

BASF Two-Pass Weed Control Programs in Corn.

Trial ID: 12-2A-MME50
 Location: Belleville Res. Center
 Investigator: Bryan Young

General Trial Information	
Study Director: Bryan Young	Investigator: Bryan Young Title: Professor
Trial Status: F - one-year/final	
Initiation Date: 5-16-12	
Trial Location	
City: Belleville	
State/Prov.: IL	
Postal Code: 62221	
Country: USA	

Objectives: Evaluate the performance of BASF two-pass weed control programs in corn compared to competitive programs.

Personnel	
Study Director: Bryan Young	Title: Professor
Investigator: Bryan Young	
Affiliation: Southern Illinois University	
Address: 1205 Lincoln Drive - AG 176 - MC 4415	
Location: Carbondale IL	
Postal Code: 62901	E-mail: bgyoung@siu.edu
Phone No.: 618-453-7679	Mobile No.: 618-713-6471

Crop Description	
Crop 1: ZEAMD Zea mays indentata Dent corn	Description: RR2/LL
Variety: DKC 61-06	Planting Date: 5-16-12
BBCH Scale: BCOR	Rate, Unit: 28000 S/A
Planting Method: SEEDED Seeded	
Depth, Unit: 1.5 IN	
Row Spacing, Unit: 30 IN	

Pest Description	
Pest 1 Type: W Code: GGGAN	Common Name: grasses, annual
	Description: Mixture of SETFA and PANDI
Pest 2 Type: W Code: CYPES - Cyperus esculentus L.	Common Name: nutsedge, yellow
Pest 3 Type: W Code: AMATA - Amaranthus rudis Sauer	Common Name: waterhemp, common
Pest 4 Type: W Code: ABUTH - Abutilon theophrasti Medik.	Common Name: velvetleaf
Pest 5 Type: W Code: IPOHE - Ipomoea hederacea (L.) Jacq.	Common Name: morningglory, ivyleaf

Site and Design	
Plot Width, Unit: 10 FT	Site Type: FIELD field
Plot Length, Unit: 28 FT	
Plot Area, Unit: 280 FT2	Tillage Type: REDTIL reduced-till
Replications: 3	Study Design: RACOB L Randomized Complete Block (RCB)

No.	Previous Crop	Year
1.	GLXMA	2011

Maintenance	
No.	Maintenance Treatment Name
1.	N 150 LB/A, P205 50 LB/A, K20 150 LB/A

Soil Description	
% OM: 1.6	Texture: SIL SILT LOAM
pH: 5.9	Soil Name: PIERRON
CEC: 6	

Additional Measured Elements		
Element	Quantity	Unit
P1	41	LB/A
K	257	LB/A

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Moisture and Weather Conditions	
Overall Moisture Conditions:	BELNOR below normal
Closest Weather Station: ICN - Belleville IL	Distance, Unit: 0.5 MI

Application Description			
	A	B	C
Application Date:	5-17-12	5-25-12	6-4-12
Time of Day:	15:00	6:30	14:45
Application Method:	Spray	Spray	Spray
Application Timing:	PRE	SPK-V2	8-12"CN
Application Placement:	BROFOL	BROFOL	BROFOL
Applied By:	LAH	JRK	JRK
Air Temperature, Unit:	80 F	76 F	85 F
% Relative Humidity:	26	74	45
Wind Velocity, Unit:	6 MPH	2 MPH	2 MPH
Wind Direction:	E	S	E
Dew Presence (Y/N):	N no	N no	N no
Soil Temperature, Unit:	61 F	69 F	71 F
Soil Moisture:	BELNOR	BELNOR	BELNOR
% Cloud Cover:	30	0	20
Next Rain Occurred On:	5-21-12	5-31-12	6-11-12

Crop Stage At Each Application				
	A	B		C
Crop 1 Code, BBCH Scale:	ZEAMD BCOR	ZEAMD	BCOR	ZEAMD BCOR
Stage Scale Used:	DESC	DESC		DESC
Stage Majority, Percent:	NA	V1		V5
Stage Minimum, Percent:		SPIKE		V4
Stage Maximum, Percent:		V1		V5
Height, Unit:		3.5	IN	11 IN
Height Minimum, Maximum:		2.5	3.5	8 11

