

MSU Weed Science Research Program

Weed Control and Crop Toleramce in Roundup Ready Sugarbeets

Trial ID: SB14-06EL-RR
 Conducted: Campus

Study Dir.: Sprague, Powell
 Investigator: Christy Sprague

Date Planted: 4/11/2006 **Row Spacing:** 30 IN
Variety: H021A RR **No. of Reps:** 4
Population: 4 3/8" seed spacing **% OM:** 3.2
Soil Type: Loam **pH:** 6.7
Plot Size: 10 X 30 FT **Design:** RANDOMIZED COMPLETE BLOCK

Tillage: Fall Chisel plow
 Soil finish 4/11/06
Fertilizer: 3/27/06- Broadcast 200lb/A Urea (90#N)
 4/11/06- 110# 19-19-19 with planter

Crop and Weed Description

Weed	Code	Common Name	Scientific Name
1.	CHEAL	LAMBSQUARTERS, COMMON	CHENOPODIUM ALBUM L.
2.	ABUTH	VELVETLEAF	ABUTILON THEOPHRASTI MEDIK.
3.	AMAPO	AMARANTH, POWELL	AMARANTHUS POWELLII S.WATS.
4.	DIGSA	CRABGRASS, LARGE	DIGITARIA SANGUINALIS (L.) SCOP.
5.	POLPY	SMARTWEED, PENNSYLVANIA	POLYGONUM PENSYLVANICUM L.
6.	SOLPT	NIGHTSHADE, EASTERN BLACK	SOLANUM PTYCANTHUM DUNAL
7.	ANGR	Annual grass	mainly foxtail, panicum
Crop	Code	Common Name	
1.	BETVU	SUGAR BEET	

Application Description

	A	B	C	D	E
Application Timing:	PPI	Micro 1	2 leaf	4" weeds	6 leaf
Date Treated:	4/11/2006	4/27/2006	6/2/2006	6/9/2006	6/14/2006
Time Treated:	9:00 pm	5:15 pm	12:30 pm	3:00 pm	8:00 am
% Cloud Cover:	100	10	100	45	48
Air Temp., Unit:	68 F	61 F	74 F	77 F	53 F
% Relative Humidity:	39	26	39	20	0
Wind Speed/Unit/Dir:	10 mph S	5 mph N	2 mph NE	6 mph NW	4 mph SE
Soil Temp., Unit:	53 F	65 F	73 F	64 F	66 F
Soil/Leaf Surface M:	1 -	5 -	5 5	5 5	5 3
Soil Moist (1=w 5=d):	1	5	4	5	5
	F	G			
Application Timing:	Grass	Canopy			
Date Treated:	7/6/2006	7/6/2006			
Time Treated:	9:00 am	9:15 am			
% Cloud Cover:	0	0			
Air Temp., Unit:	68 F	70 F			
% Relative Humidity:	59	59			
Wind Speed/Unit/Dir:	2 mph N	2 mph N			
Soil Temp., Unit:	64 F	64 F			
Soil/Leaf Surface M:	5 5	5 5			
Soil Moist (1=w 5=d):	5	5			

Crop Stage at Each Application

	A	B	C	D	E
Crop Name:	BETVU	BETVU	BETVU	BETVU	BETVU
Height (In.):	-	1/2"	.25-1.5"	1-3"	2-5"
Stage (L):	-	coty	cot-2	2-6	4-8
	F	G			
Crop Name:	BETVU	BETVU			
Height (In.):	8-14"	8-14"			
Stage (L):	8-12	8-12			

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Weed Stage at Each Application

	A	B	C	D	E
Weed 1 Name:	CHEAL	CHEAL	CHEAL	CHEAL	CHEAL
Height (In.):	-	1/4"-1/2"	.5-5"	1-3"	1-3"
Stage (L):	-	coty-2	4-many	4-many	4-many
Weed 2 Name:	ABUTH	ABUTH	ABUTH	ABUTH	ABUTH
Height (In.):	-	1/4"	.25-1.5"	1-2"	1-3"
Stage (L):	-	coty	cot-3	2-4	2-4
Weed 3 Name:	AMAPO	AMAPO	AMAPO	AMAPO	AMAPO
Height (In.):	-	-	.125-.75"	.25-1"	.5-1"
Stage (L):	-	-	cot-4	cot-4	cot-4
Weed 4 Name:	DIGSA	DIGSA	DIGSA	DIGSA	DIGSA
Height (In.):	-	-	.75"	1-2"	1-2"
Stage (L):	-	-	2	2-5	2-6
Weed 5 Name:	POLPY	POLPY	POLPY	POLPY	POLPY
Height (In.):	-	-	.25-1.5"	-	-
Stage (L):	-	-	2-4	-	-
Weed 6 Name:	SOLPT	SOLPT	SOLPT	SOLPT	SOLPT
Height (In.):	-	-	.125-1.5"	.5-4"	.5-1"
Stage (L):	-	-	cot-5	2-14"	2-6
Weed 7 Name:	ANGR	ANGR	ANGR	ANGR	ANGR
Height (In.):	-	-	-	-	-
Stage (L):	-	-	-	-	-
	F	G			
Weed 1 Name:	CHEAL	CHEAL			
Height (In.):	1.5-3"	1-6"			
Stage (L):	8-many	6-many			
Weed 2 Name:	ABUTH	ABUTH			
Height (In.):	3.5-7"	3-5"			
Stage (L):	3-7	3-5			
Weed 3 Name:	AMAPO	AMAPO			
Height (In.):	-	-			
Stage (L):	-	-			
Weed 4 Name:	DIGSA	DIGSA			
Height (In.):	8-12" dia	-			
Stage (L):	many	-			
Weed 5 Name:	POLPY	POLPY			
Height (In.):	-	2.5"			
Stage (L):	-	many			
Weed 6 Name:	SOLPT	SOLPT			
Height (In.):	-	0.5-1"			
Stage (L):	-	4-8			
Weed 7 Name:	ANGR	ANGR			
Height (In.):	3-7"	2-3"			
Stage (L):	many	5-many			

