/2018	8/2/2018	10/3/2018	10/3/2018
Rating Type	CONTRO	CONTRO	CONTRO	YIELD	MOICON
Rating Unit	%	%	%	lb/plot	%
Sample Size, Unit				1 PLOT	
Number of Subsamples	1	1	1	1	1
Assessed By	T. Campbell	T. Campbell	T. Campbell	T. Campbell	T. Campbell
Days After First/Last Applic.	42 15	55 28	86 59	148 121	148 121
Trt-Eval Interval	15 DA-C	28 DA-C	59 DA-C		
Days After Emergence	38 DE-1	51 DE-1	82 DE-1	144 DE-1	144 DE-1
ARM Action Codes					
Number of Decimals	0	0	0	1	1
Trt Treatment	Rate	Appl			
No. Name	Rate Unit	Code	6	7	8
9 FIERCE MTZ	1 pt/a A		97 abc	94 ab	93 bc
ROUNDUP POWERMAX	32 fl oz/a B				
XTENDIMAX	22 fl oz/a B				
CLASS ACT RIDION	1 % v/v B				
INTACT	0.5 % v/v B				
10 BOUNDARY	29 fl oz/a A		90 d	86 c	86 cd
ROUNDUP POWERMAX	32 fl oz/a B				
XTENDIMAX	22 fl oz/a B				
CLASS ACT RIDION	1 % v/v B				
INTACT	0.5 % v/v B				
11 ANTHEM MAXX	4 fl oz/a A		93 cd	88 bc	86 d
ROUNDUP POWERMAX	32 fl oz/a B				
XTENDIMAX	22 fl oz/a B				
CLASS ACT RIDION	1 % v/v B				
INTACT	0.5 % v/v B				
12 ANTHEM MAXX	4 fl oz/a A		96 abc	96 a	95 ab
TRICOR	6 oz/a A				
ROUNDUP POWERMAX	32 fl oz/a B				
XTENDIMAX	22 fl oz/a B				
CLASS ACT RIDION	1 % v/v B				
INTACT	0.5 % v/v B				
LSD P=.05			4.8	6.5	6.5
Standard Deviation			3.3	4.5	4.5
CV			3.39	4.77	4.74
Levene's F			2.293	2.723	3.802
Levene's Prob(F)			0.036*	0.015*	0.002*
Skewness			-2.0872*	-1.2184*	-1.1448*
Kurtosis			5.0061*	0.164	0.0177
Replicate F			1.741	0.628	1.011
Replicate Prob(F)			0.1797	0.6023	0.4016
Treatment F			4.053	6.246	6.525
Treatment Prob(F)			0.0014	0.0001	0.0001
					0.711
					0.778
					0.7069
					0.6488

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 Untreated treatment(s) 1 excluded from analysis.  
 Could not calculate LSD (% mean diff) for columns 1,2,3,5 because error mean square = 0.

## Purdue Weed Science

### Authority Supreme in Enlist Programs

Trial ID: 18S-MGS-Soy-08	Location: Meigs	Trial Year: 2018
Protocol ID: 18S-MGS-Soy-08	Investigator: Dr. Bill Johnson	
Project ID:	Study Director: Taylor Campbell	
	Sponsor Contact: FMC - Nick Hustedde	

Pest Type			
Pest Code			
Pest Name			
Crop Code		GLXMA	
Crop Name		Soybean	
Part Rated		PLOT C	
Rating Date		10/3/2018	
Rating Type		YIELD	
Rating Unit		bu/ac	
Sample Size, Unit		1 BU	
Number of Subsamples		1	
Assessed By		T. Campbell	
Days After First/Last Applic.		148 121	
Trt-Eval Interval			
Days After Emergence		144 DE-1	
ARM Action Codes		TY1	
Number of Decimals		1	
Trt Treatment	Rate	Appl	
No. Name	Rate Unit	Code	11
1 UNTREATED			52.7
2 AUTHORITY SUPREME	6 fl oz/a A		51.0 -
ROUNDUP POWERMAX	32 fl oz/a B		
XTENDIMAX	22 fl oz/a B		
CLASS ACT RIDION	1 % v/v B		
INTACT	0.5 % v/v B		
3 AUTHORITY SUPREME	8 fl oz/a A		61.3 -
ROUNDUP POWERMAX	32 fl oz/a B		
XTENDIMAX	22 fl oz/a B		
CLASS ACT RIDION	1 % v/v B		
INTACT	0.5 % v/v B		
4 AUTHORITY SUPREME	8 fl oz/a A		56.8 -
ANTHEM MAXX	2.5 fl oz/a C		
ROUNDUP POWERMAX	32 fl oz/a C		
XTENDIMAX	22 fl oz/a C		
CLASS ACT RIDION	1 % v/v C		
INTACT	0.5 % v/v C		
5 AUTHORITY SUPREME	6 fl oz/a A		51.5 -
SPARTAN CHARGE	4 fl oz/a A		
ROUNDUP POWERMAX	32 fl oz/a B		
XTENDIMAX	22 fl oz/a B		
CLASS ACT RIDION	1 % v/v B		
INTACT	0.5 % v/v B		
6 AUTHORITY SUPREME	6 fl oz/a A		57.2 -
SPARTAN CHARGE	6 fl oz/a A		
ROUNDUP POWERMAX	32 fl oz/a B		
XTENDIMAX	22 fl oz/a B		
CLASS ACT RIDION	1 % v/v B		
INTACT	0.5 % v/v B		
7 AUTHORITY SUPREME	6 fl oz/a A		60.0 -
TRICOR	6 oz/a A		
ROUNDUP POWERMAX	32 fl oz/a B		
XTENDIMAX	22 fl oz/a B		
CLASS ACT RIDION	1 % v/v B		
INTACT	0.5 % v/v B		
8 ZIDUA PRO	6 fl oz/a A		57.5 -
ROUNDUP POWERMAX	32 fl oz/a B		
XTENDIMAX	22 fl oz/a B		
CLASS ACT RIDION	1 % v/v B		
INTACT	0.5 % v/v B		

