

Southern Illinois University

Loveland Herbicide Evaluation in Corn.

Trial ID: 13-2C-MMW70 Location: Belleville Res. Center Trial Year: 2013
Investigator: Bryan Young

Trial Status: F one-year/final Initiation Date: 6-15-13 Completion Date: 11-8-13		Trial Location
City: Belleville State/Prov.: Illinois IL Postal Code: 62221	Country: USA	

Objectives:
Evaluate the performance of experimental Loveland corn herbicides compared with competitive standards.

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: ZEAMD Zea mays indentata Dent corn Variety: DKC 63-33 BBCH Scale: BCOR Description: SS RIB		Crop Description
Planting Rate, Unit: 28000 S/A Depth, Unit: 1.5 IN Row Spacing, Unit: 30 IN		
Planting Date: 6-15-13 Planting Method: SEEDED		

Pest 1 Type: W Code: PANDI Panicum dichotomiflorum Michx. Common Name: panicum, fall		Pest Description
Pest 2 Type: W Code: AMBTR Ambrosia trifida L. Common Name: ragweed, giant		
Pest 3 Type: W Code: ABUTH Abutilon theophrasti Medik. Common Name: velvetleaf		
Pest 4 Type: W Code: IPOHE Ipomoea hederacea (L.) Jacq. Common Name: morningglory, ivyleaf		

Treated Plot Width: 7.5 FT Total Plot Width: 10 FT Treated Plot Length: 28 FT Total Plot Length: 28 FT		Site and Design Site Type: FIELD Experimental Unit: 1 PLOT Tillage Type: REDTIL reduced-till Study Design: RACOB� Randomized Complete Block (RCB)
Replications: 4 Untreated Arrangement: NONE control is other than an untreated		
No.	Previous Crop	Year
1.	NON-CROP	2012

Maintenance	
No.	Maintenance Product Name
1.	N 150 LB/A, P2O5 50 LB/A, K2O 100 LB/A

% OM: 2.7 Texture: SIL silt loam pH: 6.1 Soil Name: Pierron CEC: 7		Soil Description	
Additional Measured Elements			
Element	Quantity		Unit
P1	68		lb/A
K	322	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.	6-2-13					7	DAY	50	80	F
2.	6-9-13					7	DAY	59	94	F
3.	6-10-13	0.48	IN	RAIN	rain	2	DAY			
4.	6-16-13					7	DAY	61	90	F
5.	6-17-13	2.16	IN	RAIN	rain	3	DAY			
6.	6-23-13					7	DAY	64	92	F
7.	6-23-13	5.33	IN	RAIN	rain	2	DAY			
8.	6-26-13	0.46	IN	RAIN	rain	1	DAY			
9.	6-29-13	0.19	IN	RAIN	rain	2	DAY			
10.	6-30-13					7	DAY	61	86	F
11.	7-2-13	2.08	IN	RAIN	rain	2	DAY			
12.	7-7-13					7	DAY	62	94	F
13.	7-10-13	0.2	IN	RAIN	rain	1	DAY			
14.	7-14-13					7	DAY	64	94	F
15.	7-15-13	0.03	IN	RAIN	rain	1	DAY			
16.	7-20-13	0.59	IN	RAIN	rain	1	DAY			
17.	7-21-13					7	DAY	56	91	F
18.	7-26-13	0.03	IN	RAIN	rain	1	DAY			
19.	7-28-13					7	DAY	52	87	F
20.	7-30-13	0.46	IN	RAIN	rain	1	DAY			
21.	8-2-13	0.24	IN	RAIN	rain	1	DAY			
22.	8-4-13					7	DAY	62	87	F
23.	8-8-13	0.03	IN	RAIN	rain	3	DAY			
24.	8-11-13					7	DAY	54	85	F
25.	8-12-13	0.57	IN	RAIN	rain	1	DAY			
26.	8-18-13	0.1	IN	RAIN	rain	1	DAY			
27.	8-18-13					7	DAY	61	91	F
28.	8-25-13					7	DAY	62	100	F
29.	8-31-13	0.74	IN	RAIN	rain	1	DAY			
30.	9-1-13					7	DAY	57	92	F
31.	9-8-13	0.26	IN	RAIN	rain	1	DAY			

