

**Sugarbeet tolerance to tiafenacil from preplant and preemergence applications**

Trial ID: SB01-18 Study Dir.: Sprague, Powell, Stiles  
 Conducted: SVREC Investigator: Christy Sprague

**Planting Date:** Apr-30-2018 **Row Spacing:** 30 IN  
**Variety:** Crystal G515 **No. of Reps:** 4  
**Population:** 4.375 " spacing **% OM:** 2.3  
**Soil Type:** CL clay loam **pH:** 8.0  
**Plot Size:** 10 X 30 FT **Study Design:** Randomized Complete Block (RCB)

**Tillage/Previous Crops:** Fall moldboard plowed; early spring field cultivated; planted into a stale seedbed.  
**Fertilizer:** Urea + ESN was applied preemergence at 140 lb N/A.

**Crop and Weed Description**

Weed	Code	Common Name	Scientific Name
1	POLCO	buckwheat, wild	Polygonum convolvulus
Crop	Code	Common Name	
1	BETVU	Sugarbeet	

**Application Description**

	A	B	C
<b>Application Timing:</b>	7 DBP	3 DBP	PRE
<b>Date Treated:</b>	Apr-23-2018	Apr-27-2018	Apr-30-2018
<b>Time Treated:</b>	4:30 PM	10:00 AM	11:00 AM
<b>% Cloud Cover:</b>	10	70	0
<b>Air Temp., Unit:</b>	69 F	62 F	60 F
<b>% Relative Humidity:</b>	32	27	22
<b>Wind Speed/Unit/Dir:</b>	7 mph E	4 mph W	5 mph W
<b>Soil Temp, Unit:</b>	48 F	57 F	47 F
<b>Leaf Moist/Dew Presence (Y/N):</b>	5	5	5
<b>Soil Moist:</b>	3	3	4

**Crop Stage at Each Application**

	A	B	C
<b>Crop 1 Name:</b>	BETVU	BETVU	BETVU
<b>Height:</b>			
<b>Stage:</b>			

**Weed Stage at Each Application**

	A	B	C
<b>Weed 1 Name:</b>	POLCO	POLCO	POLCO
<b>Height:</b>			
<b>Stage:</b>			

**Weed Density**

	1
<b>Date:</b>	Apr-30-2018
<b>Weed Name:</b>	POLCO
<b>Density:</b>	3 FT <sup>2</sup>

**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	20 "	20 "	100 "	19 GPA	WATER	30 PSI
B	CUB	3.8 mph	AIXR	11003	20 "	20 "	100 "	19 GPA	WATER	30 PSI
C	CUB	3.8 mph	AIXR	11003	20 "	20 "	100 "	19 GPA	WATER	30 PSI

**Comments:** Roundup PowerMax at 32 fl oz + Stinger at 3 fl oz + AMS 17 lb/100 gal was applied postemergence on May 23 and June 19 to keep the area weed-free.

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Study Director: Sprague, Powell, Stiles

