

## Comparison of Corn Tolerance to Preemergence Grass Herbicides.

00-WF-SWS-100

**OBJECTIVE:** Compare corn tolerance to 1X and 3X rates of preemergence grass herbicides in corn under weed free conditions.

**SUMMARY:** Corn injury was 0 to 10% from any rate of Dual II Magnum, Surpass, Harness, Topnotch, Degree, and Basis. Corn injury was 28 and 76% from Axiom at the 1 and 3X rates, respectively, at 28 days after treatment (DAT). Injury from Axiom was still visible at 56 DAT. Corn stand was significantly reduced in Axiom plots. Outlook and Prowl at 3X rates caused 14 and 15% corn injury, respectively, at 28 DAT. By 56 DAT, corn injury was only 3% from the 3X rate of Outlook but still 15% from the 3X rate of Prowl.

Corn yield was 184 bu/A in plots that did not receive a herbicide application (no herbicide). Plots treated with Prowl or Outlook at 3X rates yielded 27 and 19 bu/A less than no herbicide plots, respectively. The most severe reduction in yield was observed in Axiom treated plots. Plots treated with the 1X and 3X rates of Axiom yielded only 151 and 93 bu/A, respectively.

### HERBICIDES

AXIOM 68 WG  
BALANCE 75 WG  
BASIS 75 WG  
DEGREE 3.8 ME  
DUAL II MAGNUM 7.64 EC  
HARNESS 7 EC  
OUTLOOK 6 EC  
PROWL 3.3 EC  
SURPASS 6.4 EC  
TOPNOTCH 3.2 ME

### WEEDS

CROP TOLERANCE ONLY

### CROP

CORN, FIELD

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## Comparison of Corn Tolerance to Preemergence Grass Herbicides.

Project Code: 00-WF-SWS-100 Location: Belleville Research Center

Investigator: Bryan Young, Assistant Professor, Southern Illinois University

## Weed Code

1. NA CROP TOLERANCE ONLY

Crop 1: ZEAMX CORN, FIELD  
 Planting Method: SEEDED  
 Rate: 28000 S/A  
 Row Spacing: 30 IN

Variety: P33G28 LL  
 Planting Date: May-3-00  
 Depth: 1.5 IN

Plot Width, Unit: 10 FT  
 Tillage Type: REDUCED-TILL  
 Previous Crop, Year: GLXMA, 1999

Plot Length, Unit: 30 FT  
 Study Design: RCB  
 Fertilizer applied: N 150 LB/A,

Reps: 4

P<sub>2</sub>O<sub>5</sub> 50 LB/A, K<sub>2</sub>O 150 LB/A

Texture: SILT LOAM

% OM: 1.8  
 P<sub>1</sub>: 59 LB/A, pH: 6.5  
 K: 181 LB/A

CEC: 9

## APPLICATION DESCRIPTION

A  
 Application Date: May-4-00  
 Time of Day: 8:00  
 Application Method: SPRAY  
 Application Timing: PRE  
 Applic. Placement: BROSOI  
 Air Temp., Unit: 70 F  
 % Relative Humidity: 94  
 Wind Velocity, Unit: 5 MPH  
 % Cloud Cover: 25

## CROP STAGE AT EACH APPLICATION

A  
 Crop 1 Code, Stage: NA  
 Height, Unit: NA

## WEED STAGE AT EACH APPLICATION

A  
 Weed 1 Code: NA

## APPLICATION EQUIPMENT

A  
 Appl. Equipment: CO<sub>2</sub> SPRAY  
 Operating Pressure: 40 PSI  
 Nozzle Type: FLAT FAN  
 Nozzle Size: 8003  
 Boom Length, Unit: 7.33 FT  
 Spray Volume, Unit: 20 GPA

## NOTES:

Harvested Sep-21-00, (2) 30 inch rows by 20 ft.

