

MSU Weed Science Research Program

Impact of glyphosate-resistant Palmer amaranth treatments on sugarbeet yield II

Trial ID: SB07-15
 Conducted: SVREC

Study Dir.: Sprague and Powell
 Investigator: Christy Sprague

Date Planted: Apr/15/2015 **Row Spacing:** 30 IN
Variety: Crystal 351NT **No. of Reps:** 4
Population: 49,000 seeds/A **% OM:** 3.0
Soil Type: Clay loam **pH:** 7.5
Plot Size: 10 X 30 FT **Design:** RANDOMIZED COMPLETE BLOCK

Tillage: Fall moldboard disk; spring soil finish twice
Fertilizer: 125 lbs actual N per acre applied as urea broadcast and incorporated on April 1, 2015

Crop and Weed Description

Weed	Code	Common Name	Scientific Name
1.	CHEAL	LAMBSQUARTERS, COMMON	CHENOPODIUM ALBUM L.
2.	AMARE	PIGWEEED, REDROOT	AMARANTHUS RETROFLEXUS L.
3.	AMBEL	RAGWEEED, COMMON	AMBROSIA ARTEMISIIFOLIA L.
4.	POLPY	SMARTWEEED, PENNSYLVANIA	POLYGONUM PENSYLVANICUM L.
5.	HIBTR	MALLOW, VENICE	HIBISCUS TRIONUM L.
Crop	Code	Common Name	
1.	BETVU	BEET, SUGAR	

Application Description

	A	B	C
Application Timing:	2-leaf	6-leaf	canopy
Date Treated:	May/20/2015	Jun/11/2015	Jun/24/2015
Time Treated:	12:30 PM	12:15 PM	12:00 PM
% Cloud Cover:	0	30	0
Air Temp., Unit:	50 F	77 F	73 F
% Relative Humidity:	45	52	45
Wind Speed/Unit/Dir:	3 mph NW	1 mph W	6 mph SW
Soil Temp., Unit:	56 F	71 F	69 F
Soil/Leaf Surface M:	5 5	5 5	5 5
Soil Moist (1=w 5=d):	4	4	4

Crop Stage at Each Application

	A	B	C
Crop Name:	BETVU	BETVU	BETVU
Height (In.):	1.5"	7"	15"
Stage (L):	2	6	16

Weed Stage at Each Application

	A	B	C
Weed 1 Name:	CHEAL	CHEAL	CHEAL
Height (In.):	0.5-1.5"	1-4"	0.5"
Stage (L):	4-6	4-22	4
Weed 2 Name:	AMARE	AMARE	AMARE
Height (In.):	0.5-1.5"	-	-
Stage (L):	4	-	-
Weed 3 Name:	AMBEL	AMBEL	AMBEL
Height (In.):	0.5-1.5"	2"	0.5"
Stage (L):	2-4	4	2-4
Weed 4 Name:	POLPY	POLPY	POLPY
Height (In.):	0.5-1.5"	2.5"	0.5-2"
Stage (L):	4-6	6	2-4
Weed 5 Name:	HIBTR	HIBTR	HIBTR
Height (In.):	-	1-2"	-
Stage (L):	-	cot.-4	-

Weed Density (plants/sq. ft.)

	1	2	3	4
Weed Name:	CHEAL	AMARE	POLPY	HIBTR
Density:	8	3	<1	2

Application Equipment

Appl	Sprayer Type	Speed MPH	Nozzle Type	Nozzle Size	Nozzle Height	Nozzle Spacing	Boom Width	GPA	Carrier	PSI
A	Cub	3.8	AIXR	11003	23"	20"	100"	19	Water	28
B	Cub	3.8	AIXR	11003	25"	20"	100"	19	Water	28
C	Cub	3.8	AIXR	11003	28"	20"	100"	19	Water	28

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Weed Code									BETVU	CHEAL	AMBEL	POLPY
Crop Code									injury	control	control	control
Rating Data Type									percent	percent	percent	percent
Rating Unit									Jun/04/2015	Jun/04/2015	Jun/04/2015	Jun/04/2015
Rating Date									15 DA-A	15 DA-A	15 DA-A	15 DA-A
Trt-Eval Interval									0	0	0	0
# Subsamples, Dec.												
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code					
1	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	1	97	98	98	
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					
1	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C					
1	AMS		WG	17	lb/100 gal	canopy	C					
2	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	16	96	99	99	
2	Betamix	1.3	L	2	pt/a	2-leaf	A					
2	Warrant	3	L	3	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					
2	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C					
2	AMS		WG	17	lb/100 gal	canopy	C					
3	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	13	99	99	99	
3	Betamix	1.3	L	2	pt/a	2-leaf	A					
3	Dual II Magnum	7.64	L	1.33	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					
3	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C					
3	AMS		WG	17	lb/100 gal	canopy	C					
4	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	7	99	99	99	
4	Betamix	1.3	L	2	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	1.3	L	3	pt/a	6-leaf	B					
4	AMS		WG	17	lb/100 gal	6-leaf	B					
4	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C					
4	AMS		WG	17	lb/100 gal	canopy	C					
5	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	5	99	99	99	
5	Betamix	1.3	L	2	pt/a	2-leaf	A					
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	1.3	L	3	pt/a	6-leaf	B					
5	Warrant	3	L	3	pt/a	6-leaf	B					
5	AMS		WG	17	lb/100 gal	6-leaf	B					
5	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C					
5	AMS		WG	17	lb/100 gal	canopy	C					
6	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	8	97	99	99	
6	Betamix	1.3	L	2	pt/a	2-leaf	A					
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	1.3	L	3	pt/a	6-leaf	B					
6	Dual II Magnum	7.64	L	1.33	pt/a	6-leaf	B					
6	AMS		WG	17	lb/100 gal	6-leaf	B					
6	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C					
6	AMS		WG	17	lb/100 gal	canopy	C					

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Weed Code								BETVU	CHEAL	AMBEL	POLPY
Crop Code								injury	control	control	control
Rating Data Type								percent	percent	percent	percent
Rating Unit								Jun/04/2015	Jun/04/2015	Jun/04/2015	Jun/04/2015
Rating Date								15 DA-A	15 DA-A	15 DA-A	15 DA-A
Trt-Eval Interval								0	0	0	0
# Subsamples, Dec.											
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code				
7	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	6	99	99	99
7	Betamix	1.3	L	2	pt/a	2-leaf	A				
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	1.3	L	3	pt/a	6-leaf	B				
7	Outlook	6	L	18	fl oz/a	6-leaf	B				
7	AMS		WG	17	lb/100 gal	6-leaf	B				
7	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
7	AMS		WG	17	lb/100 gal	canopy	C				
8	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	6	99	99	99
8	Betamix	1.3	L	2	pt/a	2-leaf	A				
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	1.3	L	3	pt/a	6-leaf	B				
8	AMS		WG	17	lb/100 gal	6-leaf	B				
8	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
8	Betamix	1.3	L	3	pt/a	canopy	C				
8	AMS		WG	17	lb/100 gal	canopy	C				
9	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	6	98	99	99
9	Betamix	1.3	L	2	pt/a	2-leaf	A				
9	AMS		WG	17	lb/100 gal	2-leaf	A				
9	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
9	Betamix	1.3	L	4	pt/a	6-leaf	B				
9	AMS		WG	17	lb/100 gal	6-leaf	B				
9	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
9	Betamix	1.3	L	6	pt/a	canopy	C				
9	AMS		WG	17	lb/100 gal	canopy	C				
10	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	4	99	99	99
10	Betamix	1.3	L	2	pt/a	2-leaf	A				
10	AMS		WG	17	lb/100 gal	2-leaf	A				
10	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
10	Betamix	1.3	L	4	pt/a	6-leaf	B				
10	Warrant	3	L	3	pt/a	6-leaf	B				
10	AMS		WG	17	lb/100 gal	6-leaf	B				
10	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
10	Betamix	1.3	L	6	pt/a	canopy	C				
10	AMS		WG	17	lb/100 gal	canopy	C				
11	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	5	99	99	99
11	Nortron	4	L	4	fl oz/a	2-leaf	A				
11	AMS		WG	17	lb/100 gal	2-leaf	A				
11	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
11	Nortron	4	L	4	fl oz/a	6-leaf	B				
11	AMS		WG	17	lb/100 gal	6-leaf	B				
11	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
11	Nortron	4	L	4	fl oz/a	canopy	C				
11	AMS		WG	17	lb/100 gal	canopy	C				

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Crop Code								injury	control	control	control
Rating Data Type								percent	percent	percent	percent
Rating Unit								Jun/04/2015	Jun/04/2015	Jun/04/2015	Jun/04/2015
Rating Date								15 DA-A	15 DA-A	15 DA-A	15 DA-A
Trt-Eval Interval								0	0	0	0
# Subsamples, Dec.											
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code				
12	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	8	96	99	99
12	Nortron	4	L	4	fl oz/a	2-leaf	A				
12	Destiny HC		L	1.5	pt/a	2-leaf	A				
12	AMS		WG	17	lb/100 gal	2-leaf	A				
12	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
12	Nortron	4	L	4	fl oz/a	6-leaf	B				
12	Destiny HC		L	1.5	pt/a	6-leaf	B				
12	AMS		WG	17	lb/100 gal	6-leaf	B				
12	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
12	Nortron	4	L	4	fl oz/a	canopy	C				
12	Destiny HC		L	1.5	pt/a	canopy	C				
12	AMS		WG	17	lb/100 gal	canopy	C				
13	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	9	99	99	99
13	Betamix	1.3	L	2	pt/a	2-leaf	A				
13	AMS		WG	17	lb/100 gal	2-leaf	A				
13	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
13	Betamix	1.3	L	3	pt/a	6-leaf	B				
13	Warrant	3	L	3	pt/a	6-leaf	B				
13	AMS		WG	17	lb/100 gal	6-leaf	B				
13	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
13	AMS		WG	17	lb/100 gal	canopy	C				
14	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	13	99	99	99
14	Nortron	4	L	4	fl oz/a	2-leaf	A				
14	Warrant	3	L	3	pt/a	2-leaf	A				
14	Destiny HC		L	1.5	pt/a	2-leaf	A				
14	AMS		WG	17	lb/100 gal	2-leaf	A				
14	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
14	AMS		WG	17	lb/100 gal	6-leaf	B				
14	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
14	AMS		WG	17	lb/100 gal	canopy	C				
15	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	14	99	99	99
15	Nortron	4	L	4	fl oz/a	2-leaf	A				
15	Dual II Magnum	7.64	L	1.33	pt/a	2-leaf	A				
15	Destiny HC		L	1.5	pt/a	2-leaf	A				
15	AMS		WG	17	lb/100 gal	2-leaf	A				
15	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
15	AMS		WG	17	lb/100 gal	6-leaf	B				
15	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
15	AMS		WG	17	lb/100 gal	canopy	C				
16	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	8	99	99	99
16	Nortron	4	L	4	fl oz/a	2-leaf	A				
16	Destiny HC		L	1.5	pt/a	2-leaf	A				
16	AMS		WG	17	lb/100 gal	2-leaf	A				
16	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
16	Nortron	4	L	4	fl oz/a	6-leaf	C				
16	Warrant	3	L	3	pt/a	6-leaf	B				
16	Destiny HC		L	1.5	pt/a	6-leaf	B				
16	AMS		WG	17	lb/100 gal	6-leaf	B				
16	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
16	AMS		WG	17	lb/100 gal	canopy	C				