Pest Code					
Crop Code					
Rating Date	BETVU	BETVU	BETVU	BETAVU	POLCO
Rating Type	May-21-2018	May-21-2018	May-21-2018	May-23-2018	May-23-2018
Rating Unit	stand count	stand count	stand count	injury	control
Trt-Eval Interval	30' LT	30' RT	30' AVE	percent	percent
Number of Decimals	21 DA-C	21 DA-C	21 DA-C	23 DA-C	23 DA-C
	0	0	0	0	0
Trt Treatment	Form Form	Rate	Growth Appl		
No. Name	Conc Type	Rate Unit	Stage Code		
1 Tiafenacil (DCC-3825)	2.83 L	3 fl oz/a	7 DBP A	57	59
1 MSO	L	0.5 % v/v	7 DBP A	58	15
2 Tiafenacil (DCC-3825)	2.83 L	6 fl oz/a	7 DBP A	30	31
2 MSO	L	0.5 % v/v	7 DBP A	30	55
3 Tiafenacil (DCC-3825)	2.83 L	9 fl oz/a	7 DBP A	20	20
3 MSO	L	0.5 % v/v	7 DBP A	20	88
4 Gramoxone	2 SL	4 pt/a	7 DBP A	70	71
4 Surfactant	L	0.25 % v/v	7 DBP A	70	0
5 Tiafenacil (DCC-3825)	2.83 L	3 fl oz/a	3 DBP B	51	54
5 MSO	L	0.5 % v/v	3 DBP B	52	21
6 Tiafenacil (DCC-3825)	2.83 L	6 fl oz/a	3 DBP B	26	33
6 MSO	L	0.5 % v/v	3 DBP B	30	59
7 Tiafenacil (DCC-3825)	2.83 L	9 fl oz/a	3 DBP B	15	23
7 MSO	L	0.5 % v/v	3 DBP B	19	85
8 Gramoxone	2 SL	4 pt/a	3 DBP B	68	70
8 Surfactant	L	0.25 % v/v	3 DBP B	69	0
9 Tiafenacil (DCC-3825)	2.83 L	3 fl oz/a	PRE C	72	67
9 MSO	L	0.5 % v/v	PRE C	69	7
10 Tiafenacil (DCC-3825)	2.83 L	6 fl oz/a	PRE C	39	41
10 MSO	L	0.5 % v/v	PRE C	40	46
11 Tiafenacil (DCC-3825)	2.83 L	9 fl oz/a	PRE C	23	31
11 MSO	L	0.5 % v/v	PRE C	27	81
12 Gramoxone	2 SL	4 pt/a	PRE C	71	70
12 Surfactant	L	0.25 % v/v	PRE C	71	0
13 Untreated				75	68
14 Sharpen	2.85 L	0.5 fl oz/a	7 DBP A	60	58
14 MSO	L	1 % v/v	7 DBP A	59	21
15 Sharpen	2.85 L	0.5 fl oz/a	3 DBP B	45	41
15 MSO	L	1 % v/v	3 DBP B	43	49
16 Sharpen	2.85 L	0.5 fl oz/a	PRE C	68	59
16 MSO	L	1 % v/v	PRE C	63	34
LSD P=.05				12.2	13.8
Standard Deviation				8.6	9.7
CV				17.41	19.5
				10.7	7.5
				17.0	11.9
				34.09	9.41

Missing data estimates are included in columns: Average=10,11,12,13

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Pest Code					
Crop Code					
Rating Date	BETVU	BETVU	BETVU	BETVU	BETVU
Rating Type	May-30-2018	Jun-19-2018	Jul-3-2018	Sep-18-2018	Sep-18-2018
Rating Unit	injury	injury	injury	stand count	% sugar
Trt-Eval Interval	percent	percent	percent	100' row	
Number of Decimals	30 DA-C	50 DA-C	64 DA-C	141 DA-C	141 DA-C
	0	0	0	0	1
Trt Treatment	Form Form	Rate	Growth Appl		
No. Name	Conc Type	Rate Unit	Stage Code		
1 Tiafenacil (DCC-3825)	2.83 L	3 fl oz/a	7 DBP A	22	9
1 MSO	L	0.5 % v/v	7 DBP A	4	184
2 Tiafenacil (DCC-3825)	2.83 L	6 fl oz/a	7 DBP A	64	40
2 MSO	L	0.5 % v/v	7 DBP A	33	110
3 Tiafenacil (DCC-3825)	2.83 L	9 fl oz/a	7 DBP A	77	56
3 MSO	L	0.5 % v/v	7 DBP A	54	96
4 Gramoxone	2 SL	4 pt/a	7 DBP A	0	0
4 Surfactant	L	0.25 % v/v	7 DBP A	0	185
5 Tiafenacil (DCC-3825)	2.83 L	3 fl oz/a	3 DBP B	26	14
5 MSO	L	0.5 % v/v	3 DBP B	5	163
6 Tiafenacil (DCC-3825)	2.83 L	6 fl oz/a	3 DBP B	66	45
6 MSO	L	0.5 % v/v	3 DBP B	49	113
7 Tiafenacil (DCC-3825)	2.83 L	9 fl oz/a	3 DBP B	84	64
7 MSO	L	0.5 % v/v	3 DBP B	60	89
8 Gramoxone	2 SL	4 pt/a	3 DBP B	0	0
8 Surfactant	L	0.25 % v/v	3 DBP B	0	202
9 Tiafenacil (DCC-3825)	2.83 L	3 fl oz/a	PRE C	16	6
9 MSO	L	0.5 % v/v	PRE C	2	213
10 Tiafenacil (DCC-3825)	2.83 L	6 fl oz/a	PRE C	55	30
10 MSO	L	0.5 % v/v	PRE C	22	155
11 Tiafenacil (DCC-3825)	2.83 L	9 fl oz/a	PRE C	79	50
11 MSO	L	0.5 % v/v	PRE C	35	113
12 Gramoxone	2 SL	4 pt/a	PRE C	0	0
12 Surfactant	L	0.25 % v/v	PRE C	0	176
13 Untreated				0	0
14 Sharpen	2.85 L	0.5 fl oz/a	7 DBP A	34	23
14 MSO	L	1 % v/v	7 DBP A	16	139
15 Sharpen	2.85 L	0.5 fl oz/a	3 DBP B	51	35
15 MSO	L	1 % v/v	3 DBP B	18	162
16 Sharpen	2.85 L	0.5 fl oz/a	PRE C	46	18
16 MSO	L	1 % v/v	PRE C	4	177
LSD P=.05				17.2	14.2
Standard Deviation				12.0	10.0
CV				31.08	41.14
				53.75	19.92
					0.75
					0.52
					3.46

