

Southern Illinois University

BASF Two-Pass Weed Control in Corn.

Trial ID: 13-FagerS-BASF-corn Location: Murphysboro, IL Trial Year: 2013
Investigator: Bryan Young

Trial Status: F one-year/final Initiation Date: 5-1-13 Completion Date: 6-20-13	Trial Location City: Murphysboro Country: USA State/Prov.: Illinois IL Postal Code: 62966
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Objectives: Evaluate two-pass programs for waterhemp control.

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	Contacts Title: Professor Phone No.: 618-453-7679 Mobile No.: 618-713-6471 E-mail: bgyoung@siu.edu
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Crop 1: ZEAMD Zea mays indentata Dent corn Variety: DKC 63-33 BBCH Scale: BCOR Description: SS RIB Planting Rate, Unit: 28000 S/A Depth, Unit: 1.5 IN Row Spacing, Unit: 30 IN	Crop Description Planting Date: 5-1-13 Planting Method: SEEDED
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Pest 1 Type: W Code: AMATA Amaranthus rudis Sauer Common Name: waterhemp, common Description: glyphosate-resistant waterhemp	Pest Description
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Treated Plot Width: 6.67 FT Total Plot Width: 10 FT Treated Plot Length: 30 FT Total Plot Length: 30 FT Replications: 3 Untreated Arrangement: INCLUDED single control randomized in each block	Site and Design Site Type: FIELD Experimental Unit: 1 PLOT Tillage Type: NOTILL no-till Study Design: RACOB L Randomized Complete Block (RCB)
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No.	Previous Crop	Year
1.	NON-CROP	2012

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

% OM: 1.87 Texture: SIL silt loam pH: 5.5 Soil Name: Alvin CEC: 7.06	Soil Description
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Element	Quantity	Unit
P1	172	lb/A
K	446	lb/A

Overall Moisture Conditions: NORMAL Closest Weather Station: SOUTHERN IL AIRPORT (93810)	Moisture and Weather Conditions Distance, Unit: 3.5 MI
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No.	Date	Amount	Unit	Type	Type Description	Interval	Unit	Min Temp	Max Temp	Temp Unit
1.	4-1-13					7	DAY	26	75	F
2.	4-8-13					7	DAY	32	81	F
3.	4-10-13	0.85	IN	RAIN	rain	2	DAY			
4.	4-15-13					7	DAY	32	83	F
5.	4-18-13	2.16	IN	RAIN	rain	1	DAY			
6.	4-22-13					7	DAY	32	72	F
7.	4-24-13	0.55	IN	RAIN	rain	2	DAY			
8.	4-27-13	0.37	IN	RAIN	rain	2	DAY			
9.	4-29-13					7	DAY	41	81	F
10.	5-3-13	1.33	IN	RAIN	rain	3	DAY			
11.	5-5-13	0.75	IN	RAIN	rain	2	DAY			
12.	5-6-13					7	DAY	41	80	F
13.	5-10-13	0.17	IN	RAIN	rain	3	DAY			
14.	5-13-13					7	DAY	37	87	F
15.	5-16-13	0.23	IN	RAIN	rain	2	DAY			
16.	5-20-13					7	DAY	43	85	F
17.	5-21-13	0.91	IN	RAIN	rain	1	DAY			
18.	5-27-13					7	DAY	59	86	F
19.	5-31-13	0.7	IN	RAIN	rain	3	DAY			
20.	6-1-13	1.67	IN	RAIN	rain	2	DAY			
21.	6-3-13					7	DAY	50	82	F
22.	6-10-13	0.13	IN	RAIN	rain	5	DAY			
23.	6-10-13					7	DAY	57	93	F
24.	6-17-13	0.36	IN	RAIN	rain	2	DAY			
25.	6-17-13					7	DAY	61	92	F
26.	6-22-13	0.34	IN	RAIN	rain	2	DAY			
27.	6-24-13					7	DAY	64	93	F
28.	6-26-13	1.25	IN	RAIN	rain	2	DAY			
29.	6-30-13	0.3	IN	RAIN	rain	2	DAY			

Application Description

	A	B	C
Application Date:	5-2-13	5-16-13	5-30-13
Appl. Start Time:	7:40	11:00	8:20
Appl. Stop Time:	8:15	11:30	8:40
Application Method:	Spray	Spray	Spray
Application Timing:	PRE	SPK-V2	8-12"CN
Application Placement:	BROSOI	BROFOL	BROFOL
Applied By:	LXF	LXF	LXF
Air Temperature, Unit:	69 F	82 F	80 F
% Relative Humidity:	84	54	72
Wind Velocity, Unit:	1 MPH	4 MPH	6 MPH
Wind Direction:	SW	W	S
Dew Presence (Y/N):	Y	N	N
Soil Temperature, Unit:	52 F	72 F	74 F
Soil Moisture:	NORMAL	NORMAL	NORMAL
% Cloud Cover:	20	60	90
Next Moisture Occurred On:	5-2-13	5-17-13	5-30-13
Time to Next Moisture, Unit:	10 HR	17 HR	12 HR

