

Southern Illinois University

Corn Hybrid Sensitivity to ALS Herbicides.

Trial ID: 12-ARC-20-M220

Location: Agronomy 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: 4-12-12

Trial Location

City: Carbondale
State/Prov.: IL
Postal Code: 62901
Country: USA

Objectives:

To determine hybrid sensitivity of ALS herbicides preemergence and early V1 stages in a field setting and to determine effect on yield.

Personnel

Study Director: Bryan Young
Investigator: Bryan Young **Title:** Professor
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
Variety: See treatment list
BBCH Scale: BCOR **Planting Date:** 4-12-12
Planting Method: SEEDED **Rate, Unit:** 28000 S/A
Depth, Unit: 1.5 IN
Row Spacing, Unit: 30 IN

Pest Description

Code: NA

Site and Design

Plot Width, Unit: 10 FT **Site Type:** FIELD field
Plot Length, Unit: 30 FT
Plot Area, Unit: 300 FT2 **Tillage Type:** REDTIL reduced-till
Replications: 4 **Study Design:** RACOB Randomized Complete Block (RCB)

No.	Previous Crop	Year
1.	GLXMA	2011

Maintenance

No.	Maintenance Treatment Name
1.	N 198 LB/A, P205 46 LB/A, K20 120 LB/A

Soil Description

% OM: 1.8 **Texture:** SIL SILT LOAM
pH: 6.3 **Soil Name:** ST0Y
CEC: 10.5

Additional Measured Elements

Element	Quantity	Unit
P1	65	LB/A
K	313	LB/A

Moisture and Weather Conditions

Overall Moisture Conditions: BELNOR below normal
Closest Weather Station: ICN - Carbondale IL **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.	4-3-12					7	DAY	34.6	78.3	F
2.	4-4-12	0.88	IN	RAIN	rain					
3.	4-10-12					7	DAY	30.1	79.2	F
4.	4-15-12	0.43	IN	RAIN	rain					
5.	4-16-12	0.39	IN	RAIN	rain					
6.	4-17-12					7	DAY	36.7	75.6	F
7.	4-20-12	0.25	IN	RAIN	rain					
8.	4-22-12	0.09	IN	RAIN	rain					
9.	4-24-12					7	DAY	43.7	80.9	F
10.	4-27-12	0.08	IN	RAIN	rain					
11.	4-30-12	0.05	IN	RAIN	rain					
12.	5-1-12					7	DAY	59.1	91.3	F
13.	5-4-12	0.02	IN	RAIN	rain					
14.	5-7-12	0.08	IN	RAIN	rain					
15.	5-8-12					7	DAY	43.3	79	F
16.	5-15-12					7	DAY	44.9	89.1	F
17.	5-20-12	0.4	IN	RAIN	rain					
18.	5-22-12					7	DAY	45.5	92.8	F
19.	5-29-12					7	DAY	46.3	89.8	F
20.	5-29-12	0.02	IN	RAIN	rain					
21.	5-30-12	0.02	IN	RAIN	rain					
22.	5-31-12	0.16	IN	RAIN	rain					
23.	6-4-12	0.16	IN	RAIN	rain					
24.	6-5-12					7	DAY	48.5	88.8	F
25.	6-11-12	0.62	IN	RAIN	rain					
26.	6-12-12					7	DAY	49.8	91.1	F
27.	6-17-12	0.06	IN	RAIN	rain					
28.	6-19-12					7	DAY	55.4	96.4	F
29.	6-26-12					7	DAY	51.1	105.4	F
30.	7-3-12					7	DAY	71.1	105	F
31.	7-8-12	1.15	IN	RAIN	rain					
32.	7-10-12					7	DAY	65.9	93.9	F
33.	7-14-12	0.11	IN	RAIN	rain					
34.	7-16-12	0.02	IN	RAIN	rain					
35.	7-17-12					7	DAY	60	102.3	F
36.	7-17-12	0.02	IN	RAIN	rain					
37.	7-23-12	0.02	IN	RAIN	rain					
38.	7-24-12					7	DAY	64.1	102.1	F
39.	7-26-12	0.53	IN	RAIN	rain					
40.	7-27-12	0.02	IN	RAIN	rain					
41.	7-29-12	0.27	IN	RAIN	rain					
42.	7-31-12					7	DAY	62.7	97.9	F
43.	8-2-12	0.02	IN	RAIN	rain					
44.	8-3-12	0.02	IN	RAIN	rain					
45.	8-4-12	2.83	IN	RAIN	rain					
46.	8-5-12	2.09	IN	RAIN	rain					
47.	8-7-12					7	DAY	54.1	97.2	F
48.	8-13-12	0.38	IN	RAIN	rain					
49.	8-14-12					7	DAY	51.2	92.5	F
50.	8-16-12	0.66	IN	RAIN	rain					
51.	8-21-12					7	DAY	54.6	94.1	F
52.	8-28-12					7	DAY	54.8	96.2	F

