

MSU Weed Science Research Program

Comparison of Row Spacing and Plant Populations in Roundup Ready Sugarbeets

Trial ID: SB06-06
 Conducted: Bean and Beet

Study Dir.: Armstrong, Sprague, Powell
 Investigator: Christy Sprague

Date Planted: 4/20/2006 **Row Spacing:** 30 IN
Variety: Beta Seed RR **No. of Reps:** 4
Population: 3"-30"rows 6"-15"row **% OM:** 3.3
Soil Type: Silty Clay **pH:** 7.8
Plot Size: 10 X 30 FT **Design:** RANDOMIZED COMPLETE BLOCK

Tillage: Fall Chisel Plow
 Field Cultivate 4/18/2006
Fertilizer: Broadcast application of 125#/acre N on March 15, 2006

Crop and Weed Description

Weed	Code	Common Name	Scientific Name
1.	CHEAL	LAMBSQUARTERS, COMMON	CHENOPODIUM ALBUM L.
2.	POLPY	SMARTWEED, PENNSYLVANIA	POLYGONUM PENNSYLVANICUM L.
3.	AMARE	PIGWEEED, REDROOT	AMARANTHUS RETROFLEXUS L.
4.	ANGR	Annual grass	mainly foxtail, panicum
5.	POLCO	BUCKWHEAT, WILD	POLYGONUM CONVULVULUS L.
Crop	Code	Common Name	
1.	BETVU	BEET, SUGAR	

Application Description

	A	B	C
Application Timing:	2" weeds	4" weeds	8" weeds
Date Treated:	5/25/2006	6/1/2006	6/8/2006
Time Treated:	2:00 pm	2:30 pm	12:30 pm
% Cloud Cover:	50	90	25
Air Temp., Unit:	82 F	76 F	87 F
% Relative Humidity:	61	39	34
Wind Speed/Unit/Dir:	6 mph S	2 mph W	2 mph SW
Soil Temp., Unit:	66 F	80 F	93 F
Soil/Leaf Surface M:	3 5	3 5	4 5
Soil Moist (1=w 5=d):	3	3	4

Crop Stage at Each Application

	A	B	C
Crop Name:	BETVU	BETVU	BETVU
Height (In.):	1/2"-2"	1"-4 1/2"	
Stage (L):	coty-4	2-6	8-10

Weed Stage at Each Application

	A	B	C
Weed 1 Name:	CHEAL	CHEAL	CHEAL
Height (In.):	1/4"-3"	3/4"-6"	1"-12"
Stage (L):	2-20	4-many	many
Weed 2 Name:	POLPY	POLPY	POLPY
Height (In.):	1 1/2"	1 1/2"-4"	2"-5"
Stage (L):	3	8-12	many
Weed 3 Name:	AMARE	AMARE	AMARE
Height (In.):	1/4"-1/2"	1/4"-2"	1/2"-4"
Stage (L):	4-6	4-8	4-many
Weed 4 Name:	ANGR	ANGR	ANGR
Height (In.):	1"	2"-5"	3"-6"
Stage (L):	3	-	4-7
Weed 5 Name:	POLCO	POLCO	POLCO
Height (In.):	-	-	4"-7"
Stage (L):	-	-	many

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Weed Density (plants/sq. ft.)

	1	2	3	4	5	6
Date:	7/21/2006	7/21/2006	7/21/2006	7/21/2006	7/21/2006	7/21/2006
Weed Name:	CHEAL	POLPY	AMARE	AMBEL	ABUTH	SOLPT
Density:	<1	<1	0	0	<1	0
	7					
Date:	7/21/2006					
Weed Name:	ANGR					
Density:	<1					

Application Equipment

Appl	Sprayer	Speed	Nozzle	Nozzle	Nozzle	Nozzle	Boom			
	Type	MPH	Type	Size	Height	Spacing	Width	GPA	Carrier	PSI
A	Cub	3.8	AirMix	11003	20"	20"	100"	19	H20	27
B	Cub	3.8	AirMix	11003	22"	20"	100"	19	H20	27
C	Cub	3.8	AirMix	11003	22"	20"	100"	19	H20	27

Comments: Previous Crop: Soybeans. Previous Herbicide: Roundup.

