

Evaluation of PCC 196 in Field Corn.

01-50E-N70

OBJECTIVE: Evaluate PCC 196 for postemergence broadleaf control in corn compared to commercial standards.

SUMMARY: No corn injury was observed 7 days after treatment (DAT) with applications of PCC 196 at spike. However, PCC 196 treatments at the V3 stage of corn growth caused 3 to 13% corn injury. Corn injury was also observed with V3 applications of Shotgun, Marksman, and Basis Gold. By 28 DAT, corn injury was 3% or less from any treatment.

All treatments provided good control of giant foxtail and yellow nutsedge. Common and giant ragweed control 28 DAT was at least 93% from all treatments except Dual II Magnum alone and Dual II Magnum followed by a spike application of PCC 196 at 1 pt/A. All treatments controlled at least 91% of common cocklebur at 28 DAT except Dual II Magnum alone and Dual II Magnum followed by a spike application of PCC 196 at 1 or 2 pt/A. Common waterhemp and ivyleaf morningglory control was excellent from all treatments that included a postemergence herbicide. Applications of PCC 196 at V3 provided greater weed control than the same rates of PCC 196 at spike.

Corn yield tended to be greater in plots where PCC 196 was applied V3 compared to at spike, most likely due to increased weed control with the V3 application timing.

HERBICIDES / ADJUVANTS

BASIS GOLD 90 WG
 DUAL II MAGNUM 7.64 EC
 LIBERTY ATZ 4.32 EC
 MARKSMAN 3.2 L
 PCC 196 3.28 L
 SHOTGUN 3.25 L
 LI 700 100 LIQ
 PRIME OIL COC 100 LIQ

WEEDS

cocklebur, common
 foxtail, giant
 morningglory, ivyleaf
 nutsedge, yellow
 ragweed, common
 ragweed, giant
 waterhemp, common

CROP

corn, field

Bryan Young

PLANT, SOIL AND GENERAL AGRICULTURE DEPARTMENT

SOUTHERN ILLINOIS UNIVERSITY

Evaluation of PCC 196 in Field Corn.

Project Code: 01-50E-N70 Location: Belleville Research Center

Investigator: Bryan Young, Assistant Professor, Southern Illinois University

City State Zip Country: Belleville IL 62221 USA
 Trial Status: Final Initiation Date: 4-19-01

Objective:

Evaluate PCC 196 foe postemergence broadleaf control in corn compared to commercial standards.

Weed Code	Common Name	Scientific Name
1. SETFA	foxtail, giant	Setaria faberi Herrm.
2. CYPES	nutsedge, yellow	Cyperus esculentus L.
3. AMBEL	ragweed, common	Ambrosia artemisiifolia L.
4. XANST	cocklebur, common	Xanthium strumarium L.
5. AMBTR	ragweed, giant	Ambrosia trifida L.
6. AMATA	waterhemp, common	Amaranthus rudis Sauer
7. IPOHE	morningglory, ivyleaf	Ipomoea hederacea (L.) Jacq.

Crop 1: ZEAMX corn, field Variety: P33G28 LL
 Planting Method: Seeded Planting Date: 5-9-01
 Rate: 28000 S/A Depth: 1.5 IN
 Row Spacing: 30 IN

Plot Width, Unit: 10 FT Plot Length, Unit: 27 FT Reps: 3
 Tillage Type: Reduced-Till Study Design: Randomized complete block
 Previous Crop, Year: GLXMA, 2000
 Field Prep./Maintenance: N 150 LB/A, P205 0 LB/A, K20 200 LB/A

Soil Name: Weir % OM: 1.4 pH: 6.9 CEC: 12
 Texture: Silt loam Fert. Level: P1: 83 LB/A, K: 181 LB/A

APPLICATION DESCRIPTION

	A	B	C
Application Date:	5-10-01	5-16-01	5-29-01
Time of Day:	18:00	8:30	12:00
Application Method:	Spray	Spray	Spray
Application Timing:	PRE	SPIKE	V3
Applic. Placement:	BROSOI	BROFOL	BROFOL
Air Temp., Unit:	86 F	74 F	74 F
% Relative Humidity:	36	70	48
Wind Velocity, Unit:	5-10 MPH	5-10 MPH	3-5 MPH
Soil Moisture:	NORMAL	BELNOR	NORMAL
% Cloud Cover:	30	20	

