

(01-ASC-7)

FirstRate, Authority and Command followed by postemergence applied herbicides for weed control in soybean, Ames, Iowa, 2001. Owen, Micheal D.K., James F. Lux, and Damian D. Franzenburg. The purpose of this study was to evaluate clomazone and sulfentrazone for weed efficacy and crop phytotoxicity in a glyphosate resistant/sulfonylurea tolerant soybean variety. 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 corn. Tillage included a fall chisel plowing and spring field cultivation. Preplant treatments were incorporated one pass with a field cultivator operating 2 to 3 inches deep. Crop residue on the soil surface was 12% at planting. "Asgrow variety AG 3302 RR/STS" soybeans were planted 1.25 inches deep on June 8, at 154,000 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	June 8	June 9	July 3	July 9	August 8
Treatment	PPI	PRE	POST1	POST2	POST3
Sprayer					
gpa	20	20	20	20	20
psi	30	30	30	30	30
nozzle	11002	11002	11003	11002	11003
Temperature (C)					
air	27	28	31	31	32
soil (4 inch)	25	21	35	30	28
Soil moisture	moist	dry	dry	dry	dry
Wind (mph)	4-6 N	0-7 W	0-3 W	3-5 N	calm
Sky	pt. cloudy	clear	pt. cloudy	clear	clear
Relative humidity (%)	59	56	78	72	79
Soybean growth					
leaf no.	-	-	V2	V4	R2
height (inch)	-	-	3-4	5-6	26-30
Giant foxtail					
leaf no.	-	-	3-5	3-5	2-4
height (inch)	-	-	3-5	2-6	2-8
infestation (ft ²)	-	-	0-5	0-2	0-1
Common lambsquarters					
leaf no.	-	-	2-4	numerous	-
height (inch)	-	-	2-3	4-5	-
infestation (ft ²)	-	-	< 1	< 1	-
Common waterhemp					
leaf no.	-	-	numerous	numerous	numerous
height (inch)	-	-	1-5	3-10	4-12
infestation (ft ²)	-	-	0-10	0-3	0-1
Velvetleaf					
leaf no.	-	-	2-4	2-6	4-5
height (inch)	-	-	2-4	2-6	1-3
infestation (ft ²)	-	-	0-2	0-1	0-1

All treatments injured soybean on at least one evaluation. POST1 Synchrony STS plus Flexstar plus Assure II caused 15% injury on July 11. Injury was generally light for the remaining treatments and ranged from 2 to 13%. Weed control evaluated on July 11 revealed excellent control of common lambsquarters and common waterhemp by all treatments. Giant foxtail control on July 11 was good to excellent except for PRE Canopy XL. Weed control ratings from July 24, August 6, and September 27 demonstrated that treatments without a postemergence broadleaf herbicide application did not adequately control velvetleaf as the season progressed. Most of these treatments also suffered lower soybean yields. PPI Pursuit Plus and PRE Firstrate plus Authority plus Pendimax demonstrated weaker control of common waterhemp and giant foxtail, respectively. PRE Command plus Authority and PRE Command plus Authority plus POST2 Roundup UltraMAX provided the highest soybean yields of 45 bu/A, each. (Dept. of Agronomy, Iowa State University, Ames)

DATA MEAN

TITLE: FirstRate, Authority and Command followed by postemergence applied herbicides for weed control in soybean.

