

Comparison of soil-applied herbicides in soybean

Trial ID: SOY08-23 Study Dir.: Sprague, Stiles
 Conducted: Campus, C-14 Investigator: Christy Sprague

Planting Date: May-10-2023 **Row Spacing:** 30 IN
Variety: AG26XF3 **No. of Reps:** 4
Population: 150000 seeds/A **% OM:** 1.6
Soil Type: CL clay loam **pH:** 7.2
Plot Size: 10 X 30 FT **Study Design:** Randomized Complete Block (RCB)

Tillage/Previous Crops: Fall chisel plowed, fall soil finished twice, 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	AMBEL	common ragweed	Ambrosia artemisiifolia
4	ABUTH	velvetleaf	Abutilon theophrasti
Crop	Code	Common Name	
1	GLXMA	Soybean	

Application Description

	A	B
Application Timing:	PRE	POST
Date Treated:	May-10-2023	Jun-13-2023
Time Treated:	4:30 PM	8:15 AM
% Cloud Cover:	5	50
Air Temp., Unit:	76 F	55 F
% Relative Humidity:	30	76
Wind Speed/Unit/Dir:	5 MPH W	9 MPH SSW
Soil Temp, Unit:	75 F	60 F
Leaf Moist/Dew Presence (Y/N):	N	N
Soil Moist:	5	5

Crop Stage at Each Application

	A	B
Crop 1 Name:	GLXMA	GLXMA
Height:		5 "
Stage:		V2

Weed Stage at Each Application

	A	B
Weed 1 Name:	ANGR	ANGR
Height:		1-8 "
Stage:		3-5L
Weed 2 Name:	CHEAL	CHEAL
Height:		1-5 "
Stage:		6-many
Weed 3 Name:	AMBEL	AMBEL
Height:		2-5 "
Stage:		4-8L
Weed 4 Name:	ABUTH	ABUTH
Height:		1-3 "
Stage:		3-6L

Weed Density

	1	2	3	4
Date:	Jun-13-2023	Jun-13-2023	Jun-13-2023	Jun-13-2023
Weed Name:	ANGR	CHEAL	AMBEL	ABUTH
Density:	5 FT2	4 FT2	4 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	18 "	20 "	100 "	19 GAL/AC	WATER	30 PSI
B	CUB	3.8 MPH	AIXR	11003	18 "	20 "	100 "	19 GAL/AC	WATER	30 PSI

Comments: 6/20/23: A blanket application of Roundup PowerMax 3 at 30 fl oz/A + AMS was applied to all treatments, except treatment 12. Common ragweed (AMBEL) at this location is resistant to the Group 2 (ALS-inhibiting) herbicides.

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Trial ID: SOY08-23
 Protocol ID: SOY08-23 Location: Campus, C-14 Trial Year: 2023
 Study Director: Sprague, Stiles Sponsor Contact:
 Investigator: Christy Sprague