June 12- 3.5 oz/acre Amistar applied
 July 7- 0.5 oz/acre Topsin applied
 July 19- 9.2 oz/acre Headline applied
 July 31- 13 oz/acre Emminent applied
 August 15- 9.2 oz/acre Headline applied

Plant populations- # beets/acre
 Low 21954
 Med 31363
 High 40772

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Crop Code	count	% sugar	yield	RWST	RWSA
Rating Data Type	#/ 100'	ton/acre	# / ton	# / acre	
Rating Unit	9/20/2006	9/20/2006	9/20/2006	9/20/2006	9/20/2006
Rating Date	118 DA-A	118 DA-A	118 DA-A	118 DA-A	118 DA-A
Trt-Eval Interval					

Trt No.	Treatment Name	Form Conc	Rate	Unit	Grow Stg	Appl Code					
1	30" rows-126 beets/100 ft						126	16.6	20.7	243	5018
1	untreated										
2	30" rows-180 beets/100 ft						180	16.8	26.2	242	6366
2	weed free										
2	Roundup WeatherMax	4.5	22	fl oz/a	2" weeds	A					
2	Ammonium sulfate		17	lb/100 gal	2" weeds	A					
2	Roundup WeatherMax	4.5	22	fl oz/a	4" weeds	B					
2	Ammonium sulfate		17	lb/100 gal	4" weeds	B					
2	Roundup WeatherMax	4.5	22	fl oz/a	8" weeds	C					
2	Ammonium sulfate		17	lb/100 gal	8" weeds	C					
3	30" rows-180 beets/100 ft						180	17.5	24.6	253	6231
3	Roundup WeatherMax	4.5	22	fl oz/a	4" weeds	B					
3	Ammonium sulfate		17	lb/100 gal	4" weeds	B					
3	scout-TBD				8" weeds	C					
4	30" rows-234 beets/100 ft						234	17.5	26.8	256	6840
4	Roundup WeatherMax	4.5	22	fl oz/a	8" weeds	C					
4	Ammonium sulfate		17	lb/100 gal	8" weeds	C					
4	scout-TBD										
5	15" rows-63 beets/100 ft						63	16.5	21.6	239	5355
5	untreated										
6	15" rows-117 beets/100 ft						117	17.3	37.2	249	9360
6	weed free										
6	Roundup WeatherMax	4.5	22	fl oz/a	2" weeds	A					
6	Ammonium sulfate		17	lb/100 gal	2" weeds	A					
6	Roundup WeatherMax	4.5	22	fl oz/a	4" weeds	B					
6	Ammonium sulfate		17	lb/100 gal	4" weeds	B					
6	Roundup WeatherMax	4.5	22	fl oz/a	8" weeds	C					
6	Ammonium sulfate		17	lb/100 gal	8" weeds	C					
7	15" rows-90 beets/100 ft						90	17.8	31.7	259	8244
7	Roundup WeatherMax	4.5	22	fl oz/a	4" weeds	B					
7	Ammonium sulfate		17	lb/100 gal	4" weeds	B					
7	scout-TBD				8" weeds	C					
8	15" rows-63 beets/100 ft						63	17.1	31.2	247	7717
8	Roundup WeatherMax	4.5	22	fl oz/a	8" weeds	C					
8	Ammonium sulfate		17	lb/100 gal	8" weeds	C					
8	scout-TBD										
9	30" rows-180 beets/100 ft						180	16.9	25.1	248	6241
9	untreated										
10	30" rows-126 beets/100 ft						126	17.1	27.4	249	6800
10	weed free										
10	Roundup WeatherMax	4.5	22	fl oz/a	2" weeds	A					
10	Ammonium sulfate		17	lb/100 gal	2" weeds	A					
10	Roundup WeatherMax	4.5	22	fl oz/a	4" weeds	B					
10	Ammonium sulfate		17	lb/100 gal	4" weeds	B					
10	Roundup WeatherMax	4.5	22	fl oz/a	8" weeds	C					
10	Ammonium sulfate		17	lb/100 gal	8" weeds	C					
11	30" rows-234 beets/100 ft						234	17.4	25.4	253	6424
11	Roundup WeatherMax	4.5	22	fl oz/a	4" weeds	B					
11	Ammonium sulfate		17	lb/100 gal	4" weeds	B					
11	scout-TBD				8" weeds	C					

