

(01-WCN-1)

Axiom, Epic, Balance Pro, Degree Xtra and other preemergence applied herbicides for weed control in no-tillage corn, Crawfordsville, Iowa, 2001. Owen, Micheal D.K., James F. Lux, and Damian D. Franzenburg. The purpose of this study was to evaluate herbicide combinations for weed efficacy and corn phytotoxicity in no tillage production systems. The soil was a silty clay loam with a pH 5.95 and 4.5% organic matter. The experimental design was a randomized complete block with three replications and plots were 10 by 25 ft. The 2000 crop was soybean. Fertilization included 100 lb/A actual N applied as 28% urea ammonium nitrate dribble banded. Crop residue on the soil surface was 95 to 100% at planting. "Cargill hybrid 5212" corn was planted 2 inches deep on April 30, at 32,000 seeds/A in 30-inch rows. April rainfall included: 0.26, 0.45, 0.24, 0.18, 0.01, 0.48, 0.06, 0.03, 1.27, 0.01, 0.08, 0.20, 0.31 and 0.04 inches, on April 5, 6, 9, 10, 11, 14, 15, 21, 22, 23, 24, 25, 28 and 30, respectively. Total rainfall for April was 3.62 inches. May rainfall included: 0.40, 1.75, 0.01, 0.35, 0.03, 0.03, 1.20, 0.13, 0.05, 0.44, 0.69, 0.32, 0.10, 0.05, 0.35, 0.84, 0.07, 0.02 and 1.30 inches, on May 1, 3, 4, 5, 6, 7, 10, 11, 13, 14, 17, 20, 21, 23, 24, 26, 28, 30 and 31, respectively. Total rainfall for May was 8.14 inches. June rainfall included: 0.12, 0.08, 0.53, 0.06, 0.57, 0.06, 0.02, 0.02, 0.48 and 0.06 inches on June 1, 4, 5, 6, 14, 15, 17, 19, 20 and 21, respectively. Total rainfall for June was 2.00 inches. July rainfall included: 0.26 inches and 2.22 inches from July 1 through 15 and 16 through 31, respectively. Rainfall total for August was 1.07 inches. Application information is listed below:

Date	April 30
Treatment	PRE
Sprayer	
gpa	20
psi	30
nozzle	11002
Temperature (C)	
air	29
soil (4 inch)	16
Soil moisture	dry
Wind (mph)	15-20 SW
Sky	cloudy
Relative	
humidity (%)	31%
Giant foxtail	
leaf no.	1-2
height (inch)	0.25-0.5
infestation (ft <sup>2</sup> )	3-4
Common lambsquarters	
leaf no.	4-8
height (inch)	0.5-1.5
infestation (ft <sup>2</sup> )	1-3
Common waterhemp	
leaf no.	4-numerous
height (inch)	0.5-1.5
infestation (ft <sup>2</sup> )	0-1
Giant ragweed	
leaf no.	4-8
height (inch)	0.5-2
infestation (ft <sup>2</sup> )	1-5

Horseweed	
leaf no.	numerous
height (inch)	2-3
infestation (ft <sup>2</sup> )	0-1
Velvetleaf	
leaf no.	cotyl
height (inch)	0.25
infestation (ft <sup>2</sup> )	0-1

There were no significant differences in corn stand, excluding the untreated check. No corn injury was observed on May 17. Minimal injury was noted on May 29. All treatments demonstrated excellent weed control on May 29. However, on July 5 giant foxtail control began to break. Degree Xtra provided 87% control. Giant foxtail control for all other treatments fell to 77% or less. Velvetleaf control was 91, 92, 92, and 93% for Harness Xtra, USA 2001 plus Atrazine, Degree Xtra, and Bicep II Magnum, respectively. Other treatments provided at least 95% control of velvetleaf. Common lambsquarters control was 92% for USA 2001. All other treatments provided at least 95% control. Common waterhemp and giant ragweed control was excellent for all treatments. There were no significant differences between treatments for corn yield, excluding the untreated check. Yields ranged from 138 to 167 bu/A. (Dept. of Agronomy, Iowa State University, Ames)

## DATA MEAN

**TITLE:** Axiom, Epic, Balance Pro, Degree Xtra and other preemergence applied herbicides for weed control in no-tillage corn.

