

(01-ASN-1)

Evaluation of Aim, 2,4-D LV4 and Roundup Ultra for burndown weed control in no-tillage grown soybean, Ames, Iowa, 2001. Owen, Micheal D.K., James F. Lux, and Damian D. Franzenburg. The purpose of this study was to evaluate carfentrazone and 2,4-D for weed efficacy and crop phytotoxicity in a glyphosate resistant 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. Crop residue on the soil surface was 73% at planting. "Asgrow variety AG 2401 RR" soybeans were planted 1.5 inches deep on May 29, 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	May 15	May 29
Treatment	EPP	PRE
Sprayer		
gpa	20	20
psi	30	30
nozzle	11002	11003
Temperature (C)		
air	28	25
soil (4 inch)	19	24
Soil moisture	dry	moist
Wind (mph)	3 S	5-7 E
Sky	cloudy	overcast
Relative humidity (%)	61	36
Giant foxtail		
leaf no.	1-4	2-4
height (inch)	0.5-3	1-5
infestation (ft <sup>2</sup> )	0-25	0-15
Common lambsquarters		
leaf no.	numerous	numerous
height (inch)	0.25-2	2-8
infestation (ft <sup>2</sup> )	0-5	0-4
Common waterhemp		
leaf no.	2-6	numerous
height (inch)	0.25-1	1-5
infestation (ft <sup>2</sup> )	0-3	0-1
Common dandelion		
leaf no.	rosette	rosette
height (inch)	2	2
infestation (ft <sup>2</sup> )	< 1	< 1
Horseweed		
leaf no.	numerous	numerous
height (inch)	2-4	4-7
infestation (ft <sup>2</sup> )	0-2	0-1

Pennsylvania smartweed		
leaf no.	2-3	numerous
height (inch)	0-2	2-6
infestation (ft <sup>2</sup> )	0-3	0-1
Velvetleaf		
leaf no.	cotyl-3	1-3
height (inch)	0.25-0.5	0.25-1
infestation (ft <sup>2</sup> )	0-2	0-1

Early observations on May 19 demonstrated that control of all broadleaf weeds was significantly improved when Aim was included with EPP 2,4-D LV4. The most dramatic improvement was for annual weeds. Horseweed control was significantly improved when Aim was included with 2,4-D LV4 plus Roundup Ultra. The general improved weed control from the inclusion of Aim with 2,4-D LV4 plus Roundup Ultra was not as dramatic as with the addition of Aim to 2,4-D LV4, alone. On subsequent evaluation dates, there were no significant differences in broadleaf control between 2,4-D LV4 plus Roundup Ultra, and 2,4-D LV4 plus Roundup Ultra plus Aim. However, there was still significant improvement for control of several broadleaf weeds with 2,4-D LV4 when Aim was included. On June 1, PRE Aim plus Roundup Ultra provided much higher weed control in comparison to Roundup Ultra, alone. However, by June 9 there were no significant differences between these two treatments. (Dept. of Agronomy, Iowa State University, Ames)

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

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			SETFA	ABUTH	AMATA	CHEAL	ERICA
		RATE	UNIT	TM	CON % 05/19/01	CON % 05/19/01	CON % 05/19/01	CON % 05/19/01	CON % 05/19/01
1A	UNTREATED CHECK	0.00	NA	0	0	0	0	0	0
2A	»AIM (40DF)	0.008	LAA	1	10	98	96	88	85
	B»2,4-D LV4 (3.8EC)	0.475	LAA	1					
	C»CROP OIL CONCENTRATE	1.00	PMV	1					
3A	»2,4-D LV4 (3.8EC)	0.475	LAA	1	12	80	80	73	78
	B»CROP OIL CONCENTRATE	1.00	PMV	1					
4A	»AIM (40DF)	0.008	LAA	1	95	98	99	93	80
	B»2,4-D LV4 (3.8EC)	0.475	LAA	1					
	C ROUNDUP ULTRA (3SL)	0.50	LAA	1					
	D»AMMONIUM SULFATE	17.00	PMG	1					
5A	»AIM (40DF)	0.008	LAA	1	92	99	96	93	78
	B ROUNDUP ULTRA (3SL)	0.50	LAA	1					
	C»AMMONIUM SULFATE	17.00	PMG	1					
6A	»2,4-D LV4 (3.8EC)	0.475	LAA	1	90	93	93	92	68
	B ROUNDUP ULTRA (3SL)	0.50	LAA	1					
	C»AMMONIUM SULFATE	17.00	PMG	1					
7A	»AIM (40DF)	0.008	LAA	2	0	0	0	0	0
	B ROUNDUP ULTRA (3SL)	0.75	LAA	2					
	C»AMMONIUM SULFATE	17.00	PMG	2					
8A	ROUNDUP ULTRA (3SL)	0.75	LAA	2	0	0	0	0	0
	B»AMMONIUM SULFATE	17.00	PMG	2					
				LSD (0.05)	2.62	2.69	5.24	5.00	3.31

