

Purdue Weed Science

Authority Anthem Maxx Product Understanding
 Trial ID: 17S-MGS-Soy-04 Location: Meigs Trial Year: 2017
 Protocol ID: 17S-MGS-Soy-04 Investigator: Dr. Bill Johnson
 Project ID: Study Director: Taylor Campbell
 Sponsor Contact: Nick Hustedde

General Trial Information

Study Director: Taylor Campbell
Investigator: Dr. Bill Johnson

Discipline: H herbicide
Trial Status: E established
Initiation Date: 5/15/2017

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
Role: Superintendent

Cooperator: Jay Young
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
Variety: AG30X6

Soybean

Planting Rate, Unit: 140000 S/A
Depth, Unit: 1 IN
Row Spacing, Unit: 30 IN
Planting Density, Unit: 140000 S/A
Soil Temperature, Unit: 70 F
Soil Moisture: DAMP damp

Planting Date: 5/31/2017
Planting Method: PLANTD planted
Planting Equipment: PP Plot Planter
Emergence Date: 6/4/2017
Harvested Width, Unit: 5 FT
Harvested Length, Unit: 22 FT
% Standard Moisture: 13.3

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 FT² Treatments: 14

Replications: 4

Site Type: FIELD field

Experimental Unit: 1 PLOT plot

Tillage Type: NOTILL no-till

Study Design: RAOBL Randomized Complete Block (RCB)

Maintenance

No.	Date	Type	Maintenance Product Name	Form Conc	Form Unit	Form Type	Rate	Rate Unit
1.	4/13/2017	HERB	ROUNDUP POWERMAX	4.5	LBAE/GA	SL	32	FL OZ/A
2.	4/13/2017	HERB	SHREDDER 2,4-D LV4	3.8	LBAE/GA	SL	1	PT/A
3.	4/13/2017	ADJ	N-PAK	3.4	LBA/GAL	L	2.5	% V/V
4.	5/22/2017	HERB	GRAMOXONE SL	2	LBAE/GA	SL	4	PT/A
5.	5/22/2017	ADJ	COC	100	%	SL	1	% V/V
6.	5/29/2017	HERB	GRAMOXONE SL	2	LBAE/GA	SL	3	PT/A
7.	5/29/2017	ADJ	COC	100	%	SL	1	% V/V

Field Prep./Maintenance:

The trial area was cleaned in early spring with glyphosate and 2,4-D to encourage germination of waterhemp. Paraquat was sprayed twice before planting to keep the trial clean at planting.

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

Application Description

	A	B	C	D	E
Application Date:	5/30/2017	6/27/2017	6/27/2017	6/21/2017	7/3/2017
Appl. Start Time:	4:07 PM	2:56 PM	12:30 PM	12:25 PM	1:05 PM
Appl. Stop Time:	4:40 PM	3:20 PM	1:00 PM	12:40 PM	1:08 PM
Application Method:	SPRAY	SPRAY	SPRAY	SPRAY	SPRAY
Application Timing:	PREPLA	POSPOS	POSPOS	EAPOWE	POSPOS
Application Placement:	BROADC	BROADC	BROADC	BROADC	BROADC
Applied By:	J. Boe	T. Campbell	T. Campbell	T. Campbell	T. Campbell
Air Temperature, Unit:	79 F	75 F	75 F	85 F	87 F
% Relative Humidity:	38	68	68	68	61
Wind Velocity, Unit:	3 MPH	2 MPH	2 MPH	1 MPS	1 MPH
Wind Direction:	SW	SE	SE	W	NW
Dew Presence (Y/N):	N no	N no	N no	N no	N no
Soil Temperature, Unit:	73 F	72 F	72 F	87 F	90 F
Soil Moisture:	SLIWET	SLIDRY	SLIDRY	SLIWET	DRY
% Cloud Cover:	30	30	30	20	20

Crop Stage At Each Application					
	A	B	C	D	E
Crop 1 Code, BBCH Scale:	GLXMA BSOY				
Stage Scale Used:		BBCH	BBCH	BBCH	BBCH
Stage Majority, Percent:		13	13	13	16
Stage Minimum, Percent:		12	12	12	15
Stage Maximum, Percent:		14	14	14	17
Height, Unit:		8 IN	8 IN	7 IN	12 IN
Height Minimum, Maximum:		8 10	8 10	6 8	12 14

Pest Stage At Each Application					
	A	B	C	D	E
Pest 1 Code, Type, Scale:	AMATA W				
Stage Majority, Percent:			18	17	18
Stage Minimum, Percent:			17	16	17
Stage Maximum, Percent:			19	18	19
Height, Unit:			3 IN	4 IN	6 IN
Height Minimum, Maximum:			2 6	3 6	4 8
Density, Unit:			3 FT2	15 FT2	12 FT2

Application Equipment					
	A	B	C	D	E
Appl. Equipment:	CO2 BACKPACK				
Equipment Type:	BACCAI	BACCAI	BACCAI	BACCAI	BACCAI
Operation Pressure, Unit:	43 PSI	27 PSI	42 PSI	43 PSI	43 PSI
Nozzle Type:	TTI	XR	TTI	TTI	TTI
Nozzle Size:	11002	11002	11015	11015	11015
Nozzle Spacing, Unit:	20 IN				
Nozzles/Row:	4	4	4	4	4
Boom Length, Unit:	6.7 FT				
Boom Height, Unit:	15 IN	22 IN	22 IN	24 IN	28 IN
Ground Speed, Unit:	3 MPH				
Spray Volume, Unit:	15 GAL/AC				
Mix Size, Unit:	945 mL				
Propellant:	COMCO2	COMCO2	COMCO2	COMCO2	COMCO2

Date	By	Notes
10/18/2017	T. Campbell	Average moisture was used for yield, and first rep removed due to shading from tree border. Yield numbers are low due to high weed pressure observed at end of year due to lost residual herbicide activity

Purdue Weed Science

Trial ID: 17S-MGS-Soy-04 Protocol ID: 17S-MGS-Soy-04 Project ID:	Authority Anthem Maxx Product Understanding Location: Meigs Trial Year: 2017 Investigator: Dr. Bill Johnson Study Director: Taylor Campbell Sponsor Contact: Nick Hustedde
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Reps: 4 Plots: 6.67 by 25 feet
 Spray vol: 15 GAL/AC Mix Size: 945 mL (869.45 mL calculated mix size)