Missing data estimates are included in columns: Average=10,11,12,13

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Pest Code							
Crop Code					BETVU	BETVU	BETVU
Rating Date					Sep-24-2018	Sep-18-2018	Sep-18-2018
Rating Type					yield	RWST	RWSA
Rating Unit					ton/acre	#/ ton	#/ acre
Trt-Eval Interval					147 DA-C	141 DA-C	141 DA-C
Number of Decimals					1	0	0

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	Appl Code			
1	Tiafenacil (DCC-3825)	2.83	L	3 fl oz/a	7 DBP	A		26.0	214	5562
1	MSO		L	0.5 % v/v	7 DBP	A				
2	Tiafenacil (DCC-3825)	2.83	L	6 fl oz/a	7 DBP	A		21.1	217	4585
2	MSO		L	0.5 % v/v	7 DBP	A				
3	Tiafenacil (DCC-3825)	2.83	L	9 fl oz/a	7 DBP	A		16.2	200	3232
3	MSO		L	0.5 % v/v	7 DBP	A				
4	Gramoxone	2	SL	4 pt/a	7 DBP	A		25.4	218	5360
4	Surfactant		L	0.25 % v/v	7 DBP	A				
5	Tiafenacil (DCC-3825)	2.83	L	3 fl oz/a	3 DBP	B		26.5	215	5716
5	MSO		L	0.5 % v/v	3 DBP	B				
6	Tiafenacil (DCC-3825)	2.83	L	6 fl oz/a	3 DBP	B		18.9	205	3879
6	MSO		L	0.5 % v/v	3 DBP	B				
7	Tiafenacil (DCC-3825)	2.83	L	9 fl oz/a	3 DBP	B		14.6	209	3039
7	MSO		L	0.5 % v/v	3 DBP	B				
8	Gramoxone	2	SL	4 pt/a	3 DBP	B		25.1	220	5508
8	Surfactant		L	0.25 % v/v	3 DBP	B				
9	Tiafenacil (DCC-3825)	2.83	L	3 fl oz/a	PRE	C		28.5	223	6368
9	MSO		L	0.5 % v/v	PRE	C				
10	Tiafenacil (DCC-3825)	2.83	L	6 fl oz/a	PRE	C		23.4	215	5023
10	MSO		L	0.5 % v/v	PRE	C				
11	Tiafenacil (DCC-3825)	2.83	L	9 fl oz/a	PRE	C		18.9	207	4474
11	MSO		L	0.5 % v/v	PRE	C				
12	Gramoxone	2	SL	4 pt/a	PRE	C		25.4	217	5528
12	Surfactant		L	0.25 % v/v	PRE	C				
13	Untreated							27.2	222	6036
14	Sharpen	2.85	L	0.5 fl oz/a	7 DBP	A		23.3	211	4948
14	MSO		L	1 % v/v	7 DBP	A				
15	Sharpen	2.85	L	0.5 fl oz/a	3 DBP	B		22.2	211	4694
15	MSO		L	1 % v/v	3 DBP	B				
16	Sharpen	2.85	L	0.5 fl oz/a	PRE	C		23.2	217	5049
16	MSO		L	1 % v/v	PRE	C				
LSD P=.05								5.21	13.4	1142.9
Standard Deviation								3.65	9.4	800.3
CV								15.97	4.37	16.21

Missing data estimates are included in columns: Average=10,11,12,13