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	ABUTH	ANGR	AMBEL	AMARE	POLPY
Density:	2	<1	7	<1	<1	1

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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	18"	20"	100"	19	WATER	27
B	Cub	3.8	AirMix	11003	20"	20"	100"	19	WATER	27
C	Cub	3.8	AirMix	11003	22"	20"	100"	19	WATER	27
D	Cub	3.8	AirMix	11003	22"	20"	100"	19	WATER	27
E	Cub	3.8	AirMix	11003	22"	20"	100"	19	WATER	27
F	Cub	3.8	AirMix	11003	29"	20"	120"	19	water	27
G	Cub	3.8	AirMix	11003	29"	20"	120"	19	water	27

Comments: 5/8/06- Due to poor stand (<50 beets/100 ft of row); 3H021ARR sugarbeets were replanted at 4 3/8" seed spacing.

5/10/06- Liberty (32 oz) + AMS (2 lb) applied to all treatments.

Previouc Crop: Corn. Previous Herbicides: Roundup, Distinct

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Weed Code								ANGR	CHEAL	ABUTH	POLPY	SOLPT		
Crop Code						BETVU							BETVU	
Rating Data Type						injury		control	control	control	control	control	injury	
Rating Unit						percent		percent	percent	percent	percent	percent	percent	
Rating Date						6/24/2006		6/24/2006	6/24/2006	6/24/2006	6/24/2006	6/24/2006	7/5/2006	
Trt-Eval Interval						74 DA-A		74 DA-A	74 DA-A	74 DA-A	74 DA-A	74 DA-A	85 DA-A	
Trt No.	Treatment Name	Form Conc	Rate	Unit	Grow Stg	Appl Code								
15	UPI-Phen-Des	1.3	8	fl oz/a	micro 1	B	26	81	97	97	99	99	6	
15	Upbeet	50	0.125	oz/a	micro 1	B								
15	Clopyr Ag	3	1	fl oz/a	micro 1	B								
15	MSO		1.5	% v/v	micro 1	B								
15	UPI-Phen-Des	1.3	2	pt/a	std1	C								
15	Upbeet	50	0.5	oz/a	std1	C								
15	Clopyr Ag	3	4	fl oz/a	std1	C								
15	UPI-Phen-Des	1.3	3	pt/a	std2	E								
15	Upbeet	50	0.5	oz/a	std2	E								
15	Clopyr Ag	3	4	fl oz/a	std2	E								
15	Activator 90 NIS		0.25	% v/v	std2	E								
16	Betamix	1.3	8	fl oz/a	micro 1	B	21	87	98	98	99	99	8	
16	Upbeet	50	0.125	oz/a	micro 1	B								
16	Stinger	3	1	fl oz/a	micro 1	B								
16	MSO		1.5	% v/v	micro 1	B								
16	Betamix	1.3	2	pt/a	std1	C								
16	Upbeet	50	0.5	oz/a	std1	C								
16	Stinger	3	4	fl oz/a	std1	C								
16	Betamix	1.3	3	pt/a	std2	E								
16	Upbeet	50	0.5	oz/a	std2	E								
16	Stinger	3	4	fl oz/a	std2	E								
16	Activator 90 NIS		0.25	% v/v	std2	E								
17	Ro-Neet	6	2	qt/a	PPI	A	35	77	98	98	99	99	10	
17	Betamix	1.3	8	fl oz/a	micro 1	B								
17	Upbeet	50	0.125	oz/a	micro 1	B								
17	Stinger	3	1	fl oz/a	micro 1	B								
17	MSO		1.5	% v/v	micro 1	B								
17	Betamix	1.3	2	pt/a	std1	C								
17	Upbeet	50	0.5	oz/a	std1	C								
17	Stinger	3	4	fl oz/a	std1	C								
17	Betamix	1.3	3	pt/a	std2	E								
17	Upbeet	50	0.5	oz/a	std2	E								
17	Stinger	3	4	fl oz/a	std2	E								
17	Activator 90 NIS		0.25	% v/v	std2	E								
18	Ro-Neet	6	2	qt/a	PPI	A	8	98	99	99	99	99	5	
18	Roundup OriginalMAX	4.5	0.75	lb ae/a	4" weeds	D								
18	Ammonium sulfate		2	% w/w	4" weeds	D								
18	Roundup OriginalMAX	4.5	0.75	lb ae/a	canopy	G								
18	Ammonium sulfate		2	% w/w	canopy	G								
19	Roundup OriginalMAX	4.5	0.75	lb ae/a	4" weeds	D	4	99	99	99	99	99	1	
19	Ammonium sulfate		2	% w/w	4" weeds	D								
19	Roundup OriginalMAX	4.5	0.75	lb ae/a	canopy	G								
19	Ammonium sulfate		2	% w/w	canopy	G								
20	Nortron	4	3	pt/a	PPI	A	1	99	99	99	99	99	0	
20	Roundup OriginalMAX	4.5	0.75	lb ae/a	4" weeds	D								
20	Ammonium sulfate		2	% w/w	4" weeds	D								
20	Roundup OriginalMAX	4.5	0.75	lb ae/a	canopy	G								
20	Ammonium sulfate		2	% w/w	canopy	G								
LSD (P=.05)							13.5	8.2	2.1	3.9	0.7	0.0	11.5	
Standard Deviation							9.6	5.8	1.5	2.7	0.5	0.0	8.2	
CV							60.75	6.46	1.61	2.96	0.54	0.0	142.07	