CREATED: 06/05/2001 REVISED: 12/14/2001

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			GLXMA	SETFA	ABUTH	AMATA	CHEAL
		RATE	UNIT	TM	PHY % 07/11/01	CON % 07/11/01	CON % 07/11/01	CON % 07/11/01	CON % 07/11/01
1A	UNTREATED CHECK	0.00	NA	0	0	0	0	0	0
2A	PURSUIT PLUS (2.9EC)	0.91	LAA	1	7	96	85	95	99
3A»	DOMAIN (60DF)	0.60	LAA	2	3	88	85	96	99
4A»	BOUNDARY (7.8EC)	2.44	LAA	2	7	98	85	99	99
5A»	FIRSTRATE (84WG)	0.039	LAA	2	3	95	87	99	99
	B»AUTHORITY (4F)	0.31	LAA	2					
	C POAST PLUS (1EC)	0.188	LAA	3					
	D»CROP OIL CONCENTRATE	1.00	PMV	3					
6A»	FIRSTRATE (84WG)	0.039	LAA	2	3	88	93	99	99
	B»AUTHORITY (4F)	0.31	LAA	2					
	C»ROUNDUP ULTRAMAX (5SL)	0.78	LAA	4					
	D»AMMONIUM SULFATE	8.50	PMG	4					
7A»	FIRSTRATE (84WG)	0.029	LAA	2	8	87	87	99	99
	B»AUTHORITY (4F)	0.23	LAA	2					
	C»ROUNDUP ULTRAMAX (5SL)	1.02	LAA	4					
	D»AMMONIUM SULFATE	8.50	PMG	4					
8A»	FIRSTRATE (84WG)	0.039	LAA	1	5	87	82	96	99
	B»AUTHORITY (4F)	0.31	LAA	1					
	C»PENDIMAX (3.3EC)	1.03	LAA	1					
9A	COMMAND 3ME (CS)	0.75	LAA	2	5	91	88	99	99
	B»AUTHORITY (4F)	0.375	LAA	2					
10A	COMMAND 3ME (CS)	0.56	LAA	2	8	95	95	99	99
	B»AUTHORITY (4F)	0.28	LAA	2					
	C»ROUNDUP ULTRAMAX (5SL)	1.02	LAA	4					
	D»AMMONIUM SULFATE	8.50	PMG	4					
11A»	ROUNDUP ULTRAMAX (5SL)	0.78	LAA	3	12	99	98	99	99
	B»AMMONIUM SULFATE	8.50	PMG	3					
	C»ROUNDUP ULTRAMAX (5SL)	1.02	LAA	5					
	D»AMMONIUM SULFATE	8.50	PMG	5					
12A»	ROUNDUP ULTRAMAX (5SL)	1.02	LAA	4	2	0	0	0	0
	B»AMMONIUM SULFATE	8.50	PMG	4					
13A»	CANOPY XL 56.3 (DF)	0.088	LAA	2	0	72	82	99	99
	B»ROUNDUP ULTRAMAX (5SL)	1.02	LAA	4					
	C»AMMONIUM SULFATE	8.50	PMG	4					
14A»	AUTHORITY (75WG)	0.188	LAA	2	7	93	76	98	99
	B»ROUNDUP ULTRAMAX (5SL)	1.02	LAA	4					
	C»AMMONIUM SULFATE	8.50	PMG	4					
15A»	AUTHORITY (75WG)	0.188	LAA	2	7	90	99	99	99
	B»SYNCHRONY STS 42 (DG)	0.013	LAA	3					
	C ASSURE II (0.88EC)	0.048	LAA	3					
	D»CROP OIL CONCENTRATE	1.00	PMV	3					
	E»28%N	4.00	PMA	3					
16A»	AUTHORITY (75WG)	0.188	LAA	2	15	93	99	99	99
	B»SYNCHRONY STS 42 (DG)	0.006	LAA	3					
	C»FLEXSTAR (1.88SL)	0.118	LAA	3					
	D ASSURE II (0.88EC)	0.048	LAA	3					
	E»CROP OIL CONCENTRATE	1.00	PMV	3					
	F»28%N	4.00	PMA	3					
LSD (0.05)					4.00	12.56	16.33	3.19	0.00