Application Description

	A	B	C
Application Date:	6-15-13	6-27-13	7-15-13
Appl. Start Time:	17:30	19:00	7:00
Appl. Stop Time:	18:15	19:30	7:30
Application Method:	Spray	Spray	Spray
Application Timing:	PRE	V3	30DAP
Application Placement:	BROSOI	BROFOL	BROFOL
Applied By:	LXF	LXF	RJW
Air Temperature, Unit:	82 F	85 F	68 F
% Relative Humidity:	67	79	100
Wind Velocity, Unit:	5 MPH	2 MPH	2 MPH
Wind Direction:	S	W	E
Dew Presence (Y/N):	N	N	Y
Soil Temperature, Unit:	73 F	74 F	79 F
Soil Moisture:	NORMAL	ABONOR	NORMAL
% Cloud Cover:	75	30	30
Next Moisture Occurred On:	6-15-13	6-29-13	7-20-13
Time to Next Moisture, Unit:	3 HR	2 DAY	5 DAY

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	A	B	C
Crop 1 Code, BBCH Scale:	ZEAMD	ZEAMD	ZEAMD
Stage Scale Used:	DESC	DESC	DESC
Stage Majority, Percent:	NA	V3	V7
Stage Minimum, Percent:		V2	V6
Stage Maximum, Percent:		V3	V7
Height, Unit:		8 IN	22 IN
Height Minimum, Maximum:		6 8	18 22

Pest Stage At Each Application

	A	B	C
Pest 1 Code, Type, Scale:	PANDI W	PANDI W	PANDI W
Stage Majority, Percent:	NA	2	4
Stage Minimum, Percent:		1	3
Stage Maximum, Percent:		3	6
Height, Unit:		0.5 IN	6 IN
Height Minimum, Maximum:		0.5 1	3 8
Density, Unit:		0.1 FT2	0.05 FT2
Pest 2 Code, Type, Scale:	AMBTR W	AMBTR W	AMBTR W
Stage Majority, Percent:	NA	2	4
Stage Minimum, Percent:		2	4
Stage Maximum, Percent:		4	6
Height, Unit:		2 IN	3 IN
Height Minimum, Maximum:		1 2	2 3
Density, Unit:		0.001 FT2	0.001 FT2
Pest 3 Code, Type, Scale:	ABUTH W	ABUTH W	ABUTH W
Stage Majority, Percent:	NA	2	4
Stage Minimum, Percent:		2	2
Stage Maximum, Percent:		4	6
Height, Unit:		1 IN	1 IN
Height Minimum, Maximum:		0.5 1	0.5 3
Density, Unit:		0.3 FT2	0.01 FT2
Pest 4 Code, Type, Scale:	IPOHE W	IPOHE W	IPOHE W
Stage Majority, Percent:	NA	1	4
Stage Minimum, Percent:		COTY	2
Stage Maximum, Percent:		2	8
Height, Unit:		1 IN	2 IN
Height Minimum, Maximum:		1 2	1 4
Density, Unit:		0.01 FT2	0.01 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:	7.5 FT	7.5 FT	7.5 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 6-30-13 Injury Percent 15 DA-A	ZEAMD 7-7-13 Injury Percent 10 DA-B 22 DA-A	ZEAMD 7-14-13 Injury Percent 17 DA-B 29 DA-A	ZEAMD 7-30-13 Injury Percent 45 DAP 15 DA-C