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							ANGR	CHEAL	ABUTH	SOLPT	ANGR	CHEAL	ABUTH
							control	control	control	control	control	control	control
							percent	percent	percent	percent	percent	percent	percent
							7/5/2006	7/5/2006	7/5/2006	7/5/2006	10/5/2006	10/5/2006	10/5/2006
							85 DA-A	85 DA-A	85 DA-A	85 DA-A	177 DA-A	177 DA-A	177 DA-A
Trt No.	Treatment Name	Form Conc	Rate	Grow Stg	Appl Code								
1	Roundup OriginalMAX	4.5	0.75	lb ae/a	2-lf	C	93	98	99	98	100	100	100
1	Ammonium sulfate	2		% w/w	2-lf	C							
1	Roundup OriginalMAX	4.5	0.75	lb ae/a	6-lf	E							
1	Ammonium sulfate	2		% w/w	6-lf	E							
1	Roundup OriginalMAX	4.5	0.75	lb ae/a	canopy	G							
1	Ammonium sulfate	2		% w/w	canopy	G							
2	Roundup OriginalMAX	4.5	0.75	lb ae/a	2-lf	C	98	99	99	99	99	100	100
2	Betamix	1.3	3	pt/a	2-lf	C							
2	Ammonium sulfate	2		% w/w	2-lf	C							
2	Roundup OriginalMAX	4.5	0.75	lb ae/a	6-lf	E							
2	Betamix	1.3	4.5	pt/a	6-lf	E							
2	Ammonium sulfate	2		% w/w	6-lf	E							
2	Roundup OriginalMAX	4.5	0.75	lb ae/a	canopy	G							
2	Ammonium sulfate	2		% w/w	canopy	G							
3	Roundup OriginalMAX	4.5	0.75	lb ae/a	2-lf	C	97	99	99	99	100	100	100
3	Betanex	1.3	3	pt/a	2-lf	C							
3	Ammonium sulfate	2		% w/w	2-lf	C							
3	Roundup OriginalMAX	4.5	0.75	lb ae/a	6-lf	E							
3	Betanex	1.3	4.5	pt/a	6-lf	E							
3	Ammonium sulfate	2		% w/w	6-lf	E							
3	Roundup OriginalMAX	4.5	0.75	lb ae/a	canopy	G							
3	Ammonium sulfate	2		% w/w	canopy	G							
4	Roundup OriginalMAX	4.5	0.75	lb ae/a	2-lf	C	98	99	99	98	99	100	100
4	Progress	1.8	2.25	pt/a	2-lf	C							
4	Ammonium sulfate	2		% w/w	2-lf	C							
4	Roundup OriginalMAX	4.5	0.75	lb ae/a	6-lf	E							
4	Progress	1.8	3.5	pt/a	6-lf	E							
4	Ammonium sulfate	2		% w/w	6-lf	E							
4	Roundup OriginalMAX	4.5	0.75	lb ae/a	canopy	G							
4	Ammonium sulfate	2		% w/w	canopy	G							
5	Untreated						0	0	0	0	0	0	0
6	Roundup OriginalMAX	4.5	0.75	lb ae/a	2-lf	C	98	99	99	96	100	100	100
6	Nortron	4	3	fl oz/a	2-lf	C							
6	Ammonium sulfate	2		% w/w	2-lf	C							
6	Roundup OriginalMAX	4.5	0.75	lb ae/a	6-lf	E							
6	Nortron	4	3	fl oz/a	6-lf	E							
6	Ammonium sulfate	2		% w/w	6-lf	E							
6	Roundup OriginalMAX	4.5	0.75	lb ae/a	canopy	G							
6	Ammonium sulfate	2		% w/w	canopy	G							
7	Roundup OriginalMAX	4.5	0.75	lb ae/a	2-lf	C	98	99	99	99	100	100	100
7	Upbeet	50	0.5	oz/a	2-lf	C							
7	Ammonium sulfate	2		% w/w	2-lf	C							
7	Roundup OriginalMAX	4.5	0.75	lb ae/a	6-lf	E							
7	Upbeet	50	0.5	oz/a	6-lf	E							
7	Ammonium sulfate	2		% w/w	6-lf	E							
7	Roundup OriginalMAX	4.5	0.75	lb ae/a	canopy	G							
7	Ammonium sulfate	2		% w/w	canopy	G							
8	Roundup OriginalMAX	4.5	0.75	lb ae/a	2-lf	C	97	98	99	99	100	100	100
8	Ammonium sulfate	2		% w/w	2-lf	C							
8	Roundup OriginalMAX	4.5	0.75	lb ae/a	6-lf	E							
8	Quadris	2.08	14	fl oz/a	6-lf	E							
8	Ammonium sulfate	2		% w/w	6-lf	E							
8	Roundup OriginalMAX	4.5	0.75	lb ae/a	canopy	G							
8	Ammonium sulfate	2		% w/w	canopy	G							