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Weed Code						BETVU	BETVU	BETVU	BETVU	BETVU	
Crop Code						count	% sugar	yield	RWST	RWSA	
Rating Data Type						#/ 100'		ton/acre	# / ton	# / acre	
Rating Unit						9/20/2006	9/20/2006	9/20/2006	9/20/2006	9/20/2006	
Rating Date						118 DA-A	118 DA-A	118 DA-A	118 DA-A	118 DA-A	
Trt-Eval Interval											
Trt No.	Treatment Name	Form Conc	Rate	Unit	Grow Stg	Appl Code					
12	30" rows-126 beets/100 ft						126	17.3	25.5	256	6498
12	Roundup WeatherMax	4.5	22	fl oz/a	8" weeds	C					
12	Ammonium sulfate		17	lb/100 gal	8" weeds	C					
12	scout-TBD										
13	15" rows-90 beets/100 ft						90	17.1	24.7	247	6138
13	untreated										
14	15" rows-63 beets/100 ft						63	16.9	31.7	241	7629
14	weed free										
14	Roundup WeatherMax	4.5	22	fl oz/a	2" weeds	A					
14	Ammonium sulfate		17	lb/100 gal	2" weeds	A					
14	Roundup WeatherMax	4.5	22	fl oz/a	4" weeds	B					
14	Ammonium sulfate		17	lb/100 gal	4" weeds	B					
14	Roundup WeatherMax	4.5	22	fl oz/a	8" weeds	C					
14	Ammonium sulfate		17	lb/100 gal	8" weeds	C					
15	15" rows-117 beets/100 ft						117	17.1	29.2	242	7060
15	Roundup WeatherMax	4.5	22	fl oz/a	4" weeds	B					
15	Ammonium sulfate		17	lb/100 gal	4" weeds	B					
15	scout-TBD				8" weeds	C					
16	15" rows-117 beets/100 ft						117	17.1	32.2	241	7789
16	Roundup WeatherMax	4.5	22	fl oz/a	8" weeds	C					
16	Ammonium sulfate		17	lb/100 gal	8" weeds	C					
16	scout-TBD										
17	15" rows-117 beets/100 ft						117	17.4	28.9	254	7352
17	untreated										
18	15" rows-90 beets/100 ft						90	17.1	33.3	246	8211
18	weed free										
18	Roundup WeatherMax	4.5	22	fl oz/a	2" weeds	A					
18	Ammonium sulfate		17	lb/100 gal	2" weeds	A					
18	Roundup WeatherMax	4.5	22	fl oz/a	4" weeds	B					
18	Ammonium sulfate		17	lb/100 gal	4" weeds	B					
18	Roundup WeatherMax	4.5	22	fl oz/a	8" weeds	C					
18	Ammonium sulfate		17	lb/100 gal	8" weeds	C					
19	15" rows-63 beets/100 ft						63	17.2	30.5	249	7638
19	Roundup WeatherMax	4.5	22	fl oz/a	4" weeds	B					
19	Ammonium sulfate		17	lb/100 gal	4" weeds	B					
19	scout-TBD				8" weeds	C					
20	15" rows-90 beets/100 ft						90	17.8	33.6	264	8860
20	Roundup WeatherMax	4.5	22	fl oz/a	8" weeds	C					
20	Ammonium sulfate		17	lb/100 gal	8" weeds	C					
20	scout-TBD										
21	30" rows-234 beets/100 ft						234	16.7	20.2	240	4782
21	untreated										
22	30" rows-234 beets/100 ft						234	16.9	25.5	242	6128
22	weed free										
22	Roundup WeatherMax	4.5	22	fl oz/a	2" weeds	A					
22	Ammonium sulfate		17	lb/100 gal	2" weeds	A					
22	Roundup WeatherMax	4.5	22	fl oz/a	4" weeds	B					
22	Ammonium sulfate		17	lb/100 gal	4" weeds	B					
22	Roundup WeatherMax	4.5	22	fl oz/a	8" weeds	C					
22	Ammonium sulfate		17	lb/100 gal	8" weeds	C					

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Rating Data Type						count	% sugar	yield	RWST
Rating Unit						#/ 100'		ton/acre	# / ton
Rating Date						9/20/2006	9/20/2006	9/20/2006	9/20/2006
Trt-Eval Interval						118 DA-A	118 DA-A	118 DA-A	118 DA-A

Trt No.	Treatment Name	Form Conc	Rate	Unit	Grow Stg	Appl Code					
23	30" rows-126 beets/100 ft						126	16.5	24.0	237	5658
23	Roundup WeatherMax	4.5	22	fl oz/a	4" weeds	B					
23	Ammonium sulfate		17	lb/100 gal	4" weeds	B					
23	scout-TBD				8" weeds	C					
24	30" rows-180 beets/100 ft						180	17.3	26.4	251	6593
24	Roundup WeatherMax	4.5	22	fl oz/a	8" weeds	C					
24	Ammonium sulfate		17	lb/100 gal	8" weeds	C					
24	scout-TBD										
LSD (P=.05)							0.0	1.12	6.74	23.4	1797.5
Standard Deviation							0.0	0.79	4.76	16.6	1271.0
CV							0.0	4.64	17.23	6.69	18.5