

Complete Crop Protection Programs in Corn.

02-NF-N130

OBJECTIVE: Evaluate complete crop protection programs in reduced-till corn from various manufacturers.

SUMMARY: This study was designed to compare complete crop protection programs from various manufacturers for weed, insect, and disease control in corn. Environmental conditions this season did not favor the development of any disease problems at this site and insect pressure was very low. None of the crop protection programs caused corn injury. Most of the herbicide programs provided good control of giant foxtail, common cocklebur, and ivyleaf morningglory at 14 days after the postemergence herbicide applications except Balance PRO plus Define which controlled significantly less common cocklebur and ivyleaf morningglory compared to the other herbicide programs. There were no significant differences in corn yield between crop protection programs.

HERBICIDES/INSECTICIDES/FUNGICIDE	WEEDS	CROP
A12854 3.93 SE	cocklebur, common	corn, field
AATREX 90 WG	foxtail, giant	
BALANCE PRO 4 SC	morningglory, ivyleaf	
BICEP II MAGNUM 5.5 L		
CALLISTO 4 SC		
CLARITY 4 EC		
DEFINE 60 WG		
DISTINCT 70 WG		
DUAL II MAGNUM 7.64 EC		
HORNET 68.5 WG		
MARKSMAN 3.2 L		
NORTHSTAR 47.4 WG		
OUTLOOK 6 EC		
TOPNOTCH 3.2 ME		
WF2889 3.5 CS		
AZTEC 2.1 G		
COUNTER 20 CR		
FORCE 3 G		
LORSBAN 15 G		
QUADRIS 2.08 SC		

Bryan Young

PLANT, SOIL AND GENERAL AGRICULTURE DEPARTMENT

SOUTHERN ILLINOIS UNIVERSITY

Complete Crop Protection Programs in Corn.

Project Code: 02-NF-N130 Location: Belleville Research Center

Investigator: Bryan Young, Assistant Professor, Southern Illinois University

City State Zip Country: Belleville IL 62221 USA
 Trial Status: Final Updated: 10-29-02

Objective:

Evaluate complete crop protection programs in reduced-till corn
 from various manufacturers.

Weed Code	Common Name	Scientific Name
1. SETFA	foxtail, giant	Setaria faberi Herrm.
2. XANST	cocklebur, common	Xanthium strumarium L.
3. IPOHE	morningglory, ivyleaf	Ipomoea hederacea (L.) Jacq.

Crop 1:	ZEAMX corn, field	Variety:	Pioneer 33P69LL
Planting Method:	Seeded	Planting Date:	5-31-02
Rate:	28000 S/A	Depth:	1.5 IN
Row Spacing:	30 IN		

Plot Width, Unit:	10 FT	Plot Length, Unit:	60 FT	Reps:	2
Tillage Type:	Reduced-Till	Study Design:	Randomized complete block		
Previous Crop, Year:	ZEAMX, 2001				

Field Prep./Maintenance: N 150 LB/A, P205 50 LB/A, K20 200 LB/A

Soil Name:	Stoy	% OM:	1.4	pH:	5.7	CEC:	10
Texture:	Silt loam	Fert. Level:	P1: 57 LB/A, K: 197 LB/A				

APPLICATION DESCRIPTION

	A	B	C
Application Date:	5-31-02	6-14-02	7-8-02
Time of Day:	16:45	10:40	11:30
Application Method:	Spray	Spray	Spray
Application Timing:	PRE	1-3"W	V8-V12
Applic. Placement:	BROSOI	BROFOL	BROFOL
Air Temp., Unit:	90 F	76 F	94 F
% Relative Humidity:	48	42	38
Wind Velocity, Unit:	0-5 MPH	5-10 MPH	0-5 MPH
Dew Presence (Y/N):		N	N
Soil Moisture:	NORMAL	NORMAL	BELNOR
% Cloud Cover:		10	0

CROP STAGE AT EACH APPLICATION

	A	B	C
Crop 1 Code, Stage:	ZEAMX NA	ZEAMX V3-V4	ZEAMX V8
Height, Unit:	NA NA	6-8 IN	36-48 IN

WEED STAGE AT EACH APPLICATION

	A	B	C
Weed 1 Code:		SETFA	
Stage(leaves):		0-3	
Height(inches):		0-3	
Density:		Low	
Weed 2 Code:		XANST	
Stage(leaves):		2-6	
Height(inches):		2-4	
Density:		Low	
Weed 3 Code:		IPOHE	
Stage(leaves):		2-6	
Height(inches):		1-3	
Density:		Low	

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:	10 FT	10 FT	10 FT
Spray Volume, Unit:	20 GPA	20 GPA	20 GPA

NOTES:

No weeds present at V8-V12 application.
 Harvested Oct-18-02, (2) 30 inch rows by 35 ft.