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Crop Code							
Rating Data Type	control	control	control	control	control	control	control
Rating Unit	percent	percent	percent	percent	percent	percent	percent
Rating Date	7/5/2006	7/5/2006	7/5/2006	7/5/2006	10/5/2006	10/5/2006	10/5/2006
Trt-Eval Interval	85 DA-A	85 DA-A	85 DA-A	85 DA-A	177 DA-A	177 DA-A	177 DA-A

Trt No.	Treatment Name	Form Conc	Rate	Grow Unit	Stg	Appl Code	ANGR	CHEAL	ABUTH	SOLPT	ANGR	CHEAL	ABUTH
9	Roundup OriginalMAX	4.5	0.75	lb ae/a	2-lf	C	99	99	99	99	100	100	100
9	Dual Magnum	7.62	1.33	pt/a	2-lf	C							
9	Ammonium sulfate		2	% w/w	2-lf	C							
9	Roundup OriginalMAX	4.5	0.75	lb ae/a	6-lf	E							
9	Ammonium sulfate		2	% w/w	6-lf	E							
9	Roundup OriginalMAX	4.5	0.75	lb ae/a	canopy	G							
9	Ammonium sulfate		2	% w/w	canopy	G							
10	Roundup OriginalMAX	4.5	0.75	lb ae/a	2-lf	C	97	99	99	99	100	100	100
10	Stinger	3	8	fl oz/a	2-lf	C							
10	Ammonium sulfate		2	% w/w	2-lf	C							
10	Roundup OriginalMAX	4.5	0.75	lb ae/a	6-lf	E							
10	Ammonium sulfate		2	% w/w	6-lf	E							
10	Roundup OriginalMAX	4.5	0.75	lb ae/a	canopy	G							
10	Ammonium sulfate		2	% w/w	canopy	G							
11	Roundup OriginalMAX	4.5	0.75	lb ae/a	2-lf	C	99	99	99	99	100	100	100
11	Outlook	6	18	fl oz/a	2-lf	C							
11	Ammonium sulfate		2	% w/w	2-lf	C							
11	Roundup OriginalMAX	4.5	0.75	lb ae/a	6-lf	E							
11	Ammonium sulfate		2	% w/w	6-lf	E							
11	Roundup OriginalMAX	4.5	0.75	lb ae/a	canopy	G							
11	Ammonium sulfate		2	% w/w	canopy	G							
12	Roundup OriginalMAX	4.5	0.75	lb ae/a	2-lf	C	99	99	99	99	100	100	100
12	Select	6	8	fl oz/a	2-lf	C							
12	Crop Oil Concentrate		1	% v/v	2-lf	C							
12	Ammonium sulfate		2	% w/w	2-lf	C							
12	Roundup OriginalMAX	4.5	0.75	lb ae/a	6-lf	E							
12	Ammonium sulfate		2	% w/w	6-lf	E							
12	Roundup OriginalMAX	4.5	0.75	lb ae/a	canopy	G							
12	Ammonium sulfate		2	% w/w	canopy	G							
13	UPI-Phen-Des	1.3	8	fl oz/a	micro 1	B	65	89	71	99	96	85	82
13	Upbeet	50	0.125	oz/a	micro 1	B							
13	Clopyr Ag	3	1	fl oz/a	micro 1	B							
13	MSO		1.5	% v/v	micro 1	B							
13	UPI-Phen-Des	1.3	2	pt/a	std1	C							
13	Upbeet	50	0.5	oz/a	std1	C							
13	Clopyr Ag	3	4	fl oz/a	std1	C							
13	UPI-Phen-Des	1.3	3	pt/a	std2	E							
13	Upbeet	50	0.5	oz/a	std2	E							
13	Clopyr Ag	3	4	fl oz/a	std2	E							
13	Activator 90 NIS		0.25	% v/v	std2	E							
13	Select	2	8	fl oz/a	Grass	F							
13	Crop Oil Concentrate		1	% v/v	Grass	F							
13	Ammonium Sulfate		2.5	lb/a	Grass	F							
14	UPI-Phen-Des	1.3	8	fl oz/a	micro 1	B	76	93	82	99	98	94	81
14	Upbeet	50	0.125	oz/a	micro 1	B							
14	Clopyr Ag	3	1	fl oz/a	micro 1	B							
14	MSO		1.5	% v/v	micro 1	B							
14	UPI-Phen-Des	1.3	2	pt/a	std1	C							
14	Upbeet	50	0.5	oz/a	std1	C							
14	Clopyr Ag	3	4	fl oz/a	std1	C							
14	UPI-Phen-Des	1.3	3	pt/a	std2	E							
14	Upbeet	50	0.5	oz/a	std2	E							
14	Clopyr Ag	3	4	fl oz/a	std2	E							
14	Activator 90 NIS		0.25	% v/v	std2	E							
14	'Volunteer' Clethodim	2	8	fl oz/a	Grass	F							
14	Crop Oil Concentrate		1	% v/v	Grass	F							
14	Ammonium Sulfate		2.5	lb/a	Grass	F							

