Michigan Sugar Company

2006

Research Results

Jim Stewart
Carrollton, MI

Lee Hubbell
Carrollton, MI

David Wishowski
Bay City, MI

TABLE of CONTENTS

Trial(s)	Page(s)
CULTURAL PRACTICES	
Population Comparison	
Average of 3 Years	3
Average of 2 Locations, 2006	4
Individual Locations	
Kawkawlin	5
Akron	6
Infurrow, Evaluate Nutritional Products	7
Strobi Yield Enhancement	
Average of 2 Locations	8
Individual Locations	
Akron	9
Kawkawlin	10
Nitrogen - Potassium Rates	11
Boron Rates	12
Nematode Resistant Variety Trial	
Average of 4 Small Plots	13
Strip Trials; Average of 6 Locations	14
Individual Locations	15
Rhizomania Variety Strip Trial	16
CERCOSPORA CONTROL	
Fungicide Efficacy Trials	
Experimental Fungicides	17
Effect of PSI and GPA on	
Control of Cercospora	18-19
BeetCast Trials	
Quanicassee	20-24
Kawkawlin	25-29
Twining	30-31
Harbor Beach	32
Sandusky	33-34
Hope	35-36

Trial(s)	Page(s)
HERBICIDE RESEARCH	
Dual and Outlook in Micro Rates	37
Dual and Outlook Pre	38
Roundup Ready Beet Weed Control	
Gilford	39
Deckerville	40
Roundup Application Timings	41
MSO Comparison in Micro Rates	42
Pre-emergence Herbicides	43
Micro Rates, Increasing Rates	44
PRIMING TRIALS	
Priming Methods Compared	
Average of 4 Locations	45
Individual Locations	
St. Louis	46
Kawkawlin	47
Sandusky	48
Akron	49
Bay City	50
X-Beet	
Average of 5 Locations	51
Individual Locations	
Sandusky	52
Kawkawlin	53
Akron	54
Sandusky	55
Cass City	56
Saginaw	57
Priming PAT	
St. Louis	58
Saginaw	59

Michigan Sugar Company
POPULATION
2006
Average of 3 Years

No.	*Beets/ 100 Feet	RWSA	RWST	Sugar %	Purity %	Tons	Amino	Beets/100' at Harvest
7	120	6506	263.5	18.75	93.81	24.31	9.42	118.8
5	180	6505	267.2	18.93	93.85	24.03	8.87	156.5
6	150	6505	266.9	18.93	93.82	24.10	8.82	142.0
3	240	6501	270.6	19.09	94.11	23.64	7.85	185.8
2	270	6434	273.7	19.28	94.23	23.12	7.63	194.2
4	210	6415	268.5	18.93	93.94	23.71	8.78	171.8
1	300	6296	270.1	19.06	94.10	22.86	8.19	202.0
8	90	6130	257.4	18.54	93.43	23.45	9.89	93.8
9	60	5512	249.6	18.09	92.99	21.69	12.16	67.5
LSD (P=.05)		247.8	6.8	0.36	0.44	0.77	1.78	21.5
CV		2.27	1.47	1.11	0.27	1.91	8.52	8.38
Grand Mean		6312	265.3	18.85	93.81	23.43	9.07	148.1

Plot Size: 6 row X 35 ft
Reps: 6
Cercospora Sprays: 3

Row Spacing: 30 inch
Amistar: 8 leaf stage

* Population after thinning about 4 leaf size.

Conclusion: The RWSA is statistically the same for populations from 120-300. Considering all factors, good results would be expected for populations from 120-270 beets/100 feet.

Michigan Sugar Company
POPULATION
2006
Average of 2 Locations

No.	*Beets/ 100 Feet	RWSA	RWST	Sugar %	Purity %	Tons	Amino	Beets/100' at Harvest
7	120	7349	279	18.68	95.25	26.16	8.98	113.8
5	180	7291	280	18.76	95.26	25.79	9.16	142.9
6	150	7239	280	18.82	95.21	25.62	7.85	129.1
4	210	7121	286	19.15	95.22	24.93	8.45	155.4
2	270	7036	289	19.20	95.66	24.08	6.93	178.1
3	240	7020	283	18.91	95.35	24.61	7.55	168.1
1	300	6824	275	18.58	94.94	24.21	7.49	178.9
8	90	6753	272	18.32	95.08	24.59	9.13	89.8
9	60	6161	260	17.85	94.23	23.42	12.89	65.6
LSD (P=.05)		385.4	11.1	0.68	0.72	1.73	4.13	18.0
CV		2.4	1.72	1.57	0.33	3.02	20.54	5.7
Grand Mean		6977	278.2	18.69	95.13	24.82	8.71	135.7

Trial Quality: Good
Plot Size: 6 row X 35 ft
Cercospora Sprays: 3

Reps: 6
Row Spacing: 30 inch
Amistar: 8 leaf stage

* Population after thinning about 4 leaf size.