CROP STAGE AT EACH APPLICATION

	A	B	C
Crop 1 Code, Stage:	ZEAMX NA	ZEAMX SPIKE	ZEAMX V3
Height, Unit:	NA NA	1 IN	6-8 IN

WEED STAGE AT EACH APPLICATION

	A	B	C
Weed 1 Code:	SETFA	SETFA	SETFA
Stage(leaves):			2-4
Height(inches):			2-3
Density:			High
Weed 2 Code:	CYPES	CYPES	CYPES
Stage(leaves):			2-4
Height(inches):			2-5
Density:			Low
Weed 3 Code:	AMBEL	AMBEL	AMBEL
Stage(leaves):			2-4
Height(inches):			1-2
Density:			Low

Weed 4 Code:	XANST	XANST	XANST
Stage(leaves):			2-4
Height(inches):			3-4
Density:			Medium
Weed 5 Code:	AMBTR	AMBTR	AMBTR
Stage(leaves):			2-4
Height(inches):			2-4
Density:			Medium
Weed 6 Code:	AMATA	AMATA	AMATA
Weed 7 Code:	IPOHE	IPOHE	IPOHE
Stage(leaves):			0-2
Height(inches):			0.5-1
Density:			Medium

APPLICATION EQUIPMENT

	A	B	C
Appl. Equipment:	CO2 sprayer	CO2 sprayer	CO2 sprayer
Operating Pressure:	40 PSI	40 PSI	40 PSI
Nozzle Type:	Flat fan	Flat fan	Flat fan
Nozzle Size:	8003	8002	8002
Boom Length, Unit:	7.5 FT	7.5 FT	7.5 FT
Spray Volume, Unit:	20 GPA	20 GPA	20 GPA

NOTES: HARVESTED 10-3-01, 2 ROWS X 19 FT.

