

Weed control and crop tolerance in non-GMO soybean

Trial ID: SOY04-21 Study Dir.: Sprague, Stiles, Powell
 Conducted: Campus, C-14 Investigator: Christy Sprague

Planting Date: 5-10-21 **Row Spacing:** 30 IN
Variety: ZFS 2721 **No. of Reps:** 4
Population: 155000 seeds/A **% OM:** 2.4
Soil Type: CL clay loam **pH:** 7.5
Plot Size: 10 X 30 FT **Study Design:** Randomized Complete Block (RCB)

Tillage/Previous Crops: Fall chisel plow; Spring soil finished twice
Fertilizer:

Crop and Weed Description

Weed	Code	Common Name	Scientific Name
1	ANGR	annual grass	mainly foxtail species
2	CHEAL	common lambsquarters	Chenopodium album
3	AMAPO	Powell amaranth	Amaranthus powellii
4	AMBEL	common ragweed	Ambrosia artemisiifolia
5	ABUTH	velvetleaf	Abutilon theophrasti
Crop	Code	Common Name	
1	GLXMA	Soybean	

Application Description

	A	B	C	D
Application Timing:	PRE	POST	+3 d	+7 d
Date Treated:	5-10-21	6-15-21	6-17-21	6-24-21
Time Treated:	5:50 PM	1:25 PM	3:45 PM	10:15 AM
% Cloud Cover:	50	0	40	40
Air Temp., Unit:	54 F	72 F	84 F	69 F
% Relative Humidity:	49	40	40	54
Wind Speed/Unit/Dir:	5 MPH NW	7 MPH SW	3 MPH SW	8 MPH S
Soil Temp, Unit:	51 F	79 F	78 F	68 F
Leaf Moist/Dew Presence (Y/N):	N	N	N	N
Soil Moist:	4	5	5	2

Crop Stage at Each Application

	A	B	C	D
Crop 1 Name:	GLXMA	GLXMA	GLXMA	GLXMA
Height:		6-8 " (7)	6-10 " (8)	9-11 " (10)
Stage:		V3	V3	V4

Weed Stage at Each Application

	A	B	C	D
Weed 1 Name:	ANGR	ANGR	ANGR	ANGR
Height:		5-8 " (6.5)	5-8 " (6.5)	8-12 " (8)
Stage:		4L-6L (5L)	4L-6L (5L)	6L-10L (8L)
Weed 2 Name:	CHEAL	CHEAL	CHEAL	CHEAL
Height:		2-4 " (3)	2-5 " (3.5)	3-7 " (5)
Stage:		8L-10L (9L)	8L-16L (12L)	8L-20L (10L)
Weed 3 Name:	AMAPO	AMAPO	AMAPO	AMAPO
Height:		6-8 " (7)	6-8 " (7)	3-6 " (4)
Stage:		6L-8L (7L)	6L-8L (7L)	6L-10L (8L)
Weed 4 Name:	AMBEL	AMBEL	AMBEL	AMBEL
Height:		2-4 " (3)	2-4 " (3)	3-6 " (4)
Stage:		6L-8L (7L)	6L-8L (7L)	6L-12L (8L)
Weed 5 Name:	ABUTH	ABUTH	ABUTH	ABUTH
Height:		1-3 " (2)	1-3 " (2)	3-6 " (4)
Stage:		2L-4L (3L)	2L-4L (3L)	4L-6L (5L)

Weed Density

	1	2	3	4	5
Date:	6-17-21	6-17-21	6-17-21	6-17-21	6-17-21
Weed Name:	ANGR	CHEAL	AMAPO	AMBEL	ABUTH
Density:	5 FT2	1 FT2	0.5 FT2	5 FT2	1 FT2

Application Equipment

Appl	Sprayer Type	Ground Speed	Nozzle Type	Nozzle Size	Nozzle Height	Nozzle Spacing	Boom Width	Spray Volume	Carrier	Operation Pressure
A	CUB	3.8 MPH	AIXR	11003	21.0 "	20.0 "	100.0 "	19 GAL/AC	WATER	30 PSI
B	CUB	3.8 MPH	AIXR	11003	24.0 "	20.0 "	100.0 "	19 GAL/AC	WATER	30 PSI
C	CUB	3.8 MPH	AIXR	11003	25.0 "	20.0 "	100.0 "	19 GAL/AC	WATER	30 PSI
D	CUB	3.8 MPH	AIXR	11003	28.0 "	20.0 "	100.0 "	19 GAL/AC	WATER	30 PSI

Comments: Common ragweed at this location is Group 2 (ALS) resistant.