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Crop Stage At Each Application

	A	B	C
Crop 1 Code, BBCH Scale:	ZEAMD	ZEAMD	ZEAMD
Stage Scale Used:	DESC	DESC	DESC
Stage Majority, Percent:	NA	V2	V4
Stage Minimum, Percent:		V1	V3
Stage Maximum, Percent:		V2	V4
Height, Unit:		2 IN	12 IN
Height Minimum, Maximum:		1 2	8 12

Pest Stage At Each Application

	A	B	C
Pest 1 Code, Type, Scale:	AMATA W	AMATA W	AMATA W
Stage Majority, Percent:	NA	3	8
Stage Minimum, Percent:		2	4
Stage Maximum, Percent:		4	10
Height, Unit:		0.75 IN	5 IN
Height Minimum, Maximum:		0.5 1	4 6
Density, Unit:		50 FT2	12 FT2

Application Equipment

	A	B	C
Appl. Equipment:	CO2 sprayer	CO2 sprayer	CO2 sprayer
Equipment Type:	BACSPR	BACSPR	BACSPR
Operation Pressure, Unit:	30 PSI	30 PSI	30 PSI
Nozzle Type:	XR	XR	XR
Nozzle Size:	8002	8002	8002
Boom Length, Unit:	6.67 FT	6.67 FT	6.67 FT
Spray Volume, Unit:	15 GPA	15 GPA	15 GPA

