Interaction of Glyphosate with Cercospora Leaf Spot

Trial ID: DS01-08 Study Dir.: Sprague, Hanson, Kirk
Conducted: Bean & Beet Investigator: Christy Sprague

Date Planted:	4/25/08	**Row Spacing:**	30 IN
Variety:	See comments	**No. of Reps:**	4
Population:	4.1" spacing	**% OM:**	3.0
Soil Type:	Clay	**pH:**	7.8
Plot Size:	15 **X** 30 **FT**	**Design:**	RANDOMIZED COMPLETE BLOCK

Tillage: Fall Chisel Plow, Soil Finnished once in the Fall, Soil Finnish twice in the Spring.
Fertilizer: 125# nitrogen (urea) applied and incorporated early spring.

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	C	D	E	F
Application Timing:	'A' STD 1	'B' 2-LF	'C' 6-LF	'D'55 DSV	'E' +2 wk	'F' +4 wk
Date Treated:	5/15/08	5/23/08	6/4/08	7/7/08	7/25/08	8/12/08
Time Treated:	3:50 PM	11:50 AM	12:00 PM	1:00 PM	10:30 AM	11:00 AM
% Cloud Cover:	100	90	100	100	5	20
Air Temp., Unit:	65 F	60 F	65 F	83 F	83 F	72 F
% Relative Humidity:	25	47	70	61	35	34
Wind Speed/Unit/Dir:	5 mph N	4 mph NE	3 mph E	6 mph S	2 mph NW	0 mph
Soil Temp., Unit:	59 F	56 F	65 F	72 F	72 F	68 F
Soil/Leaf Surface M:	5 5	5 5	5 5	5 5	5 5	5 3
Soil Moist (1=w 5=d):	5	5	5	4	4	3

Crop Stage at Each Application

	A	B	C	D	E	F
Crop Name:	BETVU	BETVU	BETVU	BETVU	BETVU	BETVU
Height (In.):	.25-.5	.5-1	3-4.5	15-17	15-18	18-20
Stage (L):	2	2-4	4-6	14-16	18	18

Weed Stage at Each Application

	A	B	C	D	E	F
Weed 1 Name:	CHEAL	CHEAL	CHEAL	CHEAL	CHEAL	CHEAL
Height (In.):	1-1.5	.5-1.5	-	-	-	-
Stage (L):	2-4	4-8	-	-	-	-

Application Equipment

Appl	Sprayer Type	Speed MPH	Nozzle Type	Nozzle Size	Nozzle Height	Nozzle Spacing	Boom Width	GPA	Carrier	PSI
A	Cub	3.8	AirMix	11003	21	20	180	19	water	28
B	Cub	3.8	AirMix	11003	21	20	180	19	water	28
C	Cub	3.8	AirMix	11003	21	20	180	19	water	28
D	Cub	3.8	AirMix	11003	28	20	180	19	water	28
E	Cub	3.8	AirMix	11003	31	20	180	19	water	28
F	Cub	3.8	AirMix	11003	31	20	180	19	water	28

Comments: Varieties planted as follows:
Rows 1, 2, and 6 - ACH827RR

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Row 3 - Hilleshog 9027
Row 4 - Hilleshog 9028
Row 5 - Hilleshog 9029

Previous Crop- Dry Beans

INTERACTIONS OF GLYPHOSATE AND CERCOSPORA LEAF SPOT (DS01-08)

Christy Sprague, Linda Hanson, and Willie Kirk
MSU Crop and Soil Sciences, USDA-ARS, MSU Plant Pathology