Rating Date	May-31-2023	May-31-2023	May-31-2023	May-31-2023	May-31-2023	May-31-2023					
Rating Type	injury	control	control	control	control	stand count					
Rating Unit/Min/Max	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	100' row, -, -					
Crop Type, Code	C, GLXMA					C, GLXMA					
Pest Code		ANGR	CHEAL	AMBEL	ABUTH						
Trt-Eval Interval	21 DA-A	21 DA-A	21 DA-A	21 DA-A	21 DA-A	21 DA-A					
Number of Decimals	0	0	0	0	0	0					
Trt No.	Treatment Name	Rate	Appl Unit	Appl Code	Timing						
1	Boundary	1.8 pt/a	A	PRE		0	93	98	77	95	656
2	Zidua PRO	4.5 fl oz/a	A	PRE		0	96	100	91	100	674
3	Authority Edge	8 fl oz/a	A	PRE		0	96	100	65	100	646
4	Tendovo	1.5 qt/a	A	PRE		0	97	100	88	100	631
5	Untreated					0	0	0	0	0	655
6	Authority Edge	7 fl oz/a	A	PRE		0	85	100	55	97	645
	Metribuzin	5 oz/a	A	PRE							
7	Kyber	1 pt/a	A	PRE		0	92	100	77	100	621
8	Zidua PRO	6 fl oz/a	A	PRE		0	96	100	88	100	636
9	Tendovo	1.75 qt/a	A	PRE		0	94	100	87	100	626
10	Tendovo	2.1 qt/a	A	PRE		0	94	98	88	99	613
11	Zidua PRO	4.5 fl oz/a	A	PRE		0	92	100	97	100	614
	Engenia	12.8 fl oz/a	A	PRE							
	Sentris	8 fl oz/a	A	PRE							
12	Authority Edge	7 fl oz/a	A	PRE		0	79	100	61	95	640
	Anthem MAXX	3 fl oz/a	B	POST							
	Crop oil concentrate	1 % v/v	B	POST							
	LSD P=.05					.	11.5	3.0	16.7	5.5	50.0
	Standard Deviation					0.0	8.0	2.1	11.6	3.8	34.8
	CV					0.0	9.48	2.27	15.99	4.21	5.45

Missing data estimates are included in columns: Average=16,17,18,19,20,42,43
 Could not calculate LSD (% mean diff) for columns 1,7,16,26,31 because error mean square = 0.

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Trial ID: SOY08-23
 Protocol ID: SOY08-23 Location: Campus, C-14 Trial Year: 2023
 Study Director: Sprague, Stiles Sponsor Contact:
 Investigator: Christy Sprague

Rating Date	Jun-7-2023	Jun-7-2023	Jun-7-2023	Jun-7-2023	Jun-7-2023	Jun-7-2023	Jun-7-2023					
Rating Type	injury	control	control	control	control	counts	counts					
Rating Unit/Min/Max	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	/m2, -, -	/m2, -, -					
Crop Type, Code	C, GLXMA											
Pest Code		ANGR	CHEAL	AMBEL	ABUTH	ANGR	CHEAL					
Trt-Eval Interval	28 DA-A	28 DA-A	28 DA-A	28 DA-A	28 DA-A	28 DA-A	28 DA-A					
Number of Decimals	0	0	0	0	0	0	0					
Trt No.	Treatment Name	Rate	Appl Unit	Appl Code	Appl Timing							
1	Boundary	1.8 pt/a	A	PRE		0	90	90	68	88	7	1
2	Zidua PRO	4.5 fl oz/a	A	PRE		0	87	100	78	100	7	1
3	Authority Edge	8 fl oz/a	A	PRE		0	80	100	55	100	14	1
4	Tendovo	1.5 qt/a	A	PRE		0	82	96	77	100	5	0
5	Untreated					0	0	0	0	0	19	6
6	Authority Edge	7 fl oz/a	A	PRE		0	70	98	31	90	21	0
	Metribuzin	5 oz/a	A	PRE								
7	Kyber	1 pt/a	A	PRE		0	77	94	53	88	13	4
8	Zidua PRO	6 fl oz/a	A	PRE		0	88	95	75	100	4	1
9	Tendovo	1.75 qt/a	A	PRE		0	83	95	75	98	9	0
10	Tendovo	2.1 qt/a	A	PRE		0	78	91	71	97	24	1
11	Zidua PRO	4.5 fl oz/a	A	PRE		0	73	100	93	100	16	0
	Engenia	12.8 fl oz/a	A	PRE								
	Sentris	8 fl oz/a	A	PRE								
12	Authority Edge	7 fl oz/a	A	PRE		0	68	95	30	94	25	1
	Anthem MAXX	3 fl oz/a	B	POST								
	Crop oil concentrate	1 % v/v	B	POST								
	LSD P=.05					.	10.9	9.9	15.7	9.5	9.1	2.2
	Standard Deviation					0.0	7.6	6.9	10.9	6.6	6.3	1.5
	CV					0.0	10.39	7.81	18.52	7.54	46.86	134.97

