

MSU Weed Science Research Program

Sugarbeet tolerance from Betamix and glyphosate tank-mixtures

Trial ID: SB03-11 Study Dir.: Sprague, Powell
Conducted: SVREC Investigator: Christy Sprague

Date Planted: 5/4/2011 Row Spacing: 30 IN
Variety: Hilleshog 9042 No. of Reps: 4
Population: 4 1/4" spacing % OM: 2.8
Soil Type: Clay Loam pH: 7.9
Plot Size: 10 X 35 FT Design: RANDOMIZED COMPLETE BLOCK

Tillage: Fall moldboard plow. Spring field cultivated (twice).
Fertilizer: Urea (125 lb/A of nitrogen) was broadcast and incorporated prior to planting.

Crop and Weed Description

Table with 4 columns: Weed Code, Common Name, Scientific Name, and Crop Code. Lists weeds like CHEAL, AMAPO, POLPY and crop BETVU.

Application Description

Table with 3 columns: Application Timing, Date Treated, Time Treated, % Cloud Cover, Air Temp., Unit, % Relative Humidity, Wind Speed/Unit/Dir, Soil Temp., Unit, Soil/Leaf Surface M, Soil Moist (1=w 5=d). Compares treatments A and B.

Crop Stage at Each Application

Table with 3 columns: Crop Name, Height (In.), Stage (L). Shows crop stages for BETVU at treatments A and B.

Weed Stage at Each Application

Table with 3 columns: Weed Name, Height (In.), Stage (L). Shows weed stages for CHEAL, AMAPO, and POLPY at treatments A and B.

Application Equipment

Table with 11 columns: Appl, Sprayer Type, Speed MPH, Nozzle Type, Nozzle Size, Nozzle Height, Nozzle Spacing, Nozzle Width, GPA, Carrier, PSI. Details equipment for treatments A and B.

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Weed Code	CHEAL	AMAPO	POLPY	CHEAL
Crop Code	BETVU			BETVU
Rating Data Type	injury	control	control	injury
Rating Unit	percent	percent	percent	percent
Rating Date	6/9/2011	6/9/2011	6/9/2011	6/14/2011
Trt-Eval Interval	10 DA-A	10 DA-A	10 DA-A	7 DA-B
# Subsamples, Dec.	0	0	0	0

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code						
1	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	A	8	99	99	99	0	99
1	AMS		WG	17	lb/100 gal	2-leaf	A						
1	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B						
1	AMS		WG	17	lb/100 gal	6-leaf	B						
2	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	A	3	99	99	99	9	99
2	Betamix	1.7	L	2	pt/a	2-leaf	A						
2	AMS		WG	17	lb/100 gal	2-leaf	A						
2	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B						
2	AMS		WG	17	lb/100 gal	6-leaf	B						
3	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	A	11	99	99	99	16	99
3	Betamix	1.7	L	3	pt/a	2-leaf	A						
3	AMS		WG	17	lb/100 gal	2-leaf	A						
3	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B						
3	AMS		WG	17	lb/100 gal	6-leaf	B						
4	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	A	25	99	99	99	26	99
4	Betamix	1.7	L	3	pt/a	2-leaf	A						
4	AMS		WG	17	lb/100 gal	2-leaf	A						
4	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B						
4	Betamix	1.7	L	3	pt/a	6-leaf	B						
4	AMS		WG	17	lb/100 gal	6-leaf	B						
5	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	A	19	99	99	99	9	99
5	AMS		WG	17	lb/100 gal	2-leaf	A						
5	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B						
5	Betamix	1.7	L	2	pt/a	6-leaf	B						
5	AMS		WG	17	lb/100 gal	6-leaf	B						
6	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	A	25	99	99	99	21	99
6	AMS		WG	17	lb/100 gal	2-leaf	A						
6	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B						
6	Betamix	1.7	L	3	pt/a	6-leaf	B						
6	AMS		WG	17	lb/100 gal	6-leaf	B						
7	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	A	35	99	99	99	31	99
7	AMS		WG	17	lb/100 gal	2-leaf	A						
7	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B						
7	Betamix	1.7	L	4.5	pt/a	6-leaf	B						
7	AMS		WG	17	lb/100 gal	6-leaf	B						
8	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	A	36	99	99	99	35	99
8	AMS		WG	17	lb/100 gal	2-leaf	A						
8	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B						
8	Betamix	1.7	L	6	pt/a	6-leaf	B						
8	AMS		WG	17	lb/100 gal	6-leaf	B						

LSD (P=.05)	13.5	0.0	0.0	0.0	4.6	0.0
Standard Deviation	9.2	0.0	0.0	0.0	3.2	0.0
CV	45.5	0.0	0.0	0.0	17.13	0.0