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Crop Code								injury	control	control	control
Rating Data Type								percent	percent	percent	percent
Rating Unit								Jun/04/2015	Jun/04/2015	Jun/04/2015	Jun/04/2015
Rating Date								15 DA-A	15 DA-A	15 DA-A	15 DA-A
Trt-Eval Interval								0	0	0	0
# Subsamples, Dec.											
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Unit	Grow Stg	Appl Code				
17	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	10	98	99	99
17	Nortron	4	L	4	fl oz/a	2-leaf	A				
17	Destiny HC		L	1.5	pt/a	2-leaf	A				
17	AMS		WG	17	lb/100 gal	2-leaf	A				
17	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
17	Nortron	4	L	4	fl oz/a	6-leaf	B				
17	Warrant	3	L	3	pt/a	6-leaf	B				
17	Destiny HC		L	1.5	pt/a	6-leaf	B				
17	AMS		WG	17	lb/100 gal	6-leaf	B				
17	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
17	AMS		WG	17	lb/100 gal	canopy	C				
18	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	11	99	99	99
18	Nortron	4	L	4	fl oz/a	2-leaf	A				
18	Warrant	3	L	3	pt/a	2-leaf	A				
18	Destiny HC		L	1.5	pt/a	2-leaf	A				
18	AMS		WG	17	lb/100 gal	2-leaf	A				
18	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
18	Nortron	4	L	4	fl oz/a	6-leaf	B				
18	Warrant	3	L	3	pt/a	6-leaf	B				
18	Destiny HC		L	1.5	pt/a	6-leaf	B				
18	AMS		WG	17	lb/100 gal	6-leaf	B				
18	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
18	AMS		WG	17	lb/100 gal	canopy	C				
19	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	11	98	99	99
19	Nortron	4	L	4	fl oz/a	2-leaf	A				
19	Dual II Magnum	7.64	L	1.33	pt/a	2-leaf	A				
19	Destiny HC		L	1.5	pt/a	2-leaf	A				
19	AMS		WG	17	lb/100 gal	2-leaf	A				
19	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
19	Nortron	4	L	4	fl oz/a	6-leaf	B				
19	Dual II Magnum	7.64	L	1.33	pt/a	6-leaf	B				
19	Destiny HC		L	1.5	pt/a	6-leaf	B				
19	AMS		WG	17	lb/100 gal	6-leaf	B				
19	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
19	AMS		WG	17	lb/100 gal	canopy	C				
20	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	13	98	99	99
20	Nortron	4	L	4	fl oz/a	2-leaf	A				
20	Destiny HC		L	1.5	pt/a	2-leaf	A				
20	AMS		WG	17	lb/100 gal	2-leaf	A				
20	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
20	Nortron	4	L	4	fl oz/a	6-leaf	B				
20	Warrant	3	L	3	pt/a	6-leaf	B				
20	Destiny HC		L	1.5	pt/a	6-leaf	B				
20	AMS		WG	17	lb/100 gal	6-leaf	B				
20	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
20	Nortron	4	L	4	fl oz/a	canopy	C				
20	Destiny HC		L	1.5	pt/a	canopy	C				
20	AMS		WG	17	lb/100 gal	canopy	C				
LSD (P=.05)								5.0	2.0	1.1	0.7
CV								41.06	1.43	0.81	0.51

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

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Rating Data Type									percent	percent	percent	percent
Rating Unit									Jun/24/2015	Jun/24/2015	Jun/24/2015	Jun/24/2015
Rating Date									13 DA-B	13 DA-B	13 DA-B	13 DA-B
Trt-Eval Interval									0	0	0	0
# Subsamples, Dec.												
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code					
1	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	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					
1	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C					
1	AMS		WG	17	lb/100 gal	canopy	C					
2	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	0	99	98	97	
2	Betamix	1.3	L	2	pt/a	2-leaf	A					
2	Warrant	3	L	3	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					
2	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C					
2	AMS		WG	17	lb/100 gal	canopy	C					
3	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	0	99	99	99	
3	Betamix	1.3	L	2	pt/a	2-leaf	A					
3	Dual II Magnum	7.64	L	1.33	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					
3	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C					
3	AMS		WG	17	lb/100 gal	canopy	C					
4	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	0	99	99	99	
4	Betamix	1.3	L	2	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	1.3	L	3	pt/a	6-leaf	B					
4	AMS		WG	17	lb/100 gal	6-leaf	B					
4	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C					
4	AMS		WG	17	lb/100 gal	canopy	C					
5	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	0	97	98	95	
5	Betamix	1.3	L	2	pt/a	2-leaf	A					
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	1.3	L	3	pt/a	6-leaf	B					
5	Warrant	3	L	3	pt/a	6-leaf	B					
5	AMS		WG	17	lb/100 gal	6-leaf	B					
5	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C					
5	AMS		WG	17	lb/100 gal	canopy	C					
6	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	0	99	98	99	
6	Betamix	1.3	L	2	pt/a	2-leaf	A					
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	1.3	L	3	pt/a	6-leaf	B					
6	Dual II Magnum	7.64	L	1.33	pt/a	6-leaf	B					
6	AMS		WG	17	lb/100 gal	6-leaf	B					
6	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C					
6	AMS		WG	17	lb/100 gal	canopy	C					

MSU Weed Science Research Program

Impact of glyphosate-resistant Palmer amaranth treatments on sugarbeet yield II

Trial ID: SB07-15
 Conducted: SVREC

Study Dir.: Sprague and Powell
 Investigator: Christy Sprague

Weed Code								BETVU	CHEAL	AMBEL	POLPY
Crop Code								injury	control	control	control
Rating Data Type								percent	percent	percent	percent
Rating Unit								Jun/24/2015	Jun/24/2015	Jun/24/2015	Jun/24/2015
Rating Date								13 DA-B	13 DA-B	13 DA-B	13 DA-B
Trt-Eval Interval								0	0	0	0
# Subsamples, Dec.											
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code				
7	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	1	99	98	96
7	Betamix	1.3	L	2	pt/a	2-leaf	A				
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	1.3	L	3	pt/a	6-leaf	B				
7	Outlook	6	L	18	fl oz/a	6-leaf	B				
7	AMS		WG	17	lb/100 gal	6-leaf	B				
7	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
7	AMS		WG	17	lb/100 gal	canopy	C				
8	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	0	99	95	99
8	Betamix	1.3	L	2	pt/a	2-leaf	A				
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	1.3	L	3	pt/a	6-leaf	B				
8	AMS		WG	17	lb/100 gal	6-leaf	B				
8	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
8	Betamix	1.3	L	3	pt/a	canopy	C				
8	AMS		WG	17	lb/100 gal	canopy	C				
9	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	0	99	96	96
9	Betamix	1.3	L	2	pt/a	2-leaf	A				
9	AMS		WG	17	lb/100 gal	2-leaf	A				
9	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
9	Betamix	1.3	L	4	pt/a	6-leaf	B				
9	AMS		WG	17	lb/100 gal	6-leaf	B				
9	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
9	Betamix	1.3	L	6	pt/a	canopy	C				
9	AMS		WG	17	lb/100 gal	canopy	C				
10	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	0	98	98	99
10	Betamix	1.3	L	2	pt/a	2-leaf	A				
10	AMS		WG	17	lb/100 gal	2-leaf	A				
10	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
10	Betamix	1.3	L	4	pt/a	6-leaf	B				
10	Warrant	3	L	3	pt/a	6-leaf	B				
10	AMS		WG	17	lb/100 gal	6-leaf	B				
10	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
10	Betamix	1.3	L	6	pt/a	canopy	C				
10	AMS		WG	17	lb/100 gal	canopy	C				
11	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	0	99	99	99
11	Nortron	4	L	4	fl oz/a	2-leaf	A				
11	AMS		WG	17	lb/100 gal	2-leaf	A				
11	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
11	Nortron	4	L	4	fl oz/a	6-leaf	B				
11	AMS		WG	17	lb/100 gal	6-leaf	B				
11	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
11	Nortron	4	L	4	fl oz/a	canopy	C				
11	AMS		WG	17	lb/100 gal	canopy	C				

MSU Weed Science Research Program

Impact of glyphosate-resistant Palmer amaranth treatments on sugarbeet yield II

Trial ID: SB07-15 Study Dir.: Sprague and Powell
 Conducted: SVREC Investigator: Christy Sprague

Weed Code								BETVU	CHEAL	AMBEL	POLPY
Crop Code								injury	control	control	control
Rating Data Type								percent	percent	percent	percent
Rating Unit								Jun/24/2015	Jun/24/2015	Jun/24/2015	Jun/24/2015
Rating Date								13 DA-B	13 DA-B	13 DA-B	13 DA-B
Trt-Eval Interval								0	0	0	0
# Subsamples, Dec.											
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code				
12	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	0	99	99	99
12	Nortron	4	L	4	fl oz/a	2-leaf	A				
12	Destiny HC		L	1.5	pt/a	2-leaf	A				
12	AMS		WG	17	lb/100 gal	2-leaf	A				
12	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
12	Nortron	4	L	4	fl oz/a	6-leaf	B				
12	Destiny HC		L	1.5	pt/a	6-leaf	B				
12	AMS		WG	17	lb/100 gal	6-leaf	B				
12	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
12	Nortron	4	L	4	fl oz/a	canopy	C				
12	Destiny HC		L	1.5	pt/a	canopy	C				
12	AMS		WG	17	lb/100 gal	canopy	C				
13	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	0	98	96	99
13	Betamix	1.3	L	2	pt/a	2-leaf	A				
13	AMS		WG	17	lb/100 gal	2-leaf	A				
13	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
13	Betamix	1.3	L	3	pt/a	6-leaf	B				
13	Warrant	3	L	3	pt/a	6-leaf	B				
13	AMS		WG	17	lb/100 gal	6-leaf	B				
13	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
13	AMS		WG	17	lb/100 gal	canopy	C				
14	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	0	99	98	99
14	Nortron	4	L	4	fl oz/a	2-leaf	A				
14	Warrant	3	L	3	pt/a	2-leaf	A				
14	Destiny HC		L	1.5	pt/a	2-leaf	A				
14	AMS		WG	17	lb/100 gal	2-leaf	A				
14	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
14	AMS		WG	17	lb/100 gal	6-leaf	B				
14	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
14	AMS		WG	17	lb/100 gal	canopy	C				
15	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	0	99	99	99
15	Nortron	4	L	4	fl oz/a	2-leaf	A				
15	Dual II Magnum	7.64	L	1.33	pt/a	2-leaf	A				
15	Destiny HC		L	1.5	pt/a	2-leaf	A				
15	AMS		WG	17	lb/100 gal	2-leaf	A				
15	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
15	AMS		WG	17	lb/100 gal	6-leaf	B				
15	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
15	AMS		WG	17	lb/100 gal	canopy	C				
16	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	0	99	99	99
16	Nortron	4	L	4	fl oz/a	2-leaf	A				
16	Destiny HC		L	1.5	pt/a	2-leaf	A				
16	AMS		WG	17	lb/100 gal	2-leaf	A				
16	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
16	Nortron	4	L	4	fl oz/a	6-leaf	C				
16	Warrant	3	L	3	pt/a	6-leaf	B				
16	Destiny HC		L	1.5	pt/a	6-leaf	B				
16	AMS		WG	17	lb/100 gal	6-leaf	B				
16	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
16	AMS		WG	17	lb/100 gal	canopy	C				