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Pest Stage At Each Application				
	A	B	C	
Pest 1 Code, Type, Scale:	GGGAN W DESC	GGGAN W DESC	GGGAN	W DESC
Stage Majority, Percent:	NA	NA	2	
Stage Minimum, Percent:			1	
Stage Maximum, Percent:			2	
Height, Unit:			1	IN
Height Minimum, Maximum:			0.5	1
Density, Unit:			0.001 FT2	
Pest 2 Code, Type, Scale:	CYPES W DESC	CYPES W DESC	CYPES	W DESC
Stage Majority, Percent:	NA	3	4	
Stage Minimum, Percent:		2	2	
Stage Maximum, Percent:		4	6	
Height, Unit:		2	IN	3
Height Minimum, Maximum:		2	3	2
Density, Unit:		0.001	FT2	0.001
Pest 3 Code, Type, Scale:	AMATA W DESC	AMATA W DESC	AMATA	W DESC
Stage Majority, Percent:	NA	NA	2	
Stage Minimum, Percent:			Coty	
Stage Maximum, Percent:			2	
Height, Unit:			1	IN
Height Minimum, Maximum:			0.5	1
Density, Unit:			0.001 FT2	
Pest 4 Code, Type, Scale:	ABUTH W DESC	ABUTH W DESC	ABUTH	W DESC
Stage Majority, Percent:	NA	Coty	2	
Stage Minimum, Percent:		Coty	Coty	
Stage Maximum, Percent:		3	4	
Height, Unit:		0.25	IN	2
Height Minimum, Maximum:		0.25	1	0.5
Density, Unit:		0.01	FT2	0.01
Pest 5 Code, Type, Scale:	IPOHE W DESC	IPOHE W DESC	IPOHE	W DESC
Stage Majority, Percent:	NA	Coty	2	
Stage Minimum, Percent:		Coty	Coty	
Stage Maximum, Percent:		Coty	3	
Height, Unit:		0.5	IN	2
Height Minimum, Maximum:		0.5	0.5	1
Density, Unit:		0.01	FT2	0.01

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:	7.5 FT	7.5 FT	7.5 FT	
Spray Volume, Unit:	15 GPA	15 GPA	15	GPA

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Pest Code								ZEAMD	ZEAMD	ZEAMD	GGGAN	GGGAN
Crop Code								5-29-12	6-4-12	6-25-12	6-4-12	6-25-12
Rating Date								Injury	Injury	Injury	Control	Control
Rating Type								Percent	Percent	Percent	Percent	Percent
Rating Unit												
Rating Timing												
Trt-Eval Interval								7 DAE	0 DA-C	21 DA-C	0 DA-C	21 DA-C
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code			
1	NONTREATED									0 a	0 a	0 a
2	VERDICT	5.57	EC	0.65 lb ai/a	15 fl oz/a			PRE	A	0 a	0 a	0 a
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a			8-12"CN	C			80 c
	NIS (ACTIVATOR 90)	100	SL	0.25 % v/v	0.25 % v/v			8-12"CN	C			95 abc
	N-PAK AMS	100	SL	2.5 % v/v	2.5 % v/v			8-12"CN	C			
3	VERDICT	5.57	EC	0.65 lb ai/a	15 fl oz/a			PRE	A	0 a	0 a	0 a
	ARMEZON	2.8	SL	0.0164 lb ai/a	0.75 fl oz/a			8-12"CN	C			87 bc
	AATREX	4	SC	0.5 lb ai/a	1 pt/a			8-12"CN	C			98 a
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a			8-12"CN	C			
	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 a	0 a	0 a
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a			8-12"CN	C			83 c
	NIS (ACTIVATOR 90)	100	SL	0.25 % v/v	0.25 % v/v			8-12"CN	C			96 ab
	N-PAK AMS	100	SL	2.5 % v/v	2.5 % v/v			8-12"CN	C			
5	CORVIUS	2.62	SC	0.115 lb ai/a	5.6 fl oz/a			PRE	A	0 a	0 a	0 a
	AATREX	4	SC	1 lb ai/a	1 qt/a			PRE	A			92 ab
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a			8-12"CN	C			98 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			
6	VERDICT	5.57	EC	0.65 lb ai/a	15 fl oz/a			PRE	A	0 a	0 a	0 a
	GUARDSMAN MAX	5	SE	0.94 lb ai/a	1.5 pt/a			PRE	A			92 ab
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a			8-12"CN	C			97 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			
7	GUARDSMAN MAX	5	SE	2.5 lb ai/a	4 pt/a			SPK-V2	B	0 a	0 a	0 a
	ARMEZON	2.8	SL	0.0164 lb ai/a	0.75 fl oz/a			SPK-V2	B			98 a
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a			SPK-V2	B			89 bcd
	MSO (MSO ULTRA)	100	SL	1 % v/v	1 % v/v			SPK-V2	B			
	N-PAK AMS	100	SL	2.5 % v/v	2.5 % v/v			SPK-V2	B			
8	HALEX GT	4.38	CS	2.2 lb ai/a	4 pt/a			SPK-V2	B	0 a	0 a	0 a
	AATREX	4	SC	1 lb ai/a	1 qt/a			SPK-V2	B			98 a
	NIS (ACTIVATOR 90)	100	SL	0.25 % v/v	0.25 % v/v			SPK-V2	B			89 cd
	N-PAK AMS	100	SL	2.5 % v/v	2.5 % v/v			SPK-V2	B			
9	CAPRENO	3.45	SC	0.081 lb ai/a	3 fl oz/a			SPK-V2	B	0 a	0 a	0 a
	AATREX	4	SC	1 lb ai/a	1 qt/a			SPK-V2	B			98 a
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a			SPK-V2	B			89 bcd
	DESTINY HC	100	SL	0.5 % v/v	0.5 % v/v			SPK-V2	B			
	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	0 a	0 a	0 a
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a			SPK-V2	B			99 a
	NIS (ACTIVATOR 90)	100	SL	0.25 % v/v	0.25 % v/v			SPK-V2	B			85 d
	N-PAK AMS	100	SL	2.5 % v/v	2.5 % v/v			SPK-V2	B			
LSD (P=.05)								0.0	0.0	0.0	6.8	7.2
Standard Deviation								0.0	0.0	0.0	4.0	4.2
CV								0.0	0.0	0.0	4.8	5.04
Replicate F								0.000	0.000	0.000	5.581	1.035
Replicate Prob(F)								1.0000	1.0000	1.0000	0.0130	0.3753
Treatment F								0.000	0.000	0.000	169.402	149.620
Treatment Prob(F)								1.0000	1.0000	1.0000	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.

