

Duration of Weed Control from Residual Herbicides.

Trial ID: 13-1-ME50 Location: Belleville Res. Center Trial Year: 2013
Investigator: Bryan Young

Trial Status: F one-year/final Initiation Date: 7-13-13 Completion Date: 9-11-13	Trial Location City: Belleville Country: USA State/Prov.: Illinois IL Postal Code: 62221
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Objectives: Demonstrate and measure residual control from preemergence herbicides.
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Study Director: Bryan Young Organization: Southern Illinois University Address: 1205 Lincoln Drive - AG 176 - MC 4415 City+State/Prov: Carbondale IL Postal Code: 62901 Country: USA	Title: Professor Phone No.: 618-453-7679 Mobile No.: 618-713-6471 E-mail: bgyoung@siu.edu
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Crop 1: NONE - Non-crop Variety: NON-CROP	Crop Description Planting Method: NA
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Pest 1 Type: W Code: AMBTR Ambrosia trifida L. Common Name: ragweed, giant Pest 2 Type: W Code: ABUTH Abutilon theophrasti Medik. Common Name: velvetleaf Pest 3 Type: W Code: AMATA Amaranthus rudis Sauer Common Name: waterhemp, common Pest 4 Type: W Code: GGGAN Common Name: grasses, annual Description: Mixture of SETFA and PANDI	Pest Description
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Treated Plot Width: 7.5 FT Total Plot Width: 10 FT Treated Plot Length: 31 FT Total Plot Length: 31 FT Replications: 3 Untreated Arrangement: INCLUDED single control randomized in each block	Site and Design Site Type: FIELD Experimental Unit: 1 PLOT Tillage Type: REDTIL reduced-till Study Design: RACOB L Randomized Complete Block (RCB)
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No.	Previous Crop	Year
1.	ZEAMD	2012

Maintenance <table border="1"> <thead> <tr> <th>No.</th> <th>Maintenance Product Name</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>N 0 LB/A, P2O5 50 LB/A, K2O 150 LB/A</td> </tr> </tbody> </table>	No.	Maintenance Product Name	1.	N 0 LB/A, P2O5 50 LB/A, K2O 150 LB/A
No.	Maintenance Product Name			
1.	N 0 LB/A, P2O5 50 LB/A, K2O 150 LB/A			

% OM: 2.5 Texture: SIL silt loam pH: 6 Soil Name: Winfield CEC: 6	Soil Description
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Additional Measured Elements <table border="1"> <thead> <tr> <th>Element</th> <th>Quantity</th> <th>Unit</th> </tr> </thead> <tbody> <tr> <td>P1</td> <td>58</td> <td>lb/A</td> </tr> <tr> <td>K</td> <td>286</td> <td>lb/A</td> </tr> </tbody> </table>	Element	Quantity	Unit	P1	58	lb/A	K	286	lb/A
Element	Quantity	Unit							
P1	58	lb/A							
K	286	lb/A							

Overall Moisture Conditions: ABONOR Closest Weather Station: ICN - Belleville IL	Moisture and Weather Conditions Distance, Unit: 0.5 MI
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No.	Date	Amount	Unit	Type	Type Description	Interval	Unit	Min Temp	Max Temp	Temp Unit
1.	6-30-13					7	DAY	61	86	F
2.	7-2-13	2.08	IN	RAIN	rain	2	DAY			
3.	7-7-13					7	DAY	62	94	F
4.	7-10-13	0.2	IN	RAIN	rain	1	DAY			
5.	7-14-13					7	DAY	64	94	F
6.	7-15-13	0.03	IN	RAIN	rain	1	DAY			
7.	7-20-13	0.59	IN	RAIN	rain	1	DAY			
8.	7-21-13					7	DAY	56	91	F
9.	7-26-13	0.03	IN	RAIN	rain	1	DAY			
10.	7-28-13					7	DAY	52	87	F
11.	7-30-13	0.46	IN	RAIN	rain	1	DAY			
12.	8-2-13	0.24	IN	RAIN	rain	1	DAY			
13.	8-4-13					7	DAY	62	87	F
14.	8-8-13	0.03	IN	RAIN	rain	3	DAY			
15.	8-11-13					7	DAY	54	85	F
16.	8-12-13	0.57	IN	RAIN	rain	1	DAY			
17.	8-18-13	0.1	IN	RAIN	rain	1	DAY			
18.	8-18-13					7	DAY	61	91	F
19.	8-25-13					7	DAY	62	100	F
20.	8-31-13	0.74	IN	RAIN	rain	1	DAY			
21.	9-1-13					7	DAY	57	92	F
22.	9-8-13	0.26	IN	RAIN	rain	1	DAY			