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Crop Code							
Rating Data Type	control	control	control	control	control	control	control
Rating Unit	percent	percent	percent	percent	percent	percent	percent
Rating Date	7/5/2006	7/5/2006	7/5/2006	7/5/2006	10/5/2006	10/5/2006	10/5/2006
Trt-Eval Interval	85 DA-A	85 DA-A	85 DA-A	85 DA-A	177 DA-A	177 DA-A	177 DA-A

Trt No.	Treatment Name	Form Conc	Rate	Unit	Grow Stg	Appl Code	ANGR	CHEAL	ABUTH	SOLPT	ANGR	CHEAL	ABUTH
15	UPI-Phen-Des	1.3	8	fl oz/a	micro 1	B	75	94	90	99	40	89	89
15	Upbeet	50	0.125	oz/a	micro 1	B							
15	Clopyr Ag	3	1	fl oz/a	micro 1	B							
15	MSO		1.5	% v/v	micro 1	B							
15	UPI-Phen-Des	1.3	2	pt/a	std1	C							
15	Upbeet	50	0.5	oz/a	std1	C							
15	Clopyr Ag	3	4	fl oz/a	std1	C							
15	UPI-Phen-Des	1.3	3	pt/a	std2	E							
15	Upbeet	50	0.5	oz/a	std2	E							
15	Clopyr Ag	3	4	fl oz/a	std2	E							
15	Activator 90 NIS		0.25	% v/v	std2	E							
16	Betamix	1.3	8	fl oz/a	micro 1	B	72	96	91	99	45	93	84
16	Upbeet	50	0.125	oz/a	micro 1	B							
16	Stinger	3	1	fl oz/a	micro 1	B							
16	MSO		1.5	% v/v	micro 1	B							
16	Betamix	1.3	2	pt/a	std1	C							
16	Upbeet	50	0.5	oz/a	std1	C							
16	Stinger	3	4	fl oz/a	std1	C							
16	Betamix	1.3	3	pt/a	std2	E							
16	Upbeet	50	0.5	oz/a	std2	E							
16	Stinger	3	4	fl oz/a	std2	E							
16	Activator 90 NIS		0.25	% v/v	std2	E							
17	Ro-Neet	6	2	qt/a	PPI	A	71	97	96	98	61	89	94
17	Betamix	1.3	8	fl oz/a	micro 1	B							
17	Upbeet	50	0.125	oz/a	micro 1	B							
17	Stinger	3	1	fl oz/a	micro 1	B							
17	MSO		1.5	% v/v	micro 1	B							
17	Betamix	1.3	2	pt/a	std1	C							
17	Upbeet	50	0.5	oz/a	std1	C							
17	Stinger	3	4	fl oz/a	std1	C							
17	Betamix	1.3	3	pt/a	std2	E							
17	Upbeet	50	0.5	oz/a	std2	E							
17	Stinger	3	4	fl oz/a	std2	E							
17	Activator 90 NIS		0.25	% v/v	std2	E							
18	Ro-Neet	6	2	qt/a	PPI	A	98	98	94	89	98	98	99
18	Roundup OriginalMAX	4.5	0.75	lb ae/a	4" weeds	D							
18	Ammonium sulfate		2	% w/w	4" weeds	D							
18	Roundup OriginalMAX	4.5	0.75	lb ae/a	canopy	G							
18	Ammonium sulfate		2	% w/w	canopy	G							
19	Roundup OriginalMAX	4.5	0.75	lb ae/a	4" weeds	D	97	99	99	98	98	100	100
19	Ammonium sulfate		2	% w/w	4" weeds	D							
19	Roundup OriginalMAX	4.5	0.75	lb ae/a	canopy	G							
19	Ammonium sulfate		2	% w/w	canopy	G							
20	Nortron	4	3	pt/a	PPI	A	99	99	99	95	100	100	100
20	Roundup OriginalMAX	4.5	0.75	lb ae/a	4" weeds	D							
20	Ammonium sulfate		2	% w/w	4" weeds	D							
20	Roundup OriginalMAX	4.5	0.75	lb ae/a	canopy	G							
20	Ammonium sulfate		2	% w/w	canopy	G							

LSD (P=.05)	5.6	3.2	7.8	5.2	10.5	6.1	4.5
Standard Deviation	4.0	2.3	5.5	3.7	7.4	4.3	3.2
CV	4.59	2.48	6.13	3.98	8.59	4.64	3.49