Means followed by same letter do not significantly differ (P=.05, LSD)
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

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Trial ID: SB03-11 Study Dir.: Sprague, Powell
 Conducted: SVREC Investigator: Christy Sprague

Weed Code	AMAPO	POLPY	BETVU	CHEAL	AMAPO	POLPY
Crop Code						
Rating Data Type	control	control	injury	control	control	control
Rating Unit	percent	percent	percent	percent	percent	percent
Rating Date	6/14/2011	6/14/2011	6/25/2011	6/25/2011	6/25/2011	6/25/2011
Trt-Eval Interval	7 DA-B	7 DA-B	18 DA-B	18 DA-B	18 DA-B	18 DA-B
# Subsamples, Dec.	0	0	0	0	0	0

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code	AMAPO	POLPY	BETVU	CHEAL	AMAPO	POLPY
1	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	A	99	99	0	99	99	99
1	AMS		WG	17	lb/100 gal	2-leaf	A						
1	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B						
1	AMS		WG	17	lb/100 gal	6-leaf	B						
2	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	A	99	99	0	99	99	99
2	Betamix	1.7	L	2	pt/a	2-leaf	A						
2	AMS		WG	17	lb/100 gal	2-leaf	A						
2	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B						
2	AMS		WG	17	lb/100 gal	6-leaf	B						
3	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	A	99	99	6	99	99	99
3	Betamix	1.7	L	3	pt/a	2-leaf	A						
3	AMS		WG	17	lb/100 gal	2-leaf	A						
3	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B						
3	AMS		WG	17	lb/100 gal	6-leaf	B						
4	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	A	99	99	14	99	99	99
4	Betamix	1.7	L	3	pt/a	2-leaf	A						
4	AMS		WG	17	lb/100 gal	2-leaf	A						
4	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B						
4	Betamix	1.7	L	3	pt/a	6-leaf	B						
4	AMS		WG	17	lb/100 gal	6-leaf	B						
5	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	A	99	99	4	99	99	99
5	AMS		WG	17	lb/100 gal	2-leaf	A						
5	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B						
5	Betamix	1.7	L	2	pt/a	6-leaf	B						
5	AMS		WG	17	lb/100 gal	6-leaf	B						
6	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	A	99	99	10	99	99	99
6	AMS		WG	17	lb/100 gal	2-leaf	A						
6	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B						
6	Betamix	1.7	L	3	pt/a	6-leaf	B						
6	AMS		WG	17	lb/100 gal	6-leaf	B						
7	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	A	99	99	11	99	99	99
7	AMS		WG	17	lb/100 gal	2-leaf	A						
7	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B						
7	Betamix	1.7	L	4.5	pt/a	6-leaf	B						
7	AMS		WG	17	lb/100 gal	6-leaf	B						
8	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	A	99	99	18	99	99	99
8	AMS		WG	17	lb/100 gal	2-leaf	A						
8	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B						
8	Betamix	1.7	L	6	pt/a	6-leaf	B						
8	AMS		WG	17	lb/100 gal	6-leaf	B						

LSD (P=.05)	0.0	0.0	6.6	0.5	0.5	0.0
Standard Deviation	0.0	0.0	4.5	0.4	0.4	0.0
CV	0.0	0.0	59.05	0.36	0.36	0.0

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 Conducted: SVREC Investigator: Christy Sprague