Application Description

	A
Application Date:	7-13-13
Appl. Start Time:	17:30
Appl. Stop Time:	18:00
Application Method:	Spray
Application Timing:	PRE
Application Placement:	BROSOI
Applied By:	RJW
Air Temperature, Unit:	83 F
% Relative Humidity:	51
Wind Velocity, Unit:	6 MPH
Wind Direction:	S
Dew Presence (Y/N):	N
Soil Temperature, Unit:	76 F
Soil Moisture:	NORMAL
% Cloud Cover:	20
Next Moisture Occurred On:	7-20-13
Time to Next Moisture, Unit:	7 DAY

Crop Stage At Each Application

	A
Crop 1 Code, BBCH Scale:	NONE
Stage Scale Used:	DESC
Stage Majority, Percent:	NA

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Pest Stage At Each Application

	A
Pest 1 Code, Type, Scale:	AMBTR W
Stage Majority, Percent:	NA
Pest 2 Code, Type, Scale:	ABUTH W
Stage Majority, Percent:	NA
Pest 3 Code, Type, Scale:	AMATA W
Stage Majority, Percent:	NA
Pest 4 Code, Type, Scale:	GGGAN W
Stage Majority, Percent:	NA

Application Equipment

	A
Appl. Equipment:	CO2 sprayer
Equipment Type:	BACSPR
Operation Pressure, Unit:	30 PSI
Nozzle Type:	TTI
Nozzle Size:	11002
Boom Length, Unit:	7.5 FT
Spray Volume, Unit:	15 GPA

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Pest Code							AMBTR	AMBTR	AMBTR	AMBTR	AMBTR	AMBTR
Crop Code							7-23-13	8-2-13	8-12-13	8-22-13	9-1-13	9-11-13
Rating Date							Control	Control	Control	Control	Control	Control
Rating Type							Percent	Percent	Percent	Percent	Percent	Percent
Rating Unit												
Rating Timing												
Trt-Eval Interval							10 DA-A	20 DA-A	30 DA-A	40 DA-A	50 DA-A	60 DA-A
Trt Treatment No. Name	Form Conc	Form Type	Rate Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code					
1 BOUNDARY	6.5 EC		1.42 lb ai/a	1.75 pt/a		PRE A		63 c	40 c	50 fg	32 d	17 fg
2 PREFIX	5.29 EC		1.32 lb ai/a	2 pt/a		PRE A		86 ab	75 ab	76 bcd	70 b	60 bc
3 FLEXSTAR GT 3.5	2.82 SL		1.41 lb ae/a	4 pt/a		PRE A		80 ab	77 ab	93 a	85 ab	72 ab
4 DUAL MAGNUM	7.62 EC		1.27 lb ai/a	1.33 pt/a		PRE A		83 ab	72 ab	67 cde	50 c	37 de
5 VERDICT	5.57 EC		0.218 lb ai/a	5 fl oz/a		PRE A		86 ab	62 b	65 c-f	48 cd	33 def
6 AUTHORITY XL	70 WG		0.284 lb ai/a	6.5 oz/a		PRE A		73 bc	62 b	53 efg	52 c	43 cde
7 VALOR SX	51 WG		0.096 lb ai/a	3 oz/a		PRE A		82 ab	78 ab	77 bcd	76 ab	70 ab
8 SONIC	70 WG		0.28 lb ai/a	6.4 oz/a		PRE A		78 abc	77 ab	80 abc	82 ab	78 ab
9 FIERCE	76 WG		0.178 lb ai/a	3.75 oz/a		PRE A		88 ab	78 ab	83 ab	77 ab	72 ab
10 SENCOR	75 WG		0.375 lb ai/a	8 oz/a		PRE A		30 d	37 c	43 g	47 cd	25 ef
11 CLARITY	4 SL		0.5 lb ae/a	16 fl oz/a		PRE A		92 a	90 a	95 a	89 a	82 a
12 WEEDAR 64	3.8 SL		0.95 lb ae/a	32 fl oz/a		PRE A		73 bc	60 b	62 def	43 cd	50 cd
13 NONTREATED								0 e	0 d	0 h	0 e	0 g
LSD (P=.05)								15.9	18.5	15.1	17.0	19.3
Standard Deviation								9.4	11.0	8.9	10.1	11.4
CV								13.37	17.73	13.8	17.46	23.26
Replicate F								1.095	0.906	2.674	1.019	2.570
Replicate Prob(F)								0.3507	0.4176	0.0895	0.3761	0.0974
Treatment F								23.564	14.404	23.470	18.904	15.301
Treatment Prob(F)								0.0001	0.0001	0.0001	0.0001	0.0001