Trt No.	Treatment Name	Form Conc	Form Unit	Form Type	Rate Rate Unit	Appl Code	Amt Product to Measure	Rep 1	2	3	4
1	UNTREATED							101	404	606	701
2	AUTHORITY XL	70 %		DF	4.5 oz/a	A	2.123 g/mx	102	403	501	806
	SELECT MAX	0.97 LB/GAL		L	10 oz/a	B	4.922 ml/mx				
	COC	100 %		SL	1 % v/v	B	9.449 ml/mx				
	N-PAK	3.4 LBA/GAL		L	2.5 % v/v	B	23.62 ml/mx				
3	AUTHORITY XL	70 %		DF	6.4 oz/a	A	3.02 g/mx	103	304	505	801
	SELECT MAX	0.97 LB/GAL		L	10 fl oz/a	B	4.922 ml/mx				
	COC	100 %		SL	1 % v/v	B	9.449 ml/mx				
	N-PAK	3.4 LBA/GAL		L	2.5 % v/v	B	23.62 ml/mx				
4	AUTHORITY XL	70 %		DF	4.5 oz/a	A	2.123 g/mx	104	301	603	805
	ANTHEM MAXX	4.3 LBA/GAL		SC	3 fl oz/a	A	1.477 ml/mx				
	SELECT MAX	0.97 LB/GAL		L	10 fl oz/a	B	4.922 ml/mx				
	COC	100 %		SL	1 % v/v	B	9.449 ml/mx				
	N-PAK	3.4 LBA/GAL		L	2.5 % v/v	B	23.62 ml/mx				
5	AUTHORITY MTZ	45 %		WG	15 oz/a	A	7.077 g/mx	105	402	601	706
	SELECT MAX	0.97 LB/GAL		L	10 fl oz/a	B	4.922 ml/mx				
	COC	100 %		SL	1 % v/v	B	9.449 ml/mx				
	N-PAK	3.4 LBA/GAL		L	2.5 % v/v	B	23.62 ml/mx				
6	F4242-1	100 %		L	16 fl oz/a	A	7.875 ml/mx	106	302	507	803
	SELECT MAX	0.97 LB/GAL		L	10 oz/a	B	4.922 ml/mx				
	COC	100 %		SL	1 % v/v	B	9.449 ml/mx				
	N-PAK	3.4 LBA/GAL		L	2.5 % v/v	B	23.62 ml/mx				
7	ANTHEM MAXX	4.3 LBA/GAL		SC	3.25 fl oz/a	A	1.6 ml/mx	107	303	502	707
	TRICOR	75 %		DF	6 oz/a	A	2.831 g/mx				
	SELECT MAX	0.97 LB/GAL		L	10 fl oz/a	B	4.922 ml/mx				
	COC	100 %		SL	1 % v/v	B	9.449 ml/mx				
	N-PAK	3.4 LBA/GAL		L	2.5 % v/v	B	23.62 ml/mx				
8	ZIDUA PRO	4.09 LB/GAL		SC	6 fl oz/a	A	2.953 ml/mx	201	306	604	804
	SELECT MAX	0.97 LB/GAL		L	10 fl oz/a	B	4.922 ml/mx				
	COC	100 %		SL	1 % v/v	B	9.449 ml/mx				
	N-PAK	3.4 LBA/GAL		L	2.5 % v/v	B	23.62 ml/mx				
9	BOUNDARY	6.5 LB/GAL		EC	1.8 pt/a	A	14.17 ml/mx	202	305	607	703
	SELECT MAX	0.97 LB/GAL		L	10 fl oz/a	B	4.922 ml/mx				
	COC	100 %		SL	1 % v/v	B	9.449 ml/mx				
	N-PAK	3.4 LBA/GAL		L	2.5 % v/v	B	23.62 ml/mx				
10	AUTHORITY XL	70 %		DF	5 oz/a	A	2.359 g/mx	203	406	503	802
	ROUNDUP POWERMAX	4.5 LBAE/GAL		SL	22 fl oz/a	C	10.83 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				
11	AUTHORITY XL	70 %		DF	4.5 oz/a	A	2.123 g/mx	204	307	605	807
	ANTHEM MAXX	4.3 LBA/GAL		SC	3 fl oz/a	D	1.477 ml/mx				
	ROUNDUP POWERMAX	4.5 LBAE/GAL		SL	22 fl oz/a	D	10.83 ml/mx				
	XTENDIMAX	2.9 LBAE/GAL		SL	22 fl oz/a	D	10.83 ml/mx				
	CLASS ACT RIDION	100 %		L	1 % v/v	D	9.449 ml/mx				
12	ANTHEM MAXX	4.3 LBA/GAL		SC	3 fl oz/a	D	1.477 ml/mx	205	401	504	702
	ROUNDUP POWERMAX	4.5 LBAE/GAL		SL	22 fl oz/a	D	10.83 ml/mx				
	XTENDIMAX	2.9 LBAE/GAL		SL	22 fl oz/a	D	10.83 ml/mx				
	CLASS ACT RIDION	100 %		L	1 % v/v	D	9.449 ml/mx				

Trt No.	Treatment Name	Form Conc	Form Unit	Form Type	Rate Rate	Rate Unit	Appl Code	Amt Product to Measure	Rep 1	2	3	4
13	WARRANT	3	LB/GAL	EC	3	pt/a	D	23.62 ml/mx	206	407	602	705
	ROUNDUP POWERMAX	4.5	LBAE/GAL	SL	22	fl oz/a	D	10.83 ml/mx				
	XTENDIMAX	2.9	LBAE/GAL	SL	22	fl oz/a	D	10.83 ml/mx				
	CLASS ACT RIDION	100	%	L	1	% v/v	D	9.449 ml/mx				
14	ROUNDUP POWERMAX	4.5	LBAE/GAL	SL	22	fl oz/a	E	10.83 ml/mx	207	405	506	704
	XTENDIMAX	2.9	LBAE/GAL	SL	22	fl oz/a	E	10.83 ml/mx				
	CLASS ACT RIDION	100	%	L	1	% v/v	E	9.449 ml/mx				

Sort Order: Replicate 1

Pest Type	W Weed		W Weed	
Pest Code	AMATA		AMATA	
Pest Name	Common waterhe>		Common waterhe>	
Crop Code		GLXMA		GLXMA
Crop Name		Soybean		Soybean
Part Rated				
Rating Date	6/12/2017	6/12/2017	6/26/2017	6/26/2017
Rating Type	CONTRO	PHYGEN	CONTRO	PHYGEN
Rating Unit	%	%	%	%
Number of Subsamples	1	1	1	1
Assessed By	T. Campbell	T. Campbell	T. Campbell	T. Campbell
Days After First/Last Applic.	13 13	13 13	27 5	27 5
Trt-Eval Interval	13 DA-A	13 DA-A		
Days After Emergence	8 DE-1	8 DE-1	22 DE-1	22 DE-1
ARM Action Codes	P	P	P	P
Number of Decimals	0	0	0	0
Trt Treatment	Rate	Appl		
No. Name	Rate Unit	Code Plot	1	2
			3	4
8 ZIDUA PRO	6 fl oz/a A	201	100	0
SELECT MAX	10 fl oz/a B	306	100	0
COC	1 % v/v B	604	95	0
N-PAK	2.5 % v/v B	804	98	0
	Mean =		98	0
9 BOUNDARY	1.8 pt/a A	202	100	0
SELECT MAX	10 fl oz/a B	305	98	0
COC	1 % v/v B	607	98	0
N-PAK	2.5 % v/v B	703	98	0
	Mean =		99	0
10 AUTHORITY XL	5 oz/a A	203	90	0
ROUNDUP POWERMAX	22 fl oz/a C	406	95	0
XTENDIMAX	22 fl oz/a C	503	85	0
CLASS ACT RIDION	1 % v/v C	802	95	0
	Mean =		91	0
11 AUTHORITY XL	4.5 oz/a A	204	98	0
ANTHEM MAXX	3 fl oz/a D	307	95	0
ROUNDUP POWERMAX	22 fl oz/a D	605	95	0
XTENDIMAX	22 fl oz/a D	807	95	0
CLASS ACT RIDION	1 % v/v D			
	Mean =		96	0
12 ANTHEM MAXX	3 fl oz/a D	205	0	0
ROUNDUP POWERMAX	22 fl oz/a D	401	0	0
XTENDIMAX	22 fl oz/a D	504	0	0
CLASS ACT RIDION	1 % v/v D	702	0	0
	Mean =		0	0
13 WARRANT	3 pt/a D	206	0	0
ROUNDUP POWERMAX	22 fl oz/a D	407	0	0
XTENDIMAX	22 fl oz/a D	602	0	0
CLASS ACT RIDION	1 % v/v D	705	0	0
	Mean =		0	0
14 ROUNDUP POWERMAX	22 fl oz/a E	207	0	0
XTENDIMAX	22 fl oz/a E	405	0	0
CLASS ACT RIDION	1 % v/v E	506	0	0
	704		0	0
	Mean =		0	0