Michigan Sugar Company
POPULATION
2006
Brian Schwab - Kawkawlin, MI

No.	*Beets/ 100 Feet	RWSA	RWST	Sugar %	Purity %	Tons	Amino
7	120	5932	258.8	17.75	94.37	22.94	11.02
6	150	5873	261.4	17.97	94.26	22.49	10.19
3	240	5816	259.1	17.84	94.15	22.49	10.58
5	180	5809	255.0	17.64	94.03	22.79	13.18
4	210	5785	265.7	18.30	94.10	21.78	12.37
1	300	5632	256.6	17.91	93.52	21.90	10.17
2	270	5494	270.9	18.32	94.94	20.30	8.34
8	90	5321	250.0	17.26	94.17	21.31	11.82
9	60	4849	231.7	16.46	93.05	20.93	18.52
LSD (P=.05)		462.8	11.71	0.60	1.04	1.82	3.55
CV		7.0	3.87	2.85	0.94	7.04	25.6
Grand Mean		5612	256.6	17.72	94.07	21.88	11.8

Trial Quality: Good
Planting Date: April 21
Harvest Date: September 27
Plot Size: 6 row X 35 ft

Reps: 6
Row Spacing: 30 inch
Amistar: 8 leaf stage
Cercospora Sprays: 3

* Population after thinning about 4 leaf size.

Michigan Sugar Company
POPULATION
2006
D. Russell Farm - Akron, MI

No.	*Beets/ 100 Feet	RWSA	RWST	Sugar %	Purity %	Tons	Amino
5	180	8773	304.7	19.87	96.49	28.79	5.14
7	120	8765	298.4	19.61	96.13	29.37	6.94
6	150	8605	299.4	19.66	96.16	28.74	5.50
2	270	8577	307.3	20.07	96.38	27.86	5.52
4	210	8457	305.5	19.99	96.34	28.07	4.53
3	240	8224	306.7	19.97	96.55	26.73	4.52
8	90	8185	293.7	19.38	95.98	27.86	6.43
1	300	8015	293.8	19.24	96.35	26.51	4.80
9	60	7472	288.0	19.23	95.41	25.91	7.26
LSD (P=.05)		779.4	12.2	0.63	0.64	2.13	1.83
CV		7.93	3.50	2.72	0.57	6.58	27.88
Grand Mean		8341	299.7	19.67	96.20	27.76	5.63

Trial Quality: Good
Planting Date: April 19
Harvest Date: November 1
Plot Size: 6 row X 35 ft

Reps: 6
Row Spacing: 30 inch
Amistar: 8 leaf stage
Cercospora Sprays: 3

* Population after thinning about 4 leaf size.

Michigan Sugar Company

Evaluate Infurrow Applications of Humic Acids, Lignins, K-Tionic and Starter Fertilizers in Sugarbeets. Gilford, MI - 2006