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate Unit	Other Rate Rate Unit	Growth Stage	Appl Code			
1	NO PRE HERBICIDE MAKAZE WEATHER GARD COMPLETE	3 SL 100 SL		32 fl oz/a 0.5 % v/v	32 fl oz/a 0.5 % v/v	30DAP C 30DAP C				0 a
2	LI-6464 LI-6465 MAKAZE WEATHER GARD COMPLETE	100 SL 100 SL 3 SL 100 SL		2 pt/a 4 fl oz/a 32 fl oz/a 0.5 % v/v	2 pt/a 4 fl oz/a 32 fl oz/a 0.5 % v/v	PRE A PRE A 30DAP C 30DAP C		0 a	0 c	0 a
3	LI-6464 LI-6465 AATREX 4L MAKAZE WEATHER GARD COMPLETE	100 SL 100 SL 4 SC 3 SL 100 SL		2 pt/a 4 fl oz/a 1 lb ai/a 32 fl oz/a 0.5 % v/v	2 pt/a 4 fl oz/a 1 qt/a 32 fl oz/a 0.5 % v/v	PRE A PRE A PRE A 30DAP C 30DAP C		1 a	0 c	0 a
4	HARNESXTRA 5.6L MAKAZE WEATHER GARD COMPLETE	5.6 EC 3 SL 100 SL		3.36 lb ai/a 32 fl oz/a 0.5 % v/v	2.4 qt/a 32 fl oz/a 0.5 % v/v	PRE A 30DAP C 30DAP C		0 a	0 c	0 a
5	LEXAR EZ MAKAZE WEATHER GARD COMPLETE	3.7 SC 3 SL 100 SL		2.08 lb ai/a 32 fl oz/a 0.5 % v/v	2.25 qt/a 32 fl oz/a 0.5 % v/v	PRE A 30DAP C 30DAP C		0 a	0 c	0 a
6	LI-6464 LI-6465 MAKAZE WEATHER GARD COMPLETE	100 SL 100 SL 3 SL 100 SL		2 pt/a 4 fl oz/a 32 fl oz/a 0.5 % v/v	2 pt/a 4 fl oz/a 32 fl oz/a 0.5 % v/v	V3 B V3 B V3 B V3 B		5 a	0 a	0 a
7	LI-6464 LI-6465 AATREX 4L MAKAZE WEATHER GARD COMPLETE	100 SL 100 SL 4 SC 3 SL 100 SL		2 pt/a 4 fl oz/a 0.5 lb ai/a 32 fl oz/a 0.5 % v/v	2 pt/a 4 fl oz/a 0.5 qt/a 32 fl oz/a 0.5 % v/v	V3 B V3 B V3 B V3 B V3 B		3 b	0 a	0 a
8	CAPRENO MAKAZE WEATHER GARD COMPLETE	3.45 SC 3 SL 100 SL		0.081 lb ai/a 32 fl oz/a 0.5 % v/v	3 fl oz/a 32 fl oz/a 0.5 % v/v	V3 B V3 B V3 B		3 b	0 a	0 a
9	CAPRENO AATREX 4L MAKAZE WEATHER GARD COMPLETE	3.45 SC 4 SC 3 SL 100 SL		0.081 lb ai/a 0.5 lb ai/a 32 fl oz/a 0.5 % v/v	3 fl oz/a 0.5 qt/a 32 fl oz/a 0.5 % v/v	V3 B V3 B V3 B V3 B		5 a	0 a	0 a
10	HALEX GT AATREX 4L WEATHER GARD COMPLETE	4.389 CS 4 SC 100 SL		1.97 lb ai/a 0.5 lb ai/a 0.5 % v/v	3.6 pt/a 0.5 qt/a 0.5 % v/v	V3 B V3 B V3 B		6 a	0	0 a
LSD (P=.05)							1.3	1.1	0.0	0.0
Standard Deviation							0.8	0.8	0.0	0.0
CV							320.71	31.1	0.0	0.0
Replicate F							0.778	0.256	0.000	0.000
Replicate Prob(F)							0.5426	0.8559	1.0000	1.0000
Treatment F							1.556	43.462	0.000	0.000
Treatment Prob(F)							0.2832	0.0001	1.0000	1.0000