MSU Weed Science Research Program

Weed Control and Crop Toleramce in Roundup Ready Sugarbeets

Trial ID: SB14-06EL-RR
 Conducted: Campus

Study Dir.: Sprague, Powell
 Investigator: Christy Sprague

Weed Code		SOLPT										
Crop Code	Rating Data Type	Rating Unit	Rating Date	Trt-Eval Interval	control	BETVU stand count	BETVU % sugar	BETVU yield	BETVU RWST	BETVU RWSA		
Trt No.	Treatment Name	Form Conc	Rate	Grow Stg	Appl Code	10/5/2006	10/31/2006	10/31/2006	10/31/2006	10/31/2006		
						100' row	10/31/2006	10/31/2006	10/31/2006	10/31/2006		
						percent	ton/acre	# / ton	# / acre			
						177 DA-A	203 DA-A	203 DA-A	203 DA-A	203 DA-A		
1	Roundup OriginalMAX	4.5	0.75	lb ae/a	2-lf	C	100	149	18.2	27.0	259.6	7008
1	Ammonium sulfate	2		% w/w	2-lf	C						
1	Roundup OriginalMAX	4.5	0.75	lb ae/a	6-lf	E						
1	Ammonium sulfate	2		% w/w	6-lf	E						
1	Roundup OriginalMAX	4.5	0.75	lb ae/a	canopy	G						
1	Ammonium sulfate	2		% w/w	canopy	G						
2	Roundup OriginalMAX	4.5	0.75	lb ae/a	2-lf	C	100	120	18.4	20.1	261.6	5261
2	Betamix	1.3	3	pt/a	2-lf	C						
2	Ammonium sulfate	2		% w/w	2-lf	C						
2	Roundup OriginalMAX	4.5	0.75	lb ae/a	6-lf	E						
2	Betamix	1.3	4.5	pt/a	6-lf	E						
2	Ammonium sulfate	2		% w/w	6-lf	E						
2	Roundup OriginalMAX	4.5	0.75	lb ae/a	canopy	G						
2	Ammonium sulfate	2		% w/w	canopy	G						
3	Roundup OriginalMAX	4.5	0.75	lb ae/a	2-lf	C	100	109	17.8	23.5	250.5	5886
3	Betanex	1.3	3	pt/a	2-lf	C						
3	Ammonium sulfate	2		% w/w	2-lf	C						
3	Roundup OriginalMAX	4.5	0.75	lb ae/a	6-lf	E						
3	Betanex	1.3	4.5	pt/a	6-lf	E						
3	Ammonium sulfate	2		% w/w	6-lf	E						
3	Roundup OriginalMAX	4.5	0.75	lb ae/a	canopy	G						
3	Ammonium sulfate	2		% w/w	canopy	G						
4	Roundup OriginalMAX	4.5	0.75	lb ae/a	2-lf	C	100	137	17.2	24.5	242.8	5945
4	Progress	1.8	2.25	pt/a	2-lf	C						
4	Ammonium sulfate	2		% w/w	2-lf	C						
4	Roundup OriginalMAX	4.5	0.75	lb ae/a	6-lf	E						
4	Progress	1.8	3.5	pt/a	6-lf	E						
4	Ammonium sulfate	2		% w/w	6-lf	E						
4	Roundup OriginalMAX	4.5	0.75	lb ae/a	canopy	G						
4	Ammonium sulfate	2		% w/w	canopy	G						
5	Untreated						0	161	18.2	7.1	263.4	1879
6	Roundup OriginalMAX	4.5	0.75	lb ae/a	2-lf	C	100	168	18.6	33.4	271.5	9043
6	Nortron	4	3	fl oz/a	2-lf	C						
6	Ammonium sulfate	2		% w/w	2-lf	C						
6	Roundup OriginalMAX	4.5	0.75	lb ae/a	6-lf	E						
6	Nortron	4	3	fl oz/a	6-lf	E						
6	Ammonium sulfate	2		% w/w	6-lf	E						
6	Roundup OriginalMAX	4.5	0.75	lb ae/a	canopy	G						
6	Ammonium sulfate	2		% w/w	canopy	G						
7	Roundup OriginalMAX	4.5	0.75	lb ae/a	2-lf	C	100	169	18.0	30.9	255.2	7873
7	Upbeet	50	0.5	oz/a	2-lf	C						
7	Ammonium sulfate	2		% w/w	2-lf	C						
7	Roundup OriginalMAX	4.5	0.75	lb ae/a	6-lf	E						
7	Upbeet	50	0.5	oz/a	6-lf	E						
7	Ammonium sulfate	2		% w/w	6-lf	E						
7	Roundup OriginalMAX	4.5	0.75	lb ae/a	canopy	G						
7	Ammonium sulfate	2		% w/w	canopy	G						
8	Roundup OriginalMAX	4.5	0.75	lb ae/a	2-lf	C	100	171	18.0	34.2	258.7	8830
8	Ammonium sulfate	2		% w/w	2-lf	C						
8	Roundup OriginalMAX	4.5	0.75	lb ae/a	6-lf	E						
8	Quadris	2.08	14	fl oz/a	6-lf	E						
8	Ammonium sulfate	2		% w/w	6-lf	E						
8	Roundup OriginalMAX	4.5	0.75	lb ae/a	canopy	G						
8	Ammonium sulfate	2		% w/w	canopy	G						