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Application Description

	A	B
Application Date:	4-12-12	4-26-12
Time of Day:	16:00	8:00
Application Method:	Spray	Spray
Application Timing:	PRE	V1
Application Placement:	BROSOI	BROFOL
Applied By:	JRK	RJW
Air Temperature, Unit:	70 F	72 F
% Relative Humidity:	26	81
Wind Velocity, Unit:	3 MPH	2 MPH
Wind Direction:	S	N
Dew Presence (Y/N):	N no	Y yes
Soil Temperature, Unit:	64 F	64 F
Soil Moisture:	NORMAL	NORMAL
% Cloud Cover:	5	5
Next Rain Occurred On:	4-13-12	4-27-12

Crop Stage At Each Application

	A	B
Crop 1 Code, BBCH Scale:	ZEAMD BCOR	ZEAMD BCOR
Stage Scale Used:	DESC	DESC
Stage Majority, Percent:	NA	< V1
Height, Unit:	NA IN	1.5 IN
Height Minimum, Maximum:		1 1.5

Pest Stage At Each Application

	A	B
Pest 1 Code, Type, Scale:	NA DESC	NA DESC
Stage Majority, Percent:	NA	NA

Application Equipment

	A	B
Appl. Equipment:	CO2 sprayer	CO2 sprayer
Equipment Type:	BACSPR	BACSPR
Operation Pressure, Unit:	30 PSI	30 PSI
Nozzle Type:	XR	XR
Nozzle Size:	8002	8002
Boom Length, Unit:	10 FT	10 FT
Spray Volume, Unit:	15 GPA	15 GPA

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Pest Code Crop Code Rating Date Rating Type Rating Unit Rating Timing Trt-Eval Interval								ZEAMD 9-24-12 Moisture Percent	ZEAMD 9-24-12 Test wt. lb/bu	ZEAMD 9-24-12 Yield bu/A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code	
1	DKC 61-69 VT3 DEGREE XTRA	4.04	CS	2.53	lb ai/a	2.5	qt/a	PRE	A	13.1 a
2	DKC 64-69 GENVT3P DEGREE XTRA	4.04	CS	2.53	lb ai/a	2.5	qt/a	PRE	A	15.0 a
3	DKC 61-69 VT3 DEGREE XTRA	4.04	CS	2.53	lb ai/a	2.5	qt/a	V1	B	13.2 a
4	DKC 64-69 GENVT3P DEGREE XTRA	4.04	CS	2.53	lb ai/a	2.5	qt/a	V1	B	14.2 a
5	DKC 61-69 VT3 CORVUS	2.62	SC	0.115	lb ai/a	5.6	fl oz/a	PRE	A	13.4 a
6	DKC 64-69 GENVT3P CORVUS	2.62	SC	0.115	lb ai/a	5.6	fl oz/a	PRE	A	14.9 a
7	DKC 61-69 VT3 CORVUS	2.62	SC	0.115	lb ai/a	5.6	fl oz/a	V1	B	13.3 a
8	DKC 64-69 GENVT3P CORVUS	2.62	SC	0.115	lb ai/a	5.6	fl oz/a	V1	B	14.2 a
9	DKC 61-69 VT3 RESOLVE	25	WG	0.016	lb ai/a	1.02	oz/a	PRE	A	12.3 a
10	DKC 64-69 GENVT3P RESOLVE	25	WG	0.016	lb ai/a	1.02	oz/a	PRE	A	14.1 a
11	DKC 61-69 VT3 RESOLVE	25	WG	0.016	lb ai/a	1.02	oz/a	V1	B	13.0 a
12	DKC 64-69 GENVT3P RESOLVE	25	WG	0.016	lb ai/a	1.02	oz/a	V1	B	14.1 a
13	DKC 61-69 VT3 TRIPLEFLEX	4.25	EC	0.93	lb ai/a	1.75	pt/a	PRE	A	12.9 a
14	DKC 64-69 GENVT3P TRIPLEFLEX	4.25	EC	0.93	lb ai/a	1.75	pt/a	PRE	A	14.2 a
15	DKC 61-69 VT3 TRIPLEFLEX	4.25	EC	0.93	lb ai/a	1.75	pt/a	V1	B	13.3 a
16	DKC 64-69 GENVT3P TRIPLEFLEX	4.25	EC	0.93	lb ai/a	1.75	pt/a	V1	B	14.7 a
17	DKC 61-69 VT3 CALLISTO TRIPLEFLEX	4 SC 4.25 EC		0.094 0.93	lb ai/a lb ai/a	3 fl oz/a 1.75	pt/a	PRE PRE	A A	14.0 a
18	DKC 64-69 GENVT3P CALLISTO TRIPLEFLEX	4 SC 4.25 EC		0.094 0.93	lb ai/a lb ai/a	3 fl oz/a 1.75	pt/a	PRE PRE	A A	14.8 a
										59.5 a
										59.2 a
										44 a
										47 a