Glyphosate applications have been reported to reduce foliar diseases. There have also been reports that glyphosate combinations with fungicides may result in synergistic responses that could reduce foliar diseases. Cercospora leaf spot is a major foliar disease that Michigan sugarbeet growers need to manage yearly. With the recent commercialization of Roundup Ready (glyphosate-resistant) sugarbeets, applications of glyphosate may help reduce the disease severity of Cercospora leaf spot in Roundup Ready sugarbeets. A field trial was initiated at the Saginaw Valley Bean and Beet Research farm in 2008 to test this hypothesis.
This research was a cooperative effort between MSU Weed Science and USDA-ARS and MSU Plant Pathology. The study was designed to evaluate the response of sugarbeet variety, weed management treatment, and fungicide application. The entire study was inoculated for Cercospora leaf spot in early July. Four different Roundup Ready sugarbeet varieties, ACH 827RR, Hilleshog 9027, Hilleshog 9028, and Hilleshog 9029 were evaluated. The weed management treatments included: three applications of glyphosate, four applications of glyphosate, two standard-split herbicide applications (Betamix + Upbeet + Stinger), and a no herbicide control that was kept weed-free throughout the season by hand-weeding. Each of these weed management treatments was evaluated for Cercospora leaf spot disease severity with and without fungicide applications. The fungicide treatment included: three separate applications Headline followed by Eminent followed by Gem at 55 DSV according to BeetCAST.

There was not a 3-way interaction between sugarbeet variety, herbicide treatment, and fungicide treatment. Herbicide treatment did not have a significant effect on Cercospora disease severity or sugarbeet yield. However, the main effects of sugarbeet variety and fungicide application were significant. ACH 827RR was the most susceptible variety to Cercospora leaf spot. Fungicide applicationsreduced the disease severity of all varieties, ultimately leading to greater sugarbeet yields. This study will be repeated in 2009.

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Weed Code																
Crop Code								BETVU	BETVU	BETVU	BETVU	BETVU	BETVU	BETVU	BETVU	BETVU
Rating Data Type								std count	std count	std count	std count	injury	stand count	stand count	% sugar	Ton/acre
Rating Unit								ACH827RR	H-9027	H-9028	H-9029	percent	ACH827RR	H-2029	ACH827RR	ACH827RR
Rating Date								6/11/08	6/11/08	6/11/08	6/11/08	6/11/08	9/19/08	9/19/08	9/19/08	9/19/08
Trt-Eval Interval								30' row	30' row	30' row	30' row	27 DA-A	30' row	30' row	127 DA-A	127 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code									
1	No herbicide							60	73	69	71	0	59	71	14.5	23.1
2	Roundup WeatherMax	4.5	SL	22	fl oz/a	2-LF	B	65	78	75	76	0	65	74	14.5	23.1
2	AMS		WG	17	lb/100 gal	2-LF	B									
2	Roundup WeatherMax	4.5	SL	22	fl oz/a	6-LF	C									
2	AMS		WG	17	lb/100 gal	6-LF	C									
2	Roundup WeatherMax	4.5	SL	22	fl oz/a	55 DSV	D									
2	AMS		WG	17	lb/100 gal	55 DSV	D									
3	Betamix	1.3	EC	2	pt/a	STD1	A	69	73	73	69	19	62	74	14.9	19.8
3	Upbeet	50	DF	0.5	oz/a	STD1	A									
3	Stinger	3	L	4	fl oz/a	STD1	A									
3	Activator 90		L	0.25	% v/v	STD1	A									
3	Betamix	1.3	EC	3	pt/a	STD2	B									
3	Upbeet	50	DF	0.5	oz/a	STD2	B									
3	Stinger	3	L	4	fl oz/a	STD2	B									
3	Activator 90		L	0.25	% v/v	STD2	B									
4	Roundup WeatherMax	4.5	SL	22	fl oz/a	2-LF	B	66	76	69	72	0	60	76	14.7	22.1
4	AMS		WG	17	lb/100 gal	2-LF	B									
4	Roundup WeatherMax	4.5	SL	22	fl oz/a	6-LF	C									
4	AMS		WG	17	lb/100 gal	6-LF	C									
4	Roundup WeatherMax	4.5	SL	22	fl oz/a	55 DSV	D									
4	AMS		WG	17	lb/100 gal	55 DSV	D									
4	Roundup WeatherMax	4.5	SL	22	fl oz/a	+ 2 WKS	E									
4	AMS		WG	17	lb/100 gal	+ 2 WKS	E									
5	No herbicide							66	67	71	67	0	58	64	16.5	28.2
5	Headline	2.09	L	9.2	fl oz/a	55 DSV	D									
5	Eminent	1	L	13	fl oz/a	+ 2 WKS	E									
5	Gem 500 SC	4.17	L	3.5	fl oz/a	+ 4 WKS	F									