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Weed Code		SETFA SETFA CYPES CYPES AMBEL AMBEL XANST XANST AMBTR AMBTR AMATA AMATA																											
Crop Code		ZEAMX ZEAMX ZEAMX ZEAMX				SETFA		SETFA		CYPES		CYPES		ABEL		ABEL		XANST		XANST		AMBTR		AMBTR		AMATA		AMATA	
Rating Data Type		Yield Injury Injury Injury				Control Control		Control Control		Control Control		Control Control		Control Control		Control Control		Control Control		Control Control		Control Control		Control Control		Control Control		Control Control	
Rating Unit		bu/A Percent Percent Percent				Percent Percent		Percent Percent		Percent Percent		Percent Percent		Percent Percent		Percent Percent		Percent Percent		Percent Percent		Percent Percent		Percent Percent		Percent Percent		Percent Percent	
Rating Date		10-3-01																											
Trt-Eval Interval		7 DAT 14 DAT 28 DAT				14 DAT 28 DAT		14 DAT 28 DAT		14 DAT 28 DAT		14 DAT 28 DAT		14 DAT 28 DAT		14 DAT 28 DAT		14 DAT 28 DAT		14 DAT 28 DAT		14 DAT 28 DAT		14 DAT 28 DAT		14 DAT 28 DAT		14 DAT 28 DAT	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code																				
1	NONTREATED									128	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
2	DUAL II MAGNUM	7.64	EC	1.27	LB A/A	1.33	PT/A	PRE	A	157	0	0	0	99	96	97	89	0	0	0	0	0	0	99	89				
3	DUAL II MAGNUM	7.64	EC	1.27	LB A/A	1.33	PT/A	PRE	A	205	0	0	0	99	99	99	93	93	83	88	82	81	75	99	99				
3	PCC 196	3.28	L	0.41	LB A/A	1	PT/A	SPIKE	B																				
4	DUAL II MAGNUM	7.64	EC	1.27	LB A/A	1.33	PT/A	PRE	A	213	0	0	0	99	99	98	96	93	94	77	67	96	93	99	99				
4	PCC 196	3.28	L	0.82	LB A/A	2	PT/A	SPIKE	B																				
5	DUAL II MAGNUM	7.64	EC	1.27	LB A/A	1.33	PT/A	PRE	A	221	0	0	0	99	99	98	94	98	98	91	92	95	96	99	99				
5	PCC 196	3.28	L	1.23	LB A/A	3	PT/A	SPIKE	B																				
6	DUAL II MAGNUM	7.64	EC	1.27	LB A/A	1.33	PT/A	PRE	A	217	0	0	0	99	99	98	96	99	99	95	92	95	93	99	99				
6	PCC 196	3.28	L	1.64	LB A/A	4	PT/A	SPIKE	B																				
7	DUAL II MAGNUM	7.64	EC	1.27	LB A/A	1.33	PT/A	PRE	A	225	3	0	0	99	98	89	96	99	99	96	97	98	87	99	99				
7	PCC 196	3.28	L	0.41	LB A/A	1	PT/A	V3	C																				
8	DUAL II MAGNUM	7.64	EC	1.27	LB A/A	1.33	PT/A	PRE	A	231	7	0	0	99	97	99	99	99	99	98	94	96	93	99	99				
8	PCC 196	3.28	L	0.82	LB A/A	2	PT/A	V3	C																				
9	DUAL II MAGNUM	7.64	EC	1.27	LB A/A	1.33	PT/A	PRE	A	227	9	3	2	99	98	99	99	99	99	99	94	98	97	99	99				
9	PCC 196	3.28	L	1.23	LB A/A	3	PT/A	V3	C																				
10	DUAL II MAGNUM	7.64	EC	1.27	LB A/A	1.33	PT/A	PRE	A	228	13	2	0	99	99	99	99	99	99	99	97	98	97	99	99				
10	PCC 196	3.28	L	1.64	LB A/A	4	PT/A	V3	C																				
11	DUAL II MAGNUM	7.64	EC	1.27	LB A/A	1.33	PT/A	PRE	A	231	12	2	0	99	98	99	99	99	99	99	93	97	96	99	99				
11	SHOTGUN	3.25	L	1.02	LB A/A	2.5	PT/A	V3	C																				
11	LI 700	100	LIQ	0.25	% V/V	0.25	%V/V	V3	C																				
12	DUAL II MAGNUM	7.64	EC	1.27	LB A/A	1.33	PT/A	PRE	A	247	15	10	3	99	99	99	99	99	99	98	97	98	95	99	99				
12	MARKSMAN	3.2	L	1.4	LB A/A	3.5	PT/A	V3	C																				
13	DUAL II MAGNUM	7.64	EC	1.27	LB A/A	1.33	PT/A	PRE	A	234	6	0	0	99	99	99	99	99	99	90	91	98	96	99	99				
13	BASIS GOLD	90	WG	0.788	LB A/A	14	OZ/A	V3	C																				
13	PRIME OIL COC	100	LIQ	1.0	% V/V	1	%V/V	V3	C																				
14	DUAL II MAGNUM	7.64	EC	1.27	LB A/A	1.33	PT/A	PRE	A	229	1	0	0	99	96	98	91	99	99	99	98	98	96	99	99				
14	LIBERTY ATZ	4.32	EC	1.35	LB A/A	40	OZ/A	V3	C																				
LSD (P=.05)										39.8	2.9	2.1	2.8	0.0	3.1	7.8	11.8	6.6	4.4	10.8	11.6	11.6	13.5	0.0	7.5				
Replicate F										2.964	0.149	2.600	1.918	0.000	0.368	1.094	2.035	2.676	2.086	1.501	2.170	4.687	5.799	0.000	1.000				
Replicate Prob(F)										0.0693	0.8626	0.0935	0.1671	1.0000	0.6958	0.3497	0.1510	0.0877	0.1445	0.2417	0.1345	0.0183	0.0083	1.0000	0.3816				
Treatment F										5.552	31.446	13.943	1.000	0.000	614.838	94.957	40.909	242.260	549.805	87.614	72.386	76.927	54.702	0.000	104.310				
Treatment Prob(F)										0.0001	0.0001	0.0001	0.4786	1.0000	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	1.0000	0.0001				