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Pest Code	Crop Code	Rating Date	Rating Type	Rating Unit	Rating Timing	Trt-Eval Interval	PANDI	PANDI	PANDI	AMBTR	AMBTR	AMBTR
							6-30-13 Control Percent 15 DAP 15 DA-A	7-14-13 Control Percent 29 DAP 17 DA-B	7-30-13 Control Percent 45 DAP 15 DA-C	6-30-13 Control Percent 15 DAP 15 DA-A	7-14-13 Control Percent 29 DAP 17 DA-B	7-30-13 Control Percent 45 DAP 15 DA-C
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Other Rate	Other Rate	Growth Unit	Appl Stage	Code			
1	NO PRE HERBICIDE											
	MAKAZE	3	SL	32 fl oz/a	32 fl oz/a					98 a		99 a
	WEATHER GARD COMPLETE	100	SL	0.5 % v/v	0.5 % v/v							
2	LI-6464	100	SL	2 pt/a	2 pt/a							
	LI-6465	100	SL	4 fl oz/a	4 fl oz/a							
	MAKAZE	3	SL	32 fl oz/a	32 fl oz/a							
	WEATHER GARD COMPLETE	100	SL	0.5 % v/v	0.5 % v/v							
3	LI-6464	100	SL	2 pt/a	2 pt/a							
	LI-6465	100	SL	4 fl oz/a	4 fl oz/a							
	AATREX 4L	4	SC	1 lb ai/a	1 qt/a							
	MAKAZE	3	SL	32 fl oz/a	32 fl oz/a							
	WEATHER GARD COMPLETE	100	SL	0.5 % v/v	0.5 % v/v							
4	HARNESXTRA 5.6L	5.6	EC	3.36 lb ai/a	2.4 qt/a							
	MAKAZE	3	SL	32 fl oz/a	32 fl oz/a							
	WEATHER GARD COMPLETE	100	SL	0.5 % v/v	0.5 % v/v							
5	LEXAR EZ	3.7	SC	2.08 lb ai/a	2.25 qt/a							
	MAKAZE	3	SL	32 fl oz/a	32 fl oz/a							
	WEATHER GARD COMPLETE	100	SL	0.5 % v/v	0.5 % v/v							
6	LI-6464	100	SL	2 pt/a	2 pt/a							
	LI-6465	100	SL	4 fl oz/a	4 fl oz/a							
	MAKAZE	3	SL	32 fl oz/a	32 fl oz/a							
	WEATHER GARD COMPLETE	100	SL	0.5 % v/v	0.5 % v/v							
7	LI-6464	100	SL	2 pt/a	2 pt/a							
	LI-6465	100	SL	4 fl oz/a	4 fl oz/a							
	AATREX 4L	4	SC	0.5 lb ai/a	0.5 qt/a							
	MAKAZE	3	SL	32 fl oz/a	32 fl oz/a							
	WEATHER GARD COMPLETE	100	SL	0.5 % v/v	0.5 % v/v							
8	CAPRENO	3.45	SC	0.081 lb ai/a	3 fl oz/a							
	MAKAZE	3	SL	32 fl oz/a	32 fl oz/a							
	WEATHER GARD COMPLETE	100	SL	0.5 % v/v	0.5 % v/v							
9	CAPRENO	3.45	SC	0.081 lb ai/a	3 fl oz/a							
	AATREX 4L	4	SC	0.5 lb ai/a	0.5 qt/a							
	MAKAZE	3	SL	32 fl oz/a	32 fl oz/a							
	WEATHER GARD COMPLETE	100	SL	0.5 % v/v	0.5 % v/v							
10	HALEX GT	4.389	CS	1.97 lb ai/a	3.6 pt/a							
	AATREX 4L	4	SC	0.5 lb ai/a	0.5 qt/a							
	WEATHER GARD COMPLETE	100	SL	0.5 % v/v	0.5 % v/v							
LSD (P=.05)							0.0	2.0	2.1	0.0	2.3	0.8
Standard Deviation							0.0	1.3	1.4	0.0	1.5	0.6
CV							0.0	1.37	1.45	0.0	1.56	0.56
Replicate F							0.000	1.340	2.133	0.000	0.924	2.635
Replicate Prob(F)							1.0000	0.2897	0.1237	1.0000	0.4473	0.0740
Treatment F							0.000	7.703	4.653	0.000	1.367	0.933
Treatment Prob(F)							1.0000	0.0001	0.0014	1.0000	0.2696	0.5161