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Weed Code																
Crop Code								BETVU	BETVU	BETVU	BETVU	BETVU	BETVU	BETVU	BETVU	BETVU
Rating Data Type								std count	std count	std count	std count	injury	stand count	stand count	% sugar	Ton/acre
Rating Unit								ACH827RR	H-9027	H-9028	H-9029	percent	ACH827RR	H-2029	ACH827RR	ACH827RR
Rating Date								6/11/08	6/11/08	6/11/08	6/11/08	6/11/08	9/19/08	9/19/08	9/19/08	9/19/08
Trt-Eval Interval								30' row	30' row	30' row	30' row	27 DA-A	30' row	30' row	127 DA-A	127 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code									
6	Roundup WeatherMax	4.5	SL	22	fl oz/a	2-LF	B	64	72	74	67	0	60	73	16.9	32.0
6	AMS		WG	17	lb/100 gal	2-LF	B									
6	Roundup WeatherMax	4.5	SL	22	fl oz/a	6-LF	C									
6	AMS		WG	17	lb/100 gal	6-LF	C									
6	Headline	2.09	L	9.2	fl oz/a	55 DSV	D									
6	Roundup WeatherMax	4.5	SL	22	fl oz/a	55 DSV	D									
6	AMS		WG	17	lb/100 gal	55 DSV	D									
6	Eminent	1	L	13	fl oz/a	+ 2 WKS	E									
6	Gem 500 SC	4.17	L	3.5	fl oz/a	+ 4 WKS	F									
7	Betamix	1.3	EC	2	pt/a	STD1	A	69	76	67	71	20	63	68	16.5	27.4
7	Upbeet	50	DF	0.5	oz/a	STD1	A									
7	Stinger	3	L	4	fl oz/a	STD1	A									
7	Activator 90		L	0.25	% v/v	STD1	A									
7	Betamix	1.3	EC	3	pt/a	STD2	B									
7	Upbeet	50	DF	0.5	oz/a	STD2	B									
7	Stinger	3	L	4	fl oz/a	STD2	B									
7	Activator 90		L	0.25	% v/v	STD2	B									
7	Headline	2.09	L	9.2	fl oz/a	55 DSV	D									
7	Eminent	1	L	13	fl oz/a	+ 2 WKS	E									
7	Gem 500 SC	4.17	L	3.5	fl oz/a	+ 4 WKS	F									
8	Roundup WeatherMax	4.5	SL	22	fl oz/a	2-LF	B	70	79	73	71	0	60	76	16.5	32.0
8	AMS		WG	17	lb/100 gal	2-LF	B									
8	Roundup WeatherMax	4.5	SL	22	fl oz/a	6-LF	C									
8	AMS		WG	17	lb/100 gal	6-LF	C									
8	Roundup WeatherMax	4.5	SL	22	fl oz/a	55 DSV	D									
8	Headline	2.09	L	9.2	fl oz/a	55 DSV	D									
8	AMS		WG	17	lb/100 gal	55 DSV	D									
8	Eminent	1	L	13	fl oz/a	+ 2 WKS	E									
8	Roundup WeatherMax	4.5	SL	22	fl oz/a	+ 2 WKS	E									
8	AMS		WG	17	lb/100 gal	+ 2 WKS	E									
8	Gem 500 SC	4.17	L	3.5	fl oz/a	+ 4 WKS	F									