MSU Weed Science Research Program

Impact of glyphosate-resistant Palmer amaranth treatments on sugarbeet yield II

Trial ID: SB07-15 Study Dir.: Sprague and Powell
 Conducted: SVREC Investigator: Christy Sprague

Weed Code								BETVU	CHEAL	AMBEL	POLPY
Crop Code								injury	control	control	control
Rating Data Type								percent	percent	percent	percent
Rating Unit								Jun/24/2015	Jun/24/2015	Jun/24/2015	Jun/24/2015
Rating Date								13 DA-B	13 DA-B	13 DA-B	13 DA-B
Trt-Eval Interval								0	0	0	0
# Subsamples, Dec.											
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Unit	Grow Stg	Appl Code				
17	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	0	99	99	99
17	Nortron	4	L	4	fl oz/a	2-leaf	A				
17	Destiny HC		L	1.5	pt/a	2-leaf	A				
17	AMS		WG	17	lb/100 gal	2-leaf	A				
17	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
17	Nortron	4	L	4	fl oz/a	6-leaf	B				
17	Warrant	3	L	3	pt/a	6-leaf	B				
17	Destiny HC		L	1.5	pt/a	6-leaf	B				
17	AMS		WG	17	lb/100 gal	6-leaf	B				
17	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
17	AMS		WG	17	lb/100 gal	canopy	C				
18	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	0	99	99	99
18	Nortron	4	L	4	fl oz/a	2-leaf	A				
18	Warrant	3	L	3	pt/a	2-leaf	A				
18	Destiny HC		L	1.5	pt/a	2-leaf	A				
18	AMS		WG	17	lb/100 gal	2-leaf	A				
18	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
18	Nortron	4	L	4	fl oz/a	6-leaf	B				
18	Warrant	3	L	3	pt/a	6-leaf	B				
18	Destiny HC		L	1.5	pt/a	6-leaf	B				
18	AMS		WG	17	lb/100 gal	6-leaf	B				
18	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
18	AMS		WG	17	lb/100 gal	canopy	C				
19	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	0	99	97	96
19	Nortron	4	L	4	fl oz/a	2-leaf	A				
19	Dual II Magnum	7.64	L	1.33	pt/a	2-leaf	A				
19	Destiny HC		L	1.5	pt/a	2-leaf	A				
19	AMS		WG	17	lb/100 gal	2-leaf	A				
19	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
19	Nortron	4	L	4	fl oz/a	6-leaf	B				
19	Dual II Magnum	7.64	L	1.33	pt/a	6-leaf	B				
19	Destiny HC		L	1.5	pt/a	6-leaf	B				
19	AMS		WG	17	lb/100 gal	6-leaf	B				
19	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
19	AMS		WG	17	lb/100 gal	canopy	C				
20	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	0	99	99	99
20	Nortron	4	L	4	fl oz/a	2-leaf	A				
20	Destiny HC		L	1.5	pt/a	2-leaf	A				
20	AMS		WG	17	lb/100 gal	2-leaf	A				
20	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
20	Nortron	4	L	4	fl oz/a	6-leaf	B				
20	Warrant	3	L	3	pt/a	6-leaf	B				
20	Destiny HC		L	1.5	pt/a	6-leaf	B				
20	AMS		WG	17	lb/100 gal	6-leaf	B				
20	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
20	Nortron	4	L	4	fl oz/a	canopy	C				
20	Destiny HC		L	1.5	pt/a	canopy	C				
20	AMS		WG	17	lb/100 gal	canopy	C				
LSD (P=.05)								0.5	1.7	3.0	3.4
CV								894.43	1.21	2.13	2.46

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

MSU Weed Science Research Program

Impact of glyphosate-resistant Palmer amaranth treatments on sugarbeet yield II

Trial ID: SB07-15
 Conducted: SVREC

Study Dir.: Sprague and Powell
 Investigator: Christy Sprague

Weed Code								CHEAL		CHEAL	
Crop Code								BETVU		BETVU	
Rating Data Type								injury	control	injury	control
Rating Unit								percent	percent	percent	percent
Rating Date								Jul/09/2015	Jul/09/2015	Aug/13/2015	Aug/13/2015
Trt-Eval Interval								15 DA-C	15 DA-C	50 DA-C	50 DA-C
# 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	32	fl oz/a	2-leaf	A	0	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				
1	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
1	AMS		WG	17	lb/100 gal	canopy	C				
2	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	1	99	0	99
2	Betamix	1.3	L	2	pt/a	2-leaf	A				
2	Warrant	3	L	3	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				
2	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
2	AMS		WG	17	lb/100 gal	canopy	C				
3	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	3	99	0	99
3	Betamix	1.3	L	2	pt/a	2-leaf	A				
3	Dual II Magnum	7.64	L	1.33	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				
3	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
3	AMS		WG	17	lb/100 gal	canopy	C				
4	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	0	99	0	99
4	Betamix	1.3	L	2	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	1.3	L	3	pt/a	6-leaf	B				
4	AMS		WG	17	lb/100 gal	6-leaf	B				
4	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
4	AMS		WG	17	lb/100 gal	canopy	C				
5	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	3	99	0	99
5	Betamix	1.3	L	2	pt/a	2-leaf	A				
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	1.3	L	3	pt/a	6-leaf	B				
5	Warrant	3	L	3	pt/a	6-leaf	B				
5	AMS		WG	17	lb/100 gal	6-leaf	B				
5	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
5	AMS		WG	17	lb/100 gal	canopy	C				
6	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	5	99	0	99
6	Betamix	1.3	L	2	pt/a	2-leaf	A				
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	1.3	L	3	pt/a	6-leaf	B				
6	Dual II Magnum	7.64	L	1.33	pt/a	6-leaf	B				
6	AMS		WG	17	lb/100 gal	6-leaf	B				
6	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
6	AMS		WG	17	lb/100 gal	canopy	C				

MSU Weed Science Research Program

Impact of glyphosate-resistant Palmer amaranth treatments on sugarbeet yield II

Trial ID: SB07-15
 Conducted: SVREC

Study Dir.: Sprague and Powell
 Investigator: Christy Sprague

Weed Code								CHEAL		CHEAL	
Crop Code								BETVU		BETVU	
Rating Data Type								injury	control	injury	control
Rating Unit								percent	percent	percent	percent
Rating Date								Jul/09/2015	Jul/09/2015	Aug/13/2015	Aug/13/2015
Trt-Eval Interval								15 DA-C	15 DA-C	50 DA-C	50 DA-C
# Subsamples, Dec.								0	0	0	0
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code				
7	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	8	99	0	99
7	Betamix	1.3	L	2	pt/a	2-leaf	A				
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	1.3	L	3	pt/a	6-leaf	B				
7	Outlook	6	L	18	fl oz/a	6-leaf	B				
7	AMS		WG	17	lb/100 gal	6-leaf	B				
7	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
7	AMS		WG	17	lb/100 gal	canopy	C				
8	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	4	99	0	99
8	Betamix	1.3	L	2	pt/a	2-leaf	A				
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	1.3	L	3	pt/a	6-leaf	B				
8	AMS		WG	17	lb/100 gal	6-leaf	B				
8	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
8	Betamix	1.3	L	3	pt/a	canopy	C				
8	AMS		WG	17	lb/100 gal	canopy	C				
9	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	0	99	0	99
9	Betamix	1.3	L	2	pt/a	2-leaf	A				
9	AMS		WG	17	lb/100 gal	2-leaf	A				
9	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
9	Betamix	1.3	L	4	pt/a	6-leaf	B				
9	AMS		WG	17	lb/100 gal	6-leaf	B				
9	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
9	Betamix	1.3	L	6	pt/a	canopy	C				
9	AMS		WG	17	lb/100 gal	canopy	C				
10	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	3	99	0	99
10	Betamix	1.3	L	2	pt/a	2-leaf	A				
10	AMS		WG	17	lb/100 gal	2-leaf	A				
10	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
10	Betamix	1.3	L	4	pt/a	6-leaf	B				
10	Warrant	3	L	3	pt/a	6-leaf	B				
10	AMS		WG	17	lb/100 gal	6-leaf	B				
10	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
10	Betamix	1.3	L	6	pt/a	canopy	C				
10	AMS		WG	17	lb/100 gal	canopy	C				
11	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	3	99	0	99
11	Nortron	4	L	4	fl oz/a	2-leaf	A				
11	AMS		WG	17	lb/100 gal	2-leaf	A				
11	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
11	Nortron	4	L	4	fl oz/a	6-leaf	B				
11	AMS		WG	17	lb/100 gal	6-leaf	B				
11	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
11	Nortron	4	L	4	fl oz/a	canopy	C				
11	AMS		WG	17	lb/100 gal	canopy	C				