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Pest Code	ABUTH	ABUTH	ABUTH	IPHE	IPHE	IPHE
Crop Code	6-30-13	7-14-13	7-30-13	6-30-13	7-14-13	7-30-13
Rating Date	Control	Control	Control	Control	Control	Control
Rating Type	Percent	Percent	Percent	Percent	Percent	Percent
Rating Unit	15 DAP	29 DAP	45 DAP	15 DAP	29 DAP	45 DAP
Rating Timing	15 DA-A	17 DA-B	15 DA-C	15 DA-A	17 DA-B	15 DA-C
Trt-Eval Interval						
Trt Treatment No. Name	Form Conc	Form Type	Rate Rate Unit	Other Rate	Other Rate Unit	Growth Stage
1 NO PRE HERBICIDE						
MAKAZE	3 SL		32 fl oz/a	32 fl oz/a	30DAP C	
WEATHER GARD COMPLETE	100 SL		0.5 % v/v	0.5 % v/v	30DAP C	
2 LI-6464	100 SL		2 pt/a	2 pt/a	PRE A	
LI-6465	100 SL		4 fl oz/a	4 fl oz/a	PRE A	
MAKAZE	3 SL		32 fl oz/a	32 fl oz/a	30DAP C	
WEATHER GARD COMPLETE	100 SL		0.5 % v/v	0.5 % v/v	30DAP C	
3 LI-6464	100 SL		2 pt/a	2 pt/a	PRE A	
LI-6465	100 SL		4 fl oz/a	4 fl oz/a	PRE A	
AATREX 4L	4 SC		1 lb ai/a	1 qt/a	PRE A	
MAKAZE	3 SL		32 fl oz/a	32 fl oz/a	30DAP C	
WEATHER GARD COMPLETE	100 SL		0.5 % v/v	0.5 % v/v	30DAP C	
4 HARNESS XTRA 5.6L	5.6 EC		3.36 lb ai/a	2.4 qt/a	PRE A	
MAKAZE	3 SL		32 fl oz/a	32 fl oz/a	30DAP C	
WEATHER GARD COMPLETE	100 SL		0.5 % v/v	0.5 % v/v	30DAP C	
5 LEXAR EZ	3.7 SC		2.08 lb ai/a	2.25 qt/a	PRE A	
MAKAZE	3 SL		32 fl oz/a	32 fl oz/a	30DAP C	
WEATHER GARD COMPLETE	100 SL		0.5 % v/v	0.5 % v/v	30DAP C	
6 LI-6464	100 SL		2 pt/a	2 pt/a	V3 B	
LI-6465	100 SL		4 fl oz/a	4 fl oz/a	V3 B	
MAKAZE	3 SL		32 fl oz/a	32 fl oz/a	V3 B	
WEATHER GARD COMPLETE	100 SL		0.5 % v/v	0.5 % v/v	V3 B	
7 LI-6464	100 SL		2 pt/a	2 pt/a	V3 B	
LI-6465	100 SL		4 fl oz/a	4 fl oz/a	V3 B	
AATREX 4L	4 SC		0.5 lb ai/a	0.5 qt/a	V3 B	
MAKAZE	3 SL		32 fl oz/a	32 fl oz/a	V3 B	
WEATHER GARD COMPLETE	100 SL		0.5 % v/v	0.5 % v/v	V3 B	
8 CAPRENO	3.45 SC		0.081 lb ai/a	3 fl oz/a	V3 B	
MAKAZE	3 SL		32 fl oz/a	32 fl oz/a	V3 B	
WEATHER GARD COMPLETE	100 SL		0.5 % v/v	0.5 % v/v	V3 B	
9 CAPRENO	3.45 SC		0.081 lb ai/a	3 fl oz/a	V3 B	
AATREX 4L	4 SC		0.5 lb ai/a	0.5 qt/a	V3 B	
MAKAZE	3 SL		32 fl oz/a	32 fl oz/a	V3 B	
WEATHER GARD COMPLETE	100 SL		0.5 % v/v	0.5 % v/v	V3 B	
10 HALEX GT	4.389 CS		1.97 lb ai/a	3.6 pt/a	V3 B	
AATREX 4L	4 SC		0.5 lb ai/a	0.5 qt/a	V3 B	
WEATHER GARD COMPLETE	100 SL		0.5 % v/v	0.5 % v/v	V3 B	
LSD (P=.05)	1.9	3.6	3.2	4.0	3.1	3.2
Standard Deviation	1.1	2.5	2.2	2.4	2.1	2.2
CV	1.15	2.55	2.26	2.47	2.22	2.32
Replicate F	0.778	1.816	1.366	0.543	0.782	0.776
Replicate Prob(F)	0.5426	0.1768	0.2779	0.6680	0.5178	0.5192
Treatment F	0.778	8.296	3.707	1.542	10.970	15.747
Treatment Prob(F)	0.5426	0.0001	0.0053	0.2862	0.0001	0.0001

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Trial Comments

1. Protocol: Loveland (29.0).
2. Ratings: CI 15 DA-A, continue rating every 7 days until injury is gone; WC 15, 30, and 45 DAP.
3. Photos.
4. Yield.
5. Following the PRE application the first rainfall event, beginning 3 hours later, was 2.16 inch over 3 days.
Following the V3 application the first rainfall event, beginning 2 days later, was 2.27 inch over 4 days.
Following the 30DAP application the first rainfall event, beginning 5 days later, was 0.59 inch over 1 day.
6. Missing data in plots 405-410 was due to early season standing water.
7. Harvested 11-8-13, (2) 30 inch rows by 25 ft.