

(01-ACS-5)

Postemergence Roundup UltraMAX following various preemergence herbicides for weed control in Roundup Ready corn, Ames, Iowa, 2001. Owen, Micheal D.K., James F. Lux, and Damian D. Franzenburg. The purpose of this study was to evaluate several glyphosate formulations and other herbicide combinations applied postemergence for weed efficacy and crop phytotoxicity on a glyphosate resistant corn hybrid. The soil was a Canisteo, Nicollet, Clarion Webster clay loam with a pH 6.8 and 4.3% 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. Tillage included a spring field cultivation. Fertilization included 124 lb/A applied as urea. Crop residue on the soil surface was 7% at planting. "Dekalb hybrid DK C 57-40 RR" corn was planted 1.5 inches deep on May 9, at 30,200 seeds/A in 30-inch rows. May rainfall included: 0.18, 0.39, 0.83, 0.12, 0.15, 0.22, 0.07, 0.98, 0.26, 1.58, 0.05, 0.15, 0.03, 0.27, 0.20, 0.02, 0.13 and 0.64 inches on May 1, 2, 3, 4, 5, 6, 9, 10, 13, 20, 21, 23, 24, 25, 26, 27, 28 and 31, respectively. Total rainfall for May was 6.27 inches. June rainfall included: 0.07, 0.02, 0.30, 0.14, 0.59, 0.38, 0.16 and 0.01 inches on June 1, 4, 5, 10, 12, 14, 16 and 20, respectively. Total rainfall for June was 1.67 inches. July rainfall included: 0.44 inches and 1.24 inches from July 1 through 15 and 16 through 31, respectively. Rainfall total for August was 2.50 inches. Application information is listed below:

Date	May 10	June 11	June 16	July 3
Treatment	PRE	POST1	POST2	POST3
Sprayer				
gpa	20	20	20	20
psi	30	30	30	45
nozzle	11002	11002	11002	15003
Temperature (C)				
air	28	35	28	31
soil (4 inch)	20	27	22	35
Soil moisture	dry	dry	damp	dry
Wind (mph)	7-10 SW	8-12 SW	5-10 NW	0-3 W
Sky	cloudy	pt. cloudy	clear	pt. cloudy
Relative humidity (%)	53%	63%	58%	78%
Corn growth				
leaf no.	-	V4	V5-V6	V10
height (inch)	-	5-7	10-12	48
Giant foxtail				
leaf no.	-	3-4	2-4, 0-2 tillers	3-5
height (inch)	-	1-4	1-3	2-6
infestation (ft ²)	-	1-5	0-1	0-1
Common lambsquarters				
leaf no.	-	numerous	numerous	numerous
height (inch)	-	1-5	2-6	2-6
infestation (ft ²)	-	0-10	0-3	0-1
Common waterhemp				
leaf no.	-	numerous	numerous	numerous
height (inch)	-	0.25-3	2-6	4-6
infestation (ft ²)	-	0-5	0-1	0-1
Velvetleaf				
leaf no.	-	2-5	2-7	4-6
height (inch)	-	2-4	3-6	2-6
infestation (ft ²)	-	1-4	0-5	0-1

No significant differences in corn stand between treatments were determined. No corn injury resulted from PRE applied treatments when observed May 29, prior to postemergence applications. Marksman, Basis Gold, and Celebrity Plus applied POST1, and Spirit applied POST2 caused 7 to 20% corn injury when observed on June 25 and July 13. Roundup UltraMAX injury was 2% or less. Following all POST application timings, giant foxtail, velvetleaf, common waterhemp, and common lambsquarters control was good to excellent when observed on July 3, 31, and August 31. Bicep II Magnum applied PRE, and Leadoff PRE followed by Basis Gold POST1 did not effectively control velvetleaf on these dates. Corn yields were variable with significant differences occurring between treatments. All treatments yielded significantly higher than the untreated check. (Dept. of Agronomy, Iowa State University, Ames)

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CREATED: 06/05/2001 REVISED: 12/10/2001

