

Purdue Weed Science

Burndown Programs for Giant Ragweed Control in Conventional Till Soybean

Trial ID: 16S-TPAC-SOY-14	Location: TPAC	Trial Year: 2016
Protocol ID: 16S-TPAC-SOY-14	Investigator: Dr. Bill Johnson	
Project ID: MKD-H-2016-US-S36-A-01	Study Director: Joe Ikley	
	Sponsor Contact: BASF - Gery Welker	

General Trial Information

Study Director: Joe Ikley
Investigator: Dr. Bill Johnson

Conducted Under GLP: No
Conducted Under GEP: No

Contacts

Study Director: Joe Ikley
Investigator: Dr. Bill Johnson

Crop Description

Crop 1: GLXMA	Glycine max	Soybean
Variety: AG 2933		
Planting Rate, Unit: 155000 S/A	Planting Date: Jun-13-2016	
Depth, Unit: 1.25 IN	Planting Method: PLANTD planted	
Row Spacing, Unit: 30 IN	Planting Equipment: PP Plot Planter	
Soil Temperature, Unit: 80 F	Emergence Date: Jun-18-2016	
Soil Moisture: DRY dry		

Pest Description

Pest 1 Type: W **Code:** AMBTR *Ambrosia trifida*
Common Name: Giant ragweed

Pest 2 Type: W **Code:** AMARE *Amaranthus retroflexus*
Common Name: Redroot pigweed

Pest 3 Type: W **Code:** SETFA *Setaria faberi*
Common Name: Giant foxtail

Site and Design

Treated Plot Width: 10 FT	Site Type: FIELD field	
Treated Plot Length: 30 FT	Experimental Unit: 1 PLOT plot	
Treated Plot Area: 300 FT2	Treatments: 12	Tillage Type: CONTIL conventional-till
Replications: 4		Study Design: RACOB� Randomized Complete Block (RCB)

Soil Description

Description Name: TPAC - Field 4B

% OM: 2.9	Texture: SIL silt loam	
pH: 6.2	Soil Name: Toronto-Millbrook	
CEC: 13.3		

Application Description

	A
Application Date:	Jun-7-2016
Appl. Start Time:	7:15 AM
Appl. Stop Time:	7:45 AM
Application Method:	SPRAY
Application Timing:	7 DPP
Application Placement:	BROADC
Applied By:	DS
Air Temperature, Unit:	54 F
% Relative Humidity:	90
Wind Velocity, Unit:	1 MPH
Wind Direction:	W
Dew Presence (Y/N):	Y yes
Soil Temperature, Unit:	65 F
Soil Moisture:	WET
% Cloud Cover:	0

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Crop Stage At Each Application

	A
Crop 1 Code, BBCH Scale:	GLXMA BSOY

Pest Stage At Each Application

	A
Pest 1 Code, Type, Scale:	AMBTR W
Stage Majority, Percent:	32G
Stage Minimum, Percent:	31G
Stage Maximum, Percent:	33G
Height, Unit:	2.5 IN
Height Minimum, Maximum:	1 4
Density, Unit:	20 YD2
Pest 2 Code, Type, Scale:	AMARE W
Stage Majority, Percent:	13
Stage Minimum, Percent:	11
Stage Maximum, Percent:	15
Height, Unit:	1.25 IN
Height Minimum, Maximum:	0.5 2
Density, Unit:	15 YD2
Pest 3 Code, Type, Scale:	SETFA W
Stage Majority, Percent:	14
Stage Minimum, Percent:	12
Stage Maximum, Percent:	15
Height, Unit:	2 IN
Height Minimum, Maximum:	1 3
Density, Unit:	20 YD2

Application Equipment

	A
Appl. Equipment:	CO2 BACKPACK
Equipment Type:	BACSPR
Operation Pressure, Unit:	18 PSI
Nozzle Type:	FLAT FAN
Nozzle Size:	XR 11002
Nozzle Spacing, Unit:	15 IN
Nozzles/Row:	8
Boom Length, Unit:	10 FT
Boom Height, Unit:	17 IN
Ground Speed, Unit:	3 MPH
Carrier:	MEIGS
Spray Volume, Unit:	15 gal/ac
Mix Size, Unit:	1.8 liters
Propellant:	CO2

Trial Comments

Reps: 4
Spray vol: 15 GAL/AC

Plots: 10 by 30 feet
Mix Size: 1.8 liters (calculated mix size 1.5642)

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Reps: 4 Plots: 10 by 30 feet
 Spray vol: 15 GAL/AC Mix Size: 1.8 liters (calculated mix size 1.5642)