DATA MEAN

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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			GLXMA	SETFA	ABUTH	AMATA	CHEAL
		RATE	UNIT	TM	PHY % 07/24/01	CON % 07/24/01	CON % 07/24/01	CON % 07/24/01	CON % 07/24/01
1A	UNTREATED CHECK	0.00	NA	0	0	0	0	0	0
2A	PURSUIT PLUS (2.9EC)	0.91	LAA	1	3	96	78	92	99
3A»	DOMAIN (60DF)	0.60	LAA	2	2	88	80	93	99
4A»	BOUNDARY (7.8EC)	2.44	LAA	2	3	95	77	98	99
5A»	FIRSTRATE (84WG)	0.039	LAA	2	0	99	78	95	99
	B»AUTHORITY (4F)	0.31	LAA	2					
	C POAST PLUS (1EC)	0.188	LAA	3					
	D»CROP OIL CONCENTRATE	1.00	PMV	3					
6A»	FIRSTRATE (84WG)	0.039	LAA	2	3	99	96	99	99
	B»AUTHORITY (4F)	0.31	LAA	2					
	C»ROUNDUP ULTRAMAX (5SL)	0.78	LAA	4					
	D»AMMONIUM SULFATE	8.50	PMG	4					
7A»	FIRSTRATE (84WG)	0.029	LAA	2	5	99	99	99	99
	B»AUTHORITY (4F)	0.23	LAA	2					
	C»ROUNDUP ULTRAMAX (5SL)	1.02	LAA	4					
	D»AMMONIUM SULFATE	8.50	PMG	4					
8A»	FIRSTRATE (84WG)	0.039	LAA	1	5	87	73	93	99
	B»AUTHORITY (4F)	0.31	LAA	1					
	C»PENDIMAX (3.3EC)	1.03	LAA	1					
9A	COMMAND 3ME (CS)	0.75	LAA	2	2	91	85	99	99
	B»AUTHORITY (4F)	0.375	LAA	2					
10A	COMMAND 3ME (CS)	0.56	LAA	2	3	99	99	99	99
	B»AUTHORITY (4F)	0.28	LAA	2					
	C»ROUNDUP ULTRAMAX (5SL)	1.02	LAA	4					
	D»AMMONIUM SULFATE	8.50	PMG	4					
11A»	ROUNDUP ULTRAMAX (5SL)	0.78	LAA	3	13	99	99	98	99
	B»AMMONIUM SULFATE	8.50	PMG	3					
	C»ROUNDUP ULTRAMAX (5SL)	1.02	LAA	5					
	D»AMMONIUM SULFATE	8.50	PMG	5					
12A»	ROUNDUP ULTRAMAX (5SL)	1.02	LAA	4	13	99	98	98	99
	B»AMMONIUM SULFATE	8.50	PMG	4					
13A»	CANOPY XL 56.3 (DF)	0.088	LAA	2	3	99	99	99	99
	B»ROUNDUP ULTRAMAX (5SL)	1.02	LAA	4					
	C»AMMONIUM SULFATE	8.50	PMG	4					
14A»	AUTHORITY (75WG)	0.188	LAA	2	7	99	99	99	99
	B»ROUNDUP ULTRAMAX (5SL)	1.02	LAA	4					
	C»AMMONIUM SULFATE	8.50	PMG	4					
15A»	AUTHORITY (75WG)	0.188	LAA	2	7	96	98	99	99
	B»SYNCHRONY STS 42 (DG)	0.013	LAA	3					
	C ASSURE II (0.88EC)	0.048	LAA	3					
	D»CROP OIL CONCENTRATE	1.00	PMV	3					
	E»28%N	4.00	PMA	3					
16A»	AUTHORITY (75WG)	0.188	LAA	2	5	96	99	99	99
	B»SYNCHRONY STS 42 (DG)	0.006	LAA	3					
	C»FLEXSTAR (1.88SL)	0.118	LAA	3					
	D ASSURE II (0.88EC)	0.048	LAA	3					
	E»CROP OIL CONCENTRATE	1.00	PMV	3					
	F»28%N	4.00	PMA	3					
LSD (0.05)					5.21	5.67	12.75	4.37	0.00

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PLOT SIZE: 10.00 FT WIDE X 25.00 FT LONG