Pest Type			W Weed			W Weed				
Pest Code			AMATA			AMATA				
Pest Name			Common waterhe>			Common waterhe>				
Crop Code				GLXMA			GLXMA			
Crop Name				Soybean			Soybean			
Part Rated										
Rating Date			7/3/2017	7/3/2017			7/9/2017	7/9/2017		
Rating Type			CONTRO	PHYGEN			CONTRO	PHYGEN		
Rating Unit			%	%			%	%		
Number of Subsamples			1	1			1	1		
Assessed By			T. Campbell	T. Campbell			T. Campbell	T. Campbell		
Days After First/Last Applic.			34 6	34 6			40 6	40 6		
Trt-Eval Interval										
Days After Emergence			29 DE-1	29 DE-1			35 DE-1	35 DE-1		
ARM Action Codes			P	P			P	P		
Number of Decimals			0	0			0	0		
Trt Treatment	Rate	Appl								
No. Name	Rate Unit	Code Plot	5	6	7	8				
1 UNTREATED		101	0	0	0	0				
		404	0	0	0	0				
		606	0	0	0	0				
		701	0	0	0	0				
		Mean =	0	0	0	0				
2 AUTHORITY XL	4.5 oz/a	A 102	60	0	60	0				
SELECT MAX	10 oz/a	B 403	60	0	60	0				
COC	1 % v/v	B 501	60	0	55	0				
N-PAK	2.5 % v/v	B 806	70	2	60	0				
		Mean =	63	1	59	0				
3 AUTHORITY XL	6.4 oz/a	A 103	85	0	75	0				
SELECT MAX	10 fl oz/a	B 304	70	2	65	0				
COC	1 % v/v	B 505	75	0	70	0				
N-PAK	2.5 % v/v	B 801	85	2	75	0				
		Mean =	79	1	71	0				
4 AUTHORITY XL	4.5 oz/a	A 104	80	0	70	0				
ANTHEM MAXX	3 fl oz/a	A 301	70	2	65	0				
SELECT MAX	10 fl oz/a	B 603	60	2	60	0				
COC	1 % v/v	B 805	85	2	80	0				
N-PAK	2.5 % v/v	B								
		Mean =	74	2	69	0				
5 AUTHORITY MTZ	15 oz/a	A 105	85	0	85	0				
SELECT MAX	10 fl oz/a	B 402	70	2	60	0				
COC	1 % v/v	B 601	60	2	60	0				
N-PAK	2.5 % v/v	B 706	80	0	65	0				
		Mean =	74	1	68	0				
6 F4242-1	16 fl oz/a	A 106	85	0	80	0				
SELECT MAX	10 oz/a	B 302	60	2	60	0				
COC	1 % v/v	B 507	70	0	65	0				
N-PAK	2.5 % v/v	B 803	65	2	70	0				
		Mean =	70	1	69	0				
7 ANTHEM MAXX	3.25 fl oz/a	A 107	95	0	85	0				
TRICOR	6 oz/a	A 303	70	0	65	0				
SELECT MAX	10 fl oz/a	B 502	60	0	60	0				
COC	1 % v/v	B 707	80	2	65	0				
N-PAK	2.5 % v/v	B								
		Mean =	76	1	69	0				

Pest Type	W Weed		W Weed			
Pest Code	AMATA		AMATA			
Pest Name	Common waterhe>		Common waterhe>			
Crop Code		GLXMA		GLXMA		
Crop Name		Soybean		Soybean		
Part Rated						
Rating Date	7/3/2017	7/3/2017	7/9/2017	7/9/2017		
Rating Type	CONTRO	PHYGEN	CONTRO	PHYGEN		
Rating Unit	%	%	%	%		
Number of Subsamples	1	1	1	1		
Assessed By	T. Campbell	T. Campbell	T. Campbell	T. Campbell		
Days After First/Last Applic.	34 6	34 6	40 6	40 6		
Trt-Eval Interval						
Days After Emergence	29 DE-1	29 DE-1	35 DE-1	35 DE-1		
ARM Action Codes	P	P	P	P		
Number of Decimals	0	0	0	0		
Trt Treatment	Rate	Appl				
No. Name	Rate Unit	Code Plot	5	6		
			7	8		
8 ZIDUA PRO	6 fl oz/a A	201	80	2	70	0
SELECT MAX	10 fl oz/a B	306	75	2	65	0
COC	1 % v/v B	604	65	2	65	0
N-PAK	2.5 % v/v B	804	70	2	65	0
	Mean =		73	2	66	0
9 BOUNDARY	1.8 pt/a A	202	80	5	80	0
SELECT MAX	10 fl oz/a B	305	80	2	70	0
COC	1 % v/v B	607	70	2	65	0
N-PAK	2.5 % v/v B	703	85	2	70	0
	Mean =		79	3	71	0
10 AUTHORITY XL	5 oz/a A	203	85	2	90	0
ROUNDUP POWERMAX	22 fl oz/a C	406	90	2	95	0
XTENDIMAX	22 fl oz/a C	503	80	2	80	0
CLASS ACT RIDION	1 % v/v C	802	90	2	90	0
	Mean =		86	2	89	0
11 AUTHORITY XL	4.5 oz/a A	204	100	5	100	0
ANTHEM MAXX	3 fl oz/a D	307	100	5	98	0
ROUNDUP POWERMAX	22 fl oz/a D	605	100	10	98	0
XTENDIMAX	22 fl oz/a D	807	100	10	98	0
CLASS ACT RIDION	1 % v/v D					
	Mean =		100	8	99	0
12 ANTHEM MAXX	3 fl oz/a D	205	90	5	90	0
ROUNDUP POWERMAX	22 fl oz/a D	401	90	10	90	0
XTENDIMAX	22 fl oz/a D	504	90	2	90	0
CLASS ACT RIDION	1 % v/v D	702	85	10	80	0
	Mean =		89	7	88	0
13 WARRANT	3 pt/a D	206	90	5	95	0
ROUNDUP POWERMAX	22 fl oz/a D	407	90	5	90	0
XTENDIMAX	22 fl oz/a D	602	90	2	90	0
CLASS ACT RIDION	1 % v/v D	705	90	5	90	0
	Mean =		90	4	91	0
14 ROUNDUP POWERMAX	22 fl oz/a E	207	0	0	50	0
XTENDIMAX	22 fl oz/a E	405	0	0	60	0
CLASS ACT RIDION	1 % v/v E	506	0	0	50	0
		704	0	0	60	0
	Mean =		0	0	55	0

Pest Type			W Weed		W Weed	
Pest Code			AMATA		AMATA	
Pest Name			Common waterhe>		Common waterhe>	
Crop Code				GLXMA		GLXMA
Crop Name				Soybean		Soybean
Part Rated						
Rating Date			7/17/2017	7/17/2017	7/24/2017	7/24/2017
Rating Type			CONTRO	PHYGEN	CONTRO	PHYGEN
Rating Unit			%	%	%	%
Number of Subsamples			1	1	1	1
Assessed By			T. Campbell	T. Campbell	T. Campbell	T. Campbell
Days After First/Last Applic.			48 14	48 14	55 21	55 21
Trt-Eval Interval						
Days After Emergence			43 DE-1	43 DE-1	50 DE-1	50 DE-1
ARM Action Codes			P	P	P	P
Number of Decimals			0	0	0	0
Trt Treatment	Rate	Appl				
No. Name	Rate Unit	Code Plot	9	10	11	12
1 UNTREATED		101	0	0	0	0
		404	0	0	0	0
		606	0	0	0	0
		701	0	0	0	0
		Mean =	0	0	0	0
2 AUTHORITY XL	4.5 oz/a	A 102	60	0	60	0
SELECT MAX	10 oz/a	B 403	60	0	60	0
COC	1 % v/v	B 501	50	0	50	0
N-PAK	2.5 % v/v	B 806	60	0	60	0
		Mean =	58	0	58	0
3 AUTHORITY XL	6.4 oz/a	A 103	75	0	75	0
SELECT MAX	10 fl oz/a	B 304	60	0	60	0
COC	1 % v/v	B 505	85	0	85	0
N-PAK	2.5 % v/v	B 801	75	0	75	0
		Mean =	74	0	74	0
4 AUTHORITY XL	4.5 oz/a	A 104	70	0	70	0
ANTHEM MAXX	3 fl oz/a	A 301	65	0	65	0
SELECT MAX	10 fl oz/a	B 603	60	0	60	0
COC	1 % v/v	B 805	80	0	80	0
N-PAK	2.5 % v/v	B				
		Mean =	69	0	69	0
5 AUTHORITY MTZ	15 oz/a	A 105	85	0	85	0
SELECT MAX	10 fl oz/a	B 402	60	0	60	0
COC	1 % v/v	B 601	60	0	60	0
N-PAK	2.5 % v/v	B 706	65	0	65	0
		Mean =	68	0	68	0
6 F4242-1	16 fl oz/a	A 106	80	0	80	0
SELECT MAX	10 oz/a	B 302	60	0	60	0
COC	1 % v/v	B 507	65	0	65	0
N-PAK	2.5 % v/v	B 803	70	0	70	0
		Mean =	69	0	69	0
7 ANTHEM MAXX	3.25 fl oz/a	A 107	80	0	80	0
TRICOR	6 oz/a	A 303	60	0	60	0
SELECT MAX	10 fl oz/a	B 502	60	0	60	0
COC	1 % v/v	B 707	65	0	65	0
N-PAK	2.5 % v/v	B				
		Mean =	66	0	66	0