Trt No.	Treatment Name	Form Conc	Form Unit	Form Type	Rate	Appl Unit	Amt Product to Measure	Rep 1	Rep 2	Rep 3	Rep 4
1	Untreated Check							101	305	502	801
2	ZIDUA SC	4.17 LB/GAL		SC	3.3 fl oz/a	A	3.094 ml/mx	102	303	604	702
	SHARPEN	2.85 LB/GAL		CS	1 fl oz/a	A	0.9375 ml/mx				
	ROUNDUP POWERMAX	4.5 LBAE/GAL		SL	32 fl oz/a	A	30.0 ml/mx				
	MSO ULTRA	100 %		L	1 % v/v	A	18.0 ml/mx				
	N-PAK - AMS	3.4 LBA/GAL		L	2.5 % v/v	A	45.0 ml/mx				
3	ZIDUA PRO	4.09 LB/GAL		SC	6 fl oz/a	A	5.625 ml/mx	103	302	505	804
	ROUNDUP POWERMAX	4.5 LBAE/GAL		SL	32 fl oz/a	A	30.0 ml/mx				
	MSO ULTRA	100 %		L	1 % v/v	A	18.0 ml/mx				
	N-PAK - AMS	3.4 LBA/GAL		L	2.5 % v/v	A	45.0 ml/mx				
4	ZIDUA PRO	4.09 LB/GAL		SC	5 fl oz/a	A	4.687 ml/mx	104	405	506	803
	ROUNDUP POWERMAX	4.5 LBAE/GAL		SL	32 fl oz/a	A	30.0 ml/mx				
	MSO ULTRA	100 %		L	1 % v/v	A	18.0 ml/mx				
	N-PAK - AMS	3.4 LBA/GAL		L	2.5 % v/v	A	45.0 ml/mx				
5	ZIDUA PRO	4.09 LB/GAL		SC	4.5 fl oz/a	A	4.219 ml/mx	105	403	501	706
	ROUNDUP POWERMAX	4.5 LBAE/GAL		SL	32 fl oz/a	A	30.0 ml/mx				
	MSO ULTRA	100 %		L	1 % v/v	A	18.0 ml/mx				
	N-PAK - AMS	3.4 LBA/GAL		L	2.5 % v/v	A	45.0 ml/mx				
6	ZIDUA SC	4.17 LB/GAL		SC	3.3 fl oz/a	A	3.094 ml/mx	106	404	603	806
	VERDICT	5.57 LB/GAL		EC	5 fl oz/a	A	4.687 ml/mx				
	ROUNDUP POWERMAX	4.5 LBAE/GAL		SL	32 fl oz/a	A	30.0 ml/mx				
	MSO ULTRA	100 %		L	1 % v/v	A	18.0 ml/mx				
	N-PAK - AMS	3.4 LBA/GAL		L	2.5 % v/v	A	45.0 ml/mx				
7	AUTHORITY FIRST	70 %		DF	5 oz/a	A	4.493 g/mx	201	401	504	705
	ROUNDUP POWERMAX	4.5 LBAE/GAL		SL	32 fl oz/a	A	30.0 ml/mx				
	MSO ULTRA	100 %		L	1 % v/v	A	18.0 ml/mx				
	N-PAK - AMS	3.4 LBA/GAL		L	2.5 % v/v	A	45.0 ml/mx				
8	FIERCE XLT	62.41 %		WG	4.5 oz/a	A	4.044 g/mx	202	406	602	701
	ROUNDUP POWERMAX	4.5 LBAE/GAL		SL	32 fl oz/a	A	30.0 ml/mx				
	MSO ULTRA	100 %		L	1 % v/v	A	18.0 ml/mx				
	N-PAK - AMS	3.4 LBA/GAL		L	2.5 % v/v	A	45.0 ml/mx				
9	VERDICT	5.57 LB/GAL		EC	5 fl oz/a	A	4.687 ml/mx	203	304	605	802
	TRICOR	75 %		WG	5 oz/a	A	4.493 g/mx				
	ROUNDUP POWERMAX	4.5 LBAE/GAL		SL	32 fl oz/a	A	30.0 ml/mx				
	MSO ULTRA	100 %		L	1 % v/v	A	18.0 ml/mx				
	N-PAK - AMS	3.4 LBA/GAL		L	2.5 % v/v	A	45.0 ml/mx				
10	VERDICT	5.57 LB/GAL		EC	5 fl oz/a	A	4.687 ml/mx	204	301	606	805
	OUTLOOK	6 LB/GAL		EC	5 fl oz/a	A	4.687 ml/mx				
	ROUNDUP POWERMAX	4.5 LBAE/GAL		SL	32 fl oz/a	A	30.0 ml/mx				
	MSO ULTRA	100 %		L	1 % v/v	A	18.0 ml/mx				
	N-PAK - AMS	3.4 LBA/GAL		L	2.5 % v/v	A	45.0 ml/mx				
11	VALOR SX	51 %		WG	3 oz/a	A	2.696 g/mx	205	306	601	703
	TRICOR	75 %		WG	5 oz/a	A	4.493 g/mx				
	ROUNDUP POWERMAX	4.5 LBAE/GAL		SL	32 fl oz/a	A	30.0 ml/mx				
	MSO ULTRA	100 %		L	1 % v/v	A	18.0 ml/mx				
	N-PAK - AMS	3.4 LBA/GAL		L	2.5 % v/v	A	45.0 ml/mx				
12	ZIDUA SC	4.17 LB/GAL		SC	3.3 fl oz/a	A	3.094 ml/mx	206	402	503	704
	SHARPEN	2.85 LB/GAL		CS	1 fl oz/a	A	0.9375 ml/mx				
	TRICOR	75 %		WG	5 oz/a	A	4.493 g/mx				
	ROUNDUP POWERMAX	4.5 LBAE/GAL		SL	32 fl oz/a	A	30.0 ml/mx				
	MSO ULTRA	100 %		L	1 % v/v	A	18.0 ml/mx				
	N-PAK - AMS	3.4 LBA/GAL		L	2.5 % v/v	A	45.0 ml/mx				

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 Project ID: MKD-H-2016-US-S36-A-01 Study Director: Joe Ikley
 Sponsor Contact: BASF - Gery Welker