**CREATED:** 06/05/2001 **REVISED:** 12/12/2001

**COMPLETED:** N

**PROJECT TYPE:** HERBICIDE

**LOCATION:** CRAWFORDSVILLE, IA

**RESEARCHED BY:** IA State University

**DESIGN:** RANDOMIZED COMPLETE BLOCK DESIGN

**PLOT SIZE:** 10.00 FT **WIDE X** 25.00 FT **LONG**

**REPS:** 03

TRT NUM	TREATMENT COMPONENT	DOSAGE			ZEAMD 17.5 FT 08/09/01	ZEAMD PHY % 05/17/01	ZEAMD PHY % 05/29/01	SETFA CON % 05/29/01	AMBTR CON % 05/29/01
		RATE	UNIT	TM					
1A	UNTREATED CHECK	0.00	NA	0	5	0	0	0	0
2A	AXIOM (68DF)	0.98	LAA	1	28	0	5	98	99
	B»HORNET WDG (68.5WG)	0.128	LAA	1					
	C»ROUNDUP ULTRAMAX (5SL)	1.02	LAA	1					
	D»AMMONIUM SULFATE	8.50	PMG	1					
3A	HARNESS XTRA (6SC)	3.45	LAA	1	30	0	2	96	99
	B»ROUNDUP ULTRAMAX (5SL)	1.02	LAA	1					
	C»AMMONIUM SULFATE	8.50	PMG	1					
4A	EPIC (58DF)	0.54	LAA	1	28	0	2	99	99
	B»ROUNDUP ULTRAMAX (5SL)	1.02	LAA	1					
	C»AMMONIUM SULFATE	8.50	PMG	1					
5A	EPIC (58DF)	0.44	LAA	1	29	0	3	99	99
	B ATRAZINE 90DF (WG)	0.90	LAA	1					
	C»ROUNDUP ULTRAMAX (5SL)	1.02	LAA	1					
	D»AMMONIUM SULFATE	8.50	PMG	1					
6A	USA 2001 (71.5DF)	0.72	LAA	1	28	0	5	99	99
	B»ROUNDUP ULTRAMAX (5SL)	1.02	LAA	1					
	C»AMMONIUM SULFATE	8.50	PMG	1					
7A	USA 2001 (71.5DF)	0.72	LAA	1	31	0	2	99	99
	B ATRAZINE 90DF (WG)	0.90	LAA	1					
	C»ROUNDUP ULTRAMAX (5SL)	1.02	LAA	1					
	D»AMMONIUM SULFATE	8.50	PMG	1					
8A	BALANCE PRO (4SC)	0.094	LAA	1	31	0	2	95	99
	B»DEFINE (60DF)	0.30	LAA	1					
	C ATRAZINE 90DF (WG)	1.35	LAA	1					
	D»TOUCHDOWN (3SL)	0.75	LAA	1					
	E»AMMONIUM SULFATE	8.50	PMG	1					
9A	FULTIME (4SC)	3.00	LAA	1	31	0	2	96	99
	B»HORNET WDG (68.5WG)	0.128	LAA	1					
	C»GLYPHOMAX PLUS (4SL)	1.00	LAA	1					
	D»AMMONIUM SULFATE	8.50	PMG	1					
10A	DEGREE XTRA (4.04CS)	3.74	LAA	1	32	0	3	99	99
	B»ROUNDUP ULTRAMAX (5SL)	1.02	LAA	1					
	C»AMMONIUM SULFATE	8.50	PMG	1					
11A	HARNESS XTRA (6SC)	3.45	LAA	1	31	0	0	98	99
	B»BALANCE PRO (4SC)	0.063	LAA	1					
	C»ROUNDUP ULTRAMAX (5SL)	1.02	LAA	1					
	D»AMMONIUM SULFATE	8.50	PMG	1					
12A	BICEP II MAGNUM (5.5L)	3.58	LAA	1	33	0	0	99	99
	B»TOUCHDOWN (3SL)	0.75	LAA	1					
	C»AMMONIUM SULFATE	8.50	PMG	1					
LSD (0.05)					7.00	0.00	6.00	3.29	0.00