COMPLETED: N

PROJECT TYPE: HERBICIDE

LOCATION: AMES, 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		TM	ZEAMD	ZEAMD	ZEAMD	ZEAMD	ZEAMD
		RATE	UNIT		17.5 FT 07/27/01	PHY % 05/29/01	PHY % 06/18/01	PHY % 06/25/01	PHY % 07/03/01
1A	UNTREATED CHECK	0.00	NA	0	24	0	0	0	0
2A	»ROUNDUP ULTRAMAX (3.7SL)	0.75	LAA	2	28	0	0	2	2
3A	»ROUNDUP ULTRAMAX (3.7SL)	0.75	LAA	2	29	0	0	0	0
	B»AMMONIUM SULFATE	8.50	PMG	2					
	C»ROUNDUP ULTRAMAX (3.7SL)	0.56	LAA	4					
	D»AMMONIUM SULFATE	8.50	PMG	4					
4A	»DEGREE 3.8 (CS)	1.10	LAA	1	28	0	0	0	0
	B»ROUNDUP ULTRAMAX (3.7SL)	0.75	LAA	3					
	C»AMMONIUM SULFATE	8.50	PMG	3					
5A	»DEGREE XTRA (4.04CS)	1.75	LAA	1	28	0	0	0	0
	B»ROUNDUP ULTRAMAX (3.7SL)	0.75	LAA	3					
	C»AMMONIUM SULFATE	8.50	PMG	3					
6A	»DEGREE 3.8 (CS)	1.10	LAA	2	27	0	0	2	2
	B»ROUNDUP ULTRAMAX (3.7SL)	0.75	LAA	2					
	C»AMMONIUM SULFATE	8.50	PMG	2					
7A	»DEGREE XTRA (4.04CS)	1.75	LAA	2	26	0	0	0	2
	B»ROUNDUP ULTRAMAX (3.7SL)	0.75	LAA	2					
	C»AMMONIUM SULFATE	8.50	PMG	2					
8A	»READYMASTER ATZ 4 (SC)	2.00	LAA	2	28	0	0	0	2
9A	»DUAL II MAGNUM (7.64EC)	1.60	LAA	1	27	0	10	17	20
	B MARKSMAN (3.2SC)	1.40	LAA	2					
10A	»BICEP II MAGNUM (5.5L)	3.60	LAA	1	28	0	0	0	0
11A	»BICEP II MAGNUM (5.5L)	3.60	LAA	1	29	0	0	10	7
	B»SPIRIT (57WG)	0.035	LAA	3					
	C»NIS	0.25	PMV	3					
	D»28%N	2.50	PMV	3					
12A	»BICEP II MAGNUM (5.5L)	1.80	LAA	1	30	0	0	0	0
	B»TOUCHDOWN (3SL)	0.75	LAA	3					
	C»AMMONIUM SULFATE	8.50	PMG	3					
13A	»FULTIME (4SC)	1.95	LAA	1	29	0	0	0	0
	B»GLYPHOMAX PLUS 3 (SL)	0.75	LAA	3					
	C»AMMONIUM SULFATE	8.50	PMG	3					
14A	»LEADOFF (5SL)	1.40	LAA	1	28	0	10	7	8
	B»BASIS GOLD (89.5DF)	0.783	LAA	2					
	C»CROP OIL CONCENTRATE	1.00	QMA	2					
	D»28%N	4.00	QMA	2					
15A	»CELEBRITY PLUS (70WG)	0.20	LAA	2	28	0	7	10	8
	B»NIS	0.25	PMV	2					
	C»28%N	4.00	QMA	2					
LSD (0.05)					3.54	0.00	2.56	4.42	4.32

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PLOT SIZE: 10.00 FT WIDE X 25.00 FT LONG