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Untreated treatment(s) 1 excluded from analysis.

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## Purdue Weed Science

### Authority Supreme in Enlist Programs

Trial ID: 18S-MGS-Soy-08	Location: Meigs	Trial Year: 2018
Protocol ID: 18S-MGS-Soy-08	Investigator: Dr. Bill Johnson	
Project ID:	Study Director: Taylor Campbell	
	Sponsor Contact: FMC - Nick Hustedde	

Pest Type			
Pest Code			
Pest Name			
Crop Code		GLXMA	
Crop Name		Soybean	
Part Rated		PLOT C	
Rating Date		10/3/2018	
Rating Type		YIELD	
Rating Unit		bu/ac	
Sample Size, Unit		1 BU	
Number of Subsamples		1	
Assessed By		T. Campbell	
Days After First/Last Applic.		148 121	
Trt-Eval Interval			
Days After Emergence		144 DE-1	
ARM Action Codes		TY1	
Number of Decimals		1	
Trt Treatment No. Name	Rate	Appl Code	
	Rate Unit		11
9 FIERCE MTZ	1 pt/a	A	53.9 -
ROUNDUP POWERMAX	32 fl oz/a	B	
XTENDIMAX	22 fl oz/a	B	
CLASS ACT RIDION	1 % v/v	B	
INTACT	0.5 % v/v	B	
10 BOUNDARY	29 fl oz/a	A	55.4 -
ROUNDUP POWERMAX	32 fl oz/a	B	
XTENDIMAX	22 fl oz/a	B	
CLASS ACT RIDION	1 % v/v	B	
INTACT	0.5 % v/v	B	
11 ANTHEM MAXX	4 fl oz/a	A	53.5 -
ROUNDUP POWERMAX	32 fl oz/a	B	
XTENDIMAX	22 fl oz/a	B	
CLASS ACT RIDION	1 % v/v	B	
INTACT	0.5 % v/v	B	
12 ANTHEM MAXX	4 fl oz/a	A	54.9 -
TRICOR	6 oz/a	A	
ROUNDUP POWERMAX	32 fl oz/a	B	
XTENDIMAX	22 fl oz/a	B	
CLASS ACT RIDION	1 % v/v	B	
INTACT	0.5 % v/v	B	
LSD P=.05			10.72
Standard Deviation			7.42
CV			13.32
Levene's F			0.595
Levene's Prob(F)			0.806
Skewness			-0.1255
Kurtosis			-0.2521
Replicate F			9.783
Replicate Prob(F)			0.0001
Treatment F			0.770
Treatment Prob(F)			0.6556

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## Purdue Weed Science

### Authority Supreme in Enlist Programs

Trial ID: 18S-MGS-Soy-08	Location: Meigs	Trial Year: 2018
Protocol ID: 18S-MGS-Soy-08	Investigator: Dr. Bill Johnson	
Project ID:	Study Director: Taylor Campbell	
	Sponsor Contact: FMC - Nick Hustedde	

Pest Type

W, Weed, G-BYRW7, G-WedStg = Weed or volunteer crop

Pest Code

AMATA, Amaranthus tamariscinus, Common waterhemp = US

Crop Code

GLXMA, BSOY, Glycine max, Soybean = US

Part Rated

PLOT = plot

C = Crop is Part Rated

P = Pest is Part Rated

Rating Type

PHYGEN = phytotoxicity - general / injury

CONTRO = control / burndown or knockdown

YIELD = yield

MOICON = moisture content

Rating Unit

% = percent

lb/plot = pounds per plot

bu/ac = bushels per acre

PLOT = total plot

BU = bushel

ARM Action Codes

TY1 =  $6.453333^{*}[9]^{*}(100-[10])/87$