								CHEAL	AMAPO	POLPY			
Weed Code								BETVU			BETVU	BETVU	
Crop Code								injury	control	control	control	count	% sugar
Rating Data Type								percent	percent	percent	percent	100' row	
Rating Unit								9/12/2011	9/12/2011	9/12/2011	9/12/2011	9/15/2011	9/15/2011
Rating Date								97 DA-B	97 DA-B	97 DA-B	97 DA-B	100 DA-B	100 DA-B
Trt-Eval Interval								0	0	0	0	0	1
# Subsamples, Dec.													
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code						
1	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	A	0	92	93	97	231	19.4
1	AMS		WG	17	lb/100 gal	2-leaf	A						
1	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B						
1	AMS		WG	17	lb/100 gal	6-leaf	B						
2	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	A	0	98	99	97	232	19.9
2	Betamix	1.7	L	2	pt/a	2-leaf	A						
2	AMS		WG	17	lb/100 gal	2-leaf	A						
2	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B						
2	AMS		WG	17	lb/100 gal	6-leaf	B						
3	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	A	0	97	96	99	221	19.7
3	Betamix	1.7	L	3	pt/a	2-leaf	A						
3	AMS		WG	17	lb/100 gal	2-leaf	A						
3	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B						
3	AMS		WG	17	lb/100 gal	6-leaf	B						
4	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	A	0	97	95	99	237	18.7
4	Betamix	1.7	L	3	pt/a	2-leaf	A						
4	AMS		WG	17	lb/100 gal	2-leaf	A						
4	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B						
4	Betamix	1.7	L	3	pt/a	6-leaf	B						
4	AMS		WG	17	lb/100 gal	6-leaf	B						
5	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	A	0	99	95	96	225	19.7
5	AMS		WG	17	lb/100 gal	2-leaf	A						
5	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B						
5	Betamix	1.7	L	2	pt/a	6-leaf	B						
5	AMS		WG	17	lb/100 gal	6-leaf	B						
6	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	A	0	98	98	98	243	19.2
6	AMS		WG	17	lb/100 gal	2-leaf	A						
6	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B						
6	Betamix	1.7	L	3	pt/a	6-leaf	B						
6	AMS		WG	17	lb/100 gal	6-leaf	B						
7	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	A	0	99	99	99	236	19.5
7	AMS		WG	17	lb/100 gal	2-leaf	A						
7	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B						
7	Betamix	1.7	L	4.5	pt/a	6-leaf	B						
7	AMS		WG	17	lb/100 gal	6-leaf	B						
8	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	A	0	95	99	99	236	19.2
8	AMS		WG	17	lb/100 gal	2-leaf	A						
8	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B						
8	Betamix	1.7	L	6	pt/a	6-leaf	B						
8	AMS		WG	17	lb/100 gal	6-leaf	B						
LSD (P=.05)								0.0	4.9	4.7	3.2	21.5	1.10
Standard Deviation								0.0	3.3	3.2	2.2	14.6	0.75
CV								0.0	3.46	3.3	2.24	6.27	3.86

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Investigator: Christy Sprague

Weed Code

Crop Code

Rating Data Type

Rating Unit

Rating Date

Trt-Eval Interval

Subsamples, Dec.

BETVU yield ton/acre	BETVU RWST # / ton	BETVU RWSA # / acre
9/15/2011	9/15/2011	9/15/2011
100 DA-B	100 DA-B	100 DA-B
1	0	0

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code			
1	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	A	21.5	282	6077
1	AMS		WG	17	lb/100 gal	2-leaf	A			
1	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B			
1	AMS		WG	17	lb/100 gal	6-leaf	B			
2	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	A	21.3	291	6205
2	Betamix	1.7	L	2	pt/a	2-leaf	A			
2	AMS		WG	17	lb/100 gal	2-leaf	A			
2	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B			
2	AMS		WG	17	lb/100 gal	6-leaf	B			
3	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	A	19.1	285	5425
3	Betamix	1.7	L	3	pt/a	2-leaf	A			
3	AMS		WG	17	lb/100 gal	2-leaf	A			
3	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B			
3	AMS		WG	17	lb/100 gal	6-leaf	B			
4	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	A	17.5	267	4665
4	Betamix	1.7	L	3	pt/a	2-leaf	A			
4	AMS		WG	17	lb/100 gal	2-leaf	A			
4	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B			
4	Betamix	1.7	L	3	pt/a	6-leaf	B			
4	AMS		WG	17	lb/100 gal	6-leaf	B			
5	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	A	21.5	287	6160
5	AMS		WG	17	lb/100 gal	2-leaf	A			
5	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B			
5	Betamix	1.7	L	2	pt/a	6-leaf	B			
5	AMS		WG	17	lb/100 gal	6-leaf	B			
6	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	A	19.4	282	5491
6	AMS		WG	17	lb/100 gal	2-leaf	A			
6	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B			
6	Betamix	1.7	L	3	pt/a	6-leaf	B			
6	AMS		WG	17	lb/100 gal	6-leaf	B			
7	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	A	20.9	286	6006
7	AMS		WG	17	lb/100 gal	2-leaf	A			
7	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B			
7	Betamix	1.7	L	4.5	pt/a	6-leaf	B			
7	AMS		WG	17	lb/100 gal	6-leaf	B			
8	Roundup PowerMax	4.5	SL	22	fl oz/a	2-leaf	A	18.3	282	5162
8	AMS		WG	17	lb/100 gal	2-leaf	A			
8	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B			
8	Betamix	1.7	L	6	pt/a	6-leaf	B			
8	AMS		WG	17	lb/100 gal	6-leaf	B			

LSD (P=.05)

3.31

19.1

1041.5

Standard Deviation

2.25

13.0

708.1

CV

11.3

4.6

12.54

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.