

MSU Weed Science Research Program

Micronutrients use in Roundup Ready sugarbeet

Trial ID: SB07-09BB Study Dir.: Sprague, Powell
Conducted: Bean & Beet Investigator: Christy Sprague

Date Planted: 4/16/2009 Row Spacing: 30 IN
Variety: Hilleshog 9042RR No. of Reps: 4
Population: 4 1/8" spacing % OM: 2.4
Soil Type: Silty Clay Loam pH: 7.9
Plot Size: 10 X 30 FT Design: RANDOMIZED COMPLETE BLOCK

Tillage: Fall moldboard plow, spring field cultivated (2X)
Fertilizer: Broadcast 125 lb N

Crop and Weed Description

Weed Code Common Name Scientific Name
1. CHEAL LAMBSQUARTERS, COMMON CHENOPODIUM ALBUM L.
Crop Code Common Name
1. BETVU BEET, SUGAR

Application Description

A B
Application Timing: 2" weeds +4" weeds
Date Treated: 5/29/2009 6/11/2009
Time Treated: 11:20 am 10:45 am
% Cloud Cover: 0 100
Air Temp., Unit: 68 F 61 F
% Relative Humidity: 58 79
Wind Speed/Unit/Dir: 5 mph SW 5 mph N
Soil Temp., Unit: 61 F 61 F
Soil/Leaf Surface M: 4 5 4 5
Soil Moist (1=w 5=d): 3 3

Crop Stage at Each Application

A B
Crop Name: BETVU BETVU
Height (In.): 3-5 5-8
Stage (L): 6 8-12

Weed Stage at Each Application

A B
Weed 1 Name: CHEAL CHEAL
Height (In.): 1-5 4-6
Stage (L): many many

Weed Density (plants/sq. ft.)

1
Date: 7/9/2009
Weed Name: CHEAL
Density: 5

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 24" 20" 100" 19 water 28
B Cub 3.8 AirMix 11003 24" 20" 100" 19 water 28