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Pest Code Crop Code Rating Date Rating Type Rating Unit Rating Timing Trt-Eval Interval								ZEAMD 5-17-13 Injury Percent	ZEAMD 5-30-13 Injury Percent	ZEAMD 6-6-13 Injury Percent	ZEAMD 6-20-13 Injury Percent
7 DAE								0 DA-C	21 DA-B	21 DA-C	
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Unit	Other Rate	Other Rate	Growth Unit	Stage	Appl Code	
1	NONTREATED										0 e
2	VERDICT	5.57 EC		0.65 lb ai/a	15 fl oz/a	PRE	A				0 e
	ROUNDUP POWERMAX	4.5 SL		0.77 lb ae/a	22 fl oz/a	8-12"CN	C				0 c
	NIS (ACTIVATOR 90)	100 SL		0.25 % v/v	0.25 % v/v	8-12"CN	C				0 b
	N-PAK AMS	100 SL		2.5 % v/v	2.5 % v/v	8-12"CN	C				0 a
3	VERDICT	5.57 EC		0.65 lb ai/a	15 fl oz/a	PRE	A				0 e
	ARMEZON	2.8 SL		0.0164 lb ai/a	0.75 fl oz/a	8-12"CN	C				0 c
	AATREX 4L	4 SC		1 lb ai/a	1 qt/a	8-12"CN	C				0 b
	ROUNDUP POWERMAX	4.5 SL		0.77 lb ae/a	22 fl oz/a	8-12"CN	C				0 a
	NIS (ACTIVATOR 90)	100 SL		0.25 % v/v	0.25 % v/v	8-12"CN	C				
	N-PAK AMS	100 SL		2.5 % v/v	2.5 % v/v	8-12"CN	C				
4	LEXAR	3.7 SC		2.31 lb ai/a	2.5 qt/a	PRE	A				0 e
	ROUNDUP POWERMAX	4.5 SL		0.77 lb ae/a	22 fl oz/a	8-12"CN	C				0 c
	NIS (ACTIVATOR 90)	100 SL		0.25 % v/v	0.25 % v/v	8-12"CN	C				0 b
	N-PAK AMS	100 SL		2.5 % v/v	2.5 % v/v	8-12"CN	C				0 a
5	CORVUS	2.63 SC		0.115 lb ai/a	5.6 fl oz/a	PRE	A				0 e
	AATREX 4L	4 SC		1 lb ai/a	1 qt/a	PRE	A				0 c
	ROUNDUP POWERMAX	4.5 SL		0.77 lb ae/a	22 fl oz/a	8-12"CN	C				0 b
	NIS (ACTIVATOR 90)	100 SL		0.25 % v/v	0.25 % v/v	8-12"CN	C				0 a
	N-PAK AMS	100 SL		2.5 % v/v	2.5 % v/v	8-12"CN	C				
6	VERDICT	5.57 EC		0.65 lb ai/a	15 fl oz/a	PRE	A				0 e
	GUARDSMAN MAX	5 SE		0.94 lb ai/a	1.5 pt/a	PRE	A				0 c
	ROUNDUP POWERMAX	4.5 SL		0.77 lb ae/a	22 fl oz/a	8-12"CN	C				0 b
	NIS (ACTIVATOR 90)	100 SL		0.25 % v/v	0.25 % v/v	8-12"CN	C				0 a
	N-PAK AMS	100 SL		2.5 % v/v	2.5 % v/v	8-12"CN	C				
7	GUARDSMAN MAX	5 SE		2.5 lb ai/a	4 pt/a	SPK-V2	B				14 a
	ARMEZON	2.8 SL		0.0164 lb ai/a	0.75 fl oz/a	SPK-V2	B				2 b
	ROUNDUP POWERMAX	4.5 SL		0.77 lb ae/a	22 fl oz/a	SPK-V2	B				0 b
	MSO (MSO ULTRA)	100 SL		1 % v/v	1 % v/v	SPK-V2	B				0 a
	N-PAK AMS	100 SL		2.5 % v/v	2.5 % v/v	SPK-V2	B				
8	HALEX GT	4.389 CS		2.2 lb ai/a	4 pt/a	SPK-V2	B				5 d
	AATREX 4L	4 SC		1 lb ai/a	1 qt/a	SPK-V2	B				4 a
	NIS (ACTIVATOR 90)	100 SL		0.25 % v/v	0.25 % v/v	SPK-V2	B				0 b
	N-PAK AMS	100 SL		2.5 % v/v	2.5 % v/v	SPK-V2	B				0 a
9	CAPRENO	3.45 SC		0.081 lb ai/a	3 fl oz/a	SPK-V2	B				9 c
	AATREX 4L	4 SC		1 lb ai/a	1 qt/a	SPK-V2	B				2 b
	ROUNDUP POWERMAX	4.5 SL		0.77 lb ae/a	22 fl oz/a	SPK-V2	B				4 a
	HSOC (DESTINY HC)	100 SL		0.5 % v/v	0.5 % v/v	SPK-V2	B				0 a
	N-PAK AMS	100 SL		2.5 % v/v	2.5 % v/v	SPK-V2	B				
10	ANTHEM ATZ	4.5 SE		0.98 lb ai/a	28 fl oz/a	SPK-V2	B				11 b
	ROUNDUP POWERMAX	4.5 SL		0.77 lb ae/a	22 fl oz/a	SPK-V2	B				4 a
	NIS (ACTIVATOR 90)	100 SL		0.25 % v/v	0.25 % v/v	SPK-V2	B				0 b
	N-PAK AMS	100 SL		2.5 % v/v	2.5 % v/v	SPK-V2	B				0 a
LSD (P=.05)								1.3	1.6	0.6	0.0
Standard Deviation								0.8	0.9	0.4	0.0
CV								19.33	75.9	84.27	0.0
Replicate F								3.692	1.446	1.000	0.000
Replicate Prob(F)								0.0453	0.2615	0.3874	1.0000
Treatment F								159.077	10.375	42.250	0.000
Treatment Prob(F)								0.0001	0.0001	0.0001	1.0000

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.