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Location: Campus, C-14

Investigator (Creator): Christy Sprague

Study Director: Sprague, Stiles, Powell

Pest Code	Crop Type, Code	ANGR CHEAL AMAPO AMBEL ABUTH								ANGR CHEAL					
		C, GLXMA	C, GLXMA	C, GLXMA	C, GLXMA	C, GLXMA	C, GLXMA	C, GLXMA	C, GLXMA	C, GLXMA	C, GLXMA	C, GLXMA	C, GLXMA		
Rating Date		5-31-21	6-14-21	6-14-21	6-14-21	6-14-21	6-14-21	6-14-21	6-14-21	6-22-21	6-29-21	6-29-21	6-29-21		
Rating Type		injury	injury	control	control	control	control	control	control	injury	injury	control	control		
Rating Unit		%	%	%	%	%	%	%	%	%	%	%	%		
Trt-Eval Interval		21 DA-A	35 DA-A	35 DA-A	35 DA-A	35 DA-A	35 DA-A	35 DA-A	35 DA-A	7 DA-B	14 DA-B	14 DA-B	14 DA-B		
Trt No.	Treatment Name	Rate	Unit	Appl Code											
17	Prefix	2 pt/a	A	A	0	0	84	92	100	80	65	28	12	92	98
17	Metribuzin	6 oz/a	A	A											
17	Synchrony XP	0.375 oz/a	B	B											
17	Cobra	10 fl oz/a	B	B											
17	Surfactant	0.25 % v/v	B	B											
17	AMS	2.5 lb/a	B	B											
17	SelectMax	9 fl oz/a	D	D											
17	Surfactant	0.25 % v/v	D	D											
17	AMS	2.5 lb/a	D	D											
18	Warrant Ultra	50 fl oz/a	A	A	0	0	86	90	100	80	58	26	15	97	95
18	Metribuzin	6 oz/a	A	A											
18	Synchrony XP	0.375 oz/a	B	B											
18	Cobra	10 fl oz/a	B	B											
18	SelectMax	12 fl oz/a	B	B											
18	Surfactant	0.25 % v/v	B	B											
18	AMS	2.5 lb/a	B	B											
19	Matador-S	3 pt/a	A	A	0	0	90	94	100	78	100	28	23	96	94
19	Cobra	10 fl oz/a	B	B											
19	Crop oil concentrate	0.5 % v/v	B	B											
19	AMS	2.5 lb/a	B	B											
19	Harmony SG	0.125 oz/a	D	D											
19	SelectMax	12 fl oz/a	D	D											
19	Surfactant	0.25 % v/v	D	D											
19	AMS	2.5 lb/a	D	D											
20	Shutdown	5 fl oz/a	A	A	0	0	61	89	100	62	80	20	4	87	93
20	Metricor	5 fl oz/a	A	A											
20	Ultra Blazer	1.5 pt/a	B	B											
20	Shadow	8 fl oz/a	B	B											
20	Surfactant	0.25 % v/v	B	B											
20	AMS	2.5 lb/a	B	B											
21	Moccasin II Plus	1 pt/a	A	A	0	0	88	100	100	70	79	23	6	94	100
21	Shutdown	5 fl oz/a	A	A											
21	Metricor	5 fl oz/a	A	A											
21	Ultra Blazer	1.5 pt/a	B	B											
21	Shadow	8 fl oz/a	B	B											
21	Surfactant	0.25 % v/v	B	B											
21	AMS	2.5 lb/a	B	B											
22	Up-Stage	21 fl oz/a	A	A	0	0	88	93	100	79	96	18	6	98	96
22	Shutdown	5 fl oz/a	A	A											
22	Metricor	5 fl oz/a	A	A											
22	Ultra Blazer	1.5 pt/a	B	B											
22	Shadow	8 fl oz/a	B	B											
22	Surfactant	0.25 % v/v	B	B											
22	AMS	2.5 lb/a	B	B											
	LSD P=.05				.	1.5	15.1	11.4	1.5	12.3	15.7	5.4	5.4	7.3	5.6
	Standard Deviation				0.0	1.0	10.7	8.1	1.1	8.7	11.1	3.9	3.8	5.2	3.9
	CV				0.0	99.64	14.81	9.25	1.12	12.33	13.88	19.67	41.69	5.98	4.22

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Study Director: Sprague, Stiles, Powell