Reps: 4 Plots: 10 by 30 feet
 Spray vol: 15 GAL/AC Mix Size: 1.8 liters (calculated mix size 1.5642)

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

Amount*	Unit	Treatment Name	Form Conc	Form Type	Lot Code
11.602	ml	ZIDUA SC	4.17	SC	
2.344	ml	SHARPEN	2.85	CS	
412.500	ml	ROUNDUP POWERMAX	4.5	SL	
247.473	ml	MSO ULTRA	100	L	
618.683	ml	N-PAK - AMS	3.4	L	
18.164	ml	ZIDUA PRO	4.09	SC	
17.578	ml	VERDICT	5.57	EC	
5.617	g	AUTHORITY FIRST	70	DF	
5.055	g	FIERCE XLT	62.41	WG	
16.851	g	TRICOR	75	WG	
5.859	ml	OUTLOOK	6	EC	
3.370	g	VALOR SX	51	WG	

* 'Per area' calculations based on spray volume= 15 GAL/AC, mix size= 1.8 liters (mix size basis).
 * Product amount calculations increased 25 % for overage adjustment.
 * 'Per volume' calculations use spray volume= 15 GAL/AC, mix size= 1.8 liters.

Pest Type	W Weed AMBTR Giant ragweed	W Weed SETFA Giant foxtail	W Weed AMARE Redroot pigweed	GLXMA Soybean PLOT C	W Weed AMBTR Giant ragweed	W Weed SETFA Giant foxtail		
Pest Code								
Pest Name								
Crop Code								
Crop Name								
Part Rated	PLOT P	PLOT P	PLOT P		PLOT P	PLOT P		
Rating Date	Jun-15-2016	Jun-15-2016	Jun-15-2016	Jun-30-2016	Jun-30-2016	Jun-30-2016		
Rating Type	CONTRO	CONTRO	CONTRO	PHYGEN	CONTRO	CONTRO		
Rating Unit	%	%	%	%	%	%		
Number of Subsamples	1	1	1	1	1	1		
Days After First/Last Applic.	8 8	8 8	8 8	23 23	23 23	23 23		
Trt-Eval Interval	8 DA-A	8 DA-A	8 DA-A	23 DA-A	23 DA-A	23 DA-A		
Days After Emergence	-3 DE-1	-3 DE-1	-3 DE-1	12 DE-1	12 DE-1	12 DE-1		
ARM Action Codes	P	P	P	P	P	P		
Number of Decimals	0	0	0	0	0	0		
Trt Treatment	Rate	Appl	1	2	3	4	5	6
No. Name	Rate Unit	Code Plot						
1 Untreated Check		101	0	0	0	0	0	0
		305	0	0	0	0	0	0
		502	0	0	0	0	0	0
		801	0	0	0	0	0	0
		Mean =	0	0	0	0	0	0
2 ZIDUA SC	3.3 fl oz/a A	102	100	100	100	0	90	95
SHARPEN	1 fl oz/a A	303	100	100	100	5	95	100
ROUNDUP POWERMAX	32 fl oz/a A	604	100	100	100	10	85	95
MSO ULTRA	1 % v/v A	702	100	100	100	0	95	95
N-PAK - AMS	2.5 % v/v A							
		Mean =	100	100	100	4	91	96
3 ZIDUA PRO	6 fl oz/a A	103	100	100	100	0	95	100
ROUNDUP POWERMAX	32 fl oz/a A	302	100	100	100	5	99	100
MSO ULTRA	1 % v/v A	505	100	100	100	0	85	95
N-PAK - AMS	2.5 % v/v A	804	100	100	100	5	90	95
		Mean =	100	100	100	3	92	98
4 ZIDUA PRO	5 fl oz/a A	104	100	100	100	0	90	90
ROUNDUP POWERMAX	32 fl oz/a A	405	100	100	100	5	80	95
MSO ULTRA	1 % v/v A	506	100	100	100	0	80	95
N-PAK - AMS	2.5 % v/v A	803	100	100	100	0	95	95
		Mean =	100	100	100	1	86	94

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 Sponsor Contact: BASF - Gery Welker