Pest Type	W Weed		W Weed	
Pest Code	AMATA		AMATA	
Pest Name	Common waterhe>		Common waterhe>	
Crop Code		GLXMA		GLXMA
Crop Name		Soybean		Soybean
Part Rated				
Rating Date	7/17/2017	7/17/2017	7/24/2017	7/24/2017
Rating Type	CONTRO	PHYGEN	CONTRO	PHYGEN
Rating Unit	%	%	%	%
Number of Subsamples	1	1	1	1
Assessed By	T. Campbell	T. Campbell	T. Campbell	T. Campbell
Days After First/Last Applic.	48 14	48 14	55 21	55 21
Trt-Eval Interval				
Days After Emergence	43 DE-1	43 DE-1	50 DE-1	50 DE-1
ARM Action Codes	P	P	P	P
Number of Decimals	0	0	0	0
Trt Treatment	Rate	Appl		
No. Name	Rate Unit	Code Plot	9	10
8 ZIDUA PRO	6 fl oz/a	A 201	70	0
SELECT MAX	10 fl oz/a	B 306	60	0
COC	1 % v/v	B 604	65	0
N-PAK	2.5 % v/v	B 804	65	0
	Mean =		65	0
9 BOUNDARY	1.8 pt/a	A 202	80	0
SELECT MAX	10 fl oz/a	B 305	70	0
COC	1 % v/v	B 607	65	0
N-PAK	2.5 % v/v	B 703	70	0
	Mean =		71	0
10 AUTHORITY XL	5 oz/a	A 203	95	0
ROUNDUP POWERMAX	22 fl oz/a	C 406	95	0
XTENDIMAX	22 fl oz/a	C 503	90	0
CLASS ACT RIDION	1 % v/v	C 802	90	0
	Mean =		93	0
11 AUTHORITY XL	4.5 oz/a	A 204	100	0
ANTHEM MAXX	3 fl oz/a	D 307	98	0
ROUNDUP POWERMAX	22 fl oz/a	D 605	98	0
XTENDIMAX	22 fl oz/a	D 807	98	0
CLASS ACT RIDION	1 % v/v	D	98	0
	Mean =		99	0
12 ANTHEM MAXX	3 fl oz/a	D 205	90	0
ROUNDUP POWERMAX	22 fl oz/a	D 401	90	0
XTENDIMAX	22 fl oz/a	D 504	90	0
CLASS ACT RIDION	1 % v/v	D 702	80	0
	Mean =		88	0
13 WARRANT	3 pt/a	D 206	95	0
ROUNDUP POWERMAX	22 fl oz/a	D 407	90	0
XTENDIMAX	22 fl oz/a	D 602	90	0
CLASS ACT RIDION	1 % v/v	D 705	90	0
	Mean =		91	0
14 ROUNDUP POWERMAX	22 fl oz/a	E 207	80	0
XTENDIMAX	22 fl oz/a	E 405	75	0
CLASS ACT RIDION	1 % v/v	E 506	75	0
		704	80	0
	Mean =		78	0
				79

Pest Type				W Weed			
Pest Code				AMATA			
Pest Name				Common waterhe>			
Crop Code					GLXMA	GLXMA	GLXMA
Crop Name					Soybean	Soybean	Soybean
Part Rated						PLOT C	PLOT C
Rating Date				7/31/2017	7/31/2017	10/18/2017	10/18/2017
Rating Type				CONTRO	PHYGEN	YIELD	MOICON
Rating Unit				%	%	lb/plot	%
Number of Subsamples				1	1	1	1
Assessed By				T. Campbell	T. Campbell	T. Campbell	T. Campbell
Days After First/Last Applic.				62 28	62 28	141 107	141 107
Trt-Eval Interval							
Days After Emergence				57 DE-1	57 DE-1	136 DE-1	136 DE-1
ARM Action Codes				P	P		
Number of Decimals				0	0	1	1
Trt Treatment	Rate	Appl					
No. Name	Rate Unit	Code Plot		13	14	15	16
1 UNTREATED		101		0	0	6.6*	13.6
		404		0	0	5.7	13.6
		606		0	0	7.5	13.6
		701		0	0	6.6*	13.6*
		Mean =		0	0	6.6	13.6
2 AUTHORITY XL	4.5 oz/a	A 102		60	0	4.9*	13.6
SELECT MAX	10 oz/a	B 403		60	0	3.8	13.6
COC	1 % v/v	B 501		50	0	6.6	13.6
N-PAK	2.5 % v/v	B 806		60	0	4.4	13.6
		Mean =		58	0	4.9	13.6
3 AUTHORITY XL	6.4 oz/a	A 103		75	0	6.1*	13.6
SELECT MAX	10 fl oz/a	B 304		60	0	6.2	13.6
COC	1 % v/v	B 505		85	0	6.0	13.6
N-PAK	2.5 % v/v	B 801		75	0	5.9	13.6
		Mean =		74	0	6.1	13.6
4 AUTHORITY XL	4.5 oz/a	A 104		70	0	6.9*	13.6
ANTHEM MAXX	3 fl oz/a	A 301		65	0	6.8	13.6
SELECT MAX	10 fl oz/a	B 603		60	0	6.9	13.6
COC	1 % v/v	B 805		80	0	7.1	13.6
N-PAK	2.5 % v/v	B					
		Mean =		69	0	6.9	13.6
5 AUTHORITY MTZ	15 oz/a	A 105		85	0	6.8*	13.6
SELECT MAX	10 fl oz/a	B 402		60	0	7.2	13.6
COC	1 % v/v	B 601		60	0	8.4	13.6
N-PAK	2.5 % v/v	B 706		65	0	4.8	13.6
		Mean =		68	0	6.8	13.6
6 F4242-1	16 fl oz/a	A 106		80	0	6.9*	13.6
SELECT MAX	10 oz/a	B 302		60	0	7.8	13.6
COC	1 % v/v	B 507		65	0	4.6	13.6
N-PAK	2.5 % v/v	B 803		70	0	8.2	13.6
		Mean =		69	0	6.9	13.6
7 ANTHEM MAXX	3.25 fl oz/a	A 107		80	0	6.4*	13.6
TRICOR	6 oz/a	A 303		60	0	7.0	13.6
SELECT MAX	10 fl oz/a	B 502		60	0	5.5	13.6
COC	1 % v/v	B 707		65	0	6.7	13.6
N-PAK	2.5 % v/v	B					
		Mean =		66	0	6.4	13.6