Pest Code	AMAPO	AMBEL	ABUTH	C, GLXMA	ANGR	CHEAL	AMAPO	AMBEL	ABUTH	ANGR	CHEAL
Crop Type, Code											
Rating Date	6-29-21	6-29-21	6-29-21	7-13-21	7-13-21	7-13-21	7-13-21	7-13-21	7-13-21	10-11-21	10-11-21
Rating Type	control	control	control	injury	control	control	control	control	control	control	control
Rating Unit	%	%	%	%	%	%	%	%	%	%	%
Trt-Eval Interval	14 DA-B	14 DA-B	14 DA-B	28 DA-B	28 DA-B	28 DA-B	28 DA-B	28 DA-B	28 DA-B	118 DA-B	118 DA-B

Trt No.	Treatment Name	Rate	Unit	Appl Code	AMAPO	AMBEL	ABUTH	C, GLXMA	ANGR	CHEAL	AMAPO	AMBEL	ABUTH	ANGR	CHEAL
17	Prefix	2 pt/a		A	100	99	98	3	98	96	100	100	95	100	93
17	Metribuzin	6 oz/a		A											
17	Synchrony XP	0.375 oz/a		B											
17	Cobra	10 fl oz/a		B											
17	Surfactant	0.25 % v/v		B											
17	AMS	2.5 lb/a		B											
17	SelectMax	9 fl oz/a		D											
17	Surfactant	0.25 % v/v		D											
17	AMS	2.5 lb/a		D											
18	Warrant Ultra	50 fl oz/a		A	100	100	92	4	96	97	100	100	87	98	96
18	Metribuzin	6 oz/a		A											
18	Synchrony XP	0.375 oz/a		B											
18	Cobra	10 fl oz/a		B											
18	SelectMax	12 fl oz/a		B											
18	Surfactant	0.25 % v/v		B											
18	AMS	2.5 lb/a		B											
19	Matador-S	3 pt/a		A	100	95	100	10	100	96	100	96	100	99	100
19	Cobra	10 fl oz/a		B											
19	Crop oil concentrate	0.5 % v/v		B											
19	AMS	2.5 lb/a		B											
19	Harmony SG	0.125 oz/a		D											
19	SelectMax	12 fl oz/a		D											
19	Surfactant	0.25 % v/v		D											
19	AMS	2.5 lb/a		D											
20	Shutdown	5 fl oz/a		A	100	81	86	0	96	95	100	78	81	100	100
20	Metricor	5 fl oz/a		A											
20	Ultra Blazer	1.5 pt/a		B											
20	Shadow	8 fl oz/a		B											
20	Surfactant	0.25 % v/v		B											
20	AMS	2.5 lb/a		B											
21	Moccasin II Plus	1 pt/a		A	100	89	94	1	99	100	100	84	95	100	100
21	Shutdown	5 fl oz/a		A											
21	Metricor	5 fl oz/a		A											
21	Ultra Blazer	1.5 pt/a		B											
21	Shadow	8 fl oz/a		B											
21	Surfactant	0.25 % v/v		B											
21	AMS	2.5 lb/a		B											
22	Up-Stage	21 fl oz/a		A	100	88	98	0	100	100	100	84	99	98	100
22	Shutdown	5 fl oz/a		A											
22	Metricor	5 fl oz/a		A											
22	Ultra Blazer	1.5 pt/a		B											
22	Shadow	8 fl oz/a		B											
22	Surfactant	0.25 % v/v		B											
22	AMS	2.5 lb/a		B											
LSD P=.05					.	5.7	7.8	3.5	4.1	5.4	.	5.5	8.7	2.2	6.0
Standard Deviation					0.0	4.0	5.6	2.5	2.9	3.8	0.0	3.9	6.1	1.5	4.3
CV					0.0	4.54	6.1	98.12	3.23	4.09	0.0	4.43	6.82	1.69	4.55

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Pest Code	AMAPO	AMBEL	ABUTH		
Crop Type, Code				C, GLXMA	C, GLXMA
Rating Date	10-11-21	10-11-21	10-11-21	10-18-21	10-18-21
Rating Type	control	control	control	yield	lbs/plot
Rating Unit	%	%	%	%	
Trt-Eval Interval	118 DA-B	118 DA-B	118 DA-B	116 DA-D	