MSU Weed Science Research Program

Weed Control and Crop Toleramce in Roundup Ready Sugarbeets

Trial ID: SB14-06EL-RR
 Conducted: Campus

Study Dir.: Sprague, Powell
 Investigator: Christy Sprague

Weed Code						SOLPT						
Crop Code						BETVU	BETVU	BETVU	BETVU	BETVU		
Rating Data Type						control	stand count	% sugar	yield	RWST	RWSA	
Rating Unit						percent	100' row		ton/acre	# / ton	# / acre	
Rating Date						10/5/2006	10/31/2006	10/31/2006	10/31/2006	10/31/2006	10/31/2006	
Trt-Eval Interval						177 DA-A	203 DA-A	203 DA-A	203 DA-A	203 DA-A	203 DA-A	
Trt No.	Treatment Name	Form Conc	Rate	Grow Unit	Stg	Appl Code						
9	Roundup OriginalMAX	4.5	0.75	lb ae/a	2-lf	C	100	175	18.4	30.2	263.7	7999
9	Dual Magnum	7.62	1.33	pt/a	2-lf	C						
9	Ammonium sulfate		2	% w/w	2-lf	C						
9	Roundup OriginalMAX	4.5	0.75	lb ae/a	6-lf	E						
9	Ammonium sulfate		2	% w/w	6-lf	E						
9	Roundup OriginalMAX	4.5	0.75	lb ae/a	canopy	G						
9	Ammonium sulfate		2	% w/w	canopy	G						
10	Roundup OriginalMAX	4.5	0.75	lb ae/a	2-lf	C	100	160	18.1	24.9	259.2	6440
10	Stinger	3	8	fl oz/a	2-lf	C						
10	Ammonium sulfate		2	% w/w	2-lf	C						
10	Roundup OriginalMAX	4.5	0.75	lb ae/a	6-lf	E						
10	Ammonium sulfate		2	% w/w	6-lf	E						
10	Roundup OriginalMAX	4.5	0.75	lb ae/a	canopy	G						
10	Ammonium sulfate		2	% w/w	canopy	G						
11	Roundup OriginalMAX	4.5	0.75	lb ae/a	2-lf	C	100	162	18.2	26.1	262.6	6836
11	Outlook	6	18	fl oz/a	2-lf	C						
11	Ammonium sulfate		2	% w/w	2-lf	C						
11	Roundup OriginalMAX	4.5	0.75	lb ae/a	6-lf	E						
11	Ammonium sulfate		2	% w/w	6-lf	E						
11	Roundup OriginalMAX	4.5	0.75	lb ae/a	canopy	G						
11	Ammonium sulfate		2	% w/w	canopy	G						
12	Roundup OriginalMAX	4.5	0.75	lb ae/a	2-lf	C	100	167	18.0	28.8	256.9	7376
12	Select	6	8	fl oz/a	2-lf	C						
12	Crop Oil Concentrate		1	% v/v	2-lf	C						
12	Ammonium sulfate		2	% w/w	2-lf	C						
12	Roundup OriginalMAX	4.5	0.75	lb ae/a	6-lf	E						
12	Ammonium sulfate		2	% w/w	6-lf	E						
12	Roundup OriginalMAX	4.5	0.75	lb ae/a	canopy	G						
12	Ammonium sulfate		2	% w/w	canopy	G						
13	UPI-Phen-Des	1.3	8	fl oz/a	micro 1	B	100	166	18.5	30.1	268.3	8061
13	Upbeet	50	0.125	oz/a	micro 1	B						
13	Clopyr Ag	3	1	fl oz/a	micro 1	B						
13	MSO		1.5	% v/v	micro 1	B						
13	UPI-Phen-Des	1.3	2	pt/a	std1	C						
13	Upbeet	50	0.5	oz/a	std1	C						
13	Clopyr Ag	3	4	fl oz/a	std1	C						
13	UPI-Phen-Des	1.3	3	pt/a	std2	E						
13	Upbeet	50	0.5	oz/a	std2	E						
13	Clopyr Ag	3	4	fl oz/a	std2	E						
13	Activator 90 NIS		0.25	% v/v	std2	E						
13	Select	2	8	fl oz/a	Grass	F						
13	Crop Oil Concentrate		1	% v/v	Grass	F						
13	Ammonium Sulfate		2.5	lb/a	Grass	F						
14	UPI-Phen-Des	1.3	8	fl oz/a	micro 1	B	100	164	18.5	27.7	265.6	7343
14	Upbeet	50	0.125	oz/a	micro 1	B						
14	Clopyr Ag	3	1	fl oz/a	micro 1	B						
14	MSO		1.5	% v/v	micro 1	B						
14	UPI-Phen-Des	1.3	2	pt/a	std1	C						
14	Upbeet	50	0.5	oz/a	std1	C						
14	Clopyr Ag	3	4	fl oz/a	std1	C						
14	UPI-Phen-Des	1.3	3	pt/a	std2	E						
14	Upbeet	50	0.5	oz/a	std2	E						
14	Clopyr Ag	3	4	fl oz/a	std2	E						
14	Activator 90 NIS		0.25	% v/v	std2	E						
14	'Volunteer' Clethodim	2	8	fl oz/a	Grass	F						
14	Crop Oil Concentrate		1	% v/v	Grass	F						
14	Ammonium Sulfate		2.5	lb/a	Grass	F						