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Pest Code	CYPES	CYPES	AMATA	AMATA	ABUTH	ABUTH	IPOHE
Crop Code	6-4-12	6-25-12	6-4-12	6-25-12	6-4-12	6-25-12	6-25-12
Rating Date	Control	Control	Control	Control	Control	Control	Control
Rating Type	Percent	Percent	Percent	Percent	Percent	Percent	Percent
Rating Unit							
Rating Timing							
Trt-Eval Interval	0 DA-C	21 DA-C	0 DA-C	21 DA-C	0 DA-C	21 DA-C	21 DA-C
Trt Treatment No. Name	Form Conc	Form Type	Rate	Other Rate	Other Rate	Growth Unit Stage	Appl Code
1 NONTREATED							
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 cd 95 abc 95 b 98 a
3 VERDICT ARMEZON AATREX 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 0.5 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 pt/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	67 cd 96 abc 98 a 99 a
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	62 d 98 a 98 a 99 a
5 CORVIUS AATREX ROUNDUP POWERMAX NIS (ACTIVATOR 90) N-PAK AMS	2.62 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	75 c 97 ab 99 a 99 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	68 cd 97 ab 99 a 99 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	78 bc 92 bc 99 a 99 a
8 HALEX GT AATREX NIS (ACTIVATOR 90) N-PAK AMS	4.38 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	92 a 96 abc 99 a 98 a
9 CAPRENO AATREX ROUNDUP POWERMAX 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	90 ab 93 abc 99 a 90 b
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	91 a 92 c 99 a 99 a
LSD (P=.05)	12.0	5.1	2.5	3.4	8.5	5.9	5.4
Standard Deviation	7.0	2.9	1.4	2.0	5.0	3.5	3.1
CV	10.1	3.44	1.62	2.23	6.51	3.98	3.65
Replicate F	0.084	2.841	2.149	0.269	3.380	2.442	3.139
Replicate Prob(F)	0.9194	0.0847	0.1456	0.7675	0.0567	0.1152	0.0677
Treatment F	43.467	315.011	1409.810	750.218	144.815	235.544	279.140
Treatment Prob(F)	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001

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Trial Comments

1. Protocol: BASF.
2. Ratings: CI at 5-7 DAE; CI/WC at 21-28 DAP and at 0 and 21-28 DA-C.
3. Rainfall following the PRE application was 0.18 inch 4 days later and 0.28 inch 14 days later.
Rainfall following the SPK-V2 application was 0.28 inch 6 days later and 0.75 inch 17 days later.
Rainfall following the 8-12"CN application was 0.75 inch 7 days later and 0.38 inch 13 days later.
4. GGGAN = Annual grasses including 75% PANDI (fall panicum) and 25% SETFA (giant foxtail).
5. DAE = Days after crop emergence.
Ratings at 7 DAE were also 12 DA-A and 4 BA-B.
Ratings at 0 DA-C were also 18 DA-A and 10 DA-B.
6. Low weed density at postemergence applications was due to dry soil conditions.
7. Not harvested.