Pest Type				
Pest Code				
Pest Name				
Crop Code			GLXMA	
Crop Name			Soybean	
Part Rated			PLOT C	
Rating Date			10/18/2017	
Rating Type			YIELD	
Rating Unit			BU	
Number of Subsamples			1	
Assessed By			T. Campbell	
Days After First/Last Applic.			141 107	
Trt-Eval Interval				
Days After Emergence			136 DE-1	
ARM Action Codes			TY1	
Number of Decimals			1	
Trt Treatment		Rate	Appl	
No. Name		Rate Unit	Code Plot	17
1 UNTREATED			101	19.1*
			404	16.4
			606	21.8
			701	19.1*
			Mean =	19.1
2 AUTHORITY XL	4.5 oz/a	A	102	14.3*
SELECT MAX	10 oz/a	B	403	11.0
COC	1 % v/v	B	501	19.1
N-PAK	2.5 % v/v	B	806	12.8
			Mean =	14.3
3 AUTHORITY XL	6.4 oz/a	A	103	17.5*
SELECT MAX	10 fl oz/a	B	304	18.1
COC	1 % v/v	B	505	17.5
N-PAK	2.5 % v/v	B	801	17.0
			Mean =	17.5
4 AUTHORITY XL	4.5 oz/a	A	104	20.0*
ANTHEM MAXX	3 fl oz/a	A	301	19.7
SELECT MAX	10 fl oz/a	B	603	19.9
COC	1 % v/v	B	805	20.5
N-PAK	2.5 % v/v	B		
			Mean =	20.0
5 AUTHORITY MTZ	15 oz/a	A	105	19.7*
SELECT MAX	10 fl oz/a	B	402	20.9
COC	1 % v/v	B	601	24.3
N-PAK	2.5 % v/v	B	706	13.9
			Mean =	19.7
6 F4242-1	16 fl oz/a	A	106	19.9*
SELECT MAX	10 oz/a	B	302	22.5
COC	1 % v/v	B	507	13.4
N-PAK	2.5 % v/v	B	803	23.6
			Mean =	19.9
7 ANTHEM MAXX	3.25 fl oz/a	A	107	18.5*
TRICOR	6 oz/a	A	303	20.3
SELECT MAX	10 fl oz/a	B	502	16.0
COC	1 % v/v	B	707	19.2
N-PAK	2.5 % v/v	B		
			Mean =	18.5

Pest Type				
Pest Code				
Pest Name				
Crop Code			GLXMA	
Crop Name			Soybean	
Part Rated			PLOT C	
Rating Date			10/18/2017	
Rating Type			YIELD	
Rating Unit			BU	
Number of Subsamples			1	
Assessed By			T. Campbell	
Days After First/Last Applic.			141 107	
Trt-Eval Interval				
Days After Emergence			136 DE-1	
ARM Action Codes			TY1	
Number of Decimals			1	
Trt No.	Treatment Name	Rate	Appl Code	Plot
		Rate Unit		
				17
8	ZIDUA PRO	6 fl oz/a	A	201
	SELECT MAX	10 fl oz/a	B	306
	COC	1 % v/v	B	604
	N-PAK	2.5 % v/v	B	804
				Mean =
				13.4
				16.1
				18.1
				20.2
				16.9
9	BOUNDARY	1.8 pt/a	A	202
	SELECT MAX	10 fl oz/a	B	305
	COC	1 % v/v	B	607
	N-PAK	2.5 % v/v	B	703
				Mean =
				12.1
				11.0
				20.0
				19.9
				15.7
10	AUTHORITY XL	5 oz/a	A	203
	ROUNDUP POWERMAX	22 fl oz/a	C	406
	XTENDIMAX	22 fl oz/a	C	503
	CLASS ACT RIDION	1 % v/v	C	802
				Mean =
				21.2
				20.6
				18.3
				25.6
				21.4
11	AUTHORITY XL	4.5 oz/a	A	204
	ANTHEM MAXX	3 fl oz/a	D	307
	ROUNDUP POWERMAX	22 fl oz/a	D	605
	XTENDIMAX	22 fl oz/a	D	807
	CLASS ACT RIDION	1 % v/v	D	
				Mean =
				22.3
				18.1
				20.6
				26.0
				21.7
12	ANTHEM MAXX	3 fl oz/a	D	205
	ROUNDUP POWERMAX	22 fl oz/a	D	401
	XTENDIMAX	22 fl oz/a	D	504
	CLASS ACT RIDION	1 % v/v	D	702
				Mean =
				18.2
				24.5
				17.0
				28.1
				22.0
13	WARRANT	3 pt/a	D	206
	ROUNDUP POWERMAX	22 fl oz/a	D	407
	XTENDIMAX	22 fl oz/a	D	602
	CLASS ACT RIDION	1 % v/v	D	705
				Mean =
				13.6
				21.6
				25.1
				20.6
				20.2
14	ROUNDUP POWERMAX	22 fl oz/a	E	207
	XTENDIMAX	22 fl oz/a	E	405
	CLASS ACT RIDION	1 % v/v	E	506
				704
				Mean =
				19.7
				19.3
				23.3
				26.1
				22.1

Purdue Weed Science

<p>Trial ID: 17S-MGS-Soy-04 Protocol ID: 17S-MGS-Soy-04 Project ID:</p>	<p>Authority Anthem Maxx Product Understanding Location: Meigs Trial Year: 2017 Investigator: Dr. Bill Johnson Study Director: Taylor Campbell Sponsor Contact: Nick Hustedde</p>
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<p><u>Pest Type</u> W, Weed, G-BYRW7, G-WedStg = Weed or volunteer crop</p> <p><u>Pest Code</u> AMATA, Amaranthus tamariscinus, Common waterhemp = US</p> <p><u>Crop Code</u> GLXMA, BSOY, Glycine max, Soybean = US</p> <p><u>Part Rated</u> PLOT = plot C = Crop is Part Rated</p> <p><u>Rating Type</u> CONTRO = control / burndown or knockdown PHYGEN = phytotoxicity - general / injury YIELD = yield MOICON = moisture content</p> <p><u>Rating Unit</u> % = percent lb/plot = pounds per plot BU = bushel</p> <p><u>ARM Action Codes</u> P = Rating scale of 0 to 100 (e.g. % control or injury) TY1 = $2.904 * [15] * (100 - [16]) / 86.7$</p>
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Purdue Weed Science

Trial ID: 17S-MGS-Soy-04	Authority Anthem Maxx Product Understanding		
Protocol ID: 17S-MGS-Soy-04	Location: Meigs	Trial Year: 2017	
Project ID:	Investigator: Dr. Bill Johnson		
	Study Director: Taylor Campbell		
	Sponsor Contact: Nick Hustedde		

Pest Type	W Weed		W Weed	
Pest Code	AMATA		AMATA	
Pest Name	Common waterhe>		Common waterhe>	
Crop Code		GLXMA		GLXMA
Crop Name		Soybean		Soybean
Part Rated				
Rating Date	6/12/2017	6/12/2017	6/26/2017	6/26/2017
Rating Type	CONTRO	PHYGEN	CONTRO	PHYGEN
Rating Unit	%	%	%	%
Number of Subsamples	1	1	1	1
Assessed By	T. Campbell	T. Campbell	T. Campbell	T. Campbell
Days After First/Last Applic.	13 13	13 13	27 5	27 5
Trt-Eval Interval	13 DA-A	13 DA-A		
Days After Emergence	8 DE-1	8 DE-1	22 DE-1	22 DE-1
ARM Action Codes	P	P	P	P
Number of Decimals	0	0	0	0
Trt Treatment	Rate	Appl		
No. Name	Rate Unit	Code	1	2
			3	4
1 UNTREATED			0 c	0 c
2 AUTHORITY XL	4.5 oz/a	A	93 ab	0 a
SELECT MAX	10 oz/a	B		73 b
COC	1 % v/v	B		0 c
N-PAK	2.5 % v/v	B		
3 AUTHORITY XL	6.4 oz/a	A	98 a	0 a
SELECT MAX	10 fl oz/a	B		85 b
COC	1 % v/v	B		0 c
N-PAK	2.5 % v/v	B		
4 AUTHORITY XL	4.5 oz/a	A	96 ab	0 a
ANTHEM MAXX	3 fl oz/a	A		78 b
SELECT MAX	10 fl oz/a	B		0 c
COC	1 % v/v	B		
N-PAK	2.5 % v/v	B		
5 AUTHORITY MTZ	15 oz/a	A	97 ab	0 a
SELECT MAX	10 fl oz/a	B		76 b
COC	1 % v/v	B		0 c
N-PAK	2.5 % v/v	B		
6 F4242-1	16 fl oz/a	A	96 ab	0 a
SELECT MAX	10 oz/a	B		80 b
COC	1 % v/v	B		0 c
N-PAK	2.5 % v/v	B		
7 ANTHEM MAXX	3.25 fl oz/a	A	97 ab	0 a
TRICOR	6 oz/a	A		81 b
SELECT MAX	10 fl oz/a	B		0 c
COC	1 % v/v	B		
N-PAK	2.5 % v/v	B		
8 ZIDUA PRO	6 fl oz/a	A	98 a	0 a
SELECT MAX	10 fl oz/a	B		79 b
COC	1 % v/v	B		0 c
N-PAK	2.5 % v/v	B		

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls)
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
 Missing data estimates are included in columns: Yates=16; Average=15,17
 Could not calculate LSD (% mean diff) for columns 2,4,8,10,12,14,16 because error mean square = 0.