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Weed Code																
Crop Code								BETVU	BETVU	BETVU	BETVU	BETVU	BETVU	BETVU	BETVU	BETVU
Rating Data Type								std count	std count	std count	std count	injury	stand count	stand count	% sugar	Ton/acre
Rating Unit								ACH827RR	H-9027	H-9028	H-9029	percent	ACH827RR	H-2029	ACH827RR	ACH827RR
Rating Date								6/11/08	6/11/08	6/11/08	6/11/08	6/11/08	9/19/08	9/19/08	9/19/08	9/19/08
Trt-Eval Interval								30' row	30' row	30' row	30' row	27 DA-A	30' row	30' row	127 DA-A	127 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code									
LSD (P=.10)								6.9	9.3	5.1	7.4	1.9	10.1	9.4	1.08	4.79
Standard Deviation								5.6	7.7	4.2	6.1	1.6	8.3	7.7	0.88	3.93
CV								8.56	10.3	5.91	8.72	33.08	13.67	10.73	5.65	15.14

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Weed Code															
Crop Code								BETVU	BETVU	BETVU	BETVU	BETVU	BETVU	BETVU	BETVU
Rating Data Type								RWST	RWSA	stand count	% sugar	Ton/acre	RWST	RWSA	stand count
Rating Unit								ACH827RR	ACH827RR	H-9027	H-9027	H-9027	H-9027	H-9027	H-2028
Rating Date								9/19/08	9/19/08	9/19/08	9/19/08	9/19/08	9/19/08	9/19/08	9/19/08
Trt-Eval Interval								# / Ton	# / Acre	30' row	127 DA-A	127 DA-A	# / Ton	# / Acre	30' row
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code								
1	No herbicide							194.5	4502	81	15.4	27.2	218.8	5915	71
2	Roundup WeatherMax	4.5	SL	22	fl oz/a	2-LF	B	198.3	4667	88	15.6	24.8	222.0	5498	86
2	AMS		WG	17	lb/100 gal	2-LF	B								
2	Roundup WeatherMax	4.5	SL	22	fl oz/a	6-LF	C								
2	AMS		WG	17	lb/100 gal	6-LF	C								
2	Roundup WeatherMax	4.5	SL	22	fl oz/a	55 DSV	D								
2	AMS		WG	17	lb/100 gal	55 DSV	D								
3	Betamix	1.3	EC	2	pt/a	STD1	A	200.5	3980	77	15.1	22.4	211.2	4743	76
3	Upbeet	50	DF	0.5	oz/a	STD1	A								
3	Stinger	3	L	4	fl oz/a	STD1	A								
3	Activator 90		L	0.25	% v/v	STD1	A								
3	Betamix	1.3	EC	3	pt/a	STD2	B								
3	Upbeet	50	DF	0.5	oz/a	STD2	B								
3	Stinger	3	L	4	fl oz/a	STD2	B								
3	Activator 90		L	0.25	% v/v	STD2	B								
4	Roundup WeatherMax	4.5	SL	22	fl oz/a	2-LF	B	199.9	4451	76	14.5	24.9	202.5	5037	74
4	AMS		WG	17	lb/100 gal	2-LF	B								
4	Roundup WeatherMax	4.5	SL	22	fl oz/a	6-LF	C								
4	AMS		WG	17	lb/100 gal	6-LF	C								
4	Roundup WeatherMax	4.5	SL	22	fl oz/a	55 DSV	D								
4	AMS		WG	17	lb/100 gal	55 DSV	D								
4	Roundup WeatherMax	4.5	SL	22	fl oz/a	+ 2 WKS	E								
4	AMS		WG	17	lb/100 gal	+ 2 WKS	E								
5	No herbicide							236.8	6658	74	15.8	28.0	225.1	6284	66
5	Headline	2.09	L	9.2	fl oz/a	55 DSV	D								
5	Eminent	1	L	13	fl oz/a	+ 2 WKS	E								
5	Gem 500 SC	4.17	L	3.5	fl oz/a	+ 4 WKS	F								