TABLE. COMPARISON OF CORN TOLERANCE TO PREEMERGENCE GRASS HERBICIDES. PROJECT CODE:00-WF-SWS-100

TREATMENT	FORM.	RATE	UNIT	PROD	RATE	APPL TIME	APPL CODE	YIELD BU/A	ZEAMX INJURY			ZEAMX PLANTS				
									DA PRE			DA PRE				
									14	28	56	14	28	EOS		
%	%	%	000/A	000/A	000/A											
1	HANDWEED							184	0	0	0	27.1	27.1	27.3		
2	DUAL II MAGNUM	7.64	EC	1.27	LB A/A	1.33	PT/A	PRE	A	183	1	3	0	27.6	27.4	27.8
3	DUAL II MAGNUM	7.64	EC	3.81	LB A/A	4.0	PT/A	PRE	A	172	0	1	0	26.8	26.5	26.4
4	AXIOM	68	WG	0.638	LB A/A	15.0	OZ/A	PRE	A	151	5	28	11	26.2	21.8	22.7
5	AXIOM	68	WG	1.91	LB A/A	45.0	OZ/A	PRE	A	93	39	76	53	26.4	16.4	16.1
6	TOPNOTCH	3.2	ME	1.6	LB A/A	4.0	PT/A	PRE	A	180	1	8	0	27.3	26.9	27.2
7	TOPNOTCH	3.2	ME	4.8	LB A/A	12.0	PT/A	PRE	A	181	0	0	0	28.2	28.7	27.6
8	SURPASS	6.4	EC	1.6	LB A/A	2.0	PT/A	PRE	A	181	0	4	0	27.7	28.0	27.6
9	SURPASS	6.4	EC	4.8	LB A/A	6.0	PT/A	PRE	A	175	4	0	1	26.5	26.6	26.1
10	DEGREE	3.8	ME	1.544	LB A/A	3.25	PT/A	PRE	A	184	1	8	0	26.6	26.5	25.9
11	DEGREE	3.8	ME	4.631	LB A/A	9.75	PT/A	PRE	A	169	9	3	0	26.8	26.2	26.1
12	HARNESS	7	EC	1.53	LB A/A	1.75	PT/A	PRE	A	178	0	4	0	27.0	26.8	26.8
13	HARNESS	7	EC	4.59	LB A/A	5.25	PT/A	PRE	A	178	1	1	0	26.7	26.7	26.8
14	OUTLOOK	6	EC	0.7	LB A/A	15.0	OZ/A	PRE	A	179	0	4	3	26.9	26.7	26.1
15	OUTLOOK	6	EC	2.1	LB A/A	45.0	OZ/A	PRE	A	165	4	14	3	27.4	24.9	25.6
16	BALANCE	75	WG	0.059	LB A/A	1.26	OZ/A	PRE	A	186	6	4	0	28.4	27.9	27.9
17	BALANCE	75	WG	0.177	LB A/A	3.78	OZ/A	PRE	A	170	36	41	5	27.4	26.6	25.7
18	PROWL	3.3	EC	1.05	LB A/A	2.55	PT/A	PRE	A	171	1	5	3	27.1	25.4	26.5
19	PROWL	3.3	EC	3.15	LB A/A	7.6	PT/A	PRE	A	157	16	15	15	23.7	23.0	22.5
20	BASIS	75	WG	0.0469	LB A/A	1.0	OZ/A	PRE	A	179	0	4	0	28.2	27.4	27.2
LSD								17		5	7	7	1.8	2.4	2.4	
P								0.01		0.01	0.01	0.01	0.01	0.01	0.01	

1. PROTOCOL: NOVARTIS MJ028A.
2. EOS = END OF SEASON.
3. BLANKET PREEMERGENCE APPLICATION OF AATREX 90 WG AT 2.0 LBAI/A TO ALL PLOTS ON 5-4-00.
4. RATING DATES:  
14 DA PRE, 28 DA PRE, 56 DA PRE AND EOS ON MAY-18-00, JUN-1-00, JUN-29-00, AND AUG-20-00, RESPECTIVELY.