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TRT NUM	TREATMENT COMPONENT	DOSAGE			POLPY	TAROF	SETFA	ABUTH	AMATA	
		RATE	UNIT	TM	CON % 05/19/01	CON % 05/19/01	CON % 05/25/01	CON % 05/25/01	CON % 05/25/01	
1A	UNTREATED CHECK	0.00	NA	0	0	0	0	0	0	
2A	»AIM (40DF)	0.008	LAA	1	88	73	7	98	95	
	B»2,4-D LV4 (3.8EC)	0.475	LAA	1						
	C»CROP OIL CONCENTRATE	1.00	PMV	1						
3A	»2,4-D LV4 (3.8EC)	0.475	LAA	1	73	65	8	80	73	
	B»CROP OIL CONCENTRATE	1.00	PMV	1						
4A	»AIM (40DF)	0.008	LAA	1	95	80	99	99	99	
	B»2,4-D LV4 (3.8EC)	0.475	LAA	1						
	C ROUNDUP ULTRA (3SL)	0.50	LAA	1						
	D»AMMONIUM SULFATE	17.00	PMG	1						
5A	»AIM (40DF)	0.008	LAA	1	93	80	99	98	99	
	B ROUNDUP ULTRA (3SL)	0.50	LAA	1						
	C»AMMONIUM SULFATE	17.00	PMG	1						
6A	»2,4-D LV4 (3.8EC)	0.475	LAA	1	93	77	99	99	99	
	B ROUNDUP ULTRA (3SL)	0.50	LAA	1						
	C»AMMONIUM SULFATE	17.00	PMG	1						
7A	»AIM (40DF)	0.008	LAA	2	0	0	0	0	0	
	B ROUNDUP ULTRA (3SL)	0.75	LAA	2						
	C»AMMONIUM SULFATE	17.00	PMG	2						
8A	ROUNDUP ULTRA (3SL)	0.75	LAA	2	0	0	0	0	0	
	B»AMMONIUM SULFATE	17.00	PMG	2						
					LSD (0.05)	4.73	6.76	4.87	2.09	4.81

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TRT NUM	TREATMENT COMPONENT	DOSAGE			CHEAL	ERICA	POLPY	TAROF	SETFA
		RATE	UNIT	TM	CON % 05/25/01	CON % 05/25/01	CON % 05/25/01	CON % 05/25/01	CON % 06/01/01
1A	UNTREATED CHECK	0.00	NA	0	0	0	0	0	0
2A	»AIM (40DF)	0.008	LAA	1	96	85	90	82	10
	B»2,4-D LV4 (3.8EC)	0.475	LAA	1					
	C»CROP OIL CONCENTRATE	1.00	PMV	1					
3A	»2,4-D LV4 (3.8EC)	0.475	LAA	1	72	73	72	68	12
	B»CROP OIL CONCENTRATE	1.00	PMV	1					
4A	»AIM (40DF)	0.008	LAA	1	99	90	99	93	99
	B»2,4-D LV4 (3.8EC)	0.475	LAA	1					
	C ROUNDUP ULTRA (3SL)	0.50	LAA	1					
	D»AMMONIUM SULFATE	17.00	PMG	1					
5A	»AIM (40DF)	0.008	LAA	1	98	87	98	90	99
	B ROUNDUP ULTRA (3SL)	0.50	LAA	1					
	C»AMMONIUM SULFATE	17.00	PMG	1					
6A	»2,4-D LV4 (3.8EC)	0.475	LAA	1	98	85	99	90	99
	B ROUNDUP ULTRA (3SL)	0.50	LAA	1					
	C»AMMONIUM SULFATE	17.00	PMG	1					
7A	»AIM (40DF)	0.008	LAA	2	0	0	0	0	17
	B ROUNDUP ULTRA (3SL)	0.75	LAA	2					
	C»AMMONIUM SULFATE	17.00	PMG	2					
8A	ROUNDUP ULTRA (3SL)	0.75	LAA	2	0	0	0	0	15
	B»AMMONIUM SULFATE	17.00	PMG	2					
				LSD (0.05)	5.26	6.65	3.62	7.00	5.23