Trt No.	Treatment Name	Rate	Unit	Appl Code	AMAPO	AMBEL	ABUTH	C, GLXMA	C, GLXMA
1	Boundary	2.4	pt/a	A	100	94	96	80.2	17.4
1	Flexstar	1	pt/a	B					
1	Harmony SG	0.125	oz/a	B					
1	Crop oil concentrate	1	% v/v	B					
1	AMS	2.5	lb/a	B					
1	SelectMax	9	fl oz/a	D					
1	Surfactant	0.25	% v/v	D					
1	AMS	2.5	lb/a	D					
2	BroadAxe XC	32	fl oz/a	A	100	96	99	73.1	15.8
2	Flexstar	1	pt/a	B					
2	Perpetuo	6	fl oz/a	B					
2	Crop oil concentrate	1	% v/v	B					
2	AMS	2.5	lb/a	B					
2	SelectMax	9	fl oz/a	D					
2	Surfactant	0.25	% v/v	D					
2	AMS	2.5	lb/a	D					
3	Sonic	6	oz/a	A	100	96	100	75.7	16.4
3	Boundary	1.5	pt/a	A					
3	Flexstar	1	pt/a	B					
3	Harmony SG	0.125	oz/a	B					
3	SelectMax	12	fl oz/a	B					
3	Surfactant	0.25	% v/v	B					
3	AMS	2.5	lb/a	B					
4	Surveil	3.5	oz/a	A	100	100	100	73.7	16.0
4	Metribuzin	6	oz/a	A					
4	Raptor	5	fl oz/a	B					
4	Flexstar	1	pt/a	B					
4	Crop oil concentrate	1	% v/v	B					
4	AMS	2.5	lb/a	B					
5	Untreated				0	0	0	44.6	9.7
6	Dimetric Charged	12	fl oz/a	A	100	100	100	81.2	17.6
6	Flexstar	1	pt/a	B					
6	Perpetuo	6	fl oz/a	B					
6	SelectMax	12	fl oz/a	B					
6	Crop oil concentrate	1	% v/v	B					
6	AMS	2.5	lb/a	B					
7	Valor EZ	2.5	fl oz/a	A	100	100	100	77.4	16.8
7	Prowl H2O	2	pt/a	A					
7	Raptor	5	fl oz/a	B					
7	Crop oil concentrate	1	% v/v	B					
7	AMS	2.5	lb/a	B					
7	Flexstar	1	pt/a	C					
7	Crop oil concentrate	1	% v/v	C					
7	AMS	2.5	lb/a	C					
8	Fierce EZ	7.5	fl oz/a	A	100	99	100	78.9	17.1
8	Raptor	5	fl oz/a	B					
8	Basagran	12.8	fl oz/a	B					
8	Flexstar	1	pt/a	B					
8	Crop oil concentrate	1	% v/v	B					
8	AMS	2.5	lb/a	B					
9	Fierce MTZ	16	fl oz/a	A	100	98	100	81.1	17.6
9	Raptor	5	fl oz/a	B					
9	Flexstar	1	pt/a	B					
9	Crop oil concentrate	1	% v/v	B					
9	AMS	2.5	lb/a	B					

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Pest Code	AMAPO	AMBEL	ABUTH		
Crop Type, Code				C, GLXMA	C, GLXMA
Rating Date	10-11-21	10-11-21	10-11-21	10-18-21	10-18-21
Rating Type	control	control	control	yield	lbs/plot
Rating Unit	%	%	%	%	
Trt-Eval Interval	118 DA-B	118 DA-B	118 DA-B	116 DA-D	

Trt No.	Treatment Name	Rate	Unit	Appl Code					
10	Valor XLT	4 oz/a		A	100	99	95	81.3	17.6
10	SelectMax	9 fl oz/a		B					
10	Surfactant	0.25 % v/v		B					
10	AMS	2.5 lb/a		B					
10	Flexstar	1 pt/a		C					
10	Harmony SG	0.125 oz/a		C					
10	Crop oil concentrate	1 % v/v		C					
10	AMS	2.5 lb/a		C					
11	Valor XLT	4 oz/a		A	100	0	73	55.0	11.9
11	Metribuzin	6 oz/a		A					
12	Authority MTZ	14 oz/a		A	100	98	100	76.3	16.5
12	SelectMax	9 fl oz/a		B					
12	Surfactant	0.25 % v/v		B					
12	AMS	2.5 lb/a		B					
12	Cobra	10 fl oz/a		C					
12	Perpetuo	6 fl oz/a		C					
12	Crop oil concentrate	0.5 % v/v		C					
12	AMS	2.5 lb/a		C					
13	Authority Edge	10 fl oz/a		A	100	100	100	80.6	17.5
13	Flexstar	1 pt/a		B					
13	Crop oil concentrate	0.5 % v/v		B					
13	AMS	2.5 lb/a		B					
13	Harmony SG	0.125 oz/a		D					
13	SelectMax	12 fl oz/a		D					
13	Surfactant	0.25 % v/v		D					
13	AMS	2.5 lb/a		D					
14	Authority Edge	8 fl oz/a		A	100	99	98	79.2	17.1
14	Metribuzin	6 oz/a		A					
14	Flexstar	1 pt/a		B					
14	Cobra	4 fl oz/a		B					
14	Crop oil concentrate	0.5 % v/v		B					
14	AMS	2.5 lb/a		B					
14	Harmony SG	0.125 oz/a		D					
14	SelectMax	12 fl oz/a		D					
14	Surfactant	0.25 % v/v		D					
14	AMS	2.5 lb/a		D					
15	Zidua PRO	6 fl oz/a		A	100	96	95	74.4	16.1
15	Basagran	1.6 pt/a		B					
15	Flexstar	1 pt/a		B					
15	Crop oil concentrate	1 % v/v		B					
15	AMS	2.5 lb/a		B					
15	SelectMax	9 fl oz/a		D					
15	Surfactant	0.25 % v/v		D					
15	AMS	2.5 lb/a		D					
16	Valor XLT	2.5 oz/a		A	100	91	100	85.7	18.6
16	Valor EZ	1.5 fl oz/a		A					
16	Metribuzin	8 oz/a		A					
16	Marvel	7.25 fl oz/a		B					
16	Flexstar	4 fl oz/a		B					
16	Crop oil concentrate	1 % v/v		B					
16	AMS	2.5 lb/a		B					
16	SelectMax	9 fl oz/a		D					
16	Surfactant	0.25 % v/v		D					
16	AMS	2.5 lb/a		D					