Pest Type	W Weed	W Weed	W Weed		W Weed	W Weed		
Pest Code	AMBTR	SETFA	AMARE		AMBTR	SETFA		
Pest Name	Giant ragweed	Giant foxtail	Redroot pigweed		Giant ragweed	Giant foxtail		
Crop Code				GLXMA				
Crop Name				Soybean				
Part Rated	PLOT P	PLOT P	PLOT P	PLOT C	PLOT P	PLOT P		
Rating Date	Jun-15-2016	Jun-15-2016	Jun-15-2016	Jun-30-2016	Jun-30-2016	Jun-30-2016		
Rating Type	CONTRO	CONTRO	CONTRO	PHYGEN	CONTRO	CONTRO		
Rating Unit	%	%	%	%	%	%		
Number of Subsamples	1	1	1	1	1	1		
Days After First/Last Applic.	8 8	8 8	8 8	23 23	23 23	23 23		
Trt-Eval Interval	8 DA-A	8 DA-A	8 DA-A	23 DA-A	23 DA-A	23 DA-A		
Days After Emergence	-3 DE-1	-3 DE-1	-3 DE-1	12 DE-1	12 DE-1	12 DE-1		
ARM Action Codes	P	P	P	P	P	P		
Number of Decimals	0	0	0	0	0	0		
Trt Treatment	Rate	Appl						
No. Name	Rate Unit	Code Plot	1	2	3	4	5	6
5 ZIDUA PRO	4.5 fl oz/a A	105	100	100	100	0	85	100
ROUNDUP POWERMAX	32 fl oz/a A	403	100	100	100	5	85	95
MSO ULTRA	1 % v/v A	501	100	100	100	0	90	95
N-PAK - AMS	2.5 % v/v A	706	100	100	100	5	60	85
		Mean =	100	100	100	3	80	94
6 ZIDUA SC	3.3 fl oz/a A	106	100	100	100	0	85	95
VERDICT	5 fl oz/a A	404	100	100	100	5	85	95
ROUNDUP POWERMAX	32 fl oz/a A	603	100	100	100	10	85	100
MSO ULTRA	1 % v/v A	806	100	100	100	5	70	100
N-PAK - AMS	2.5 % v/v A							
		Mean =	100	100	100	5	81	98
7 AUTHORITY FIRST	5 oz/a A	201	100	100	100	0	99	95
ROUNDUP POWERMAX	32 fl oz/a A	401	80	100	100	5	90	95
MSO ULTRA	1 % v/v A	504	85	100	100	0	95	85
N-PAK - AMS	2.5 % v/v A	705	70	100	100	0	90	80
		Mean =	84	100	100	1	94	89
8 FIERCE XLT	4.5 oz/a A	202	100	100	100	10	99	100
ROUNDUP POWERMAX	32 fl oz/a A	406	100	100	100	10	90	100
MSO ULTRA	1 % v/v A	602	90	100	100	10	95	95
N-PAK - AMS	2.5 % v/v A	701	90	100	100	5	99	95
		Mean =	95	100	100	9	96	98
9 VERDICT	5 fl oz/a A	203	100	100	100	5	99	95
TRICOR	5 oz/a A	304	100	100	100	5	95	95
ROUNDUP POWERMAX	32 fl oz/a A	605	100	100	100	5	95	80
MSO ULTRA	1 % v/v A	802	100	100	100	5	95	95
N-PAK - AMS	2.5 % v/v A							
		Mean =	100	100	100	5	96	91
10 VERDICT	5 fl oz/a A	204	100	100	100	5	95	95
OUTLOOK	5 fl oz/a A	301	100	100	100	5	95	95
ROUNDUP POWERMAX	32 fl oz/a A	606	100	100	100	5	95	100
MSO ULTRA	1 % v/v A	805	100	100	100	0	90	95
N-PAK - AMS	2.5 % v/v A							
		Mean =	100	100	100	4	94	96
11 VALOR SX	3 oz/a A	205	100	100	100	10	90	95
TRICOR	5 oz/a A	306	95	90	100	5	90	99
ROUNDUP POWERMAX	32 fl oz/a A	601	100	100	100	5	90	95
MSO ULTRA	1 % v/v A	703	100	95	100	5	95	95
N-PAK - AMS	2.5 % v/v A							
		Mean =	99	96	100	6	91	96
12 ZIDUA SC	3.3 fl oz/a A	206	100	100	100	5	80	100
SHARPEN	1 fl oz/a A	402	100	100	100	10	95	95
TRICOR	5 oz/a A	503	100	100	100	5	95	95
ROUNDUP POWERMAX	32 fl oz/a A	704	100	99	100	5	95	100
MSO ULTRA	1 % v/v A							
N-PAK - AMS	2.5 % v/v A							
		Mean =	100	100	100	6	91	98

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Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed	W Weed
Pest Code	AMARE	AMBTR	SETFA	AMARE	AMBTR	AMBTR
Pest Name	Redroot pigweed	Giant ragweed	Giant foxtail	Redroot pigweed	Giant ragweed	Giant ragweed
Crop Code						
Crop Name						
Part Rated	PLOT P	PLOT P	PLOT P	PLOT P	PLOT P	PLOT P
Rating Date	Jun-30-2016	Jul-14-2016	Jul-14-2016	Jul-14-2016	Aug-4-2016	Aug-4-2016
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%	%	%
Number of Subsamples	1	1	1	1	1	1
Days After First/Last Applic.	23 23	37 37	37 37	37 37	58 58	58 58
Trt-Eval Interval	23 DA-A	37 DA-A	37 DA-A	37 DA-A	58 DA-A	58 DA-A
Days After Emergence	12 DE-1	26 DE-1	26 DE-1	26 DE-1	47 DE-1	47 DE-1
ARM Action Codes	P	P	P	P	P	P
Number of Decimals	0	0	0	0	0	0
Trt Treatment	Rate	Appl				
No. Name	Rate Unit	Code Plot	7	8	9	10
1 Untreated Check		101	0	0	0	0
		305	0	0	0	0
		502	0	0	0	0
		801	0	0	0	0
		Mean =	0	0	0	0
2 ZIDUA SC	3.3 fl oz/a A	102	100	50	100	100
SHARPEN	1 fl oz/a A	303	100	90	95	100
ROUNDUP POWERMAX	32 fl oz/a A	604	100	60	85	100
MSO ULTRA	1 % v/v A	702	100	95	80	100
N-PAK - AMS	2.5 % v/v A					
		Mean =	100	74	90	100
3 ZIDUA PRO	6 fl oz/a A	103	100	75	100	100
ROUNDUP POWERMAX	32 fl oz/a A	302	100	97	99	100
MSO ULTRA	1 % v/v A	505	100	65	95	100
N-PAK - AMS	2.5 % v/v A	804	100	80	90	100
		Mean =	100	79	96	100
4 ZIDUA PRO	5 fl oz/a A	104	100	30	100	100
ROUNDUP POWERMAX	32 fl oz/a A	405	100	20	95	100
MSO ULTRA	1 % v/v A	506	100	35	95	100
N-PAK - AMS	2.5 % v/v A	803	100	.	90	100
		Mean =	100	28	95	100