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Weed Code															
Crop Code								BETVU	BETVU	BETVU	BETVU	BETVU	BETVU	BETVU	BETVU
Rating Data Type								RWST	RWSA	stand count	% sugar	Ton/acre	RWST	RWSA	stand count
Rating Unit								ACH827RR	ACH827RR	H-9027	H-9027	H-9027	H-9027	H-9027	H-2028
Rating Date								9/19/08	9/19/08	9/19/08	9/19/08	9/19/08	9/19/08	9/19/08	9/19/08
Trt-Eval Interval								# / Ton	# / Acre	30' row	127 DA-A	127 DA-A	# / Ton	# / Acre	30' row
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code								
6	Roundup WeatherMax	4.5	SL	22	fl oz/a	2-LF	B	242.3	7728	81	15.9	28.7	227.0	6500	73
6	AMS		WG	17	lb/100 gal	2-LF	B								
6	Roundup WeatherMax	4.5	SL	22	fl oz/a	6-LF	C								
6	AMS		WG	17	lb/100 gal	6-LF	C								
6	Headline	2.09	L	9.2	fl oz/a	55 DSV	D								
6	Roundup WeatherMax	4.5	SL	22	fl oz/a	55 DSV	D								
6	AMS		WG	17	lb/100 gal	55 DSV	D								
6	Eminent	1	L	13	fl oz/a	+ 2 WKS	E								
6	Gem 500 SC	4.17	L	3.5	fl oz/a	+ 4 WKS	F								
7	Betamix	1.3	EC	2	pt/a	STD1	A	233.7	6417	83	15.9	26.6	228.4	6082	74
7	Upbeet	50	DF	0.5	oz/a	STD1	A								
7	Stinger	3	L	4	fl oz/a	STD1	A								
7	Activator 90		L	0.25	% v/v	STD1	A								
7	Betamix	1.3	EC	3	pt/a	STD2	B								
7	Upbeet	50	DF	0.5	oz/a	STD2	B								
7	Stinger	3	L	4	fl oz/a	STD2	B								
7	Activator 90		L	0.25	% v/v	STD2	B								
7	Headline	2.09	L	9.2	fl oz/a	55 DSV	D								
7	Eminent	1	L	13	fl oz/a	+ 2 WKS	E								
7	Gem 500 SC	4.17	L	3.5	fl oz/a	+ 4 WKS	F								
8	Roundup WeatherMax	4.5	SL	22	fl oz/a	2-LF	B	233.9	7473	88	15.7	32.4	225.5	7303	79
8	AMS		WG	17	lb/100 gal	2-LF	B								
8	Roundup WeatherMax	4.5	SL	22	fl oz/a	6-LF	C								
8	AMS		WG	17	lb/100 gal	6-LF	C								
8	Roundup WeatherMax	4.5	SL	22	fl oz/a	55 DSV	D								
8	Headline	2.09	L	9.2	fl oz/a	55 DSV	D								
8	AMS		WG	17	lb/100 gal	55 DSV	D								
8	Eminent	1	L	13	fl oz/a	+ 2 WKS	E								
8	Roundup WeatherMax	4.5	SL	22	fl oz/a	+ 2 WKS	E								
8	AMS		WG	17	lb/100 gal	+ 2 WKS	E								
8	Gem 500 SC	4.17	L	3.5	fl oz/a	+ 4 WKS	F								

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Crop Code								BETVU	BETVU		BETVU	BETVU	BETVU	BETVU	BETVU	BETVU
Rating Data Type								RWST	RWSA		stand count	% sugar	Ton/acre	RWST	RWSA	stand count
Rating Unit								ACH827RR	ACH827RR		H-9027	H-9027	H-9027	H-9027	H-9027	H-2028
Rating Date								9/19/08	9/19/08		9/19/08	9/19/08	9/19/08	9/19/08	9/19/08	9/19/08
Trt-Eval Interval								# / Ton	# / Acre		30' row	127 DA-A	127 DA-A	# / Ton	# / Acre	30' row
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code									
LSD (P=.10)								21.34	1149.7	.	13.8	0.41	2.93	8.41	594.6	.	13.2
Standard Deviation								17.53	944.8	.	11.3	0.33	2.41	6.91	488.6	.	10.9
CV								8.06	16.48	.	13.99	2.15	8.96	3.14	8.25	.	14.54