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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Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Unit Unit	Other Rate	Other Rate	Growth Unit Stage	Appl Code	
19	DKC 61-69 VT3 CALLISTO TRIPLEFLEX	4 SC 4.25 EC		0.094 lb ai/a 0.93 lb ai/a		3 fl oz/a 1.75 pt/a		V1 V1	B B	13.4 a
20	DKC 64-69 GENVT3P CALLISTO TRIPLEFLEX	4 SC 4.25 EC		0.094 lb ai/a 0.93 lb ai/a		3 fl oz/a 1.75 pt/a		V1 V1	B B	13.3 a
LSD (P=.05)								1.61	9.23	17.2
Standard Deviation								1.14	6.53	12.2
CV								8.26	11.56	26.68
Replicate F								1.758	0.156	0.966
Replicate Prob(F)								0.1654	0.9254	0.4150
Treatment F								1.761	0.588	0.483
Treatment Prob(F)								0.0519	0.8997	0.9592

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Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Other Rate	Other Rate	Growth Unit Stage	Appl Code						
1	DKC 61-69 VT3 DEGREE XTRA	4.04	CS	2.53	lb ai/a	2.5	qt/a	PRE A		0.0 a		0.0 a		0.0 a
2	DKC 64-69 GENVT3P DEGREE XTRA	4.04	CS	2.53	lb ai/a	2.5	qt/a	PRE A		0.0 a		0.0 a		0.0 a
3	DKC 61-69 VT3 DEGREE XTRA	4.04	CS	2.53	lb ai/a	2.5	qt/a	V1 B			0.0 a		0.0 a	0.0 a
4	DKC 64-69 GENVT3P DEGREE XTRA	4.04	CS	2.53	lb ai/a	2.5	qt/a	V1 B			0.0 a		0.0 a	0.0 a
5	DKC 61-69 VT3 CORVUS	2.62	SC	0.115	lb ai/a	5.6	fl oz/a	PRE A		0.0 a		0.0 a		0.0 a
6	DKC 64-69 GENVT3P CORVUS	2.62	SC	0.115	lb ai/a	5.6	fl oz/a	PRE A		0.0 a		0.0 a		0.0 a
7	DKC 61-69 VT3 CORVUS	2.62	SC	0.115	lb ai/a	5.6	fl oz/a	V1 B			0.0 a		0.0 a	0.0 a
8	DKC 64-69 GENVT3P CORVUS	2.62	SC	0.115	lb ai/a	5.6	fl oz/a	V1 B			0.0 a		0.0 a	0.0 a
9	DKC 61-69 VT3 RESOLVE	25	WG	0.016	lb ai/a	1.02	oz/a	PRE A		0.0 a		0.0 a		0.0 a
10	DKC 64-69 GENVT3P RESOLVE	25	WG	0.016	lb ai/a	1.02	oz/a	PRE A		0.0 a		0.0 a		0.0 a
11	DKC 61-69 VT3 RESOLVE	25	WG	0.016	lb ai/a	1.02	oz/a	V1 B			0.0 a		0.0 a	0.0 a
12	DKC 64-69 GENVT3P RESOLVE	25	WG	0.016	lb ai/a	1.02	oz/a	V1 B			0.0 a		0.0 a	0.0 a
13	DKC 61-69 VT3 TRIPLEFLEX	4.25	EC	0.93	lb ai/a	1.75	pt/a	PRE A		0.0 a		0.0 a		0.0 a
14	DKC 64-69 GENVT3P TRIPLEFLEX	4.25	EC	0.93	lb ai/a	1.75	pt/a	PRE A		0.0 a		0.0 a		0.0 a
15	DKC 61-69 VT3 TRIPLEFLEX	4.25	EC	0.93	lb ai/a	1.75	pt/a	V1 B			0.0 a		0.0 a	0.0 a