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								5-23-13 Control Percent	5-30-13 Control Percent	6-6-13 Control Percent	6-20-13 Control Percent
								21 DA-A	0 DA-C	21 DA-B	21 DA-C
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Rate Unit	Other Rate	Other Rate	Growth Unit Stage	Appl Code		
1	NONTREATED									0 c	0 c
2	VERDICT ROUNDUP POWERMAX NIS (ACTIVATOR 90) N-PAK AMS	5.57 EC 4.5 SL 100 SL 100 SL		0.65 lb ai/a 0.77 lb ae/a 0.25 % v/v 2.5 % v/v	15 fl oz/a 22 fl oz/a 0.25 % v/v 2.5 % v/v			PRE A 8-12"CN C 8-12"CN C 8-12"CN C		70 b	58 b
3	VERDICT ARMEZON AATREX 4L ROUNDUP POWERMAX NIS (ACTIVATOR 90) N-PAK AMS	5.57 EC 2.8 SL 4 SC 4.5 SL 100 SL 100 SL		0.65 lb ai/a 0.0164 lb ai/a 1 lb ai/a 0.77 lb ae/a 0.25 % v/v 2.5 % v/v	15 fl oz/a 0.75 fl oz/a 1 qt/a 22 fl oz/a 0.25 % v/v 2.5 % v/v			PRE A 8-12"CN C 8-12"CN C 8-12"CN C 8-12"CN C 8-12"CN C		77 b	69 b
4	LEXAR ROUNDUP POWERMAX NIS (ACTIVATOR 90) N-PAK AMS	3.7 SC 4.5 SL 100 SL 100 SL		2.31 lb ai/a 0.77 lb ae/a 0.25 % v/v 2.5 % v/v	2.5 qt/a 22 fl oz/a 0.25 % v/v 2.5 % v/v			PRE A 8-12"CN C 8-12"CN C 8-12"CN C		98 a	97 a
5	CORVUS AATREX 4L ROUNDUP POWERMAX NIS (ACTIVATOR 90) N-PAK AMS	2.63 SC 4 SC 4.5 SL 100 SL 100 SL		0.115 lb ai/a 1 lb ai/a 0.77 lb ae/a 0.25 % v/v 2.5 % v/v	5.6 fl oz/a 1 qt/a 22 fl oz/a 0.25 % v/v 2.5 % v/v			PRE A PRE A 8-12"CN C 8-12"CN C 8-12"CN C		98 a	97 a
6	VERDICT GUARDSMAN MAX ROUNDUP POWERMAX NIS (ACTIVATOR 90) N-PAK AMS	5.57 EC 5 SE 4.5 SL 100 SL 100 SL		0.65 lb ai/a 0.94 lb ai/a 0.77 lb ae/a 0.25 % v/v 2.5 % v/v	15 fl oz/a 1.5 pt/a 22 fl oz/a 0.25 % v/v 2.5 % v/v			PRE A PRE A 8-12"CN C 8-12"CN C 8-12"CN C		96 a	95 a
7	GUARDSMAN MAX ARMEZON ROUNDUP POWERMAX MSO (MSO ULTRA) N-PAK AMS	5 SE 2.8 SL 4.5 SL 100 SL 100 SL		2.5 lb ai/a 0.0164 lb ai/a 0.77 lb ae/a 1 % v/v 2.5 % v/v	4 pt/a 0.75 fl oz/a 22 fl oz/a 1 % v/v 2.5 % v/v			SPK-V2 B SPK-V2 B SPK-V2 B SPK-V2 B SPK-V2 B		99 a	99 a
8	HALEX GT AATREX 4L NIS (ACTIVATOR 90) N-PAK AMS	4.389 CS 4 SC 100 SL 100 SL		2.2 lb ai/a 1 lb ai/a 0.25 % v/v 2.5 % v/v	4 pt/a 1 qt/a 0.25 % v/v 2.5 % v/v			SPK-V2 B SPK-V2 B SPK-V2 B SPK-V2 B		99 a	98 a
9	CAPRENO AATREX 4L ROUNDUP POWERMAX HSOC (DESTINY HC) N-PAK AMS	3.45 SC 4 SC 4.5 SL 100 SL 100 SL		0.081 lb ai/a 1 lb ai/a 0.77 lb ae/a 0.5 % v/v 2.5 % v/v	3 fl oz/a 1 qt/a 22 fl oz/a 0.5 % v/v 2.5 % v/v			SPK-V2 B SPK-V2 B SPK-V2 B SPK-V2 B SPK-V2 B		99 a	99 a
10	ANTHEM ATZ ROUNDUP POWERMAX NIS (ACTIVATOR 90) N-PAK AMS	4.5 SE 4.5 SL 100 SL 100 SL		0.98 lb ai/a 0.77 lb ae/a 0.25 % v/v 2.5 % v/v	28 fl oz/a 22 fl oz/a 0.25 % v/v 2.5 % v/v			SPK-V2 B SPK-V2 B SPK-V2 B SPK-V2 B		99 a	99 a
LSD (P=.05)								13.3	15.1	7.5	7.8
Standard Deviation								7.7	8.8	4.4	4.5
CV								9.25	10.81	5.2	5.33
Replicate F								1.221	1.516	0.836	0.510
Replicate Prob(F)								0.3182	0.2464	0.4496	0.6091
Treatment F								48.859	39.747	145.873	137.146
Treatment Prob(F)								0.0001	0.0001	0.0001	0.0001

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Trial Comments

1. Protocol: (BASF AJ-1).
2. Ratings: CI 5-7 DAE; WC 3-4 WA-A (prior to C); 3-4 WA-B, and 3-4 WA-C.
3. Blanket burndown application of glyphosate (1.5 lbae/A) was applied to all plots on 4-13-13.
Blanket prior to planting of Gramoxone (4 pt/A) was applied to all plots on 4-30-13.
4. Application C can also be 4"W.
5. Yield not requested
6. AMATA-HR = Herbicide-resistant waterhemp (glyphosate).
DAE = Days after corn emergence.
7. Following the PRE application the first rainfall event, beginning the same day, was 2.08 inch over 4 days.
Following the SPK-V2 application rainfall the next day, was 0.05 inch, then 0.91 inch 4 days later.
Following the 8-12"CN application the first rainfall event, beginning the next day, was 2.37 inch over 3 days.
8. Not harvested.