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TRT NUM	TREATMENT COMPONENT	DOSAGE			ABUTH	AMATA	CHEAL	ERICA	POLPY
		RATE	UNIT	TM	CON % 06/01/01	CON % 06/01/01	CON % 06/01/01	CON % 06/01/01	CON % 06/01/01
1A	UNTREATED CHECK	0.00	NA	0	0	3	0	0	0
2A	»AIM (40DF)	0.008	LAA	1	99	96	96	67	72
	B»2,4-D LV4 (3.8EC)	0.475	LAA	1					
	C»CROP OIL CONCENTRATE	1.00	PMV	1					
3A	»2,4-D LV4 (3.8EC)	0.475	LAA	1	72	80	85	62	72
	B»CROP OIL CONCENTRATE	1.00	PMV	1					
4A	»AIM (40DF)	0.008	LAA	1	99	99	99	98	99
	B»2,4-D LV4 (3.8EC)	0.475	LAA	1					
	C ROUNDUP ULTRA (3SL)	0.50	LAA	1					
	D»AMMONIUM SULFATE	17.00	PMG	1					
5A	»AIM (40DF)	0.008	LAA	1	99	99	99	99	99
	B ROUNDUP ULTRA (3SL)	0.50	LAA	1					
	C»AMMONIUM SULFATE	17.00	PMG	1					
6A	»2,4-D LV4 (3.8EC)	0.475	LAA	1	99	94	99	99	99
	B ROUNDUP ULTRA (3SL)	0.50	LAA	1					
	C»AMMONIUM SULFATE	17.00	PMG	1					
7A	»AIM (40DF)	0.008	LAA	2	92	93	77	47	77
	B ROUNDUP ULTRA (3SL)	0.75	LAA	2					
	C»AMMONIUM SULFATE	17.00	PMG	2					
8A	ROUNDUP ULTRA (3SL)	0.75	LAA	2	13	42	13	8	8
	B»AMMONIUM SULFATE	17.00	PMG	2					
				LSD (0.05)	15.45	30.21	11.79	19.66	16.53

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TRT NUM	TREATMENT COMPONENT	DOSAGE			TAROF	SETFA	ABUTH	AMATA	CHEAL
		RATE	UNIT	TM	CON % 06/01/01	CON % 06/09/01	CON % 06/09/01	CON % 06/09/01	CON % 06/09/01
1A	UNTREATED CHECK	0.00	NA	0	0	0	0	0	0
2A	»AIM (40DF)	0.008	LAA	1	73	18	99	99	99
	B»2,4-D LV4 (3.8EC)	0.475	LAA	1					
	C»CROP OIL CONCENTRATE	1.00	PMV	1					
3A	»2,4-D LV4 (3.8EC)	0.475	LAA	1	65	20	83	86	90
	B»CROP OIL CONCENTRATE	1.00	PMV	1					
4A	»AIM (40DF)	0.008	LAA	1	96	99	99	99	99
	B»2,4-D LV4 (3.8EC)	0.475	LAA	1					
	C ROUNDUP ULTRA (3SL)	0.50	LAA	1					
	D»AMMONIUM SULFATE	17.00	PMG	1					
5A	»AIM (40DF)	0.008	LAA	1	99	99	99	99	99
	B ROUNDUP ULTRA (3SL)	0.50	LAA	1					
	C»AMMONIUM SULFATE	17.00	PMG	1					
6A	»2,4-D LV4 (3.8EC)	0.475	LAA	1	98	99	99	99	99
	B ROUNDUP ULTRA (3SL)	0.50	LAA	1					
	C»AMMONIUM SULFATE	17.00	PMG	1					
7A	»AIM (40DF)	0.008	LAA	2	57	99	99	99	99
	B ROUNDUP ULTRA (3SL)	0.75	LAA	2					
	C»AMMONIUM SULFATE	17.00	PMG	2					
8A	ROUNDUP ULTRA (3SL)	0.75	LAA	2	7	99	98	98	96
	B»AMMONIUM SULFATE	17.00	PMG	2					
		LSD (0.05)			27.00	12.12	4.75	9.11	5.30