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Pest Type	W Weed AMARE	W Weed AMBTR	W Weed SETFA	W Weed AMARE	W Weed AMBTR		
Pest Code	Redroot pigweed	Giant ragweed	Giant foxtail	Redroot pigweed	Giant ragweed		
Pest Name							
Crop Code							
Crop Name							
Part Rated	PLOT P	PLOT P	PLOT P	PLOT P	PLOT P		
Rating Date	Jun-30-2016	Jul-14-2016	Jul-14-2016	Jul-14-2016	Aug-4-2016		
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO		
Rating Unit	%	%	%	%	%		
Number of Subsamples	1	1	1	1	1		
Days After First/Last Applic.	23 23	37 37	37 37	37 37	58 58		
Trt-Eval Interval	23 DA-A	37 DA-A	37 DA-A	37 DA-A	58 DA-A		
Days After Emergence	12 DE-1	26 DE-1	26 DE-1	26 DE-1	47 DE-1		
ARM Action Codes	P	P	P	P	P		
Number of Decimals	0	0	0	0	0		
Trt Treatment	Rate	Appl					
No. Name	Rate Unit	Code Plot	7	8	9	10	11
5 ZIDUA PRO	4.5 fl oz/a A	105	100	60	100	100	15
ROUNDUP POWERMAX	32 fl oz/a A	403	100	25	90	100	10
MSO ULTRA	1 % v/v A	501	100	80	90	100	20
N-PAK - AMS	2.5 % v/v A	706	100	20	100	100	10
	Mean =		100	46	95	100	14
6 ZIDUA SC	3.3 fl oz/a A	106	100	65	95	95	10
VERDICT	5 fl oz/a A	404	100	30	85	100	15
ROUNDUP POWERMAX	32 fl oz/a A	603	100	75	85	100	20
MSO ULTRA	1 % v/v A	806	100	20	95	100	5
N-PAK - AMS	2.5 % v/v A						
	Mean =		100	48	90	99	13
7 AUTHORITY FIRST	5 oz/a A	201	100	97	95	100	80
ROUNDUP POWERMAX	32 fl oz/a A	401	100	80	80	100	50
MSO ULTRA	1 % v/v A	504	100	85	70	100	40
N-PAK - AMS	2.5 % v/v A	705	100	65	60	100	20
	Mean =		100	82	76	100	48
8 FIERCE XLT	4.5 oz/a A	202	100	98	100	100	90
ROUNDUP POWERMAX	32 fl oz/a A	406	100	65	99	100	25
MSO ULTRA	1 % v/v A	602	100	85	90	100	15
N-PAK - AMS	2.5 % v/v A	701	100	100	90	100	80
	Mean =		100	87	95	100	53
9 VERDICT	5 fl oz/a A	203	100	95	95	100	60
TRICOR	5 oz/a A	304	100	85	95	100	20
ROUNDUP POWERMAX	32 fl oz/a A	605	100	80	30	100	35
MSO ULTRA	1 % v/v A	802	100	90	95	100	70
N-PAK - AMS	2.5 % v/v A						
	Mean =		100	88	79	100	46
10 VERDICT	5 fl oz/a A	204	100	80	95	100	50
OUTLOOK	5 fl oz/a A	301	100	95	97	95	65
ROUNDUP POWERMAX	32 fl oz/a A	606	100	90	90	100	50
MSO ULTRA	1 % v/v A	805	100	50	90	100	10
N-PAK - AMS	2.5 % v/v A						
	Mean =		100	79	93	99	44
11 VALOR SX	3 oz/a A	205	100	75	95	100	15
TRICOR	5 oz/a A	306	100	70	97	100	35
ROUNDUP POWERMAX	32 fl oz/a A	601	100	90	85	100	40
MSO ULTRA	1 % v/v A	703	100	90	90	95	70
N-PAK - AMS	2.5 % v/v A						
	Mean =		100	81	92	99	40
12 ZIDUA SC	3.3 fl oz/a A	206	100	30	100	95	10
SHARPEN	1 fl oz/a A	402	100	85	90	100	40
TRICOR	5 oz/a A	503	100	75	80	100	10
ROUNDUP POWERMAX	32 fl oz/a A	704	100	85	80	100	60
MSO ULTRA	1 % v/v A						
N-PAK - AMS	2.5 % v/v A						
	Mean =		100	69	88	99	30

Purdue Weed Science

Burndown Programs for Giant Ragweed Control in Conventional Till Soybean

Trial ID: 16S-TPAC-SOY-14 Location: TPAC Trial Year: 2016
 Protocol ID: 16S-TPAC-SOY-14 Investigator: Dr. Bill Johnson
 Project ID: MKD-H-2016-US-S36-A-01 Study Director: Joe Ikley
 Sponsor Contact: BASF - Gery Welker