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Weed Code										IPOHE	IPOHE
Rating Data Type										Control	Control
Rating Unit										Percent	Percent
Trt-Eval Interval										14 DAT	28 DAT

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code		
1	NONTREATED									0	0
2	DUAL II MAGNUM	7.64	EC	1.27	LB A/A	1.33	PT/A	PRE	A	0	0
3	DUAL II MAGNUM	7.64	EC	1.27	LB A/A	1.33	PT/A	PRE	A	99	98
3	PCC 196	3.28	L	0.41	LB A/A	1	PT/A	SPIKE	B		
4	DUAL II MAGNUM	7.64	EC	1.27	LB A/A	1.33	PT/A	PRE	A	99	96
4	PCC 196	3.28	L	0.82	LB A/A	2	PT/A	SPIKE	B		
5	DUAL II MAGNUM	7.64	EC	1.27	LB A/A	1.33	PT/A	PRE	A	99	98
5	PCC 196	3.28	L	1.23	LB A/A	3	PT/A	SPIKE	B		
6	DUAL II MAGNUM	7.64	EC	1.27	LB A/A	1.33	PT/A	PRE	A	99	98
6	PCC 196	3.28	L	1.64	LB A/A	4	PT/A	SPIKE	B		
7	DUAL II MAGNUM	7.64	EC	1.27	LB A/A	1.33	PT/A	PRE	A	99	96
7	PCC 196	3.28	L	0.41	LB A/A	1	PT/A	V3	C		
8	DUAL II MAGNUM	7.64	EC	1.27	LB A/A	1.33	PT/A	PRE	A	99	98
8	PCC 196	3.28	L	0.82	LB A/A	2	PT/A	V3	C		
9	DUAL II MAGNUM	7.64	EC	1.27	LB A/A	1.33	PT/A	PRE	A	99	96
9	PCC 196	3.28	L	1.23	LB A/A	3	PT/A	V3	C		
10	DUAL II MAGNUM	7.64	EC	1.27	LB A/A	1.33	PT/A	PRE	A	99	97
10	PCC 196	3.28	L	1.64	LB A/A	4	PT/A	V3	C		
11	DUAL II MAGNUM	7.64	EC	1.27	LB A/A	1.33	PT/A	PRE	A	99	95
11	SHOTGUN	3.25	L	1.02	LB A/A	2.5	PT/A	V3	C		
11	LI 700	100	LIQ	0.25	% V/V	0.25	%V/V	V3	C		
12	DUAL II MAGNUM	7.64	EC	1.27	LB A/A	1.33	PT/A	PRE	A	99	97
12	MARKSMAN	3.2	L	1.4	LB A/A	3.5	PT/A	V3	C		
13	DUAL II MAGNUM	7.64	EC	1.27	LB A/A	1.33	PT/A	PRE	A	99	98
13	BASIS GOLD	90	WG	0.788	LB A/A	14	OZ/A	V3	C		
13	PRIME OIL COC	100	LIQ	1.0	% V/V	1	%V/V	V3	C		
14	DUAL II MAGNUM	7.64	EC	1.27	LB A/A	1.33	PT/A	PRE	A	99	97
14	LIBERTY ATZ	4.32	EC	1.35	LB A/A	40	OZ/A	V3	C		
LSD (P=.05)										0.3	4.5
Replicate F										1.000	2.065
Replicate Prob(F)										0.3816	0.1472
Treatment F										162757.000	507.614
Treatment Prob(F)										0.0001	0.0001

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Trial Comments

1. Protocol: UAP.
2. DAT = days after postemergence application.
 - 7 days after SPIKE and V3 applications was on 5-23-01 and 6-5-01, respectively.
 - 14 days after SPIKE and V3 applications was on 5-30-01 and 6-12-01, respectively.
 - 28 days after SPIKE and V3 applications was on 6-13-01 and 6-26-01, respectively.