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Rating Date	Jun-7-2023	Jun-7-2023	Jun-14-2023	Jun-14-2023	Jun-14-2023	Jun-14-2023	Jun-14-2023
Rating Type	counts	counts	injury	control	control	control	control
Rating Unit/Min/Max	/m2, -, -	/m2, -, -	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100
Crop Type, Code			C, GLXMA				
Pest Code	AMBEL	ABUTH		ANGR	CHEAL	AMBEL	ABUTH
Trt-Eval Interval	28 DA-A	28 DA-A	35 DA-A	35 DA-A	35 DA-A	35 DA-A	35 DA-A
Number of Decimals	0	0	0	0	0	0	0

Trt No.	Treatment Name	Rate	Appl Unit	Appl Code	Appl Timing	Jun-7-2023	Jun-7-2023	Jun-14-2023	Jun-14-2023	Jun-14-2023	Jun-14-2023	
1	Boundary	1.8 pt/a	A	PRE		22	0	0	88	93	67	87
2	Zidua PRO	4.5 fl oz/a	A	PRE		5	0	0	87	100	75	100
3	Authority Edge	8 fl oz/a	A	PRE		23	0	0	75	100	40	91
4	Tendovo	1.5 qt/a	A	PRE		14	0	0	77	95	71	100
5	Untreated					47	5	0	0	0	0	0
6	Authority Edge	7 fl oz/a	A	PRE		49	1	0	65	98	30	89
	Metribuzin	5 oz/a	A	PRE								
7	Kyber	1 pt/a	A	PRE		30	0	0	67	78	45	83
8	Zidua PRO	6 fl oz/a	A	PRE		13	0	0	84	92	74	98
9	Tendovo	1.75 qt/a	A	PRE		19	0	0	77	91	73	98
10	Tendovo	2.1 qt/a	A	PRE		26	0	0	71	88	65	95
11	Zidua PRO	4.5 fl oz/a	A	PRE		2	0	0	73	100	88	98
	Engenia	12.8 fl oz/a	A	PRE								
	Sentris	8 fl oz/a	A	PRE								
12	Authority Edge	7 fl oz/a	A	PRE		40	1	0	63	93	42	94
	Anthem MAXX	3 fl oz/a	B	POST								
	Crop oil concentrate	1 % v/v	B	POST								
	LSD P=.05					18.8	0.9	.	11.6	13.8	18.5	14.5
	Standard Deviation					13.1	0.6	0.0	8.1	9.6	12.9	10.1
	CV					54.84	115.5	0.0	11.7	11.24	23.06	11.72

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 Investigator: Christy Sprague

Rating Date	Jun-20-2023	Jun-20-2023	Jun-20-2023	Jun-20-2023	Jun-20-2023	Jul-5-2023					
Rating Type	injury	control	control	control	control	injury					
Rating Unit/Min/Max	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100					
Crop Type, Code	C, GLXMA					C, GLXMA					
Pest Code		ANGR	CHEAL	AMBEL	ABUTH						
Trt-Eval Interval	41 DA-A	41 DA-A	41 DA-A	41 DA-A	41 DA-A	15 DA-POST					
Number of Decimals	0	0	0	0	0	0					
Trt No.	Treatment Name	Rate	Appl Unit	Appl Code	Timing						
1	Boundary	1.8 pt/a	A	PRE		1	82	80	65	75	0
2	Zidua PRO	4.5 fl oz/a	A	PRE		1	82	95	75	100	0
3	Authority Edge	8 fl oz/a	A	PRE		0	72	100	55	90	0
4	Tendovo	1.5 qt/a	A	PRE		2	78	94	71	98	0
5	Untreated					0	0	0	0	0	0
6	Authority Edge	7 fl oz/a	A	PRE		0	66	90	43	84	0
	Metribuzin	5 oz/a	A	PRE							
7	Kyber	1 pt/a	A	PRE		0	70	70	48	86	0
8	Zidua PRO	6 fl oz/a	A	PRE		0	83	93	73	96	0
9	Tendovo	1.75 qt/a	A	PRE		1	77	93	70	100	0
10	Tendovo	2.1 qt/a	A	PRE		0	69	86	67	96	0
11	Zidua PRO	4.5 fl oz/a	A	PRE		0	71	100	91	100	0
	Engenia	12.8 fl oz/a	A	PRE							
	Sentris	8 fl oz/a	A	PRE							
12	Authority Edge	7 fl oz/a	A	PRE		24	65	96	80	100	0
	Anthem MAXX	3 fl oz/a	B	POST							
	Crop oil concentrate	1 % v/v	B	POST							
	LSD P=.05					1.8	10.7	14.8	15.5	10.6	.
	Standard Deviation					1.3	7.4	10.3	10.8	7.4	0.0
	CV					54.23	10.94	12.4	17.56	8.62	0.0