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**LOCATION:** CRAWFORDSVILLE, IA

**RESEARCHED BY:** IA State University

**DESIGN:** RANDOMIZED COMPLETE BLOCK DESIGN

**PLOT SIZE:** 10.00 FT **WIDE X** 25.00 FT **LONG**

**REPS:** 03

TRT NUM	TREATMENT COMPONENT	DOSAGE			CHEAL	ERICA	ZEAMD	SETFA	ABUTH
		RATE	UNIT	TM	CON % 05/29/01	CON % 05/29/01	PHY % 07/05/01	CON % 07/05/01	CON % 07/05/01
1A	UNTREATED CHECK	0.00	NA	0	0	0	0	0	0
2A	AXIOM (68DF)	0.98	LAA	1	99	99	2	72	96
	B»HORNET WDG (68.5WG)	0.128	LAA	1					
	C»ROUNDUP ULTRAMAX (5SL)	1.02	LAA	1					
	D»AMMONIUM SULFATE	8.50	PMG	1					
3A	HARNESS XTRA (6SC)	3.45	LAA	1	99	99	0	63	91
	B»ROUNDUP ULTRAMAX (5SL)	1.02	LAA	1					
	C»AMMONIUM SULFATE	8.50	PMG	1					
4A	EPIC (58DF)	0.54	LAA	1	99	99	0	72	96
	B»ROUNDUP ULTRAMAX (5SL)	1.02	LAA	1					
	C»AMMONIUM SULFATE	8.50	PMG	1					
5A	EPIC (58DF)	0.44	LAA	1	99	99	0	72	95
	B ATRAZINE 90DF (WG)	0.90	LAA	1					
	C»ROUNDUP ULTRAMAX (5SL)	1.02	LAA	1					
	D»AMMONIUM SULFATE	8.50	PMG	1					
6A	USA 2001 (71.5DF)	0.72	LAA	1	99	99	0	77	95
	B»ROUNDUP ULTRAMAX (5SL)	1.02	LAA	1					
	C»AMMONIUM SULFATE	8.50	PMG	1					
7A	USA 2001 (71.5DF)	0.72	LAA	1	99	99	0	77	92
	B ATRAZINE 90DF (WG)	0.90	LAA	1					
	C»ROUNDUP ULTRAMAX (5SL)	1.02	LAA	1					
	D»AMMONIUM SULFATE	8.50	PMG	1					
8A	BALANCE PRO (4SC)	0.094	LAA	1	99	99	0	72	96
	B»DEFINE (60DF)	0.30	LAA	1					
	C ATRAZINE 90DF (WG)	1.35	LAA	1					
	D»TOUCHDOWN (3SL)	0.75	LAA	1					
	E»AMMONIUM SULFATE	8.50	PMG	1					
9A	FULTIME (4SC)	3.00	LAA	1	99	99	0	68	98
	B»HORNET WDG (68.5WG)	0.128	LAA	1					
	C»GLYPHOMAX PLUS (4SL)	1.00	LAA	1					
	D»AMMONIUM SULFATE	8.50	PMG	1					
10A	DEGREE XTRA (4.04CS)	3.74	LAA	1	99	99	0	87	92
	B»ROUNDUP ULTRAMAX (5SL)	1.02	LAA	1					
	C»AMMONIUM SULFATE	8.50	PMG	1					
11A	HARNESS XTRA (6SC)	3.45	LAA	1	99	99	0	65	96
	B»BALANCE PRO (4SC)	0.063	LAA	1					
	C»ROUNDUP ULTRAMAX (5SL)	1.02	LAA	1					
	D»AMMONIUM SULFATE	8.50	PMG	1					
12A	BICEP II MAGNUM (5.5L)	3.58	LAA	1	99	99	0	75	93
	B»TOUCHDOWN (3SL)	0.75	LAA	1					
	C»AMMONIUM SULFATE	8.50	PMG	1					
LSD (0.05)					0.00	0.00	1.41	7.58	6.49