MSU Weed Science Research Program

Impact of glyphosate-resistant Palmer amaranth treatments on sugarbeet yield II

Trial ID: SB07-15
 Conducted: SVREC

Study Dir.: Sprague and Powell
 Investigator: Christy Sprague

Weed Code								CHEAL		CHEAL	
Crop Code								BETVU		BETVU	
Rating Data Type								injury	control	injury	control
Rating Unit								percent	percent	percent	percent
Rating Date								Jul/09/2015	Jul/09/2015	Aug/13/2015	Aug/13/2015
Trt-Eval Interval								15 DA-C	15 DA-C	50 DA-C	50 DA-C
# Subsamples, Dec.								0	0	0	0
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code				
12	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	1	99	0	99
12	Nortron	4	L	4	fl oz/a	2-leaf	A				
12	Destiny HC		L	1.5	pt/a	2-leaf	A				
12	AMS		WG	17	lb/100 gal	2-leaf	A				
12	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
12	Nortron	4	L	4	fl oz/a	6-leaf	B				
12	Destiny HC		L	1.5	pt/a	6-leaf	B				
12	AMS		WG	17	lb/100 gal	6-leaf	B				
12	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
12	Nortron	4	L	4	fl oz/a	canopy	C				
12	Destiny HC		L	1.5	pt/a	canopy	C				
12	AMS		WG	17	lb/100 gal	canopy	C				
13	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	0	99	0	99
13	Betamix	1.3	L	2	pt/a	2-leaf	A				
13	AMS		WG	17	lb/100 gal	2-leaf	A				
13	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
13	Betamix	1.3	L	3	pt/a	6-leaf	B				
13	Warrant	3	L	3	pt/a	6-leaf	B				
13	AMS		WG	17	lb/100 gal	6-leaf	B				
13	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
13	AMS		WG	17	lb/100 gal	canopy	C				
14	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	1	99	0	99
14	Nortron	4	L	4	fl oz/a	2-leaf	A				
14	Warrant	3	L	3	pt/a	2-leaf	A				
14	Destiny HC		L	1.5	pt/a	2-leaf	A				
14	AMS		WG	17	lb/100 gal	2-leaf	A				
14	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
14	AMS		WG	17	lb/100 gal	6-leaf	B				
14	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
14	AMS		WG	17	lb/100 gal	canopy	C				
15	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	1	99	0	99
15	Nortron	4	L	4	fl oz/a	2-leaf	A				
15	Dual II Magnum	7.64	L	1.33	pt/a	2-leaf	A				
15	Destiny HC		L	1.5	pt/a	2-leaf	A				
15	AMS		WG	17	lb/100 gal	2-leaf	A				
15	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
15	AMS		WG	17	lb/100 gal	6-leaf	B				
15	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
15	AMS		WG	17	lb/100 gal	canopy	C				
16	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	0	99	0	99
16	Nortron	4	L	4	fl oz/a	2-leaf	A				
16	Destiny HC		L	1.5	pt/a	2-leaf	A				
16	AMS		WG	17	lb/100 gal	2-leaf	A				
16	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
16	Nortron	4	L	4	fl oz/a	6-leaf	C				
16	Warrant	3	L	3	pt/a	6-leaf	B				
16	Destiny HC		L	1.5	pt/a	6-leaf	B				
16	AMS		WG	17	lb/100 gal	6-leaf	B				
16	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
16	AMS		WG	17	lb/100 gal	canopy	C				

MSU Weed Science Research Program

Impact of glyphosate-resistant Palmer amaranth treatments on sugarbeet yield II

Trial ID: SB07-15
 Conducted: SVREC

Study Dir.: Sprague and Powell
 Investigator: Christy Sprague

								CHEAL		CHEAL	
								BETVU	control	BETVU	control
								injury	percent	injury	percent
								percent	percent	percent	percent
								Jul/09/2015	Jul/09/2015	Aug/13/2015	Aug/13/2015
								15 DA-C	15 DA-C	50 DA-C	50 DA-C
								0	0	0	0
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code				
17	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	0	99	0	99
17	Nortron	4	L	4	fl oz/a	2-leaf	A				
17	Destiny HC		L	1.5	pt/a	2-leaf	A				
17	AMS		WG	17	lb/100 gal	2-leaf	A				
17	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
17	Nortron	4	L	4	fl oz/a	6-leaf	B				
17	Warrant	3	L	3	pt/a	6-leaf	B				
17	Destiny HC		L	1.5	pt/a	6-leaf	B				
17	AMS		WG	17	lb/100 gal	6-leaf	B				
17	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
17	AMS		WG	17	lb/100 gal	canopy	C				
18	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	5	99	0	99
18	Nortron	4	L	4	fl oz/a	2-leaf	A				
18	Warrant	3	L	3	pt/a	2-leaf	A				
18	Destiny HC		L	1.5	pt/a	2-leaf	A				
18	AMS		WG	17	lb/100 gal	2-leaf	A				
18	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
18	Nortron	4	L	4	fl oz/a	6-leaf	B				
18	Warrant	3	L	3	pt/a	6-leaf	B				
18	Destiny HC		L	1.5	pt/a	6-leaf	B				
18	AMS		WG	17	lb/100 gal	6-leaf	B				
18	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
18	AMS		WG	17	lb/100 gal	canopy	C				
19	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	5	99	0	98
19	Nortron	4	L	4	fl oz/a	2-leaf	A				
19	Dual II Magnum	7.64	L	1.33	pt/a	2-leaf	A				
19	Destiny HC		L	1.5	pt/a	2-leaf	A				
19	AMS		WG	17	lb/100 gal	2-leaf	A				
19	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
19	Nortron	4	L	4	fl oz/a	6-leaf	B				
19	Dual II Magnum	7.64	L	1.33	pt/a	6-leaf	B				
19	Destiny HC		L	1.5	pt/a	6-leaf	B				
19	AMS		WG	17	lb/100 gal	6-leaf	B				
19	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
19	AMS		WG	17	lb/100 gal	canopy	C				
20	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	3	99	0	99
20	Nortron	4	L	4	fl oz/a	2-leaf	A				
20	Destiny HC		L	1.5	pt/a	2-leaf	A				
20	AMS		WG	17	lb/100 gal	2-leaf	A				
20	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
20	Nortron	4	L	4	fl oz/a	6-leaf	B				
20	Warrant	3	L	3	pt/a	6-leaf	B				
20	Destiny HC		L	1.5	pt/a	6-leaf	B				
20	AMS		WG	17	lb/100 gal	6-leaf	B				
20	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
20	Nortron	4	L	4	fl oz/a	canopy	C				
20	Destiny HC		L	1.5	pt/a	canopy	C				
20	AMS		WG	17	lb/100 gal	canopy	C				
LSD (P=.05)								5.1	0.0	0.0	0.8
CV								165.03	0.0	0.0	0.57

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

MSU Weed Science Research Program

Impact of glyphosate-resistant Palmer amaranth treatments on sugarbeet yield II

Trial ID: SB07-15
 Conducted: SVREC

Study Dir.: Sprague and Powell
 Investigator: Christy Sprague

Weed Code								AMARE	POLPY	HIBTR	BETVU
Crop Code								control	control	control	injury
Rating Data Type								percent	percent	percent	percent
Rating Unit								Aug/13/2015	Aug/13/2015	Aug/13/2015	Sep/14/2015
Rating Date								50 DA-C	50 DA-C	50 DA-C	82 DA-C
Trt-Eval Interval								0	0	0	0
# Subsamples, Dec.											
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code				
1	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	99	99	99	0
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				
1	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
1	AMS		WG	17	lb/100 gal	canopy	C				
2	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	99	99	99	0
2	Betamix	1.3	L	2	pt/a	2-leaf	A				
2	Warrant	3	L	3	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				
2	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
2	AMS		WG	17	lb/100 gal	canopy	C				
3	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	99	99	99	0
3	Betamix	1.3	L	2	pt/a	2-leaf	A				
3	Dual II Magnum	7.64	L	1.33	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				
3	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
3	AMS		WG	17	lb/100 gal	canopy	C				
4	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	99	99	99	0
4	Betamix	1.3	L	2	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	1.3	L	3	pt/a	6-leaf	B				
4	AMS		WG	17	lb/100 gal	6-leaf	B				
4	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
4	AMS		WG	17	lb/100 gal	canopy	C				
5	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	99	99	99	0
5	Betamix	1.3	L	2	pt/a	2-leaf	A				
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	1.3	L	3	pt/a	6-leaf	B				
5	Warrant	3	L	3	pt/a	6-leaf	B				
5	AMS		WG	17	lb/100 gal	6-leaf	B				
5	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
5	AMS		WG	17	lb/100 gal	canopy	C				
6	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	99	99	99	0
6	Betamix	1.3	L	2	pt/a	2-leaf	A				
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	1.3	L	3	pt/a	6-leaf	B				
6	Dual II Magnum	7.64	L	1.33	pt/a	6-leaf	B				
6	AMS		WG	17	lb/100 gal	6-leaf	B				
6	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
6	AMS		WG	17	lb/100 gal	canopy	C				

MSU Weed Science Research Program

Impact of glyphosate-resistant Palmer amaranth treatments on sugarbeet yield II

Trial ID: SB07-15 Study Dir.: Sprague and Powell
 Conducted: SVREC Investigator: Christy Sprague

Weed Code								AMARE	POLPY	HIBTR	BETVU
Crop Code								control	control	control	injury
Rating Data Type								percent	percent	percent	percent
Rating Unit								Aug/13/2015	Aug/13/2015	Aug/13/2015	Sep/14/2015
Rating Date								50 DA-C	50 DA-C	50 DA-C	82 DA-C
Trt-Eval Interval								0	0	0	0
# Subsamples, Dec.											
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Rate Unit	Grow Stg	Appl Code				
7	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	99	99	99	0
7	Betamix	1.3	L	2	pt/a	2-leaf	A				
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	1.3	L	3	pt/a	6-leaf	B				
7	Outlook	6	L	18	fl oz/a	6-leaf	B				
7	AMS		WG	17	lb/100 gal	6-leaf	B				
7	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
7	AMS		WG	17	lb/100 gal	canopy	C				
8	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	99	99	99	0
8	Betamix	1.3	L	2	pt/a	2-leaf	A				
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	1.3	L	3	pt/a	6-leaf	B				
8	AMS		WG	17	lb/100 gal	6-leaf	B				
8	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
8	Betamix	1.3	L	3	pt/a	canopy	C				
8	AMS		WG	17	lb/100 gal	canopy	C				
9	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	99	99	98	0
9	Betamix	1.3	L	2	pt/a	2-leaf	A				
9	AMS		WG	17	lb/100 gal	2-leaf	A				
9	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
9	Betamix	1.3	L	4	pt/a	6-leaf	B				
9	AMS		WG	17	lb/100 gal	6-leaf	B				
9	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
9	Betamix	1.3	L	6	pt/a	canopy	C				
9	AMS		WG	17	lb/100 gal	canopy	C				
10	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	99	99	99	0
10	Betamix	1.3	L	2	pt/a	2-leaf	A				
10	AMS		WG	17	lb/100 gal	2-leaf	A				
10	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
10	Betamix	1.3	L	4	pt/a	6-leaf	B				
10	Warrant	3	L	3	pt/a	6-leaf	B				
10	AMS		WG	17	lb/100 gal	6-leaf	B				
10	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
10	Betamix	1.3	L	6	pt/a	canopy	C				
10	AMS		WG	17	lb/100 gal	canopy	C				
11	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	99	99	98	0
11	Nortron	4	L	4	fl oz/a	2-leaf	A				
11	AMS		WG	17	lb/100 gal	2-leaf	A				
11	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
11	Nortron	4	L	4	fl oz/a	6-leaf	B				
11	AMS		WG	17	lb/100 gal	6-leaf	B				
11	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
11	Nortron	4	L	4	fl oz/a	canopy	C				
11	AMS		WG	17	lb/100 gal	canopy	C				