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Rating Date	Jul-5-2023	Jul-5-2023	Jul-5-2023	Jul-5-2023	Aug-1-2023	Aug-1-2023	
Rating Type	control	control	control	control	injury	control	
Rating Unit/Min/Max	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	
Crop Type, Code						C, GLXMA	
Pest Code	ANGR	CHEAL	AMBEL	ABUTH	ANGR		
Trt-Eval Interval	15 DA-POST	15 DA-POST	15 DA-POST	15 DA-POST	42 DA-POST	42 DA-POST	
Number of Decimals	0	0	0	0	0	0	

Trt No.	Treatment Name	Rate	Appl Unit	Appl Code	Timing						
1	Boundary	1.8 pt/a	A	PRE		93	99	85	99	0	100
2	Zidua PRO	4.5 fl oz/a	A	PRE		100	100	94	100	0	100
3	Authority Edge	8 fl oz/a	A	PRE		99	100	90	100	0	100
4	Tendovo	1.5 qt/a	A	PRE		100	100	96	100	0	100
5	Untreated					99	96	88	100	0	75
6	Authority Edge	7 fl oz/a	A	PRE		100	100	91	100	0	100
	Metribuzin	5 oz/a	A	PRE							
7	Kyber	1 pt/a	A	PRE		100	100	93	100	0	99
8	Zidua PRO	6 fl oz/a	A	PRE		100	100	94	100	0	100
9	Tendovo	1.75 qt/a	A	PRE		100	99	97	100	0	100
10	Tendovo	2.1 qt/a	A	PRE		100	100	93	100	0	100
11	Zidua PRO	4.5 fl oz/a	A	PRE		100	100	99	100	0	99
	Engenia	12.8 fl oz/a	A	PRE							
	Sentris	8 fl oz/a	A	PRE							
12	Authority Edge	7 fl oz/a	A	PRE		53	100	64	100	0	65
	Anthem MAXX	3 fl oz/a	B	POST							
	Crop oil concentrate	1 % v/v	B	POST							
	LSD P=.05					3.5	2.2	7.1	1.0	.	2.9
	Standard Deviation					2.5	1.5	4.9	0.7	0.0	2.0
	CV					2.58	1.54	5.46	0.72	0.0	2.13

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 Investigator: Christy Sprague

Rating Date	Aug-1-2023	Aug-1-2023	Aug-1-2023	Aug-1-2023	Oct-23-2023	Oct-23-2023
Rating Type	control	control	control	control	control	control
Rating Unit/Min/Max	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100
Crop Type, Code						
Pest Code	CHEAL	AMAPO	AMBEL	ABUTH	ANGR	CHEAL
Trt-Eval Interval	42 DA-POST	42 DA-POST	42 DA-POST	42 DA-POST	@ harvest	@ harvest
Number of Decimals	0	0	0	0	0	0