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

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

Missing data estimates are included in columns: Average=8,12

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Pest Code	Crop Code	Rating Date	Rating Type	Rating Unit	Rating Timing	Trt-Eval Interval	ABUTH	ABUTH	ABUTH	ABUTH	ABUTH	ABUTH
							7-23-13 Control Percent	8-2-13 Control Percent	8-12-13 Control Percent	8-22-13 Control Percent	9-1-13 Control Percent	9-11-13 Control Percent
							10 DA-A	20 DA-A	30 DA-A	40 DA-A	50 DA-A	60 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code				
1	BOUNDARY	6.5	EC	1.42	lb ai/a	1.75	pt/a	PRE	A	70 ab	65 abc	67 b
2	PREFIX	5.29	EC	1.32	lb ai/a	2	pt/a	PRE	A	20 cd	30 def	10 cd
3	FLEXSTAR GT 3.5	2.82	SL	1.41	lb ae/a	4	pt/a	PRE	A	7 d	13 ef	10 cd
4	DUAL MAGNUM	7.62	EC	1.27	lb ai/a	1.33	pt/a	PRE	A	10 d	13 ef	10 cd
5	VERDICT	5.57	EC	0.218	lb ai/a	5	fl oz/a	PRE	A	50 bc	37 cde	33 c
6	AUTHORITY XL	70	WG	0.284	lb ai/a	6.5	oz/a	PRE	A	77 ab	75 ab	82 ab
7	VALOR SX	51	WG	0.096	lb ai/a	3	oz/a	PRE	A	89 a	94 a	92 ab
8	SONIC	70	WG	0.28	lb ai/a	6.4	oz/a	PRE	A	82 ab	88 a	87 ab
9	FIERCE	76	WG	0.178	lb ai/a	3.75	oz/a	PRE	A	96 a	95 a	96 a
10	SENCOR	75	WG	0.375	lb ai/a	8	oz/a	PRE	A	63 ab	80 ab	77 ab
11	CLARITY	4	SL	0.5	lb ae/a	16	fl oz/a	PRE	A	17 d	53 bcd	32 c
12	WEEDAR 64	3.8	SL	0.95	lb ae/a	32	fl oz/a	PRE	A	27 cd	30 def	32 c
13	NONTREATED									0 d	0 f	0 d
LSD (P=.05)										33.3	31.0	28.4
Standard Deviation										19.7	18.4	16.9
CV										42.32	35.53	35.02
Replicate F										0.317	1.939	2.097
Replicate Prob(F)										0.7314	0.1657	0.1448
Treatment F										9.165	9.809	13.539
Treatment Prob(F)										0.0001	0.0001	0.0001
										3.332	1.870	1.724
										0.0528	0.1759	0.1997
										13.747	14.541	14.514
										0.0001	0.0001	0.0001