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										SETFA	SETFA	XANST	XANST	IPOHE	IPOHE				
										ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX					
										Yield	Injury	Injury	Injury	Lodging					
										bu/A	Percent	Percent	Percent	Percent	Control	Control			
										10-18-02	6-12-02	6-21-02	7-15-02	7-22-02	6-28-02	7-26-02			
										7 DAE	7 DA-B	7 DA-C			14 DA-B	42 DA-B			
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code										
1	MAXIM XL			0.167	OZ WT/CWT			SEED TRT		136	0	0	0	97	85	99	95	99	97
1	FORCE	3	G	4.0	OZ/1000 ROW-FT			T-BAND											
1	A12854	3.93	SE	2.8	LB A/A	5.7	PT/A	PRE	A										
2	MAXIM XL			0.167	OZ WT/CWT			SEED TRT		147	0	0	0	97	81	96	93	92	63
2	FORCE	3	G	4.0	OZ/1000 ROW-FT			T-BAND											
2	A12854	3.93	SE	2.8	LB A/A	5.7	PT/A	PRE	A										
2	QUADRIS	2.08	SC	0.15	LB A/A	9.2	OZ/A	V8-V12	C										
3	MAXIM XL			0.167	OZ WT/CWT			SEED TRT		170	0	0	0	99	93	97	95	99	97
3	LORSBAN	15	G	8.0	OZ/1000 ROW-FT			T-BAND											
3	WF2889	3.5	CS	2.41	LB A/A	2.75	QT/A	PRE	A										
4	MAXIM XL			0.167	OZ WT/CWT			SEED TRT		144	0	0	0	99	86	95	80	75	55
4	LORSBAN	15	G	8.0	OZ/1000 ROW-FT			T-BAND											
4	TOPNOTCH	3.2	ME	1.6	LB A/A	2	QT/A	PRE	A										
4	HORNET	68.5	WG	0.171	LB A/A	4	OZ/A	PRE	A										
5	MAXIM XL			0.167	OZ WT/CWT			SEED TRT		151	0	0	0	98	87	93	88	99	90
5	COUNTER	20	CR	6.0	OZ/1000 ROW-FT			T-BAND											
5	OUTLOOK	6	EC	0.7	LB A/A	15	OZ/A	PRE	A										
5	MARKSMAN	3.2	L	1.4	LB A/A	3.5	PT/A	PRE	A										
6	MAXIM XL			0.167	OZ WT/CWT			SEED TRT		127	0	0	0	97	83	73	50	35	0
6	AZTEC	2.1	G	6.7	OZ/1000 ROW-FT			T-BAND											
6	BALANCE PRO	4	SC	0.0703	LB A/A	2.25	OZ/A	PRE	A										
6	DEFINE	60	WG	0.263	LB A/A	7	OZ/A	PRE	A										
7	MAXIM XL			0.167	OZ WT/CWT			SEED TRT		153	0	0	0	98	88	88	73	99	90
7	FORCE	3	G	4.0	OZ/1000 ROW-FT			T-BAND											
7	DUAL II MAGNUM	7.64	EC	1.27	LB A/A	1.33	PT/A	PRE	A										
7	CALLISTO	4	SC	0.094	LB A/A	3	OZ/A	1-3"W	B										
7	AATREX	90	WG	0.25	LB A/A	4.44	OZ/A	1-3"W	B										
7	PRIME OIL COC	100	LIQ	1.0	% V/V	1	%V/V	1-3"W	B										
7	28% UAN	100	LIQ	2.5	% V/V	2.5	%V/V	1-3"W	B										
8	MAXIM XL			0.167	OZ WT/CWT			SEED TRT		159	0	0	0	97	89	88	80	99	88
8	FORCE	3	G	4.0	OZ/1000 ROW-FT			T-BAND											
8	DUAL II MAGNUM	7.64	EC	1.27	LB A/A	1.33	PT/A	PRE	A										
8	CALLISTO	4	SC	0.094	LB A/A	3	OZ/A	1-3"W	B										
8	AATREX	90	WG	0.25	LB A/A	4.44	OZ/A	1-3"W	B										
8	PRIME OIL COC	100	LIQ	1.0	% V/V	1	%V/V	1-3"W	B										
8	28% UAN	100	LIQ	2.5	% V/V	2.5	%V/V	1-3"W	B										
8	QUADRIS	2.08	SC	0.15	LB A/A	9.2	OZ/A	V8-V12	C										