REPS: 03

TRT NUM	TREATMENT COMPONENT	DOSAGE			SETFA	ABUTH	AMATA	CHEAL	ZEAMD
		RATE	UNIT	TM	CON % 07/03/01	CON % 07/03/01	CON % 07/03/01	CON % 07/03/01	PHY % 07/31/01
1A	UNTREATED CHECK	0.00	NA	0	0	0	0	0	0
2A	»ROUNDUP ULTRAMAX (3.7SL)	0.75	LAA	2	99	99	98	99	2
3A	»ROUNDUP ULTRAMAX (3.7SL)	0.75	LAA	2	99	99	99	99	0
	B»AMMONIUM SULFATE	8.50	PMG	2					
	C»ROUNDUP ULTRAMAX (3.7SL)	0.56	LAA	4					
	D»AMMONIUM SULFATE	8.50	PMG	4					
4A	»DEGREE 3.8 (CS)	1.10	LAA	1	99	99	99	99	0
	B»ROUNDUP ULTRAMAX (3.7SL)	0.75	LAA	3					
	C»AMMONIUM SULFATE	8.50	PMG	3					
5A	»DEGREE XTRA (4.04CS)	1.75	LAA	1	99	99	99	99	0
	B»ROUNDUP ULTRAMAX (3.7SL)	0.75	LAA	3					
	C»AMMONIUM SULFATE	8.50	PMG	3					
6A	»DEGREE 3.8 (CS)	1.10	LAA	2	99	99	99	95	0
	B»ROUNDUP ULTRAMAX (3.7SL)	0.75	LAA	2					
	C»AMMONIUM SULFATE	8.50	PMG	2					
7A	»DEGREE XTRA (4.04CS)	1.75	LAA	2	99	99	99	98	0
	B»ROUNDUP ULTRAMAX (3.7SL)	0.75	LAA	2					
	C»AMMONIUM SULFATE	8.50	PMG	2					
8A	»READYMASTER ATZ 4 (SC)	2.00	LAA	2	99	99	98	92	0
9A	»DUAL II MAGNUM (7.64EC)	1.60	LAA	1	98	68	99	99	10
	B MARKSMAN (3.2SC)	1.40	LAA	2					
10A	»BICEP II MAGNUM (5.5L)	3.60	LAA	1	93	35	99	96	0
11A	»BICEP II MAGNUM (5.5L)	3.60	LAA	1	99	98	99	99	0
	B»SPIRIT (57WG)	0.035	LAA	3					
	C»NIS	0.25	PMV	3					
	D»28%N	2.50	PMV	3					
12A	»BICEP II MAGNUM (5.5L)	1.80	LAA	1	99	99	99	99	0
	B»TOUCHDOWN (3SL)	0.75	LAA	3					
	C»AMMONIUM SULFATE	8.50	PMG	3					
13A	»FULTIME (4SC)	1.95	LAA	1	99	99	99	99	0
	B»GLYPHOMAX PLUS 3 (SL)	0.75	LAA	3					
	C»AMMONIUM SULFATE	8.50	PMG	3					
14A	»LEADOFF (5SL)	1.40	LAA	1	99	72	99	95	3
	B»BASIS GOLD (89.5DF)	0.783	LAA	2					
	C»CROP OIL CONCENTRATE	1.00	QMA	2					
	D»28%N	4.00	QMA	2					
15A	»CELEBRITY PLUS (70WG)	0.20	LAA	2	93	95	99	98	5
	B»NIS	0.25	PMV	2					
	C»28%N	4.00	QMA	2					
LSD (0.05)					3.45	12.52	1.36	4.16	4.51

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TRT NUM	TREATMENT COMPONENT	DOSAGE			SETFA	ABUTH	AMATA	CHEAL	SETFA
		RATE	UNIT	TM	CON % 07/31/01	CON % 07/31/01	CON % 07/31/01	CON % 07/31/01	CON % 08/31/01
1A	UNTREATED CHECK	0.00	NA	0	0	0	0	0	0
2A	»ROUNDUP ULTRAMAX (3.7SL)	0.75	LAA	2	92	95	96	95	92
3A	»ROUNDUP ULTRAMAX (3.7SL)	0.75	LAA	2	99	99	99	98	99
	B»AMMONIUM SULFATE	8.50	PMG	2					
	C»ROUNDUP ULTRAMAX (3.7SL)	0.56	LAA	4					
	D»AMMONIUM SULFATE	8.50	PMG	4					
4A	»DEGREE 3.8 (CS)	1.10	LAA	1	96	98	99	98	96
	B»ROUNDUP ULTRAMAX (3.7SL)	0.75	LAA	3					
	C»AMMONIUM SULFATE	8.50	PMG	3					
5A	»DEGREE XTRA (4.04CS)	1.75	LAA	1	99	98	99	99	99
	B»ROUNDUP ULTRAMAX (3.7SL)	0.75	LAA	3					
	C»AMMONIUM SULFATE	8.50	PMG	3					
6A	»DEGREE 3.8 (CS)	1.10	LAA	2	99	98	99	95	99
	B»ROUNDUP ULTRAMAX (3.7SL)	0.75	LAA	2					
	C»AMMONIUM SULFATE	8.50	PMG	2					
7A	»DEGREE XTRA (4.04CS)	1.75	LAA	2	99	90	99	98	98
	B»ROUNDUP ULTRAMAX (3.7SL)	0.75	LAA	2					
	C»AMMONIUM SULFATE	8.50	PMG	2					
8A	»READYMASTER ATZ 4 (SC)	2.00	LAA	2	95	90	99	96	95
9A	»DUAL II MAGNUM (7.64EC)	1.60	LAA	1	95	85	99	98	92
	B MARKSMAN (3.2SC)	1.40	LAA	2					
10A	»BICEP II MAGNUM (5.5L)	3.60	LAA	1	93	33	99	96	92
11A	»BICEP II MAGNUM (5.5L)	3.60	LAA	1	99	98	99	99	96
	B»SPIRIT (57WG)	0.035	LAA	3					
	C»NIS	0.25	PMV	3					
	D»28%N	2.50	PMV	3					
12A	»BICEP II MAGNUM (5.5L)	1.80	LAA	1	98	99	99	99	98
	B»TOUCHDOWN (3SL)	0.75	LAA	3					
	C»AMMONIUM SULFATE	8.50	PMG	3					
13A	»FULTIME (4SC)	1.95	LAA	1	95	99	99	98	93
	B»GLYPHOMAX PLUS 3 (SL)	0.75	LAA	3					
	C»AMMONIUM SULFATE	8.50	PMG	3					
14A	»LEADOFF (5SL)	1.40	LAA	1	96	70	99	96	96
	B»BASIS GOLD (89.5DF)	0.783	LAA	2					
	C»CROP OIL CONCENTRATE	1.00	QMA	2					
	D»28%N	4.00	QMA	2					
15A	»CELEBRITY PLUS (70WG)	0.20	LAA	2	90	95	99	96	90
	B»NIS	0.25	PMV	2					
	C»28%N	4.00	QMA	2					
LSD (0.05)					4.80	12.81	1.00	4.20	5.38