REPS: 03

TRT NUM	TREATMENT COMPONENT	DOSAGE			GLXMA	SETFA	ABUTH	AMATA	CHEAL
		RATE	UNIT	TM	PHY % 08/06/01	CON % 08/06/01	CON % 08/06/01	CON % 08/06/01	CON % 08/06/01
1A	UNTREATED CHECK	0.00	NA	0	0	0	0	0	0
2A	PURSUIT PLUS (2.9EC)	0.91	LAA	1	2	96	75	83	99
3A»	DOMAIN (60DF)	0.60	LAA	2	0	88	75	88	99
4A»	BOUNDARY (7.8EC)	2.44	LAA	2	3	93	75	96	99
5A»	FIRSTRATE (84WG)	0.039	LAA	2	0	99	75	95	99
	B»AUTHORITY (4F)	0.31	LAA	2					
	C POAST PLUS (1EC)	0.188	LAA	3					
	D»CROP OIL CONCENTRATE	1.00	PMV	3					
6A»	FIRSTRATE (84WG)	0.039	LAA	2	2	99	93	99	99
	B»AUTHORITY (4F)	0.31	LAA	2					
	C»ROUNDUP ULTRAMAX (5SL)	0.78	LAA	4					
	D»AMMONIUM SULFATE	8.50	PMG	4					
7A»	FIRSTRATE (84WG)	0.029	LAA	2	5	98	98	98	99
	B»AUTHORITY (4F)	0.23	LAA	2					
	C»ROUNDUP ULTRAMAX (5SL)	1.02	LAA	4					
	D»AMMONIUM SULFATE	8.50	PMG	4					
8A»	FIRSTRATE (84WG)	0.039	LAA	1	3	82	63	88	99
	B»AUTHORITY (4F)	0.31	LAA	1					
	C»PENDIMAX (3.3EC)	1.03	LAA	1					
9A	COMMAND 3ME (CS)	0.75	LAA	2	0	90	82	98	99
	B»AUTHORITY (4F)	0.375	LAA	2					
10A	COMMAND 3ME (CS)	0.56	LAA	2	3	99	99	99	99
	B»AUTHORITY (4F)	0.28	LAA	2					
	C»ROUNDUP ULTRAMAX (5SL)	1.02	LAA	4					
	D»AMMONIUM SULFATE	8.50	PMG	4					
11A»	ROUNDUP ULTRAMAX (5SL)	0.78	LAA	3	10	96	98	96	99
	B»AMMONIUM SULFATE	8.50	PMG	3					
	C»ROUNDUP ULTRAMAX (5SL)	1.02	LAA	5					
	D»AMMONIUM SULFATE	8.50	PMG	5					
12A»	ROUNDUP ULTRAMAX (5SL)	1.02	LAA	4	12	99	98	92	99
	B»AMMONIUM SULFATE	8.50	PMG	4					
13A»	CANOPY XL 56.3 (DF)	0.088	LAA	2	2	99	99	99	99
	B»ROUNDUP ULTRAMAX (5SL)	1.02	LAA	4					
	C»AMMONIUM SULFATE	8.50	PMG	4					
14A»	AUTHORITY (75WG)	0.188	LAA	2	7	99	96	99	99
	B»ROUNDUP ULTRAMAX (5SL)	1.02	LAA	4					
	C»AMMONIUM SULFATE	8.50	PMG	4					
15A»	AUTHORITY (75WG)	0.188	LAA	2	5	92	95	98	99
	B»SYNCHRONY STS 42 (DG)	0.013	LAA	3					
	C ASSURE II (0.88EC)	0.048	LAA	3					
	D»CROP OIL CONCENTRATE	1.00	PMV	3					
	E»28%N	4.00	PMA	3					
16A»	AUTHORITY (75WG)	0.188	LAA	2	5	91	98	99	99
	B»SYNCHRONY STS 42 (DG)	0.006	LAA	3					
	C»FLEXSTAR (1.88SL)	0.118	LAA	3					
	D ASSURE II (0.88EC)	0.048	LAA	3					
	E»CROP OIL CONCENTRATE	1.00	PMV	3					
	F»28%N	4.00	PMA	3					
LSD (0.05)					5.23	7.49	13.00	8.80	0.00

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RESEARCHED BY: IA State University