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Crop Type, Code				C, GLXMA	C, GLXMA
Rating Date	10-11-21	10-11-21	10-11-21	10-18-21	10-18-21
Rating Type	control	control	control	yield	lbs/plot
Rating Unit	%	%	%	%	
Trt-Eval Interval	118 DA-B	118 DA-B	118 DA-B	116 DA-D	

Trt No.	Treatment Name	Rate	Unit	Appl Code	AMAPO	AMBEL	ABUTH	C, GLXMA	C, GLXMA
17	Prefix	2 pt/a		A	100	98	94	80.5	17.4
17	Metribuzin	6 oz/a		A					
17	Synchrony XP	0.375 oz/a		B					
17	Cobra	10 fl oz/a		B					
17	Surfactant	0.25 % v/v		B					
17	AMS	2.5 lb/a		B					
17	SelectMax	9 fl oz/a		D					
17	Surfactant	0.25 % v/v		D					
17	AMS	2.5 lb/a		D					
18	Warrant Ultra	50 fl oz/a		A	100	95	91	79.9	17.3
18	Metribuzin	6 oz/a		A					
18	Synchrony XP	0.375 oz/a		B					
18	Cobra	10 fl oz/a		B					
18	SelectMax	12 fl oz/a		B					
18	Surfactant	0.25 % v/v		B					
18	AMS	2.5 lb/a		B					
19	Matador-S	3 pt/a		A	100	95	100	73.6	15.9
19	Cobra	10 fl oz/a		B					
19	Crop oil concentrate	0.5 % v/v		B					
19	AMS	2.5 lb/a		B					
19	Harmony SG	0.125 oz/a		D					
19	SelectMax	12 fl oz/a		D					
19	Surfactant	0.25 % v/v		D					
19	AMS	2.5 lb/a		D					
20	Shutdown	5 fl oz/a		A	100	68	90	75.0	16.2
20	Metricor	5 fl oz/a		A					
20	Ultra Blazer	1.5 pt/a		B					
20	Shadow	8 fl oz/a		B					
20	Surfactant	0.25 % v/v		B					
20	AMS	2.5 lb/a		B					
21	Moccasin II Plus	1 pt/a		A	100	73	88	75.2	16.3
21	Shutdown	5 fl oz/a		A					
21	Metricor	5 fl oz/a		A					
21	Ultra Blazer	1.5 pt/a		B					
21	Shadow	8 fl oz/a		B					
21	Surfactant	0.25 % v/v		B					
21	AMS	2.5 lb/a		B					
22	Up-Stage	21 fl oz/a		A	100	82	100	77.6	16.8
22	Shutdown	5 fl oz/a		A					
22	Metricor	5 fl oz/a		A					
22	Ultra Blazer	1.5 pt/a		B					
22	Shadow	8 fl oz/a		B					
22	Surfactant	0.25 % v/v		B					
22	AMS	2.5 lb/a		B					
	LSD P=.05				.	7.0	8.2	8.65 ..	1.87
	Standard Deviation				0.0	4.9	5.8	6.12 ..	1.33
	CV				0.0	5.8	6.36	8.11 ..	8.11