MSU Weed Science Research Program

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Crop Code								BETVU	BETVU	BETVU	BETVU	BETVU	BETVU	BETVU	BETVU	BETVU
Rating Data Type								% sugar	Ton/acre	RWST	RWSA	stand count	% sugar	Ton/acre	RWST	RWSA
Rating Unit								H-9028	H-9028	H-9028	H-9028	H-2029	H-9029	H-9029	H-9029	H-9029
Rating Date								9/19/08	9/19/08	9/19/08	9/19/08	9/19/08	9/19/08	9/19/08	9/19/08	9/19/08
Trt-Eval Interval								127 DA-A	127 DA-A	# / Ton	# / Acre	30' row	127 DA-A	127 DA-A	# / Ton	# / Acre
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code									
1	No herbicide							15.1	29.3	212.1	6217	71	14.7	25.5	203.9	5189
2	Roundup WeatherMax	4.5	SL	22	fl oz/a	2-LF	B	14.8	26.5	210.9	5589	74	14.5	24.0	201.8	4852
2	AMS		WG	17	lb/100 gal	2-LF	B									
2	Roundup WeatherMax	4.5	SL	22	fl oz/a	6-LF	C									
2	AMS		WG	17	lb/100 gal	6-LF	C									
2	Roundup WeatherMax	4.5	SL	22	fl oz/a	55 DSV	D									
2	AMS		WG	17	lb/100 gal	55 DSV	D									
3	Betamix	1.3	EC	2	pt/a	STD1	A	14.3	22.7	197.6	4489	74	14.3	21.3	196.2	4181
3	Upbeet	50	DF	0.5	oz/a	STD1	A									
3	Stinger	3	L	4	fl oz/a	STD1	A									
3	Activator 90		L	0.25	% v/v	STD1	A									
3	Betamix	1.3	EC	3	pt/a	STD2	B									
3	Upbeet	50	DF	0.5	oz/a	STD2	B									
3	Stinger	3	L	4	fl oz/a	STD2	B									
3	Activator 90		L	0.25	% v/v	STD2	B									
4	Roundup WeatherMax	4.5	SL	22	fl oz/a	2-LF	B	14.4	26.0	198.3	5154	76	14.5	24.6	204.6	5031
4	AMS		WG	17	lb/100 gal	2-LF	B									
4	Roundup WeatherMax	4.5	SL	22	fl oz/a	6-LF	C									
4	AMS		WG	17	lb/100 gal	6-LF	C									
4	Roundup WeatherMax	4.5	SL	22	fl oz/a	55 DSV	D									
4	AMS		WG	17	lb/100 gal	55 DSV	D									
4	Roundup WeatherMax	4.5	SL	22	fl oz/a	+ 2 WKS	E									
4	AMS		WG	17	lb/100 gal	+ 2 WKS	E									
5	No herbicide							15.4	32.2	221.6	7132	64	15.3	27.0	217.7	5873
5	Headline	2.09	L	9.2	fl oz/a	55 DSV	D									
5	Eminent	1	L	13	fl oz/a	+ 2 WKS	E									
5	Gem 500 SC	4.17	L	3.5	fl oz/a	+ 4 WKS	F									

MSU Weed Science Research Program

Interaction of Glyphosate with Cercospora Leaf Spot

Trial ID: DS01-08 Study Dir.: Sprague, Hanson, Kirk
Conducted: Bean & Beet Investigator: Christy Sprague