MSU Weed Science Research Program

Impact of glyphosate-resistant Palmer amaranth treatments on sugarbeet yield II

Trial ID: SB07-15
 Conducted: SVREC

Study Dir.: Sprague and Powell
 Investigator: Christy Sprague

								AMARE	POLPY	HIBTR	BETVU
								control	control	control	injury
								percent	percent	percent	percent
								Aug/13/2015	Aug/13/2015	Aug/13/2015	Sep/14/2015
								50 DA-C	50 DA-C	50 DA-C	82 DA-C
								0	0	0	0
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code				
12	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	99	99	99	0
12	Nortron	4	L	4	fl oz/a	2-leaf	A				
12	Destiny HC		L	1.5	pt/a	2-leaf	A				
12	AMS		WG	17	lb/100 gal	2-leaf	A				
12	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
12	Nortron	4	L	4	fl oz/a	6-leaf	B				
12	Destiny HC		L	1.5	pt/a	6-leaf	B				
12	AMS		WG	17	lb/100 gal	6-leaf	B				
12	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
12	Nortron	4	L	4	fl oz/a	canopy	C				
12	Destiny HC		L	1.5	pt/a	canopy	C				
12	AMS		WG	17	lb/100 gal	canopy	C				
13	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	99	99	98	0
13	Betamix	1.3	L	2	pt/a	2-leaf	A				
13	AMS		WG	17	lb/100 gal	2-leaf	A				
13	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
13	Betamix	1.3	L	3	pt/a	6-leaf	B				
13	Warrant	3	L	3	pt/a	6-leaf	B				
13	AMS		WG	17	lb/100 gal	6-leaf	B				
13	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
13	AMS		WG	17	lb/100 gal	canopy	C				
14	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	99	99	99	0
14	Nortron	4	L	4	fl oz/a	2-leaf	A				
14	Warrant	3	L	3	pt/a	2-leaf	A				
14	Destiny HC		L	1.5	pt/a	2-leaf	A				
14	AMS		WG	17	lb/100 gal	2-leaf	A				
14	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
14	AMS		WG	17	lb/100 gal	6-leaf	B				
14	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
14	AMS		WG	17	lb/100 gal	canopy	C				
15	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	99	99	99	0
15	Nortron	4	L	4	fl oz/a	2-leaf	A				
15	Dual II Magnum	7.64	L	1.33	pt/a	2-leaf	A				
15	Destiny HC		L	1.5	pt/a	2-leaf	A				
15	AMS		WG	17	lb/100 gal	2-leaf	A				
15	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
15	AMS		WG	17	lb/100 gal	6-leaf	B				
15	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
15	AMS		WG	17	lb/100 gal	canopy	C				
16	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	99	99	99	0
16	Nortron	4	L	4	fl oz/a	2-leaf	A				
16	Destiny HC		L	1.5	pt/a	2-leaf	A				
16	AMS		WG	17	lb/100 gal	2-leaf	A				
16	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
16	Nortron	4	L	4	fl oz/a	6-leaf	C				
16	Warrant	3	L	3	pt/a	6-leaf	B				
16	Destiny HC		L	1.5	pt/a	6-leaf	B				
16	AMS		WG	17	lb/100 gal	6-leaf	B				
16	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
16	AMS		WG	17	lb/100 gal	canopy	C				

MSU Weed Science Research Program

Impact of glyphosate-resistant Palmer amaranth treatments on sugarbeet yield II

Trial ID: SB07-15 Study Dir.: Sprague and Powell
 Conducted: SVREC Investigator: Christy Sprague

Weed Code								AMARE	POLPY	HIBTR	BETVU
Crop Code								control	control	control	injury
Rating Data Type								percent	percent	percent	percent
Rating Unit								Aug/13/2015	Aug/13/2015	Aug/13/2015	Sep/14/2015
Rating Date								50 DA-C	50 DA-C	50 DA-C	82 DA-C
Trt-Eval Interval								0	0	0	0
# Subsamples, Dec.											
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Unit	Grow Stg	Appl Code				
17	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	99	99	99	0
17	Nortron	4	L	4	fl oz/a	2-leaf	A				
17	Destiny HC		L	1.5	pt/a	2-leaf	A				
17	AMS		WG	17	lb/100 gal	2-leaf	A				
17	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
17	Nortron	4	L	4	fl oz/a	6-leaf	B				
17	Warrant	3	L	3	pt/a	6-leaf	B				
17	Destiny HC		L	1.5	pt/a	6-leaf	B				
17	AMS		WG	17	lb/100 gal	6-leaf	B				
17	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
17	AMS		WG	17	lb/100 gal	canopy	C				
18	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	99	99	99	0
18	Nortron	4	L	4	fl oz/a	2-leaf	A				
18	Warrant	3	L	3	pt/a	2-leaf	A				
18	Destiny HC		L	1.5	pt/a	2-leaf	A				
18	AMS		WG	17	lb/100 gal	2-leaf	A				
18	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
18	Nortron	4	L	4	fl oz/a	6-leaf	B				
18	Warrant	3	L	3	pt/a	6-leaf	B				
18	Destiny HC		L	1.5	pt/a	6-leaf	B				
18	AMS		WG	17	lb/100 gal	6-leaf	B				
18	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
18	AMS		WG	17	lb/100 gal	canopy	C				
19	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	99	99	99	0
19	Nortron	4	L	4	fl oz/a	2-leaf	A				
19	Dual II Magnum	7.64	L	1.33	pt/a	2-leaf	A				
19	Destiny HC		L	1.5	pt/a	2-leaf	A				
19	AMS		WG	17	lb/100 gal	2-leaf	A				
19	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
19	Nortron	4	L	4	fl oz/a	6-leaf	B				
19	Dual II Magnum	7.64	L	1.33	pt/a	6-leaf	B				
19	Destiny HC		L	1.5	pt/a	6-leaf	B				
19	AMS		WG	17	lb/100 gal	6-leaf	B				
19	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
19	AMS		WG	17	lb/100 gal	canopy	C				
20	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	99	99	99	0
20	Nortron	4	L	4	fl oz/a	2-leaf	A				
20	Destiny HC		L	1.5	pt/a	2-leaf	A				
20	AMS		WG	17	lb/100 gal	2-leaf	A				
20	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
20	Nortron	4	L	4	fl oz/a	6-leaf	B				
20	Warrant	3	L	3	pt/a	6-leaf	B				
20	Destiny HC		L	1.5	pt/a	6-leaf	B				
20	AMS		WG	17	lb/100 gal	6-leaf	B				
20	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
20	Nortron	4	L	4	fl oz/a	canopy	C				
20	Destiny HC		L	1.5	pt/a	canopy	C				
20	AMS		WG	17	lb/100 gal	canopy	C				
LSD (P=.05)								0.0	0.4	1.1	0.0
CV								0.0	0.28	0.78	0.0

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

MSU Weed Science Research Program

Impact of glyphosate-resistant Palmer amaranth treatments on sugarbeet yield II

Trial ID: SB07-15 Study Dir.: Sprague and Powell
 Conducted: SVREC Investigator: Christy Sprague

Weed Code								CHEAL	AMARE	AMBEL	POLPY
Crop Code											
Rating Data Type								control	control	control	control
Rating Unit								percent	percent	percent	percent
Rating Date								Sep/14/2015	Sep/14/2015	Sep/14/2015	Sep/14/2015
Trt-Eval Interval								82 DA-C	82 DA-C	82 DA-C	82 DA-C
# 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	32	fl oz/a	2-leaf	A	99	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				
1	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
1	AMS		WG	17	lb/100 gal	canopy	C				
2	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	99	99	98	99
2	Betamix	1.3	L	2	pt/a	2-leaf	A				
2	Warrant	3	L	3	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				
2	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
2	AMS		WG	17	lb/100 gal	canopy	C				
3	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	99	99	99	99
3	Betamix	1.3	L	2	pt/a	2-leaf	A				
3	Dual II Magnum	7.64	L	1.33	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				
3	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
3	AMS		WG	17	lb/100 gal	canopy	C				
4	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	99	99	99	99
4	Betamix	1.3	L	2	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	1.3	L	3	pt/a	6-leaf	B				
4	AMS		WG	17	lb/100 gal	6-leaf	B				
4	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
4	AMS		WG	17	lb/100 gal	canopy	C				
5	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	99	99	99	99
5	Betamix	1.3	L	2	pt/a	2-leaf	A				
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	1.3	L	3	pt/a	6-leaf	B				
5	Warrant	3	L	3	pt/a	6-leaf	B				
5	AMS		WG	17	lb/100 gal	6-leaf	B				
5	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
5	AMS		WG	17	lb/100 gal	canopy	C				
6	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	99	98	99	99
6	Betamix	1.3	L	2	pt/a	2-leaf	A				
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	1.3	L	3	pt/a	6-leaf	B				
6	Dual II Magnum	7.64	L	1.33	pt/a	6-leaf	B				
6	AMS		WG	17	lb/100 gal	6-leaf	B				
6	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
6	AMS		WG	17	lb/100 gal	canopy	C				

MSU Weed Science Research Program

Impact of glyphosate-resistant Palmer amaranth treatments on sugarbeet yield II

Trial ID: SB07-15 Study Dir.: Sprague and Powell
 Conducted: SVREC Investigator: Christy Sprague