Trt No.	Treatment Name	Rate	Appl Unit	Appl Code	Appl Timing	Aug-1-2023	Aug-1-2023	Aug-1-2023	Aug-1-2023	Oct-23-2023	Oct-23-2023
1	Boundary	1.8 pt/a	A		PRE	100	100	85	100	99	100
2	Zidua PRO	4.5 fl oz/a	A		PRE	100	100	93	100	100	100
3	Authority Edge	8 fl oz/a	A		PRE	100	100	89	100	100	100
4	Tendovo	1.5 qt/a	A		PRE	100	100	88	100	100	100
5	Untreated					84	96	68	95	79	84
6	Authority Edge	7 fl oz/a	A		PRE	100	100	86	100	100	100
	Metribuzin	5 oz/a	A		PRE						
7	Kyber	1 pt/a	A		PRE	100	100	96	100	100	99
8	Zidua PRO	6 fl oz/a	A		PRE	100	100	93	100	100	100
9	Tendovo	1.75 qt/a	A		PRE	100	100	89	100	100	100
10	Tendovo	2.1 qt/a	A		PRE	100	100	87	100	100	99
11	Zidua PRO	4.5 fl oz/a	A		PRE	100	100	92	100	100	100
	Engenia	12.8 fl oz/a	A		PRE						
	Sentris	8 fl oz/a	A		PRE						
12	Authority Edge	7 fl oz/a	A		PRE	93	95	43	94	53	100
	Anthem MAXX	3 fl oz/a	B		POST						
	Crop oil concentrate	1 % v/v	B		POST						
	LSD P=.05					5.9	5.0	7.5	5.1	2.9	2.7
	Standard Deviation					4.1	3.4	5.2	3.6	2.0	1.9
	CV					4.15	3.47	6.23	3.59	2.13	1.93

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Trial ID: SOY08-23
 Protocol ID: SOY08-23 Location: Campus, C-14 Trial Year: 2023
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 Investigator: Christy Sprague

Rating Date	Oct-23-2023	Oct-23-2023	Oct-23-2023	Oct-24-2023	Oct-24-2023
Rating Type	control	control	control	moisture	yield
Rating Unit/Min/Max	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	bu/A, -, -
Crop Type, Code				C, GLXMA	C, GLXMA
Pest Code	AMAPO	AMBEL	ABUTH		
Trt-Eval Interval	@ harvest	@ harvest	@ harvest	@harvest	@harvest
Number of Decimals	0	0	0	1	1

Trt No.	Treatment Name	Rate	Appl Unit	Appl Code	Appl Timing					
1	Boundary	1.8 pt/a	A		PRE	100	90	100	15.3	58.4
2	Zidua PRO	4.5 fl oz/a	A		PRE	100	96	100	14.9	57.3
3	Authority Edge	8 fl oz/a	A		PRE	100	94	100	15.4	59.4
4	Tendovo	1.5 qt/a	A		PRE	100	91	100	15.1	62.1
5	Untreated					96	82	94	15.5	61.0
6	Authority Edge	7 fl oz/a	A		PRE	100	93	100	14.9	68.8
	Metribuzin	5 oz/a	A		PRE					
7	Kyber	1 pt/a	A		PRE	100	98	100	14.7	67.5
8	Zidua PRO	6 fl oz/a	A		PRE	100	99	100	15.2	65.5
9	Tendovo	1.75 qt/a	A		PRE	100	95	100	15.3	64.6
10	Tendovo	2.1 qt/a	A		PRE	100	96	100	14.5	72.2
11	Zidua PRO	4.5 fl oz/a	A		PRE	100	99	100	14.8	71.9
	Engenia	12.8 fl oz/a	A		PRE					
	Sentris	8 fl oz/a	A		PRE					
12	Authority Edge	7 fl oz/a	A		PRE	100	50	100	15.7	37.9
	Anthem MAXX	3 fl oz/a	B		POST					
	Crop oil concentrate	1 % v/v	B		POST					
	LSD P=.05					3.1	7.5	3.1	1.08	8.33
	Standard Deviation					2.2	5.2	2.2	0.75	5.79
	CV					2.17	5.76	2.18	4.97	9.3

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