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TRT NUM	TREATMENT COMPONENT	DOSAGE			ABUTH CON % 08/31/01	AMATA CON % 08/31/01	CHEAL CON % 08/31/01	ZEAMD BU/A 10/12/01
		RATE	UNIT	TM				
1A	UNTREATED CHECK	0.00	NA	0	0	0	0	101
2A	»ROUNDUP ULTRAMAX (3.7SL)	0.75	LAA	2	95	98	88	188
3A	»ROUNDUP ULTRAMAX (3.7SL)	0.75	LAA	2	99	99	98	179
	B»AMMONIUM SULFATE	8.50	PMG	2				
	C»ROUNDUP ULTRAMAX (3.7SL)	0.56	LAA	4				
	D»AMMONIUM SULFATE	8.50	PMG	4				
4A	»DEGREE 3.8 (CS)	1.10	LAA	1	98	99	95	200
	B»ROUNDUP ULTRAMAX (3.7SL)	0.75	LAA	3				
	C»AMMONIUM SULFATE	8.50	PMG	3				
5A	»DEGREE XTRA (4.04CS)	1.75	LAA	1	98	99	98	204
	B»ROUNDUP ULTRAMAX (3.7SL)	0.75	LAA	3				
	C»AMMONIUM SULFATE	8.50	PMG	3				
6A	»DEGREE 3.8 (CS)	1.10	LAA	2	95	99	90	185
	B»ROUNDUP ULTRAMAX (3.7SL)	0.75	LAA	2				
	C»AMMONIUM SULFATE	8.50	PMG	2				
7A	»DEGREE XTRA (4.04CS)	1.75	LAA	2	88	99	98	180
	B»ROUNDUP ULTRAMAX (3.7SL)	0.75	LAA	2				
	C»AMMONIUM SULFATE	8.50	PMG	2				
8A	»READYMASTER ATZ 4 (SC)	2.00	LAA	2	90	99	93	194
9A	»DUAL II MAGNUM (7.64EC)	1.60	LAA	1	83	99	98	165
	B MARKSMAN (3.2SC)	1.40	LAA	2				
10A	»BICEP II MAGNUM (5.5L)	3.60	LAA	1	30	99	95	192
11A	»BICEP II MAGNUM (5.5L)	3.60	LAA	1	98	99	99	173
	B»SPIRIT (57WG)	0.035	LAA	3				
	C»NIS	0.25	PMV	3				
	D»28%N	2.50	PMV	3				
12A	»BICEP II MAGNUM (5.5L)	1.80	LAA	1	99	99	98	189
	B»TOUCHDOWN (3SL)	0.75	LAA	3				
	C»AMMONIUM SULFATE	8.50	PMG	3				
13A	»FULTIME (4SC)	1.95	LAA	1	99	99	98	198
	B»GLYPHOMAX PLUS 3 (SL)	0.75	LAA	3				
	C»AMMONIUM SULFATE	8.50	PMG	3				
14A	»LEADOFF (5SL)	1.40	LAA	1	60	99	95	175
	B»BASIS GOLD (89.5DF)	0.783	LAA	2				
	C»CROP OIL CONCENTRATE	1.00	QMA	2				
	D»28%N	4.00	QMA	2				
15A	»CELEBRITY PLUS (70WG)	0.20	LAA	2	96	99	93	177
	B»NIS	0.25	PMV	2				
	C»28%N	4.00	QMA	2				
LSD (0.05)					16.17	1.00	4.73	24.00

» = SUPPLEMENTAL CHEMICAL

* TIMING CODES

00 = UNTRCHK / UNTREATED TIMING (FP)
 01 = PREPRE / PRE 05/10/2001(1)
 02 = POSPOS / POST1 06/11/2001(2)
 03 = POSPOS / POST2 06/16/2001(3)
 04 = POSPOS / POST3 07/03/2001(4)