No.	Treatment	Rate Per Acre	RWSA	RWST	Tons/A 10-Oct	% Suc	% CJP	B/100ft 27 Day	Vigor 0-10 13-Jul
4	BorreGRO HA-1	3 gal	5896	204.5	28.88	15.70	90.01	196	7.7
9	K-Tionic Alpine	1 pt 3 gal	5724	193.6	29.60	15.20	89.26	197	8.0
2	BorreGRO HA-1	1 gal	5720	200.9	28.61	15.50	89.81	173	7.5
16	Untreated		5602	196.8	28.44	15.31	89.63	178	8.7
5	BorreGRO HA-1 Alpine	3 gal 3 gal	5570	197.7	28.11	15.25	89.82	157	7.7
11	K-Tionic Alpine	2 pt 3 gal	5537	198.9	27.83	15.21	90.27	186	7.7
6	BorreGRO Ca	1 gal	5499	207.7	26.56	15.96	89.90	197	7.5
14	10-34-0	3 gal	5489	191.6	28.76	14.94	89.57	181	8.5
1	Alpine	3 gal	5463	193.1	28.40	15.19	89.05	168	7.3
8	K-Tionic	1 pt	5395	202.4	26.74	15.56	89.95	172	7.0
13	Hydra Hume Alpine	1 gal 3 gal	5377	188.6	28.54	14.90	89.09	189	8.3
15	28%	1 gal	5354	186.7	28.79	15.07	88.33	166	7.0
3	BorreGRO HA-1 Alpine	1 gal 3 gal	5340	192.2	27.79	15.10	89.27	163	7.3
12	Hydra Hume	1 gal	5211	199.6	25.93	15.37	89.94	166	7.7
10	K-Tionic	2 pt	5157	187.9	27.58	15.14	88.37	182	7.0
7	BorreGRO Ca Alpine	1 gal 3 gal	5154	198.7	25.91	15.44	89.62	180	7.0
LSD (P=.05)			ns	ns	ns	ns	ns	ns	ns
CV			11.5	10.3	7.6	6.8	1.4	10.7	11.4
Grand Mean			5468	196.3	27.90	15.30	89.50	178.2	7.6

Planted: Apr 28, 2006
Harvested: October 3, 2006
Trial Quality: Good

Summary: No significant differences existed between the treatments

Michigan Sugar Company

Evaluate the Effect of Strobilurin Fungicides on Sugarbeet Yield and Quality

Average of 2 Locations

No.	Treatment	Rate	RWSA	RWST	Tons/A	%Suc	%CJP
1	Headline (early)	9 fl oz/A	8759	273.3	32.08	18.61	94.60
2	Eminent (late)	13 fl oz/A	8470	267.0	30.94	18.51	93.80
9	Eminent (early)	13 fl oz/A	8417	263.6	32.23	18.28	93.80
3	Gem (early)	7 oz/A	8378	256.5	32.71	17.81	93.55
7	Gem (late)	7 oz/A	8302	262.3	31.66	18.11	93.95
6	Headline (late)	9 fl oz/A	8281	260.2	31.81	18.00	93.95
4	Quadris (early)	9 fl oz/A	7995	251.0	31.89	17.45	93.90
8	Quadris (late)	9 fl oz/A	7933	249.6	31.76	17.45	93.60
5	Untreated Check		7191	257.9	28.02	17.86	93.90
LSD (P=.05)			701.6	15.9	2.87	0.80	0.92
CV			3.71	2.66	3.95	1.92	0.43
Grand Mean			8192	260.1	31.45	18.01	93.89

Reps: 6
Row Spacing: 30 inch
Plot Size: 6 row X 35 ft

Conclusion: Cercospora leafspot was controlled by the application of other fungicides in all treatments including the Untreated Check but may not have been controlled completely. All treatments were statistically better than the untreated check.

Michigan Sugar Company

Evaluate the Effect of Strobilurin Fungicides on Sugarbeet Yield and Quality

Sylvester Farm, Akron, MI - 2006

No.	Treatment	Rate	RWSA	RWST	Tons/A	%Suc	%CJP
7	Gem (late)	7 oz/A	9403	269.4	34.94	18.71	93.64
1	Headline (early)	9 fl oz/A	9326	274.8	33.95	18.90	94.04
2	Eminent (late)	13 fl oz/A	9325	272.8	34.21	18.96	93.58
9	Eminent (early)	13 fl oz/A	9033	261.5	34.62	18.51	92.79
6	Headline (late)	9 fl oz/A	8986	262.9	34.20	18.39	93.37
3	Gem (early)	7 oz/A	8941	253.7	35.26	18.09	92.56
8	Quadris (late)	9 fl oz/A	8906	255.5	34.86	18.01	93.08
4	Quadris (early)	9 fl oz/A	8835	260.2	34.00	18.31	93.11
5	Untreated Check		8584	258.0	33.26	18.11	93.26
10	Untreated Check		8011	248.3	32.34	17.67	92.74
LSD (P=.05)			640.2	14.7	ns	0.71	0.89
CV			6.1	4.8	6.2	3.3	0.82
Grand Mean			8935	261.7	34.2	18.4	93.22

Trial Quality: Good
Planting Date: April 20
Harvest Date: November 3

Reps: 6
Row Spacing: 30 inch
Plot Size: 6 row X 35 ft

Early Treatment: August 5
Late Treatment: September 6

Fungicide applications for Cercospora control.