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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	GLXMA
		RATE	UNIT	TM	CON % 09/27/01	CON % 09/27/01	CON % 09/27/01	CON % 09/27/01	BU/A 10/26/01
1A	UNTREATED CHECK	0.00	NA	0	0	0	0	0	10
2A	PURSUIT PLUS (2.9EC)	0.91	LAA	1	95	57	80	99	35
3A»	DOMAIN (60DF)	0.60	LAA	2	85	58	88	99	36
4A»	BOUNDARY (7.8EC)	2.44	LAA	2	93	57	96	99	31
5A»	FIRSTRATE (84WG)	0.039	LAA	2	99	60	93	99	34
	B»AUTHORITY (4F)	0.31	LAA	2					
	C POAST PLUS (1EC)	0.188	LAA	3					
	D»CROP OIL CONCENTRATE	1.00	PMV	3					
6A»	FIRSTRATE (84WG)	0.039	LAA	2	99	96	99	99	46
	B»AUTHORITY (4F)	0.31	LAA	2					
	C»ROUNDUP ULTRAMAX (5SL)	0.78	LAA	4					
	D»AMMONIUM SULFATE	8.50	PMG	4					
7A»	FIRSTRATE (84WG)	0.029	LAA	2	99	98	99	99	39
	B»AUTHORITY (4F)	0.23	LAA	2					
	C»ROUNDUP ULTRAMAX (5SL)	1.02	LAA	4					
	D»AMMONIUM SULFATE	8.50	PMG	4					
8A»	FIRSTRATE (84WG)	0.039	LAA	1	82	62	86	99	34
	B»AUTHORITY (4F)	0.31	LAA	1					
	C»PENDIMAX (3.3EC)	1.03	LAA	1					
9A	COMMAND 3ME (CS)	0.75	LAA	2	90	78	96	99	45
	B»AUTHORITY (4F)	0.375	LAA	2					
10A	COMMAND 3ME (CS)	0.56	LAA	2	99	99	99	99	45
	B»AUTHORITY (4F)	0.28	LAA	2					
	C»ROUNDUP ULTRAMAX (5SL)	1.02	LAA	4					
	D»AMMONIUM SULFATE	8.50	PMG	4					
11A»	ROUNDUP ULTRAMAX (5SL)	0.78	LAA	3	99	99	99	99	39
	B»AMMONIUM SULFATE	8.50	PMG	3					
	C»ROUNDUP ULTRAMAX (5SL)	1.02	LAA	5					
	D»AMMONIUM SULFATE	8.50	PMG	5					
12A»	ROUNDUP ULTRAMAX (5SL)	1.02	LAA	4	99	99	95	99	39
	B»AMMONIUM SULFATE	8.50	PMG	4					
13A»	CANOPY XL 56.3 (DF)	0.088	LAA	2	99	99	99	99	39
	B»ROUNDUP ULTRAMAX (5SL)	1.02	LAA	4					
	C»AMMONIUM SULFATE	8.50	PMG	4					
14A»	AUTHORITY (75WG)	0.188	LAA	2	99	96	99	99	34
	B»ROUNDUP ULTRAMAX (5SL)	1.02	LAA	4					
	C»AMMONIUM SULFATE	8.50	PMG	4					
15A»	AUTHORITY (75WG)	0.188	LAA	2	96	95	98	99	37
	B»SYNCHRONY STS 42 (DG)	0.013	LAA	3					
	C ASSURE II (0.88EC)	0.048	LAA	3					
	D»CROP OIL CONCENTRATE	1.00	PMV	3					
	E»28%N	4.00	PMA	3					
16A»	AUTHORITY (75WG)	0.188	LAA	2	95	98	99	99	39
	B»SYNCHRONY STS 42 (DG)	0.006	LAA	3					
	C»FLEXSTAR (1.88SL)	0.118	LAA	3					
	D ASSURE II (0.88EC)	0.048	LAA	3					
	E»CROP OIL CONCENTRATE	1.00	PMV	3					
	F»28%N	4.00	PMA	3					
LSD (0.05)					8.09	27.29	10.35	0.00	7.47

» = SUPPLEMENTAL CHEMICAL

TRIAL # US 034/01/01 000 A1 : ASC 7

DATA MEAN

* TIMING CODES

00 = UNTRCHK / UNTREATED TIMING (FP)
01 = PRE INC / PPI 06/08/2001 (1)
02 = PREPRE / PRE 06/09/2001 (2)
03 = POSPOS / POST1 07/03/2001 (3)
04 = POSPOS / POST2 07/09/2001 (4)
05 = POSPOS / POST3 08/08/2001 (5)