Pest Type		W Weed		W Weed	
Pest Code		AMATA		AMATA	
Pest Name		Common waterhe>		Common waterhe>	
Crop Code			GLXMA		GLXMA
Crop Name			Soybean		Soybean
Part Rated					
Rating Date		6/12/2017	6/12/2017	6/26/2017	6/26/2017
Rating Type		CONTRO	PHYGEN	CONTRO	PHYGEN
Rating Unit		%	%	%	%
Number of Subsamples		1	1	1	1
Assessed By		T. Campbell	T. Campbell	T. Campbell	T. Campbell
Days After First/Last Applic.		13 13	13 13	27 5	27 5
Trt-Eval Interval		13 DA-A	13 DA-A		
Days After Emergence		8 DE-1	8 DE-1	22 DE-1	22 DE-1
ARM Action Codes		P	P	P	P
Number of Decimals		0	0	0	0
Trt Treatment	Rate	Appl			
No. Name	Rate Unit	Code	1	2	3
9 BOUNDARY	1.8 pt/a	A	99 a	0 a	84 b
SELECT MAX	10 fl oz/a	B			
COC	1 % v/v	B			
N-PAK	2.5 % v/v	B			
10 AUTHORITY XL	5 oz/a	A	91 b	0 a	73 b
ROUNDUP POWERMAX	22 fl oz/a	C			
XTENDIMAX	22 fl oz/a	C			
CLASS ACT RIDION	1 % v/v	C			
11 AUTHORITY XL	4.5 oz/a	A	96 ab	0 a	97 a
ANTHEM MAXX	3 fl oz/a	D			
ROUNDUP POWERMAX	22 fl oz/a	D			
XTENDIMAX	22 fl oz/a	D			
CLASS ACT RIDION	1 % v/v	D			
12 ANTHEM MAXX	3 fl oz/a	D	0 c	0 a	80 b
ROUNDUP POWERMAX	22 fl oz/a	D			
XTENDIMAX	22 fl oz/a	D			
CLASS ACT RIDION	1 % v/v	D			
13 WARRANT	3 pt/a	D	0 c	0 a	80 b
ROUNDUP POWERMAX	22 fl oz/a	D			
XTENDIMAX	22 fl oz/a	D			
CLASS ACT RIDION	1 % v/v	D			
14 ROUNDUP POWERMAX	22 fl oz/a	E	0 c	0 a	0 c
XTENDIMAX	22 fl oz/a	E			
CLASS ACT RIDION	1 % v/v	E			
LSD P=.05			3.8	.	9.2
Standard Deviation			2.7	0.0	6.4
CV			3.89	0.0	9.35
Bartlett's X2			11.325	0.0	15.379
P(Bartlett's X2)			0.254	.	0.081
Skewness			-0.9567*	.	-1.7473*
Kurtosis			-1.0996	.	1.7068*
Replicate F			4.662	0.000	3.857
Replicate Prob(F)			0.0070	1.0000	0.0165
Treatment F			1138.280	0.000	85.557
Treatment Prob(F)			0.0001	1.0000	0.0001

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls)
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
Missing data estimates are included in columns: Yates=16; Average=15,17
Could not calculate LSD (% mean diff) for columns 2,4,8,10,12,14,16 because error mean square = 0.

Pest Type			W Weed		W Weed	
Pest Code			AMATA		AMATA	
Pest Name			Common waterhe>		Common waterhe>	
Crop Code				GLXMA		GLXMA
Crop Name				Soybean		Soybean
Part Rated						
Rating Date			7/3/2017	7/3/2017	7/9/2017	7/9/2017
Rating Type			CONTRO	PHYGEN	CONTRO	PHYGEN
Rating Unit			%	%	%	%
Number of Subsamples			1	1	1	1
Assessed By			T. Campbell	T. Campbell	T. Campbell	T. Campbell
Days After First/Last Applic.			34 6	34 6	40 6	40 6
Trt-Eval Interval						
Days After Emergence			29 DE-1	29 DE-1	35 DE-1	35 DE-1
ARM Action Codes			P	P	P	P
Number of Decimals			0	0	0	0
Trt Treatment	Rate	Appl				
No. Name	Rate Unit	Code	5	6	7	8
1 UNTREATED			0 g	0 c	0 e	0 a
2 AUTHORITY XL	4.5 oz/a	A	63 f	1 c	59 cd	0 a
SELECT MAX	10 oz/a	B				
COC	1 % v/v	B				
N-PAK	2.5 % v/v	B				
3 AUTHORITY XL	6.4 oz/a	A	79 b-e	1 bc	71 c	0 a
SELECT MAX	10 fl oz/a	B				
COC	1 % v/v	B				
N-PAK	2.5 % v/v	B				
4 AUTHORITY XL	4.5 oz/a	A	74 def	2 bc	69 c	0 a
ANTHEM MAXX	3 fl oz/a	A				
SELECT MAX	10 fl oz/a	B				
COC	1 % v/v	B				
N-PAK	2.5 % v/v	B				
5 AUTHORITY MTZ	15 oz/a	A	74 def	1 bc	68 c	0 a
SELECT MAX	10 fl oz/a	B				
COC	1 % v/v	B				
N-PAK	2.5 % v/v	B				
6 F4242-1	16 fl oz/a	A	70 ef	1 bc	69 c	0 a
SELECT MAX	10 oz/a	B				
COC	1 % v/v	B				
N-PAK	2.5 % v/v	B				
7 ANTHEM MAXX	3.25 fl oz/a	A	76 cde	1 c	69 c	0 a
TRICOR	6 oz/a	A				
SELECT MAX	10 fl oz/a	B				
COC	1 % v/v	B				
N-PAK	2.5 % v/v	B				
8 ZIDUA PRO	6 fl oz/a	A	73 def	2 bc	66 c	0 a
SELECT MAX	10 fl oz/a	B				
COC	1 % v/v	B				
N-PAK	2.5 % v/v	B				

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls)
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
Missing data estimates are included in columns: Yates=16; Average=15,17
Could not calculate LSD (% mean diff) for columns 2,4,8,10,12,14,16 because error mean square = 0.