Pest Type
 W, Weed, G-BYRW7, G-WedStg = Weed or volunteer crop
Pest Code
 AMBTR, Ambrosia trifida, = US
 SETFA, Setaria faberi, = US
 AMARE, Amaranthus retroflexus, = US
Crop Code
 GLXMA, BSOY, Glycine max, = US
Part Rated
 PLOT = plot
 P = Pest is Part Rated
 C = Crop is Part Rated
Rating Type
 CONTRO = control / burndown or knockdown
 PHYGEN = phytotoxicity - general / injury
Rating Unit
 % = percent
ARM Action Codes
 P = Rating scale of 0 to 100 (e.g. % control or injury)

Pest Type	W Weed	W Weed	W Weed		W Weed	W Weed		
Pest Code	AMBTR	SETFA	AMARE		AMBTR	SETFA		
Pest Name	Giant ragweed	Giant foxtail	Redroot pigweed		Giant ragweed	Giant foxtail		
Crop Code				GLXMA				
Crop Name				Soybean				
Part Rated	PLOT P	PLOT P	PLOT P	PLOT C	PLOT P	PLOT P		
Rating Date	Jun-15-2016	Jun-15-2016	Jun-15-2016	Jun-30-2016	Jun-30-2016	Jun-30-2016		
Rating Type	CONTRO	CONTRO	CONTRO	PHYGEN	CONTRO	CONTRO		
Rating Unit	%	%	%	%	%	%		
Number of Subsamples	1	1	1	1	1	1		
Days After First/Last Applic.	8 8	8 8	8 8	23 23	23 23	23 23		
Trt-Eval Interval	8 DA-A	8 DA-A	8 DA-A	23 DA-A	23 DA-A	23 DA-A		
Days After Emergence	-3 DE-1	-3 DE-1	-3 DE-1	12 DE-1	12 DE-1	12 DE-1		
ARM Action Codes	P	P	P	P	P	P		
Number of Decimals	0	0	0	0	0	0		
Trt Treatment	Rate	Appl						
No. Name	Rate Unit	Code	1	2	3	4	5	6
1 Untreated Check			0 c	0 c	0 -	0 b	0 c	0 b
2 ZIDUA SC	3.3 fl oz/a A		100 a	100 a	100 -	4 ab	91 ab	96 a
SHARPEN	1 fl oz/a A							
ROUNDUP POWERMAX	32 fl oz/a A							
MSO ULTRA	1 % v/v A							
N-PAK - AMS	2.5 % v/v A							
3 ZIDUA PRO	6 fl oz/a A		100 a	100 a	100 -	3 b	92 ab	98 a
ROUNDUP POWERMAX	32 fl oz/a A							
MSO ULTRA	1 % v/v A							
N-PAK - AMS	2.5 % v/v A							
4 ZIDUA PRO	5 fl oz/a A		100 a	100 a	100 -	1 b	86 ab	94 a
ROUNDUP POWERMAX	32 fl oz/a A							
MSO ULTRA	1 % v/v A							
N-PAK - AMS	2.5 % v/v A							
5 ZIDUA PRO	4.5 fl oz/a A		100 a	100 a	100 -	3 b	80 b	94 a
ROUNDUP POWERMAX	32 fl oz/a A							
MSO ULTRA	1 % v/v A							
N-PAK - AMS	2.5 % v/v A							
6 ZIDUA SC	3.3 fl oz/a A		100 a	100 a	100 -	5 ab	81 ab	98 a
VERDICT	5 fl oz/a A							
ROUNDUP POWERMAX	32 fl oz/a A							
MSO ULTRA	1 % v/v A							
N-PAK - AMS	2.5 % v/v A							
7 AUTHORITY FIRST	5 oz/a A		84 b	100 a	100 -	1 b	94 ab	89 a
ROUNDUP POWERMAX	32 fl oz/a A							
MSO ULTRA	1 % v/v A							
N-PAK - AMS	2.5 % v/v A							

Purdue Weed Science

Burndown Programs for Giant Ragweed Control in Conventional Till Soybean

Trial ID: 16S-TPAC-SOY-14 Location: TPAC Trial Year: 2016
 Protocol ID: 16S-TPAC-SOY-14 Investigator: Dr. Bill Johnson
 Project ID: MKD-H-2016-US-S36-A-01 Study Director: Joe Ikley
 Sponsor Contact: BASF - Gery Welker