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Weed Code	Crop Code	BETVU injury percent	BETVU injury percent	CHEAL control percent	CHEAL control percent	CHEAL control percent	BETVU count # / 100'						
Rating Data Type	Rating Unit	6/3/2009	6/11/2009	6/11/2009	6/22/2009	7/14/2009	9/14/2009						
Rating Date	Trt-Eval Interval	5 DA-A	13 DA-A	13 DA-A	24 DA-A	46 DA-A	108 DA-A						
# Subsamples, Dec.		0	0	0	0	0	0						
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Unit	Stg	Appl Code						
1	Roundup PowerMax	4.5	L	22	fl oz/a	2" weeds	A	0	0	99	99	99	208
1	Class Act NG		L	2.5	% v/v	2" weeds	A						
1	Roundup PowerMax	4.5	L	22	fl oz/a	+ 4" wds	B						
1	Class Act NG		L	2.5	% v/v	+ 4" wds	B						
2	Roundup PowerMax	4.5	L	22	fl oz/a	2" weeds	A	0	0	99	99	99	199
2	Class Act NG		L	2.5	% v/v	2" weeds	A						
2	AGM 06018		L	1	qt/a	2" weeds	A						
2	Roundup PowerMax	4.5	L	22	fl oz/a	+ 4" wds	B						
2	Class Act NG		L	2.5	% v/v	+ 4" wds	B						
2	AGM 06018		L	1	qt/a	+ 4" wds	B						
3	Roundup PowerMax	4.5	L	22	fl oz/a	2" weeds	A	0	0	99	99	99	212
3	Class Act NG		L	2.5	% v/v	2" weeds	A						
3	AGM 07027		L	1	qt/a	2" weeds	A						
3	Roundup PowerMax	4.5	L	22	fl oz/a	+ 4" wds	B						
3	Class Act NG		L	2.5	% v/v	+ 4" wds	B						
3	AGM 07027		L	1	qt/a	+ 4" wds	B						
4	Roundup PowerMax	4.5	L	22	fl oz/a	2" weeds	A	0	0	99	99	99	208
4	Class Act NG		L	2.5	% v/v	2" weeds	A						
4	AGM 06018		L	1	qt/a	2" weeds	A						
4	AGM 08005		L	3.2	fl oz/a	2" weeds	A						
4	Roundup PowerMax	4.5	L	22	fl oz/a	+ 4" wds	B						
4	Class Act NG		L	2.5	% v/v	+ 4" wds	B						
4	AGM 06018		L	1	qt/a	+ 4" wds	B						
4	AGM 08005		L	3.2	fl oz/a	+ 4" wds	B						
5	Roundup PowerMax	4.5	L	22	fl oz/a	2" weeds	A	0	0	99	99	99	214
5	Class Act NG		L	2.5	% v/v	2" weeds	A						
5	AGM 06018		L	1	qt/a	2" weeds	A						
5	AGM 08005		L	5	fl oz/a	2" weeds	A						
5	Roundup PowerMax	4.5	L	22	fl oz/a	+ 4" wds	B						
5	Class Act NG		L	2.5	% v/v	+ 4" wds	B						
5	AGM 06018		L	1	qt/a	+ 4" wds	B						
5	AGM 08005		L	5	fl oz/a	+ 4" wds	B						
6	Roundup PowerMax	4.5	L	22	fl oz/a	2" weeds	A	0	0	96	98	99	217
6	Class Act NG		L	2.5	% v/v	2" weeds	A						
6	Ele-Max		L	3	pt/a	2" weeds	A						
6	Roundup PowerMax	4.5	L	22	fl oz/a	+ 4" wds	B						
6	Class Act NG		L	2.5	% v/v	+ 4" wds	B						
6	Ele-Max		L	3	pt/a	+ 4" wds	B						
7	Roundup PowerMax	4.5	L	22	fl oz/a	2" weeds	A	0	0	99	99	99	229
7	Class Act NG		L	2.5	% v/v	2" weeds	A						
7	Coron		L	2	qt/a	2" weeds	A						
7	Roundup PowerMax	4.5	L	22	fl oz/a	+ 4" wds	B						
7	Class Act NG		L	2.5	% v/v	+ 4" wds	B						
7	Coron		L	2	qt/a	+ 4" wds	B						
8	Roundup PowerMax	4.5	L	22	fl oz/a	2" weeds	A	0	0	99	99	99	229
8	Class Act NG		L	2.5	% v/v	2" weeds	A						
8	Tracite		L	2	qt/a	2" weeds	A						
8	Roundup PowerMax	4.5	L	22	fl oz/a	+ 4" wds	B						
8	Class Act NG		L	2.5	% v/v	+ 4" wds	B						
8	Tracite		L	2	qt/a	+ 4" wds	B						

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Weed Code	BETVU		CHEAL		CHEAL	BETVU	
Crop Code	injury	injury	control	control	control	count	
Rating Data Type	percent	percent	percent	percent	percent	# / 100'	
Rating Unit	6/3/2009	6/11/2009	6/11/2009	6/22/2009	7/14/2009	9/14/2009	
Rating Date	5 DA-A	13 DA-A	13 DA-A	24 DA-A	46 DA-A	108 DA-A	
Trt-Eval Interval	0	0	0	0	0	0	
# Subsamples, Dec.							
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Unit	Stg	Appl Code
LSD (P=.05)		0.0	0.0	2.3	1.0	0.0	36.7
Standard Deviation		0.0	0.0	1.6	0.7	0.0	24.9
CV		0.0	0.0	1.61	0.72	0.0	11.64

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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## Weed Code

Crop Code

Rating Data Type

Rating Unit

Rating Date

Trt-Eval Interval

# Subsamples, Dec.

BETVU % sugar	BETVU yield ton/acre	BETVU RWST # / ton	BETVU RWSA # / acre
9/16/2009 110 DA-A 1	9/16/2009 110 DA-A 1	9/16/2009 110 DA-A 1	9/16/2009 110 DA-A 0

Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Rate Unit	Grow Stg	Appl Code				
1	Roundup PowerMax	4.5	L	22	fl oz/a	2" weeds	A	18.7	27.5	272.1	7466
1	Class Act NG		L	2.5	% v/v	2" weeds	A				
1	Roundup PowerMax	4.5	L	22	fl oz/a	+ 4" wds	B				
1	Class Act NG		L	2.5	% v/v	+ 4" wds	B				
2	Roundup PowerMax	4.5	L	22	fl oz/a	2" weeds	A	19.0	28.4	275.7	7815
2	Class Act NG		L	2.5	% v/v	2" weeds	A				
2	AGM 06018		L	1	qt/a	2" weeds	A				
2	Roundup PowerMax	4.5	L	22	fl oz/a	+ 4" wds	B				
2	Class Act NG		L	2.5	% v/v	+ 4" wds	B				
2	AGM 06018		L	1	qt/a	+ 4" wds	B				
3	Roundup PowerMax	4.5	L	22	fl oz/a	2" weeds	A	19.0	29.9	279.3	8347
3	Class Act NG		L	2.5	% v/v	2" weeds	A				
3	AGM 07027		L	1	qt/a	2" weeds	A				
3	Roundup PowerMax	4.5	L	22	fl oz/a	+ 4" wds	B				
3	Class Act NG		L	2.5	% v/v	+ 4" wds	B				
3	AGM 07027		L	1	qt/a	+ 4" wds	B				
4	Roundup PowerMax	4.5	L	22	fl oz/a	2" weeds	A	19.6	28.9	285.7	8234
4	Class Act NG		L	2.5	% v/v	2" weeds	A				
4	AGM 06018		L	1	qt/a	2" weeds	A				
4	AGM 08005		L	3.2	fl oz/a	2" weeds	A				
4	Roundup PowerMax	4.5	L	22	fl oz/a	+ 4" wds	B				
4	Class Act NG		L	2.5	% v/v	+ 4" wds	B				
4	AGM 06018		L	1	qt/a	+ 4" wds	B				
4	AGM 08005		L	3.2	fl oz/a	+ 4" wds	B				
5	Roundup PowerMax	4.5	L	22	fl oz/a	2" weeds	A	18.9	25.4	276.6	7024
5	Class Act NG		L	2.5	% v/v	2" weeds	A				
5	AGM 06018		L	1	qt/a	2" weeds	A				
5	AGM 08005		L	5	fl oz/a	2" weeds	A				
5	Roundup PowerMax	4.5	L	22	fl oz/a	+ 4" wds	B				
5	Class Act NG		L	2.5	% v/v	+ 4" wds	B				
5	AGM 06018		L	1	qt/a	+ 4" wds	B				
5	AGM 08005		L	5	fl oz/a	+ 4" wds	B				
6	Roundup PowerMax	4.5	L	22	fl oz/a	2" weeds	A	19.1	26.8	280.9	7532
6	Class Act NG		L	2.5	% v/v	2" weeds	A				
6	Ele-Max		L	3	pt/a	2" weeds	A				
6	Roundup PowerMax	4.5	L	22	fl oz/a	+ 4" wds	B				
6	Class Act NG		L	2.5	% v/v	+ 4" wds	B				
6	Ele-Max		L	3	pt/a	+ 4" wds	B				
7	Roundup PowerMax	4.5	L	22	fl oz/a	2" weeds	A	19.2	29.9	280.1	8379
7	Class Act NG		L	2.5	% v/v	2" weeds	A				
7	Coron		L	2	qt/a	2" weeds	A				
7	Roundup PowerMax	4.5	L	22	fl oz/a	+ 4" wds	B				
7	Class Act NG		L	2.5	% v/v	+ 4" wds	B				
7	Coron		L	2	qt/a	+ 4" wds	B				
8	Roundup PowerMax	4.5	L	22	fl oz/a	2" weeds	A	19.1	29.4	280.1	8203
8	Class Act NG		L	2.5	% v/v	2" weeds	A				
8	Tracite		L	2	qt/a	2" weeds	A				
8	Roundup PowerMax	4.5	L	22	fl oz/a	+ 4" wds	B				
8	Class Act NG		L	2.5	% v/v	+ 4" wds	B				
8	Tracite		L	2	qt/a	+ 4" wds	B				

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Weed Code									
Crop Code	BETVU	BETVU	BETVU	BETVU					
Rating Data Type	% sugar	yield	RWST	RWSA					
Rating Unit		ton/acre	# / ton	# / acre					
Rating Date	9/16/2009	9/16/2009	9/16/2009	9/16/2009					
Trt-Eval Interval	110 DA-A	110 DA-A	110 DA-A	110 DA-A					
# Subsamples, Dec.	1	1	1	0					
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Unit	Appl Stg	Code		
LSD (P=.05)								0.93	4.71
Standard Deviation								0.63	3.20
CV								3.32	11.34
									14.70
									9.99
									925.7
									3.58
									11.75

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