Pest Type		W Weed		W Weed	
Pest Code		AMATA		AMATA	
Pest Name		Common waterhe>		Common waterhe>	
Crop Code			GLXMA		GLXMA
Crop Name			Soybean		Soybean
Part Rated					
Rating Date		7/3/2017	7/3/2017	7/9/2017	7/9/2017
Rating Type		CONTRO	PHYGEN	CONTRO	PHYGEN
Rating Unit		%	%	%	%
Number of Subsamples		1	1	1	1
Assessed By		T. Campbell	T. Campbell	T. Campbell	T. Campbell
Days After First/Last Applic.		34 6	34 6	40 6	40 6
Trt-Eval Interval					
Days After Emergence		29 DE-1	29 DE-1	35 DE-1	35 DE-1
ARM Action Codes		P	P	P	P
Number of Decimals		0	0	0	0
Trt Treatment	Rate	Appl			
No. Name	Rate Unit	Code	5	6	7
9 BOUNDARY	1.8 pt/a	A	79 b-e	3 bc	71 c
SELECT MAX	10 fl oz/a	B			0 a
COC	1 % v/v	B			
N-PAK	2.5 % v/v	B			
10 AUTHORITY XL	5 oz/a	A	86 bcd	2 bc	89 b
ROUNDUP POWERMAX	22 fl oz/a	C			0 a
XTENDIMAX	22 fl oz/a	C			
CLASS ACT RIDION	1 % v/v	C			
11 AUTHORITY XL	4.5 oz/a	A	100 a	8 a	99 a
ANTHEM MAXX	3 fl oz/a	D			0 a
ROUNDUP POWERMAX	22 fl oz/a	D			
XTENDIMAX	22 fl oz/a	D			
CLASS ACT RIDION	1 % v/v	D			
12 ANTHEM MAXX	3 fl oz/a	D	89 bc	7 a	88 b
ROUNDUP POWERMAX	22 fl oz/a	D			0 a
XTENDIMAX	22 fl oz/a	D			
CLASS ACT RIDION	1 % v/v	D			
13 WARRANT	3 pt/a	D	90 b	4 b	91 ab
ROUNDUP POWERMAX	22 fl oz/a	D			0 a
XTENDIMAX	22 fl oz/a	D			
CLASS ACT RIDION	1 % v/v	D			
14 ROUNDUP POWERMAX	22 fl oz/a	E	0 g	0 c	55 d
XTENDIMAX	22 fl oz/a	E			0 a
CLASS ACT RIDION	1 % v/v	E			
LSD P=.05			9.0	2.2	7.9
Standard Deviation			6.3	1.5	5.6
CV			9.27	69.73	8.09
Bartlett's X2			11.458	14.727	23.277
P(Bartlett's X2)			0.246	0.099	0.025*
Skewness			-1.5178*	1.756*	-1.5697*
Kurtosis			1.1875	2.8439*	3.1372*
Replicate F			6.581	2.099	6.117
Replicate Prob(F)			0.0010	0.1161	0.0016
Treatment F			92.567	9.661	71.500
Treatment Prob(F)			0.0001	0.0001	0.0001

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Missing data estimates are included in columns: Yates=16; Average=15,17
Could not calculate LSD (% mean diff) for columns 2,4,8,10,12,14,16 because error mean square = 0.

Pest Type			W Weed		W Weed	
Pest Code			AMATA		AMATA	
Pest Name			Common waterhe>		Common waterhe>	
Crop Code				GLXMA		GLXMA
Crop Name				Soybean		Soybean
Part Rated						
Rating Date			7/17/2017	7/17/2017	7/24/2017	7/24/2017
Rating Type			CONTRO	PHYGEN	CONTRO	PHYGEN
Rating Unit			%	%	%	%
Number of Subsamples			1	1	1	1
Assessed By			T. Campbell	T. Campbell	T. Campbell	T. Campbell
Days After First/Last Applic.			48 14	48 14	55 21	55 21
Trt-Eval Interval						
Days After Emergence			43 DE-1	43 DE-1	50 DE-1	50 DE-1
ARM Action Codes			P	P	P	P
Number of Decimals			0	0	0	0
Trt Treatment	Rate	Appl				
No. Name	Rate Unit	Code	9	10	11	12
1 UNTREATED			0 e	0 a	0 f	0 a
2 AUTHORITY XL	4.5 oz/a	A	58 d	0 a	58 e	0 a
SELECT MAX	10 oz/a	B				
COC	1 % v/v	B				
N-PAK	2.5 % v/v	B				
3 AUTHORITY XL	6.4 oz/a	A	74 c	0 a	74 cd	0 a
SELECT MAX	10 fl oz/a	B				
COC	1 % v/v	B				
N-PAK	2.5 % v/v	B				
4 AUTHORITY XL	4.5 oz/a	A	69 cd	0 a	69 cde	0 a
ANTHEM MAXX	3 fl oz/a	A				
SELECT MAX	10 fl oz/a	B				
COC	1 % v/v	B				
N-PAK	2.5 % v/v	B				
5 AUTHORITY MTZ	15 oz/a	A	68 cd	0 a	68 cde	0 a
SELECT MAX	10 fl oz/a	B				
COC	1 % v/v	B				
N-PAK	2.5 % v/v	B				
6 F4242-1	16 fl oz/a	A	69 cd	0 a	69 cde	0 a
SELECT MAX	10 oz/a	B				
COC	1 % v/v	B				
N-PAK	2.5 % v/v	B				
7 ANTHEM MAXX	3.25 fl oz/a	A	66 cd	0 a	66 cde	0 a
TRICOR	6 oz/a	A				
SELECT MAX	10 fl oz/a	B				
COC	1 % v/v	B				
N-PAK	2.5 % v/v	B				
8 ZIDUA PRO	6 fl oz/a	A	65 cd	0 a	65 de	0 a
SELECT MAX	10 fl oz/a	B				
COC	1 % v/v	B				
N-PAK	2.5 % v/v	B				

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Could not calculate LSD (% mean diff) for columns 2,4,8,10,12,14,16 because error mean square = 0.

Pest Type	W Weed		W Weed	
Pest Code	AMATA		AMATA	
Pest Name	Common waterhe>		Common waterhe>	
Crop Code		GLXMA		GLXMA
Crop Name		Soybean		Soybean
Part Rated				
Rating Date	7/17/2017	7/17/2017	7/24/2017	7/24/2017
Rating Type	CONTRO	PHYGEN	CONTRO	PHYGEN
Rating Unit	%	%	%	%
Number of Subsamples	1	1	1	1
Assessed By	T. Campbell	T. Campbell	T. Campbell	T. Campbell
Days After First/Last Applic.	48 14	48 14	55 21	55 21
Trt-Eval Interval				
Days After Emergence	43 DE-1	43 DE-1	50 DE-1	50 DE-1
ARM Action Codes	P	P	P	P
Number of Decimals	0	0	0	0
Trt Treatment	Rate	Appl		
No. Name	Rate Unit	Code	9	10
9 BOUNDARY	1.8 pt/a	A	71 c	0 a
SELECT MAX	10 fl oz/a	B		
COC	1 % v/v	B		
N-PAK	2.5 % v/v	B		
10 AUTHORITY XL	5 oz/a	A	93 ab	0 a
ROUNDUP POWERMAX	22 fl oz/a	C		
XTENDIMAX	22 fl oz/a	C		
CLASS ACT RIDION	1 % v/v	C		
11 AUTHORITY XL	4.5 oz/a	A	99 a	0 a
ANTHEM MAXX	3 fl oz/a	D		
ROUNDUP POWERMAX	22 fl oz/a	D		
XTENDIMAX	22 fl oz/a	D		
CLASS ACT RIDION	1 % v/v	D		
12 ANTHEM MAXX	3 fl oz/a	D	88 b	0 a
ROUNDUP POWERMAX	22 fl oz/a	D		
XTENDIMAX	22 fl oz/a	D		
CLASS ACT RIDION	1 % v/v	D		
13 WARRANT	3 pt/a	D	91 ab	0 a
ROUNDUP POWERMAX	22 fl oz/a	D		
XTENDIMAX	22 fl oz/a	D		
CLASS ACT RIDION	1 % v/v	D		
14 ROUNDUP POWERMAX	22 fl oz/a	E	78 c	0 a
XTENDIMAX	22 fl oz/a	E		
CLASS ACT RIDION	1 % v/v	E		
LSD P=.05	8.1	.	8.1	.
Standard Deviation	5.6	0.0	5.7	0.0
CV	8.0	0.0	8.07	0.0
Bartlett's X2	22.881	0.0	23.543	0.0
P(Bartlett's X2)	0.029*	.	0.023*	.
Skewness	-1.7232*	.	-1.7279*	.
Kurtosis	3.5127*	.	3.5108*	.
Replicate F	6.308	0.000	5.890	0.000
Replicate Prob(F)	0.0014	1.0000	0.0020	1.0000
Treatment F	70.209	0.000	69.104	0.000
Treatment Prob(F)	0.0001	1.0000	0.0001	1.0000