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TRT NUM	TREATMENT COMPONENT	DOSAGE			ERICA	POLPY	TAROF	SETFA	ABUTH
		RATE	UNIT	TM	CON % 06/09/01	CON % 06/09/01	CON % 06/09/01	CON % 06/16/01	CON % 06/16/01
1A	UNTREATED CHECK	0.00	NA	0	0	0	0	0	0
2A	»AIM (40DF)	0.008	LAA	1	73	75	87	13	99
	B»2,4-D LV4 (3.8EC)	0.475	LAA	1					
	C»CROP OIL CONCENTRATE	1.00	PMV	1					
3A	»2,4-D LV4 (3.8EC)	0.475	LAA	1	70	63	70	17	99
	B»CROP OIL CONCENTRATE	1.00	PMV	1					
4A	»AIM (40DF)	0.008	LAA	1	99	99	99	99	99
	B»2,4-D LV4 (3.8EC)	0.475	LAA	1					
	C ROUNDUP ULTRA (3SL)	0.50	LAA	1					
	D»AMMONIUM SULFATE	17.00	PMG	1					
5A	»AIM (40DF)	0.008	LAA	1	99	99	99	99	99
	B ROUNDUP ULTRA (3SL)	0.50	LAA	1					
	C»AMMONIUM SULFATE	17.00	PMG	1					
6A	»2,4-D LV4 (3.8EC)	0.475	LAA	1	99	99	99	99	99
	B ROUNDUP ULTRA (3SL)	0.50	LAA	1					
	C»AMMONIUM SULFATE	17.00	PMG	1					
7A	»AIM (40DF)	0.008	LAA	2	95	91	98	99	99
	B ROUNDUP ULTRA (3SL)	0.75	LAA	2					
	C»AMMONIUM SULFATE	17.00	PMG	2					
8A	ROUNDUP ULTRA (3SL)	0.75	LAA	2	90	78	92	99	99
	B»AMMONIUM SULFATE	17.00	PMG	2					
				LSD (0.05)	5.81	11.27	7.51	11.00	0.00



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TRT	TREATMENT	DOSAGE			AMATA	CHEAL	ERICA	POLPY	TAROF		
		NUM	COMPONENT	RATE	UNIT	TM	CON %	CON %	CON %	CON %	CON %
1A	UNTREATED CHECK			0.00	NA	0	0	0	0	0	
2A»	AIM (40DF)			0.008	LAA	1	99	99	70	58	98
	B»2,4-D LV4 (3.8EC)			0.475	LAA	1					
	C»CROP OIL CONCENTRATE			1.00	PMV	1					
3A»	2,4-D LV4 (3.8EC)			0.475	LAA	1	98	99	82	80	98
	B»CROP OIL CONCENTRATE			1.00	PMV	1					
4A»	AIM (40DF)			0.008	LAA	1	99	99	99	99	99
	B»2,4-D LV4 (3.8EC)			0.475	LAA	1					
	C ROUNDUP ULTRA (3SL)			0.50	LAA	1					
	D»AMMONIUM SULFATE			17.00	PMG	1					
5A»	AIM (40DF)			0.008	LAA	1	99	99	99	98	99
	B ROUNDUP ULTRA (3SL)			0.50	LAA	1					
	C»AMMONIUM SULFATE			17.00	PMG	1					
6A»	2,4-D LV4 (3.8EC)			0.475	LAA	1	99	99	99	99	99
	B ROUNDUP ULTRA (3SL)			0.50	LAA	1					
	C»AMMONIUM SULFATE			17.00	PMG	1					
7A»	AIM (40DF)			0.008	LAA	2	99	99	99	96	99
	B ROUNDUP ULTRA (3SL)			0.75	LAA	2					
	C»AMMONIUM SULFATE			17.00	PMG	2					
8A	ROUNDUP ULTRA (3SL)			0.75	LAA	2	99	99	98	95	99
	B»AMMONIUM SULFATE			17.00	PMG	2					
				LSD (0.05)			1.43	0.00	10.65	14.31	2.09

» = SUPPLEMENTAL CHEMICAL

\* TIMING CODES

00 = UNTRCHK / UNTREATED TIMING (FP)

01 = EARPRE / EPP 05/15/2001(1)

02 = PREPRE / PRE 05/29/2001(2)