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Pest Code Crop Code Rating Date Rating Type Rating Unit Rating Timing Trt-Eval Interval								AMATA 7-23-13 Control Percent 10 DA-A	AMATA 8-2-13 Control Percent 20 DA-A	AMATA 8-12-13 Control Percent 30 DA-A	AMATA 8-22-13 Control Percent 40 DA-A	AMATA 9-1-13 Control Percent 50 DA-A	AMATA 9-11-13 Control Percent 60 DA-A	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Other Rate	Other Unit	Growth Stage	Appl Code					
1	BOUNDARY	6.5	EC	1.42	lb ai/a	1.75	pt/a	PRE	A	99 a	99 a	99 a	98 a	93 a
2	PREFIX	5.29	EC	1.32	lb ai/a	2	pt/a	PRE	A	99 a	99 a	99 a	98 a	98 a
3	FLEXSTAR GT 3.5	2.82	SL	1.41	lb ae/a	4	pt/a	PRE	A	99 a	99 a	97 a	96 a	98 a
4	DUAL MAGNUM	7.62	EC	1.27	lb ai/a	1.33	pt/a	PRE	A	99 a	99 a	97 a	96 a	96 a
5	VERDICT	5.57	EC	0.218	lb ai/a	5	fl oz/a	PRE	A	98 b	98 a	96 a	96 a	95 a
6	AUTHORITY XL	70	WG	0.284	lb ai/a	6.5	oz/a	PRE	A	99 a	98 a	98 a	96 a	96 a
7	VALOR SX	51	WG	0.096	lb ai/a	3	oz/a	PRE	A	99 a	99 a	96 a	95 a	92 a
8	SONIC	70	WG	0.28	lb ai/a	6.4	oz/a	PRE	A	99 a	99 a	96 a	93 a	92 a
9	FIERCE	76	WG	0.178	lb ai/a	3.75	oz/a	PRE	A	99 a	99 a	99 a	99 a	99 a
10	SENCOR	75	WG	0.375	lb ai/a	8	oz/a	PRE	A	99 a	99 a	98 a	98 a	98 a
11	CLARITY	4	SL	0.5	lb ae/a	16	fl oz/a	PRE	A	99 a	99 a	84 b	70 b	73 b
12	WEEDAR 64	3.8	SL	0.95	lb ae/a	32	fl oz/a	PRE	A	90 c	85 b	65 c	47 c	47 c
13	NONTREATED									0 d	0 c	0 d	0 d	0 d
LSD (P=.05)										1.1	4.3	5.9	9.0	15.7
Standard Deviation										0.6	2.5	3.5	5.3	9.3
CV										0.71	2.83	4.03	6.39	11.23
Replicate F										1.000	0.581	3.264	1.241	0.118
Replicate Prob(F)										0.3827	0.5672	0.0557	0.3070	0.8888
Treatment F										5462.594	345.913	188.973	90.583	28.825
Treatment Prob(F)										0.0001	0.0001	0.0001	0.0001	0.0001

Pest Code							GGGAN	GGGAN	GGGAN	GGGAN	GGGAN	GGGAN
Crop Code							7-23-13	8-2-13	8-12-13	8-22-13	9-1-13	9-11-13
Rating Date							Control	Control	Control	Control	Control	Control
Rating Type							Percent	Percent	Percent	Percent	Percent	Percent
Rating Unit												
Rating Timing												
Trt-Eval Interval							10 DA-A	20 DA-A	30 DA-A	40 DA-A	50 DA-A	60 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Other Rate	Other Unit	Growth Stage	Appl Code			
1	BOUNDARY	6.5	EC	1.42	lb ai/a	1.75	pt/a	PRE	A	99 a	99 a	98 a
2	PREFIX	5.29	EC	1.32	lb ai/a		2 pt/a	PRE	A	98 a	98 a	96 a
3	FLEXSTAR GT 3.5	2.82	SL	1.41	lb ae/a		4 pt/a	PRE	A	83 b	82 b	78 bc
4	DUAL MAGNUM	7.62	EC	1.27	lb ai/a	1.33	pt/a	PRE	A	99 a	99 a	98 a
5	VERDICT	5.57	EC	0.218	lb ai/a		5 fl oz/a	PRE	A	99 a	99 a	92 ab
6	AUTHORITY XL	70	WG	0.284	lb ai/a	6.5	oz/a	PRE	A	98 a	95 ab	92 ab
7	VALOR SX	51	WG	0.096	lb ai/a		3 oz/a	PRE	A	99 a	99 a	82 bc
8	SONIC	70	WG	0.28	lb ai/a	6.4	oz/a	PRE	A	92 ab	92 ab	82 bc
9	FIERCE	76	WG	0.178	lb ai/a	3.75	oz/a	PRE	A	99 a	99 a	98 a
10	SENCOR	75	WG	0.375	lb ai/a	8	oz/a	PRE	A	93 ab	83 b	70 c
11	CLARITY	4	SL	0.5	lb ae/a	16	fl oz/a	PRE	A	10 c	10 c	17 d
12	WEEDAR 64	3.8	SL	0.95	lb ae/a	32	fl oz/a	PRE	A	0 c	0 c	0 e
13	NONTREATED									0 c	0 c	0 e
LSD (P=.05)										11.8	13.4	14.6
Standard Deviation										7.0	8.0	8.6
CV										9.36	10.83	12.45
Replicate F										0.004	0.166	0.910
Replicate Prob(F)										0.9963	0.8481	0.4161
Treatment F										103.286	77.599	56.749
Treatment Prob(F)										0.0001	0.0001	0.0001

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Trial Comments

1. Protocol: Syngenta.
2. Ratings: WC every 7-10 DA-A.
3. Photos.
4. No yield (non-crop).
5. Following the PRE application the first rainfall event, beginning 7 days later, was 0.59 inch over 1 day.
6. GGGAN = Annual grasses including 50% SETFA (giant foxtail) and 50% PANDI (fall panicum).
7. Not harvested (non-crop).