16	DKC 64-69 GENVT3P TRIPLEFLEX	4.25	EC	0.93	lb ai/a	1.75	pt/a	V1 B			0.0 a		0.0 a	0.0 a
17	DKC 61-69 VT3 CALLISTO TRIPLEFLEX	4 SC 4.25 EC		0.094 0.93	lb ai/a lb ai/a	3 1.75	fl oz/a pt/a	PRE A PRE A		0.0 a		0.0 a		0.0 a
18	DKC 64-69 GENVT3P CALLISTO TRIPLEFLEX	4 SC 4.25 EC		0.094 0.93	lb ai/a lb ai/a	3 1.75	fl oz/a pt/a	PRE A PRE A		0.0 a		0.0 a		0.0 a

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Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Unit Unit	Other Rate	Other Rate	Growth Stage	Appl Code					
19	DKC 61-69 VT3 CALLISTO TRIPLEFLEX	4 SC 4.25 EC		0.094 lb ai/a 0.93 lb ai/a		3 fl oz/a 1.75 pt/a		V1 V1	B B		0.0 a		0.0 a	0.0 a
20	DKC 64-69 GENVT3P CALLISTO TRIPLEFLEX	4 SC 4.25 EC		0.094 lb ai/a 0.93 lb ai/a		3 fl oz/a 1.75 pt/a		V1 V1	B B		0.0 a		0.0 a	0.0 a
LSD (P=.05)										0.00	0.00	0.00	0.00	0.00
Standard Deviation										0.00	0.00	0.00	0.00	0.00
CV										0.0	0.0	0.0	0.0	0.0
Replicate F										0.000	0.000	0.000	0.000	0.000
Replicate Prob(F)										1.0000	1.0000	1.0000	1.0000	1.0000
Treatment F										0.000	0.000	0.000	0.000	0.000
Treatment Prob(F)										1.0000	1.0000	1.0000	1.0000	1.0000

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Trial Comments

1. Protocol: Monsanto (52-01).
2. Ratings: CI (describe injury and rate separately if needed chlorosis, necrosis, growth reduction) at 7, 21, and 42 DAT.
Take photos of injury symptoms at any evaluation where they occur.
Inspect/Evaluate ear development.
3. V1 timing is targeted for when the first leaf starts to be visible and emerge from the coleoptile.
4. Take photos at the B application to document corn growth stage.
5. Apply Roundup PowerMax as needed to maintain weed-free.
6. Yield, test weight.
7. Rainfall following the PRE application was 0.16 inch 1 day later, 0.43 inch 3 days later, 0.39 inch 4 days later, 0.25 inch 8 days later and 0.09 inch 10 days later.
Rainfall following the V1 application was 0.08 inch 1 day later, 0.05 inch 4 days later, 0.01 inch 5 days later, 0.02 inch 8 days later, 0.01 inch 10 days later and 0.08 inch 11 days later.
8. Ratings at 7 DA-A were not possible as the corn had not yet emerged.
9. Harvested 9-24-12, (2) 30 inch rows by 24 ft.