Pest Type	W Weed	W Weed	W Weed		W Weed	W Weed
Pest Code	AMBTR	SETFA	AMARE		AMBTR	SETFA
Pest Name	Giant ragweed	Giant foxtail	Redroot pigweed		Giant ragweed	Giant foxtail
Crop Code				GLXMA		
Crop Name				Soybean		
Part Rated	PLOT P	PLOT P	PLOT P	PLOT C	PLOT P	PLOT P
Rating Date	Jun-15-2016	Jun-15-2016	Jun-15-2016	Jun-30-2016	Jun-30-2016	Jun-30-2016
Rating Type	CONTRO	CONTRO	CONTRO	PHYGEN	CONTRO	CONTRO
Rating Unit	%	%	%	%	%	%
Number of Subsamples	1	1	1	1	1	1
Days After First/Last Applic.	8 8	8 8	8 8	23 23	23 23	23 23
Trt-Eval Interval	8 DA-A	8 DA-A	8 DA-A	23 DA-A	23 DA-A	23 DA-A
Days After Emergence	-3 DE-1	-3 DE-1	-3 DE-1	12 DE-1	12 DE-1	12 DE-1
ARM Action Codes	P	P	P	P	P	P
Number of Decimals	0	0	0	0	0	0
Trt Treatment	Rate	Appl				
No. Name	Rate Unit	Code	1	2	3	4
8 FIERCE XLT	4.5 oz/a	A	95 a	100 a	100 -	9 a
ROUNDUP POWERMAX	32 fl oz/a	A				
MSO ULTRA	1 % v/v	A				
N-PAK - AMS	2.5 % v/v	A				
9 VERDICT	5 fl oz/a	A	100 a	100 a	100 -	5 ab
TRICOR	5 oz/a	A				
ROUNDUP POWERMAX	32 fl oz/a	A				
MSO ULTRA	1 % v/v	A				
N-PAK - AMS	2.5 % v/v	A				
10 VERDICT	5 fl oz/a	A	100 a	100 a	100 -	4 ab
OUTLOOK	5 fl oz/a	A				
ROUNDUP POWERMAX	32 fl oz/a	A				
MSO ULTRA	1 % v/v	A				
N-PAK - AMS	2.5 % v/v	A				
11 VALOR SX	3 oz/a	A	99 a	96 b	100 -	6 ab
TRICOR	5 oz/a	A				
ROUNDUP POWERMAX	32 fl oz/a	A				
MSO ULTRA	1 % v/v	A				
N-PAK - AMS	2.5 % v/v	A				
12 ZIDUA SC	3.3 fl oz/a	A	100 a	100 a	100 -	6 ab
SHARPEN	1 fl oz/a	A				
TRICOR	5 oz/a	A				
ROUNDUP POWERMAX	32 fl oz/a	A				
MSO ULTRA	1 % v/v	A				
N-PAK - AMS	2.5 % v/v	A				
LSD P=.05	5.7	2.0			3.8	9.2
Standard Deviation	4.0	1.4		0.0	2.6	6.4
CV	4.42	1.52		0.0	68.45	7.72
Bartlett's X2	6.281	9.331		0.0	3.295	17.057
P(Bartlett's X2)	0.043*	0.002*		.	0.951	0.073
Skewness	-2.9084*	-3.0959*		-3.1133*	0.3378	-2.7212*
Kurtosis	7.104*	7.9526*		8.0253*	-0.8345	6.3571*
Replicate F	1.458	1.039		0.000	2.469	0.409
Replicate Prob(F)	0.2439	0.3880		1.0000	0.0792	0.7475
Treatment F	209.121	1722.103		0.000	3.667	69.115
Treatment Prob(F)	0.0001	0.0001		1.0000	0.0018	0.0001

Purdue Weed Science

Burndown Programs for Giant Ragweed Control in Conventional Till Soybean

Trial ID: 16S-TPAC-SOY-14	Location: TPAC	Trial Year: 2016
Protocol ID: 16S-TPAC-SOY-14	Investigator: Dr. Bill Johnson	
Project ID: MKD-H-2016-US-S36-A-01	Study Director: Joe Ikley	
	Sponsor Contact: BASF - Gery Welker	

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed		
Pest Code	AMARE	AMBTR	SETFA	AMARE	AMBTR		
Pest Name	Redroot pigweed	Giant ragweed	Giant foxtail	Redroot pigweed	Giant ragweed		
Crop Code							
Crop Name							
Part Rated	PLOT P	PLOT P	PLOT P	PLOT P	PLOT P		
Rating Date	Jun-30-2016	Jul-14-2016	Jul-14-2016	Jul-14-2016	Aug-4-2016		
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO		
Rating Unit	%	%	%	%	%		
Number of Subsamples	1	1	1	1	1		
Days After First/Last Applic.	23 23	37 37	37 37	37 37	58 58		
Trt-Eval Interval	23 DA-A	37 DA-A	37 DA-A	37 DA-A	58 DA-A		
Days After Emergence	12 DE-1	26 DE-1	26 DE-1	26 DE-1	47 DE-1		
ARM Action Codes	P	P	P	P	P		
Number of Decimals	0	0	0	0	0		
Trt Treatment	Rate	Appl					
No. Name	Rate Unit	Code	7	8	9	10	11
1 Untreated Check			0 -	0 c	0 b	0 b	0 -
2 ZIDUA SC	3.3 fl oz/a A		100 -	74 a	90 a	100 a	43 -
SHARPEN	1 fl oz/a A						
ROUNDUP POWERMAX	32 fl oz/a A						
MSO ULTRA	1 % v/v A						
N-PAK - AMS	2.5 % v/v A						
3 ZIDUA PRO	6 fl oz/a A		100 -	79 a	96 a	100 a	48 -
ROUNDUP POWERMAX	32 fl oz/a A						
MSO ULTRA	1 % v/v A						
N-PAK - AMS	2.5 % v/v A						
4 ZIDUA PRO	5 fl oz/a A		100 -	28 b	95 a	100 a	13 -
ROUNDUP POWERMAX	32 fl oz/a A						
MSO ULTRA	1 % v/v A						
N-PAK - AMS	2.5 % v/v A						
5 ZIDUA PRO	4.5 fl oz/a A		100 -	46 ab	95 a	100 a	14 -
ROUNDUP POWERMAX	32 fl oz/a A						
MSO ULTRA	1 % v/v A						
N-PAK - AMS	2.5 % v/v A						
6 ZIDUA SC	3.3 fl oz/a A		100 -	48 ab	90 a	99 a	13 -
VERDICT	5 fl oz/a A						
ROUNDUP POWERMAX	32 fl oz/a A						
MSO ULTRA	1 % v/v A						
N-PAK - AMS	2.5 % v/v A						
7 AUTHORITY FIRST	5 oz/a A		100 -	82 a	76 a	100 a	48 -
ROUNDUP POWERMAX	32 fl oz/a A						
MSO ULTRA	1 % v/v A						
N-PAK - AMS	2.5 % v/v A						