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Pest Type			W Weed				
Pest Code			AMATA				
Pest Name			Common waterhe>				
Crop Code				GLXMA	GLXMA	GLXMA	GLXMA
Crop Name				Soybean	Soybean	Soybean	Soybean
Part Rated					PLOT C	PLOT C	PLOT C
Rating Date			7/31/2017	7/31/2017	10/18/2017	10/18/2017	10/18/2017
Rating Type			CONTRO	PHYGEN	YIELD	MOICON	YIELD
Rating Unit			%	%	lb/plot	%	BU
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.			62 28	62 28	141 107	141 107	141 107
Trt-Eval Interval							
Days After Emergence			57 DE-1	57 DE-1	136 DE-1	136 DE-1	136 DE-1
ARM Action Codes			P	P			TY1
Number of Decimals			0	0	1	1	1
Trt Treatment	Rate	Appl					
No. Name	Rate Unit	Code	13	14	15	16	17
1 UNTREATED			0 f	0 a	6.6 a	13.6 a	19.1 a
2 AUTHORITY XL	4.5 oz/a	A	58 e	0 a	4.9 a	13.6 a	14.3 a
SELECT MAX	10 oz/a	B					
COC	1 % v/v	B					
N-PAK	2.5 % v/v	B					
3 AUTHORITY XL	6.4 oz/a	A	74 cd	0 a	6.1 a	13.6 a	17.5 a
SELECT MAX	10 fl oz/a	B					
COC	1 % v/v	B					
N-PAK	2.5 % v/v	B					
4 AUTHORITY XL	4.5 oz/a	A	69 cde	0 a	6.9 a	13.6 a	20.0 a
ANTHEM MAXX	3 fl oz/a	A					
SELECT MAX	10 fl oz/a	B					
COC	1 % v/v	B					
N-PAK	2.5 % v/v	B					
5 AUTHORITY MTZ	15 oz/a	A	68 cde	0 a	6.8 a	13.6 a	19.7 a
SELECT MAX	10 fl oz/a	B					
COC	1 % v/v	B					
N-PAK	2.5 % v/v	B					
6 F4242-1	16 fl oz/a	A	69 cde	0 a	6.9 a	13.6 a	19.9 a
SELECT MAX	10 oz/a	B					
COC	1 % v/v	B					
N-PAK	2.5 % v/v	B					
7 ANTHEM MAXX	3.25 fl oz/a	A	66 cde	0 a	6.4 a	13.6 a	18.5 a
TRICOR	6 oz/a	A					
SELECT MAX	10 fl oz/a	B					
COC	1 % v/v	B					
N-PAK	2.5 % v/v	B					
8 ZIDUA PRO	6 fl oz/a	A	65 de	0 a	5.9 a	13.6 a	16.9 a
SELECT MAX	10 fl oz/a	B					
COC	1 % v/v	B					
N-PAK	2.5 % v/v	B					

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Could not calculate LSD (% mean diff) for columns 2,4,8,10,12,14,16 because error mean square = 0.

Pest Type	W Weed					
Pest Code	AMATA					
Pest Name	Common waterhe>					
Crop Code		GLXMA	GLXMA	GLXMA	GLXMA	GLXMA
Crop Name		Soybean	Soybean	Soybean	Soybean	Soybean
Part Rated			PLOT C	PLOT C	PLOT C	PLOT C
Rating Date	7/31/2017	7/31/2017	10/18/2017	10/18/2017	10/18/2017	10/18/2017
Rating Type	CONTRO	PHYGEN	YIELD	MOICON	YIELD	YIELD
Rating Unit	%	%	lb/plot	%	BU	BU
Number of Subsamples	1	1	1	1	1	1
Assessed By	T. Campbell	T. Campbell	T. Campbell	T. Campbell	T. Campbell	T. Campbell
Days After First/Last Applic.	62 28	62 28	141 107	141 107	141 107	141 107
Trt-Eval Interval						
Days After Emergence	57 DE-1	57 DE-1	136 DE-1	136 DE-1	136 DE-1	136 DE-1
ARM Action Codes	P	P				TY1
Number of Decimals	0	0	1	1	1	1
Trt Treatment	Rate	Appl				
No. Name	Rate Unit	Code	13	14	15	16
9 BOUNDARY	1.8 pt/a	A	71 cd	0 a	5.4 a	13.6 a
SELECT MAX	10 fl oz/a	B				15.7 a
COC	1 % v/v	B				
N-PAK	2.5 % v/v	B				
10 AUTHORITY XL	5 oz/a	A	93 ab	0 a	7.4 a	13.6 a
ROUNDUP POWERMAX	22 fl oz/a	C				21.4 a
XTENDIMAX	22 fl oz/a	C				
CLASS ACT RIDION	1 % v/v	C				
11 AUTHORITY XL	4.5 oz/a	A	99 a	0 a	7.5 a	13.6 a
ANTHEM MAXX	3 fl oz/a	D				21.7 a
ROUNDUP POWERMAX	22 fl oz/a	D				
XTENDIMAX	22 fl oz/a	D				
CLASS ACT RIDION	1 % v/v	D				
12 ANTHEM MAXX	3 fl oz/a	D	88 b	0 a	7.6 a	13.6 a
ROUNDUP POWERMAX	22 fl oz/a	D				22.0 a
XTENDIMAX	22 fl oz/a	D				
CLASS ACT RIDION	1 % v/v	D				
13 WARRANT	3 pt/a	D	91 ab	0 a	7.0 a	13.6 a
ROUNDUP POWERMAX	22 fl oz/a	D				20.2 a
XTENDIMAX	22 fl oz/a	D				
CLASS ACT RIDION	1 % v/v	D				
14 ROUNDUP POWERMAX	22 fl oz/a	E	79 c	0 a	7.6 a	13.6 a
XTENDIMAX	22 fl oz/a	E				22.1 a
CLASS ACT RIDION	1 % v/v	E				
LSD P=.05	8.1	.	1.89	.	5.47	
Standard Deviation	5.7	0.0	1.31	0.00	3.80	
CV	8.07	0.0	19.75	0.0	19.75	
Bartlett's X2	23.543	0.0	15.385	0.0	15.385	
P(Bartlett's X2)	0.023*	.	0.284	.	0.284	
Skewness	-1.7279*	.	-0.1639	-1.0283*	-0.1639	
Kurtosis	3.5108*	.	-0.2985	-2.0769*	-0.2985	
Replicate F	5.890	0.000	1.719	0.000	1.719	
Replicate Prob(F)	0.0020	1.0000	0.1835	1.0000	0.1835	
Treatment F	69.104	0.000	1.582	0.000	1.582	
Treatment Prob(F)	0.0001	1.0000	0.1442	1.0000	0.1442	

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Purdue Weed Science

<p>Trial ID: 17S-MGS-Soy-04 Protocol ID: 17S-MGS-Soy-04 Project ID:</p>	<p>Authority Anthem Maxx Product Understanding Location: Meigs Trial Year: 2017 Investigator: Dr. Bill Johnson Study Director: Taylor Campbell Sponsor Contact: Nick Hustedde</p>
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<p><u>Pest Type</u> W, Weed, G-BYRW7, G-WedStg = Weed or volunteer crop</p> <p><u>Pest Code</u> AMATA, Amaranthus tamariscinus, Common waterhemp = US</p> <p><u>Crop Code</u> GLXMA, BSOY, Glycine max, Soybean = US</p> <p><u>Part Rated</u> PLOT = plot C = Crop is Part Rated</p> <p><u>Rating Type</u> CONTRO = control / burndown or knockdown PHYGEN = phytotoxicity - general / injury YIELD = yield MOICON = moisture content</p> <p><u>Rating Unit</u> % = percent lb/plot = pounds per plot BU = bushel</p> <p><u>ARM Action Codes</u> P = Rating scale of 0 to 100 (e.g. % control or injury) TY1 = $2.904 * [15] * (100 - [16]) / 86.7$</p>
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