Weed Code						SETFA	SETFA	XANST	XANST	IPOHE	IPOHE
Crop Code						ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	
Rating Data Type						Yield	Injury	Injury	Injury	Lodging	Control
Rating Unit						bu/A	Percent	Percent	Percent	Percent	Percent
Rating Date						10-18-02	6-12-02	6-21-02	7-15-02	7-22-02	6-28-02
Trt-Eval Interval							7 DAE	7 DA-B	7 DA-C		14 DA-B

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Form Rate	Form Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code											
9	MAXIM XL			0.167		OZ WT/CWT				SEED TRT	155	0	0	0	99	95					
9	FORCE	3	G	4.0		OZ/1000 ROW-FT				T-BAND											
9	BICEP II MAGNUM	5.5	L	2.89		LB A/A	2.1	QT/A	PRE	A											
9	NORTHSTAR	47.4	WG	0.148		LB A/A	5	OZ/A	1-3"W	B											
9	PRIME OIL COC	100	LIQ	1.0		% V/V	1	%V/V	1-3"W	B											
9	AMS	100	DRY	2.5		LB/A	2.5	LB/A	1-3"W	B											
10	MAXIM XL			0.167		OZ WT/CWT				SEED TRT	155	0	0	0	99	97					
10	FORCE	3	G	4.0		OZ/1000 ROW-FT				T-BAND											
10	BICEP II MAGNUM	5.5	L	2.89		LB A/A	2.1	QT/A	PRE	A											
10	NORTHSTAR	47.4	WG	0.148		LB A/A	5	OZ/A	1-3"W	B											
10	PRIME OIL COC	100	LIQ	1.0		% V/V	1	%V/V	1-3"W	B											
10	AMS	100	DRY	2.5		LB/A	2.5	LB/A	1-3"W	B											
10	QUADRIS	2.08	SC	0.15		LB A/A	9.2	OZ/A	V8-V12	C											
11	MAXIM XL			0.167		OZ WT/CWT				SEED TRT	137	0	0	0	99	87					
11	LORSBAN	15	G	8.0		OZ/1000 ROW-FT				T-BAND											
11	TOPNOTCH	3.2	ME	1.6		LB A/A	2	QT/A	PRE	A											
11	HORNET	68.5	WG	0.107		LB A/A	2.5	OZ/A	1-3"W	B											
11	CLARITY	4	EC	0.25		LB A/A	8	OZ/A	1-3"W	B											
11	ACTIVATOR 90	100	LIQ	0.25		% V/V	0.25	%V/V	1-3"W	B											
12	MAXIM XL			0.167		OZ WT/CWT				SEED TRT	146	0	0	0	98	82					
12	COUNTER	20	CR	6.0		OZ/1000 ROW-FT				T-BAND											
12	OUTLOOK	6	EC	0.7		LB A/A	15	OZ/A	PRE	A											
12	DISTINCT	70	WG	0.175		LB A/A	4	OZ/A	1-3"W	B											
12	ACTIVATOR 90	100	LIQ	0.25		% V/V	0.25	%V/V	1-3"W	B											
12	28% UAN	100	LIQ	1.25		% V/V	1.25	%V/V	1-3"W	B											
13	NONTREATED										82	0	0	0	0	0					
LSD (P=.05)											46.2	0.0	0.0	0.0	0.0	3.2	13.7	6.0	13.6	29.0	29.9
Replicate F											3.818	0.000	0.000	0.000	0.000	3.000	0.711	3.679	3.814	2.441	0.907
Replicate Prob(F)											0.0744	1.0000	1.0000	1.0000	1.0000	0.1089	0.4157	0.0792	0.0745	0.1442	0.3614
Treatment F											2.056	0.000	0.000	0.000	0.000	680.823	31.001	177.338	36.496	10.724	13.233
Treatment Prob(F)											0.1130	1.0000	1.0000	1.0000	1.0000	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001

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Trial Comments

1. Protocol: Syngenta.
2. Plot length is 40 and 80 ft in replication 1 and 2, respectively, average of 60 ft.
3. DAE = days after emergence. DA-B = days after 1-3"W application. DA-C = days after V8-V12 application.
4. Ratings at 7 DAE were also 12 days after PRE application and prior to POST applications.
Ratings at 7 and 14 days after 1-3"W application were also 21 and 28 days after PRE application, respectively.
Ratings at 42 days after 1-3"W application were also 56 and 18 days after the PRE and V8-V12 applications, respectively.