Weed Code								CHEAL	AMARE	AMBEL	POLPY
Crop Code											
Rating Data Type								control	control	control	control
Rating Unit								percent	percent	percent	percent
Rating Date								Sep/14/2015	Sep/14/2015	Sep/14/2015	Sep/14/2015
Trt-Eval Interval								82 DA-C	82 DA-C	82 DA-C	82 DA-C
# Subsamples, Dec.								0	0	0	0
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code				
7	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	99	99	99	99
7	Betamix	1.3	L	2	pt/a	2-leaf	A				
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	1.3	L	3	pt/a	6-leaf	B				
7	Outlook	6	L	18	fl oz/a	6-leaf	B				
7	AMS		WG	17	lb/100 gal	6-leaf	B				
7	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
7	AMS		WG	17	lb/100 gal	canopy	C				
8	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	97	99	99	99
8	Betamix	1.3	L	2	pt/a	2-leaf	A				
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	1.3	L	3	pt/a	6-leaf	B				
8	AMS		WG	17	lb/100 gal	6-leaf	B				
8	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
8	Betamix	1.3	L	3	pt/a	canopy	C				
8	AMS		WG	17	lb/100 gal	canopy	C				
9	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	99	99	99	99
9	Betamix	1.3	L	2	pt/a	2-leaf	A				
9	AMS		WG	17	lb/100 gal	2-leaf	A				
9	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
9	Betamix	1.3	L	4	pt/a	6-leaf	B				
9	AMS		WG	17	lb/100 gal	6-leaf	B				
9	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
9	Betamix	1.3	L	6	pt/a	canopy	C				
9	AMS		WG	17	lb/100 gal	canopy	C				
10	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	99	99	99	99
10	Betamix	1.3	L	2	pt/a	2-leaf	A				
10	AMS		WG	17	lb/100 gal	2-leaf	A				
10	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
10	Betamix	1.3	L	4	pt/a	6-leaf	B				
10	Warrant	3	L	3	pt/a	6-leaf	B				
10	AMS		WG	17	lb/100 gal	6-leaf	B				
10	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
10	Betamix	1.3	L	6	pt/a	canopy	C				
10	AMS		WG	17	lb/100 gal	canopy	C				
11	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	99	99	99	99
11	Nortron	4	L	4	fl oz/a	2-leaf	A				
11	AMS		WG	17	lb/100 gal	2-leaf	A				
11	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
11	Nortron	4	L	4	fl oz/a	6-leaf	B				
11	AMS		WG	17	lb/100 gal	6-leaf	B				
11	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
11	Nortron	4	L	4	fl oz/a	canopy	C				
11	AMS		WG	17	lb/100 gal	canopy	C				

MSU Weed Science Research Program

Impact of glyphosate-resistant Palmer amaranth treatments on sugarbeet yield II

Trial ID: SB07-15 Study Dir.: Sprague and Powell
 Conducted: SVREC Investigator: Christy Sprague

								CHEAL	AMARE	AMBEL	POLPY
								control	control	control	control
								percent	percent	percent	percent
								Sep/14/2015	Sep/14/2015	Sep/14/2015	Sep/14/2015
								82 DA-C	82 DA-C	82 DA-C	82 DA-C
								0	0	0	0
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code				
12	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	99	99	99	99
12	Nortron	4	L	4	fl oz/a	2-leaf	A				
12	Destiny HC		L	1.5	pt/a	2-leaf	A				
12	AMS		WG	17	lb/100 gal	2-leaf	A				
12	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
12	Nortron	4	L	4	fl oz/a	6-leaf	B				
12	Destiny HC		L	1.5	pt/a	6-leaf	B				
12	AMS		WG	17	lb/100 gal	6-leaf	B				
12	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
12	Nortron	4	L	4	fl oz/a	canopy	C				
12	Destiny HC		L	1.5	pt/a	canopy	C				
12	AMS		WG	17	lb/100 gal	canopy	C				
13	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	98	99	99	99
13	Betamix	1.3	L	2	pt/a	2-leaf	A				
13	AMS		WG	17	lb/100 gal	2-leaf	A				
13	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
13	Betamix	1.3	L	3	pt/a	6-leaf	B				
13	Warrant	3	L	3	pt/a	6-leaf	B				
13	AMS		WG	17	lb/100 gal	6-leaf	B				
13	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
13	AMS		WG	17	lb/100 gal	canopy	C				
14	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	99	99	99	99
14	Nortron	4	L	4	fl oz/a	2-leaf	A				
14	Warrant	3	L	3	pt/a	2-leaf	A				
14	Destiny HC		L	1.5	pt/a	2-leaf	A				
14	AMS		WG	17	lb/100 gal	2-leaf	A				
14	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
14	AMS		WG	17	lb/100 gal	6-leaf	B				
14	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
14	AMS		WG	17	lb/100 gal	canopy	C				
15	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	99	99	99	99
15	Nortron	4	L	4	fl oz/a	2-leaf	A				
15	Dual II Magnum	7.64	L	1.33	pt/a	2-leaf	A				
15	Destiny HC		L	1.5	pt/a	2-leaf	A				
15	AMS		WG	17	lb/100 gal	2-leaf	A				
15	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
15	AMS		WG	17	lb/100 gal	6-leaf	B				
15	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
15	AMS		WG	17	lb/100 gal	canopy	C				
16	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	99	99	99	99
16	Nortron	4	L	4	fl oz/a	2-leaf	A				
16	Destiny HC		L	1.5	pt/a	2-leaf	A				
16	AMS		WG	17	lb/100 gal	2-leaf	A				
16	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
16	Nortron	4	L	4	fl oz/a	6-leaf	C				
16	Warrant	3	L	3	pt/a	6-leaf	B				
16	Destiny HC		L	1.5	pt/a	6-leaf	B				
16	AMS		WG	17	lb/100 gal	6-leaf	B				
16	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
16	AMS		WG	17	lb/100 gal	canopy	C				

MSU Weed Science Research Program

Impact of glyphosate-resistant Palmer amaranth treatments on sugarbeet yield II

Trial ID: SB07-15
 Conducted: SVREC

Study Dir.: Sprague and Powell
 Investigator: Christy Sprague

								CHEAL	AMARE	AMBEL	POLPY
								control	control	control	control
								percent	percent	percent	percent
								Sep/14/2015	Sep/14/2015	Sep/14/2015	Sep/14/2015
								82 DA-C	82 DA-C	82 DA-C	82 DA-C
								0	0	0	0
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code				
17	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	98	99	98	99
17	Nortron	4	L	4	fl oz/a	2-leaf	A				
17	Destiny HC		L	1.5	pt/a	2-leaf	A				
17	AMS		WG	17	lb/100 gal	2-leaf	A				
17	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
17	Nortron	4	L	4	fl oz/a	6-leaf	B				
17	Warrant	3	L	3	pt/a	6-leaf	B				
17	Destiny HC		L	1.5	pt/a	6-leaf	B				
17	AMS		WG	17	lb/100 gal	6-leaf	B				
17	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
17	AMS		WG	17	lb/100 gal	canopy	C				
18	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	99	99	99	99
18	Nortron	4	L	4	fl oz/a	2-leaf	A				
18	Warrant	3	L	3	pt/a	2-leaf	A				
18	Destiny HC		L	1.5	pt/a	2-leaf	A				
18	AMS		WG	17	lb/100 gal	2-leaf	A				
18	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
18	Nortron	4	L	4	fl oz/a	6-leaf	B				
18	Warrant	3	L	3	pt/a	6-leaf	B				
18	Destiny HC		L	1.5	pt/a	6-leaf	B				
18	AMS		WG	17	lb/100 gal	6-leaf	B				
18	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
18	AMS		WG	17	lb/100 gal	canopy	C				
19	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	99	99	99	99
19	Nortron	4	L	4	fl oz/a	2-leaf	A				
19	Dual II Magnum	7.64	L	1.33	pt/a	2-leaf	A				
19	Destiny HC		L	1.5	pt/a	2-leaf	A				
19	AMS		WG	17	lb/100 gal	2-leaf	A				
19	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
19	Nortron	4	L	4	fl oz/a	6-leaf	B				
19	Dual II Magnum	7.64	L	1.33	pt/a	6-leaf	B				
19	Destiny HC		L	1.5	pt/a	6-leaf	B				
19	AMS		WG	17	lb/100 gal	6-leaf	B				
19	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
19	AMS		WG	17	lb/100 gal	canopy	C				
20	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	99	99	99	99
20	Nortron	4	L	4	fl oz/a	2-leaf	A				
20	Destiny HC		L	1.5	pt/a	2-leaf	A				
20	AMS		WG	17	lb/100 gal	2-leaf	A				
20	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
20	Nortron	4	L	4	fl oz/a	6-leaf	B				
20	Warrant	3	L	3	pt/a	6-leaf	B				
20	Destiny HC		L	1.5	pt/a	6-leaf	B				
20	AMS		WG	17	lb/100 gal	6-leaf	B				
20	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
20	Nortron	4	L	4	fl oz/a	canopy	C				
20	Destiny HC		L	1.5	pt/a	canopy	C				
20	AMS		WG	17	lb/100 gal	canopy	C				
LSD (P=.05)								2.0	0.6	1.0	0.5
CV								1.46	0.45	0.71	0.34

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

MSU Weed Science Research Program

Impact of glyphosate-resistant Palmer amaranth treatments on sugarbeet yield II

Trial ID: SB07-15
 Conducted: SVREC

Study Dir.: Sprague and Powell
 Investigator: Christy Sprague

Weed Code								HIBTR			
Crop Code								control	BETVU	BETVU	BETVU
Rating Data Type								percent	stand count	% sugar	yield
Rating Unit								Sep/14/2015	Sep/15/2015	Sep/15/2015	Sep/15/2015
Rating Date								82 DA-C	118 DA-A	118 DA-A	118 DA-A
Trt-Eval Interval								0	0	1	1
# Subsamples, Dec.											
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code				
1	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	94	193	16.8	27.5
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				
1	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
1	AMS		WG	17	lb/100 gal	canopy	C				
2	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	96	197	17.4	24.8
2	Betamix	1.3	L	2	pt/a	2-leaf	A				
2	Warrant	3	L	3	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				
2	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
2	AMS		WG	17	lb/100 gal	canopy	C				
3	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	97	189	17.5	25.5
3	Betamix	1.3	L	2	pt/a	2-leaf	A				
3	Dual II Magnum	7.64	L	1.33	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				
3	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
3	AMS		WG	17	lb/100 gal	canopy	C				
4	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	98	161	17.5	27.4
4	Betamix	1.3	L	2	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	1.3	L	3	pt/a	6-leaf	B				
4	AMS		WG	17	lb/100 gal	6-leaf	B				
4	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
4	AMS		WG	17	lb/100 gal	canopy	C				
5	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	99	156	17.4	23.1
5	Betamix	1.3	L	2	pt/a	2-leaf	A				
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	1.3	L	3	pt/a	6-leaf	B				
5	Warrant	3	L	3	pt/a	6-leaf	B				
5	AMS		WG	17	lb/100 gal	6-leaf	B				
5	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
5	AMS		WG	17	lb/100 gal	canopy	C				
6	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	99	179	17.5	26.6
6	Betamix	1.3	L	2	pt/a	2-leaf	A				
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	1.3	L	3	pt/a	6-leaf	B				
6	Dual II Magnum	7.64	L	1.33	pt/a	6-leaf	B				
6	AMS		WG	17	lb/100 gal	6-leaf	B				
6	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
6	AMS		WG	17	lb/100 gal	canopy	C				

MSU Weed Science Research Program

Impact of glyphosate-resistant Palmer amaranth treatments on sugarbeet yield II

Trial ID: SB07-15 Study Dir.: Sprague and Powell
 Conducted: SVREC Investigator: Christy Sprague