Weed Code																
Crop Code								BETVU	BETVU	BETVU	BETVU	BETVU	BETVU	BETVU	BETVU	BETVU
Rating Data Type								% sugar	Ton/acre	RWST	RWSA	stand count	% sugar	Ton/acre	RWST	RWSA
Rating Unit								H-9028	H-9028	H-9028	H-9028	H-2029	H-9029	H-9029	H-9029	H-9029
Rating Date								9/19/08	9/19/08	9/19/08	9/19/08	9/19/08	9/19/08	9/19/08	9/19/08	9/19/08
Trt-Eval Interval								127 DA-A	127 DA-A	# / Ton	# / Acre	30' row	127 DA-A	127 DA-A	# / Ton	# / Acre
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code									
6	Roundup WeatherMax	4.5	SL	22	fl oz/a	2-LF	B	15.3	32.7	219.3	7158	73	15.4	28.5	215.3	6132
6	AMS		WG	17	lb/100 gal	2-LF	B									
6	Roundup WeatherMax	4.5	SL	22	fl oz/a	6-LF	C									
6	AMS		WG	17	lb/100 gal	6-LF	C									
6	Headline	2.09	L	9.2	fl oz/a	55 DSV	D									
6	Roundup WeatherMax	4.5	SL	22	fl oz/a	55 DSV	D									
6	AMS		WG	17	lb/100 gal	55 DSV	D									
6	Eminent	1	L	13	fl oz/a	+ 2 WKS	E									
6	Gem 500 SC	4.17	L	3.5	fl oz/a	+ 4 WKS	F									
7	Betamix	1.3	EC	2	pt/a	STD1	A	15.3	29.0	215.9	6248	68	14.9	25.0	207.0	5188
7	Upbeet	50	DF	0.5	oz/a	STD1	A									
7	Stinger	3	L	4	fl oz/a	STD1	A									
7	Activator 90		L	0.25	% v/v	STD1	A									
7	Betamix	1.3	EC	3	pt/a	STD2	B									
7	Upbeet	50	DF	0.5	oz/a	STD2	B									
7	Stinger	3	L	4	fl oz/a	STD2	B									
7	Activator 90		L	0.25	% v/v	STD2	B									
7	Headline	2.09	L	9.2	fl oz/a	55 DSV	D									
7	Eminent	1	L	13	fl oz/a	+ 2 WKS	E									
7	Gem 500 SC	4.17	L	3.5	fl oz/a	+ 4 WKS	F									
8	Roundup WeatherMax	4.5	SL	22	fl oz/a	2-LF	B	15.2	36.3	215.7	7836	76	15.0	32.4	206.0	6664
8	AMS		WG	17	lb/100 gal	2-LF	B									
8	Roundup WeatherMax	4.5	SL	22	fl oz/a	6-LF	C									
8	AMS		WG	17	lb/100 gal	6-LF	C									
8	Roundup WeatherMax	4.5	SL	22	fl oz/a	55 DSV	D									
8	Headline	2.09	L	9.2	fl oz/a	55 DSV	D									
8	AMS		WG	17	lb/100 gal	55 DSV	D									
8	Eminent	1	L	13	fl oz/a	+ 2 WKS	E									
8	Roundup WeatherMax	4.5	SL	22	fl oz/a	+ 2 WKS	E									
8	AMS		WG	17	lb/100 gal	+ 2 WKS	E									
8	Gem 500 SC	4.17	L	3.5	fl oz/a	+ 4 WKS	F									

MSU Weed Science Research Program

Interaction of Glyphosate with Cercospora Leaf Spot

Trial ID: DS01-08 Study Dir.: Sprague, Hanson, Kirk
Conducted: Bean & Beet Investigator: Christy Sprague

Weed Code																	
Crop Code								BETVU	BETVU	BETVU	BETVU		BETVU	BETVU	BETVU	BETVU	BETVU
Rating Data Type								% sugar	Ton/acre	RWST	RWSA		stand count	% sugar	Ton/acre	RWST	RWSA
Rating Unit								H-9028	H-9028	H-9028	H-9028		H-2029	H-9029	H-9029	H-9029	H-9029
Rating Date								9/19/08	9/19/08	9/19/08	9/19/08		9/19/08	9/19/08	9/19/08	9/19/08	9/19/08
Trt-Eval Interval								127 DA-A	127 DA-A	# / Ton	# / Acre		30' row	127 DA-A	127 DA-A	# / Ton	# / Acre
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code										
LSD (P=.10)								0.41	3.17	7.56	661.7	.	9.4	0.55	4.67	12.69	1041.8
Standard Deviation								0.33	2.61	6.21	543.7	.	7.7	0.45	3.83	10.43	856.1
CV								2.23	8.88	2.94	8.73	.	10.73	3.04	14.73	5.05	15.89