Purdue Weed Science

Burndown Programs for Giant Ragweed Control in Conventional Till Soybean

Trial ID: 16S-TPAC-SOY-14 Location: TPAC Trial Year: 2016
 Protocol ID: 16S-TPAC-SOY-14 Investigator: Dr. Bill Johnson
 Project ID: MKD-H-2016-US-S36-A-01 Study Director: Joe Ikley
 Sponsor Contact: BASF - Gery Welker

Pest Type	W Weed AMARE	W Weed AMBTR	W Weed SETFA	W Weed AMARE	W Weed AMBTR		
Pest Code							
Pest Name	Redroot pigweed	Giant ragweed	Giant foxtail	Redroot pigweed	Giant ragweed		
Crop Code							
Crop Name							
Part Rated	PLOT P	PLOT P	PLOT P	PLOT P	PLOT P		
Rating Date	Jun-30-2016	Jul-14-2016	Jul-14-2016	Jul-14-2016	Aug-4-2016		
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO		
Rating Unit	%	%	%	%	%		
Number of Subsamples	1	1	1	1	1		
Days After First/Last Applic.	23 23	37 37	37 37	37 37	58 58		
Trt-Eval Interval	23 DA-A	37 DA-A	37 DA-A	37 DA-A	58 DA-A		
Days After Emergence	12 DE-1	26 DE-1	26 DE-1	26 DE-1	47 DE-1		
ARM Action Codes	P	P	P	P	P		
Number of Decimals	0	0	0	0	0		
Trt Treatment	Rate	Appl					
No. Name	Rate Unit	Code	7	8	9	10	11
8 FIERCE XLT	4.5 oz/a	A	100 -	87 a	95 a	100 a	53 -
ROUNDUP POWERMAX	32 fl oz/a	A					
MSO ULTRA	1 % v/v	A					
N-PAK - AMS	2.5 % v/v	A					
9 VERDICT	5 fl oz/a	A	100 -	88 a	79 a	100 a	46 -
TRICOR	5 oz/a	A					
ROUNDUP POWERMAX	32 fl oz/a	A					
MSO ULTRA	1 % v/v	A					
N-PAK - AMS	2.5 % v/v	A					
10 VERDICT	5 fl oz/a	A	100 -	79 a	93 a	99 a	44 -
OUTLOOK	5 fl oz/a	A					
ROUNDUP POWERMAX	32 fl oz/a	A					
MSO ULTRA	1 % v/v	A					
N-PAK - AMS	2.5 % v/v	A					
11 VALOR SX	3 oz/a	A	100 -	81 a	92 a	99 a	40 -
TRICOR	5 oz/a	A					
ROUNDUP POWERMAX	32 fl oz/a	A					
MSO ULTRA	1 % v/v	A					
N-PAK - AMS	2.5 % v/v	A					
12 ZIDUA SC	3.3 fl oz/a	A	100 -	69 a	88 a	99 a	30 -
SHARPEN	1 fl oz/a	A					
TRICOR	5 oz/a	A					
ROUNDUP POWERMAX	32 fl oz/a	A					
MSO ULTRA	1 % v/v	A					
N-PAK - AMS	2.5 % v/v	A					
LSD P=.05			.	27.1	14.6	2.1	31.6
Standard Deviation			0.0	18.8	10.1	1.5	21.9
CV			0.0	29.94	12.29	1.61	68.06
Bartlett's X2			0.0	10.761	31.347	0.0	18.189
P(Bartlett's X2)			.	0.376	0.001*	.	0.052
Skewness			-3.1133*	-0.8752*	-2.391*	-3.0997*	0.6106
Kurtosis			8.0253*	-0.4825	4.6409*	7.9704*	-0.8956
Replicate F			0.000	0.429	4.929	0.647	1.001
Replicate Prob(F)			1.0000	0.7333	0.0061	0.5904	0.4052
Treatment F			0.000	8.136	27.850	1539.530	2.584
Treatment Prob(F)			1.0000	0.0001	0.0001	0.0001	0.0179

Purdue Weed Science

Burndown Programs for Giant Ragweed Control in Conventional Till Soybean

Trial ID: 16S-TPAC-SOY-14 Location: TPAC Trial Year: 2016
Protocol ID: 16S-TPAC-SOY-14 Investigator: Dr. Bill Johnson
Project ID: MKD-H-2016-US-S36-A-01 Study Director: Joe Ikley
Sponsor Contact: BASF - Gery Welker

Pest Type

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

Pest Code

AMBTR, Ambrosia trifida, = US

SETFA, Setaria faberi, = US

AMARE, Amaranthus retroflexus, = US

Crop Code

GLXMA, BSOY, Glycine max, = US

Part Rated

PLOT = plot

P = Pest is Part Rated

C = Crop is Part Rated

Rating Type

CONTRO = control / burndown or knockdown

PHYGEN = phytotoxicity - general / injury

Rating Unit

% = percent

ARM Action Codes

P = Rating scale of 0 to 100 (e.g. % control or injury)