Weed Code								HIBTR	BETVU	BETVU	BETVU
Crop Code								control	stand count	% sugar	yield
Rating Data Type								percent	100' row		ton/acre
Rating Unit								Sep/14/2015	Sep/15/2015	Sep/15/2015	Sep/15/2015
Rating Date								82 DA-C	118 DA-A	118 DA-A	118 DA-A
Trt-Eval Interval								0	0	1	1
# Subsamples, Dec.											
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code				
7	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	98	183	17.2	25.8
7	Betamix	1.3	L	2	pt/a	2-leaf	A				
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	1.3	L	3	pt/a	6-leaf	B				
7	Outlook	6	L	18	fl oz/a	6-leaf	B				
7	AMS		WG	17	lb/100 gal	6-leaf	B				
7	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
7	AMS		WG	17	lb/100 gal	canopy	C				
8	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	96	183	17.8	24.4
8	Betamix	1.3	L	2	pt/a	2-leaf	A				
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	1.3	L	3	pt/a	6-leaf	B				
8	AMS		WG	17	lb/100 gal	6-leaf	B				
8	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
8	Betamix	1.3	L	3	pt/a	canopy	C				
8	AMS		WG	17	lb/100 gal	canopy	C				
9	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	96	187	17.1	27.3
9	Betamix	1.3	L	2	pt/a	2-leaf	A				
9	AMS		WG	17	lb/100 gal	2-leaf	A				
9	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
9	Betamix	1.3	L	4	pt/a	6-leaf	B				
9	AMS		WG	17	lb/100 gal	6-leaf	B				
9	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
9	Betamix	1.3	L	6	pt/a	canopy	C				
9	AMS		WG	17	lb/100 gal	canopy	C				
10	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	99	189	17.6	26.3
10	Betamix	1.3	L	2	pt/a	2-leaf	A				
10	AMS		WG	17	lb/100 gal	2-leaf	A				
10	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
10	Betamix	1.3	L	4	pt/a	6-leaf	B				
10	Warrant	3	L	3	pt/a	6-leaf	B				
10	AMS		WG	17	lb/100 gal	6-leaf	B				
10	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
10	Betamix	1.3	L	6	pt/a	canopy	C				
10	AMS		WG	17	lb/100 gal	canopy	C				
11	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	94	189	17.7	25.1
11	Nortron	4	L	4	fl oz/a	2-leaf	A				
11	AMS		WG	17	lb/100 gal	2-leaf	A				
11	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
11	Nortron	4	L	4	fl oz/a	6-leaf	B				
11	AMS		WG	17	lb/100 gal	6-leaf	B				
11	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
11	Nortron	4	L	4	fl oz/a	canopy	C				
11	AMS		WG	17	lb/100 gal	canopy	C				

MSU Weed Science Research Program

Impact of glyphosate-resistant Palmer amaranth treatments on sugarbeet yield II

Trial ID: SB07-15 Study Dir.: Sprague and Powell
 Conducted: SVREC Investigator: Christy Sprague

Weed Code								HIBTR	BETVU	BETVU	BETVU
Crop Code								control	stand count	% sugar	yield
Rating Data Type								percent	100' row		ton/acre
Rating Unit								Sep/14/2015	Sep/15/2015	Sep/15/2015	Sep/15/2015
Rating Date								82 DA-C	118 DA-A	118 DA-A	118 DA-A
Trt-Eval Interval								0	0	1	1
# Subsamples, Dec.											
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code				
12	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	98	196	17.5	29.5
12	Nortron	4	L	4	fl oz/a	2-leaf	A				
12	Destiny HC		L	1.5	pt/a	2-leaf	A				
12	AMS		WG	17	lb/100 gal	2-leaf	A				
12	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
12	Nortron	4	L	4	fl oz/a	6-leaf	B				
12	Destiny HC		L	1.5	pt/a	6-leaf	B				
12	AMS		WG	17	lb/100 gal	6-leaf	B				
12	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
12	Nortron	4	L	4	fl oz/a	canopy	C				
12	Destiny HC		L	1.5	pt/a	canopy	C				
12	AMS		WG	17	lb/100 gal	canopy	C				
13	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	99	172	16.7	23.1
13	Betamix	1.3	L	2	pt/a	2-leaf	A				
13	AMS		WG	17	lb/100 gal	2-leaf	A				
13	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
13	Betamix	1.3	L	3	pt/a	6-leaf	B				
13	Warrant	3	L	3	pt/a	6-leaf	B				
13	AMS		WG	17	lb/100 gal	6-leaf	B				
13	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
13	AMS		WG	17	lb/100 gal	canopy	C				
14	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	97	196	17.3	26.8
14	Nortron	4	L	4	fl oz/a	2-leaf	A				
14	Warrant	3	L	3	pt/a	2-leaf	A				
14	Destiny HC		L	1.5	pt/a	2-leaf	A				
14	AMS		WG	17	lb/100 gal	2-leaf	A				
14	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
14	AMS		WG	17	lb/100 gal	6-leaf	B				
14	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
14	AMS		WG	17	lb/100 gal	canopy	C				
15	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	98	192	17.3	26.9
15	Nortron	4	L	4	fl oz/a	2-leaf	A				
15	Dual II Magnum	7.64	L	1.33	pt/a	2-leaf	A				
15	Destiny HC		L	1.5	pt/a	2-leaf	A				
15	AMS		WG	17	lb/100 gal	2-leaf	A				
15	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
15	AMS		WG	17	lb/100 gal	6-leaf	B				
15	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
15	AMS		WG	17	lb/100 gal	canopy	C				
16	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	98	191	16.8	28.1
16	Nortron	4	L	4	fl oz/a	2-leaf	A				
16	Destiny HC		L	1.5	pt/a	2-leaf	A				
16	AMS		WG	17	lb/100 gal	2-leaf	A				
16	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
16	Nortron	4	L	4	fl oz/a	6-leaf	C				
16	Warrant	3	L	3	pt/a	6-leaf	B				
16	Destiny HC		L	1.5	pt/a	6-leaf	B				
16	AMS		WG	17	lb/100 gal	6-leaf	B				
16	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
16	AMS		WG	17	lb/100 gal	canopy	C				

MSU Weed Science Research Program

Impact of glyphosate-resistant Palmer amaranth treatments on sugarbeet yield II

Trial ID: SB07-15
 Conducted: SVREC

Study Dir.: Sprague and Powell
 Investigator: Christy Sprague

Weed Code								HIBTR	BETVU	BETVU	BETVU
Crop Code								control	stand count	% sugar	yield
Rating Data Type								percent	100' row		ton/acre
Rating Unit								Sep/14/2015	Sep/15/2015	Sep/15/2015	Sep/15/2015
Rating Date								82 DA-C	118 DA-A	118 DA-A	118 DA-A
Trt-Eval Interval								0	0	1	1
# Subsamples, Dec.											
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Unit	Grow Stg	Appl Code				
17	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	99	183	17.1	25.5
17	Nortron	4	L	4	fl oz/a	2-leaf	A				
17	Destiny HC		L	1.5	pt/a	2-leaf	A				
17	AMS		WG	17	lb/100 gal	2-leaf	A				
17	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
17	Nortron	4	L	4	fl oz/a	6-leaf	B				
17	Warrant	3	L	3	pt/a	6-leaf	B				
17	Destiny HC		L	1.5	pt/a	6-leaf	B				
17	AMS		WG	17	lb/100 gal	6-leaf	B				
17	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
17	AMS		WG	17	lb/100 gal	canopy	C				
18	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	98	191	17.0	24.6
18	Nortron	4	L	4	fl oz/a	2-leaf	A				
18	Warrant	3	L	3	pt/a	2-leaf	A				
18	Destiny HC		L	1.5	pt/a	2-leaf	A				
18	AMS		WG	17	lb/100 gal	2-leaf	A				
18	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
18	Nortron	4	L	4	fl oz/a	6-leaf	B				
18	Warrant	3	L	3	pt/a	6-leaf	B				
18	Destiny HC		L	1.5	pt/a	6-leaf	B				
18	AMS		WG	17	lb/100 gal	6-leaf	B				
18	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
18	AMS		WG	17	lb/100 gal	canopy	C				
19	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	98	192	17.3	24.1
19	Nortron	4	L	4	fl oz/a	2-leaf	A				
19	Dual II Magnum	7.64	L	1.33	pt/a	2-leaf	A				
19	Destiny HC		L	1.5	pt/a	2-leaf	A				
19	AMS		WG	17	lb/100 gal	2-leaf	A				
19	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
19	Nortron	4	L	4	fl oz/a	6-leaf	B				
19	Dual II Magnum	7.64	L	1.33	pt/a	6-leaf	B				
19	Destiny HC		L	1.5	pt/a	6-leaf	B				
19	AMS		WG	17	lb/100 gal	6-leaf	B				
19	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
19	AMS		WG	17	lb/100 gal	canopy	C				
20	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	98	199	17.1	29.5
20	Nortron	4	L	4	fl oz/a	2-leaf	A				
20	Destiny HC		L	1.5	pt/a	2-leaf	A				
20	AMS		WG	17	lb/100 gal	2-leaf	A				
20	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B				
20	Nortron	4	L	4	fl oz/a	6-leaf	B				
20	Warrant	3	L	3	pt/a	6-leaf	B				
20	Destiny HC		L	1.5	pt/a	6-leaf	B				
20	AMS		WG	17	lb/100 gal	6-leaf	B				
20	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C				
20	Nortron	4	L	4	fl oz/a	canopy	C				
20	Destiny HC		L	1.5	pt/a	canopy	C				
20	AMS		WG	17	lb/100 gal	canopy	C				
LSD (P=.05)								5.0	29.9	0.61	4.55
CV								3.63	11.27	2.45	12.2

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

MSU Weed Science Research Program

Impact of glyphosate-resistant Palmer amaranth treatments on sugarbeet yield II

Trial ID: SB07-15
 Conducted: SVREC

Study Dir.: Sprague and Powell
 Investigator: Christy Sprague

Weed Code

Crop Code

Rating Data Type

Rating Unit

Rating Date

Trt-Eval Interval

Subsamples, Dec.