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**REPS:** 03

TRT	TREATMENT	DOSAGE			AMATA	AMBTR	CHEAL	ERICA	ZEAMD
NUM	COMPONENT	RATE	UNIT	TM	CON %	CON %	CON %	CON %	BU/A
					07/05/01	07/05/01	07/05/01	07/05/01	10/09/01
1A	UNTREATED CHECK	0.00	NA	0	0	0	0	0	0
2A»	AXIOM (68DF)	0.98	LAA	1	95	96	98	99	138
	B»HORNET WDG (68.5WG)	0.128	LAA	1					
	C»ROUNDUP ULTRAMAX (5SL)	1.02	LAA	1					
	D»AMMONIUM SULFATE	8.50	PMG	1					
3A	HARNESS XTRA (6SC)	3.45	LAA	1	93	96	98	99	145
	B»ROUNDUP ULTRAMAX (5SL)	1.02	LAA	1					
	C»AMMONIUM SULFATE	8.50	PMG	1					
4A»	EPIC (58DF)	0.54	LAA	1	96	99	96	99	157
	B»ROUNDUP ULTRAMAX (5SL)	1.02	LAA	1					
	C»AMMONIUM SULFATE	8.50	PMG	1					
5A»	EPIC (58DF)	0.44	LAA	1	95	98	96	99	145
	B ATRAZINE 90DF (WG)	0.90	LAA	1					
	C»ROUNDUP ULTRAMAX (5SL)	1.02	LAA	1					
	D»AMMONIUM SULFATE	8.50	PMG	1					
6A»	USA 2001 (71.5DF)	0.72	LAA	1	93	99	92	99	148
	B»ROUNDUP ULTRAMAX (5SL)	1.02	LAA	1					
	C»AMMONIUM SULFATE	8.50	PMG	1					
7A»	USA 2001 (71.5DF)	0.72	LAA	1	95	99	98	99	167
	B ATRAZINE 90DF (WG)	0.90	LAA	1					
	C»ROUNDUP ULTRAMAX (5SL)	1.02	LAA	1					
	D»AMMONIUM SULFATE	8.50	PMG	1					
8A»	BALANCE PRO (4SC)	0.094	LAA	1	96	99	98	99	153
	B»DEFINE (60DF)	0.30	LAA	1					
	C ATRAZINE 90DF (WG)	1.35	LAA	1					
	D»TOUCHDOWN (3SL)	0.75	LAA	1					
	E»AMMONIUM SULFATE	8.50	PMG	1					
9A»	FULTIME (4SC)	3.00	LAA	1	99	99	98	99	142
	B»HORNET WDG (68.5WG)	0.128	LAA	1					
	C»GLYPHOMAX PLUS (4SL)	1.00	LAA	1					
	D»AMMONIUM SULFATE	8.50	PMG	1					
10A»	DEGREE XTRA (4.04CS)	3.74	LAA	1	99	99	95	99	145
	B»ROUNDUP ULTRAMAX (5SL)	1.02	LAA	1					
	C»AMMONIUM SULFATE	8.50	PMG	1					
11A	HARNESS XTRA (6SC)	3.45	LAA	1	99	99	98	99	142
	B»BALANCE PRO (4SC)	0.063	LAA	1					
	C»ROUNDUP ULTRAMAX (5SL)	1.02	LAA	1					
	D»AMMONIUM SULFATE	8.50	PMG	1					
12A»	BICEP II MAGNUM (5.5L)	3.58	LAA	1	98	98	98	99	150
	B»TOUCHDOWN (3SL)	0.75	LAA	1					
	C»AMMONIUM SULFATE	8.50	PMG	1					
		LSD (0.05)			6.27	3.10	3.15	0.00	32.08

» = SUPPLEMENTAL CHEMICAL

## \* TIMING CODES

00 = UNTRCHK / UNTREATED TIMING (FP)

01 = PREPRE / PRE 04/30/2001(1)