MSU Weed Science Research Program

Weed Control and Crop Toleramce in Roundup Ready Sugarbeets

Trial ID: SB14-06EL-RR
 Conducted: Campus

Study Dir.: Sprague, Powell
 Investigator: Christy Sprague

Weed Code						SOLPT							
Crop Code								BETVU	BETVU	BETVU	BETVU	BETVU	BETVU
Rating Data Type						control		stand count	% sugar	yield	RWST	RWSA	
Rating Unit						percent		100' row		ton/acre	# / ton	# / acre	
Rating Date						10/5/2006		10/31/2006	10/31/2006	10/31/2006	10/31/2006	10/31/2006	10/31/2006
Trt-Eval Interval						177 DA-A		203 DA-A	203 DA-A	203 DA-A	203 DA-A	203 DA-A	203 DA-A
Trt No.	Treatment Name	Form Conc	Rate	Unit	Grow Stg	Appl Code							
15	UPI-Phen-Des	1.3	8	fl oz/a	micro 1	B	100	152	18.0	24.2	256.4	6218	
15	Upbeet	50	0.125	oz/a	micro 1	B							
15	Clopyr Ag	3	1	fl oz/a	micro 1	B							
15	MSO		1.5	% v/v	micro 1	B							
15	UPI-Phen-Des	1.3	2	pt/a	std1	C							
15	Upbeet	50	0.5	oz/a	std1	C							
15	Clopyr Ag	3	4	fl oz/a	std1	C							
15	UPI-Phen-Des	1.3	3	pt/a	std2	E							
15	Upbeet	50	0.5	oz/a	std2	E							
15	Clopyr Ag	3	4	fl oz/a	std2	E							
15	Activator 90 NIS		0.25	% v/v	std2	E							
16	Betamix	1.3	8	fl oz/a	micro 1	B	100	161	17.8	25.7	258.8	6632	
16	Upbeet	50	0.125	oz/a	micro 1	B							
16	Stinger	3	1	fl oz/a	micro 1	B							
16	MSO		1.5	% v/v	micro 1	B							
16	Betamix	1.3	2	pt/a	std1	C							
16	Upbeet	50	0.5	oz/a	std1	C							
16	Stinger	3	4	fl oz/a	std1	C							
16	Betamix	1.3	3	pt/a	std2	E							
16	Upbeet	50	0.5	oz/a	std2	E							
16	Stinger	3	4	fl oz/a	std2	E							
16	Activator 90 NIS		0.25	% v/v	std2	E							
17	Ro-Neet	6	2	qt/a	PPI	A	88	157	18.5	23.4	264.1	6141	
17	Betamix	1.3	8	fl oz/a	micro 1	B							
17	Upbeet	50	0.125	oz/a	micro 1	B							
17	Stinger	3	1	fl oz/a	micro 1	B							
17	MSO		1.5	% v/v	micro 1	B							
17	Betamix	1.3	2	pt/a	std1	C							
17	Upbeet	50	0.5	oz/a	std1	C							
17	Stinger	3	4	fl oz/a	std1	C							
17	Betamix	1.3	3	pt/a	std2	E							
17	Upbeet	50	0.5	oz/a	std2	E							
17	Stinger	3	4	fl oz/a	std2	E							
17	Activator 90 NIS		0.25	% v/v	std2	E							
18	Ro-Neet	6	2	qt/a	PPI	A	100	168	18.3	28.0	263.2	7371	
18	Roundup OriginalMAX	4.5	0.75	lb ae/a	4" weeds	D							
18	Ammonium sulfate		2	% w/w	4" weeds	D							
18	Roundup OriginalMAX	4.5	0.75	lb ae/a	canopy	G							
18	Ammonium sulfate		2	% w/w	canopy	G							
19	Roundup OriginalMAX	4.5	0.75	lb ae/a	4" weeds	D	100	156	18.7	27.8	269.8	7422	
19	Ammonium sulfate		2	% w/w	4" weeds	D							
19	Roundup OriginalMAX	4.5	0.75	lb ae/a	canopy	G							
19	Ammonium sulfate		2	% w/w	canopy	G							
20	Nortron	4	3	pt/a	PPI	A	100	168	18.1	30.5	256.0	7779	
20	Roundup OriginalMAX	4.5	0.75	lb ae/a	4" weeds	D							
20	Ammonium sulfate		2	% w/w	4" weeds	D							
20	Roundup OriginalMAX	4.5	0.75	lb ae/a	canopy	G							
20	Ammonium sulfate		2	% w/w	canopy	G							
LSD (P=.05)							7.9	37.0	0.74	7.24	14.03	1790.2	
Standard Deviation							5.6	26.1	0.52	5.12	9.92	1265.8	
CV							5.92	16.66	2.87	19.38	3.81	18.43	