BETVU

BETVU

RWST

RWSA

/ ton

/ acre

Sep/15/2015

Sep/15/2015

118 DA-A

118 DA-A

1

1

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code		
1	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	251.9	6913.3
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		
1	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C		
1	AMS		WG	17	lb/100 gal	canopy	C		
2	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	262.1	6501.6
2	Betamix	1.3	L	2	pt/a	2-leaf	A		
2	Warrant	3	L	3	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		
2	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C		
2	AMS		WG	17	lb/100 gal	canopy	C		
3	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	263.2	6703.6
3	Betamix	1.3	L	2	pt/a	2-leaf	A		
3	Dual II Magnum	7.64	L	1.33	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		
3	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C		
3	AMS		WG	17	lb/100 gal	canopy	C		
4	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	261.8	7160.2
4	Betamix	1.3	L	2	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	1.3	L	3	pt/a	6-leaf	B		
4	AMS		WG	17	lb/100 gal	6-leaf	B		
4	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C		
4	AMS		WG	17	lb/100 gal	canopy	C		
5	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	261.8	6066.5
5	Betamix	1.3	L	2	pt/a	2-leaf	A		
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	1.3	L	3	pt/a	6-leaf	B		
5	Warrant	3	L	3	pt/a	6-leaf	B		
5	AMS		WG	17	lb/100 gal	6-leaf	B		
5	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C		
5	AMS		WG	17	lb/100 gal	canopy	C		
6	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	264.2	7015.8
6	Betamix	1.3	L	2	pt/a	2-leaf	A		
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	1.3	L	3	pt/a	6-leaf	B		
6	Dual II Magnum	7.64	L	1.33	pt/a	6-leaf	B		
6	AMS		WG	17	lb/100 gal	6-leaf	B		
6	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C		
6	AMS		WG	17	lb/100 gal	canopy	C		

MSU Weed Science Research Program

Impact of glyphosate-resistant Palmer amaranth treatments on sugarbeet yield II

Trial ID: SB07-15
 Conducted: SVREC

Study Dir.: Sprague and Powell
 Investigator: Christy Sprague

Weed Code

Crop Code

Rating Data Type

Rating Unit

Rating Date

Trt-Eval Interval

Subsamples, Dec.

BETVU

BETVU

RWST

RWSA

/ ton

/ acre

Sep/15/2015

Sep/15/2015

118 DA-A

118 DA-A

1

1

Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Rate Unit	Grow Stg	Appl Code		
7	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	258.1	6662.7
7	Betamix	1.3	L	2	pt/a	2-leaf	A		
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	1.3	L	3	pt/a	6-leaf	B		
7	Outlook	6	L	18	fl oz/a	6-leaf	B		
7	AMS		WG	17	lb/100 gal	6-leaf	B		
7	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C		
7	AMS		WG	17	lb/100 gal	canopy	C		
8	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	268.2	6538.8
8	Betamix	1.3	L	2	pt/a	2-leaf	A		
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	1.3	L	3	pt/a	6-leaf	B		
8	AMS		WG	17	lb/100 gal	6-leaf	B		
8	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C		
8	Betamix	1.3	L	3	pt/a	canopy	C		
8	AMS		WG	17	lb/100 gal	canopy	C		
9	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	257.4	6974.3
9	Betamix	1.3	L	2	pt/a	2-leaf	A		
9	AMS		WG	17	lb/100 gal	2-leaf	A		
9	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B		
9	Betamix	1.3	L	4	pt/a	6-leaf	B		
9	AMS		WG	17	lb/100 gal	6-leaf	B		
9	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C		
9	Betamix	1.3	L	6	pt/a	canopy	C		
9	AMS		WG	17	lb/100 gal	canopy	C		
10	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	265.2	6976.5
10	Betamix	1.3	L	2	pt/a	2-leaf	A		
10	AMS		WG	17	lb/100 gal	2-leaf	A		
10	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B		
10	Betamix	1.3	L	4	pt/a	6-leaf	B		
10	Warrant	3	L	3	pt/a	6-leaf	B		
10	AMS		WG	17	lb/100 gal	6-leaf	B		
10	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C		
10	Betamix	1.3	L	6	pt/a	canopy	C		
10	AMS		WG	17	lb/100 gal	canopy	C		
11	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	267.5	6725.8
11	Nortron	4	L	4	fl oz/a	2-leaf	A		
11	AMS		WG	17	lb/100 gal	2-leaf	A		
11	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B		
11	Nortron	4	L	4	fl oz/a	6-leaf	B		
11	AMS		WG	17	lb/100 gal	6-leaf	B		
11	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C		
11	Nortron	4	L	4	fl oz/a	canopy	C		
11	AMS		WG	17	lb/100 gal	canopy	C		

MSU Weed Science Research Program

Impact of glyphosate-resistant Palmer amaranth treatments on sugarbeet yield II

Trial ID: SB07-15
 Conducted: SVREC

Study Dir.: Sprague and Powell
 Investigator: Christy Sprague

Weed Code
 Crop Code
 Rating Data Type
 Rating Unit
 Rating Date
 Trt-Eval Interval
 # Subsamples, Dec.

BETVU
 RWST
 # / ton
 Sep/15/2015
 118 DA-A
 1

BETVU
 RWSA
 # / acre
 Sep/15/2015
 118 DA-A
 1

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code		
12	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	263.9	7795.6
12	Nortron	4	L	4	fl oz/a	2-leaf	A		
12	Destiny HC		L	1.5	pt/a	2-leaf	A		
12	AMS		WG	17	lb/100 gal	2-leaf	A		
12	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B		
12	Nortron	4	L	4	fl oz/a	6-leaf	B		
12	Destiny HC		L	1.5	pt/a	6-leaf	B		
12	AMS		WG	17	lb/100 gal	6-leaf	B		
12	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C		
12	Nortron	4	L	4	fl oz/a	canopy	C		
12	Destiny HC		L	1.5	pt/a	canopy	C		
12	AMS		WG	17	lb/100 gal	canopy	C		
13	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	248.3	5734.2
13	Betamix	1.3	L	2	pt/a	2-leaf	A		
13	AMS		WG	17	lb/100 gal	2-leaf	A		
13	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B		
13	Betamix	1.3	L	3	pt/a	6-leaf	B		
13	Warrant	3	L	3	pt/a	6-leaf	B		
13	AMS		WG	17	lb/100 gal	6-leaf	B		
13	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C		
13	AMS		WG	17	lb/100 gal	canopy	C		
14	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	257.0	6875.5
14	Nortron	4	L	4	fl oz/a	2-leaf	A		
14	Warrant	3	L	3	pt/a	2-leaf	A		
14	Destiny HC		L	1.5	pt/a	2-leaf	A		
14	AMS		WG	17	lb/100 gal	2-leaf	A		
14	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B		
14	AMS		WG	17	lb/100 gal	6-leaf	B		
14	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C		
14	AMS		WG	17	lb/100 gal	canopy	C		
15	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	256.3	6891.0
15	Nortron	4	L	4	fl oz/a	2-leaf	A		
15	Dual II Magnum	7.64	L	1.33	pt/a	2-leaf	A		
15	Destiny HC		L	1.5	pt/a	2-leaf	A		
15	AMS		WG	17	lb/100 gal	2-leaf	A		
15	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B		
15	AMS		WG	17	lb/100 gal	6-leaf	B		
15	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C		
15	AMS		WG	17	lb/100 gal	canopy	C		
16	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	250.5	7062.1
16	Nortron	4	L	4	fl oz/a	2-leaf	A		
16	Destiny HC		L	1.5	pt/a	2-leaf	A		
16	AMS		WG	17	lb/100 gal	2-leaf	A		
16	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B		
16	Nortron	4	L	4	fl oz/a	6-leaf	C		
16	Warrant	3	L	3	pt/a	6-leaf	B		
16	Destiny HC		L	1.5	pt/a	6-leaf	B		
16	AMS		WG	17	lb/100 gal	6-leaf	B		
16	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C		
16	AMS		WG	17	lb/100 gal	canopy	C		

MSU Weed Science Research Program

Impact of glyphosate-resistant Palmer amaranth treatments on sugarbeet yield II

Trial ID: SB07-15
 Conducted: SVREC

Study Dir.: Sprague and Powell
 Investigator: Christy Sprague

Weed Code
 Crop Code
 Rating Data Type
 Rating Unit
 Rating Date
 Trt-Eval Interval
 # Subsamples, Dec.

BETVU
 RWST
 # / ton
 Sep/15/2015
 118 DA-A
 1

BETVU
 RWSA
 # / acre
 Sep/15/2015
 118 DA-A
 1

Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Rate Unit	Grow Stg	Appl Code		
17	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	255.1	6511.6
17	Nortron	4	L	4	fl oz/a	2-leaf	A		
17	Destiny HC		L	1.5	pt/a	2-leaf	A		
17	AMS		WG	17	lb/100 gal	2-leaf	A		
17	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B		
17	Nortron	4	L	4	fl oz/a	6-leaf	B		
17	Warrant	3	L	3	pt/a	6-leaf	B		
17	Destiny HC		L	1.5	pt/a	6-leaf	B		
17	AMS		WG	17	lb/100 gal	6-leaf	B		
17	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C		
17	AMS		WG	17	lb/100 gal	canopy	C		
18	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	255.3	6279.1
18	Nortron	4	L	4	fl oz/a	2-leaf	A		
18	Warrant	3	L	3	pt/a	2-leaf	A		
18	Destiny HC		L	1.5	pt/a	2-leaf	A		
18	AMS		WG	17	lb/100 gal	2-leaf	A		
18	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B		
18	Nortron	4	L	4	fl oz/a	6-leaf	B		
18	Warrant	3	L	3	pt/a	6-leaf	B		
18	Destiny HC		L	1.5	pt/a	6-leaf	B		
18	AMS		WG	17	lb/100 gal	6-leaf	B		
18	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C		
18	AMS		WG	17	lb/100 gal	canopy	C		
19	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	260.0	6255.8
19	Nortron	4	L	4	fl oz/a	2-leaf	A		
19	Dual II Magnum	7.64	L	1.33	pt/a	2-leaf	A		
19	Destiny HC		L	1.5	pt/a	2-leaf	A		
19	AMS		WG	17	lb/100 gal	2-leaf	A		
19	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B		
19	Nortron	4	L	4	fl oz/a	6-leaf	B		
19	Dual II Magnum	7.64	L	1.33	pt/a	6-leaf	B		
19	Destiny HC		L	1.5	pt/a	6-leaf	B		
19	AMS		WG	17	lb/100 gal	6-leaf	B		
19	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C		
19	AMS		WG	17	lb/100 gal	canopy	C		
20	Roundup PowerMax	4.5	SL	32	fl oz/a	2-leaf	A	255.2	7501.2
20	Nortron	4	L	4	fl oz/a	2-leaf	A		
20	Destiny HC		L	1.5	pt/a	2-leaf	A		
20	AMS		WG	17	lb/100 gal	2-leaf	A		
20	Roundup PowerMax	4.5	SL	22	fl oz/a	6-leaf	B		
20	Nortron	4	L	4	fl oz/a	6-leaf	B		
20	Warrant	3	L	3	pt/a	6-leaf	B		
20	Destiny HC		L	1.5	pt/a	6-leaf	B		
20	AMS		WG	17	lb/100 gal	6-leaf	B		
20	Roundup PowerMax	4.5	SL	22	fl oz/a	canopy	C		
20	Nortron	4	L	4	fl oz/a	canopy	C		
20	Destiny HC		L	1.5	pt/a	canopy	C		
20	AMS		WG	17	lb/100 gal	canopy	C		
LSD (P=.05)								10.79	1098.90
CV								2.91	11.38

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