July 24 Super Tim
August 17 Penncozeb

Michigan Sugar Company

Evaluate the Effect of Strobilurin Fungicides on Sugarbeet Yield and Quality

Schwab Farm, Kawkawlin, MI - 2006

No.	Treatment	Rate	RWSA	RWST	Tons/A	%Suc	%CJP
1	Headline (early)	9 fl oz/A	8192	271.7	30.21	18.32	95.20
3	Gem (early)	7 oz/A	7815	259.3	30.15	17.52	94.50
9	Eminent (early)	13 fl oz/A	7800	265.7	29.83	18.04	94.80
2	Eminent (late)	13 fl oz/A	7614	261.2	27.67	18.05	94.00
6	Headline (late)	9 fl oz/A	7575	257.4	29.42	17.61	94.50
7	Gem (late)	7 oz/A	7201	255.2	28.38	17.51	94.30
4	Quadris (early)	9 fl oz/A	7155	241.8	29.77	16.58	94.70
8	Quadris (late)	9 fl oz/A	6960	243.6	28.66	16.89	94.10
5	Untreated Check		6085	262.6	23.23	17.84	94.80
LSD (P=.05)			1207	ns	5.3	ns	ns
CV			11.0	8.8	12.4	7.3	1.00
Grand Mean			7377	257.6	28.59	17.62	94.50

Trial Quality: Fair
Planting Date: April 21
Harvest Date: September 27
Plot Size: 6 row X 35 ft

Reps: 6
Row Spacing: 30 inch

Early Treatment: August 7
Late Treatment: August 31

Fungicide applications for Cercospora control.

July 8 Super Tim
September 1 Penncozeb

Michigan Sugar Company

Nitrogen - Potash Trial

2006

Wishowski, Auburn, MI

No.	Rate of N - K	RWSA	RWST	Sugar %	Purity %	Tons
6	100-450	5802	246.0	18.23	90.91	23.35
3	50-450	5236	252.7	18.64	91.07	20.73
1	50-150	5177	262.6	18.93	91.98	19.75
4	100-150	4986	246.6	17.89	91.87	20.14
5	100-300	4929	244.9	18.22	90.80	20.16
8	150-300	4863	234.6	17.66	90.40	20.66
9	150-450	4759	235.1	17.75	90.31	20.19
7	150-150	4688	234.1	17.82	89.98	20.11
2	50-300	4578	248.2	18.18	91.42	18.79
LSD (P=.05)		843.6	15.9	0.73	1.14	2.98
CV		11.35	4.40	2.72	0.85	9.85
Grand Mean		5002	245.0	18.15	90.97	20.43

Trial Quality: Fair
Planting Date: May 5
Harvest Date: November 9
Plot Size: 6 row X 50 ft

Reps: 6
Row Spacing: 30 inch
Amistar: 8 leaf stage
Cercospora Sprays: 3

Conclusions: We have conducted this trial two years but only one location harvested each year. Results were not consistent. No recommendations can be made yet.

Michigan Sugar Company

BORON RATES

2006

Brian Schwab - Kawkawlin, MI

Pounds/ Acre	RWSA	RWST	Sugar %	Purity %	Tons	Amino
3	7309	259.4	18.20	93.25	28.20	6.59
0	7289	267.8	18.77	93.19	27.25	7.17
9	7260	267.3	18.67	93.39	27.14	6.09
6	7212	262.5	18.46	93.15	27.49	6.90
LSD (P=.05)	ns	7.5	0.41	ns	ns	ns
CV	9.54	2.23	1.76	0.73	9.03	29.69
Grand Mean	7267	264.3	18.53	93.25	27.52	6.69

Trial Quality: Good
Planting Date: April 21
Harvest Date: September 27
Plot Size: 4 row X 35 ft

Reps: 6
Row Spacing: 30 inch
Amistar: 8 leaf stage
Cercospora Sprays: 3

Conclusion: There was no advantage to Boron applications at this location.

Michigan Sugar Company
Small Plot Nematode Variety Trials

Average of 4 Trials - 2006

				%	%	Tons/	%	CLS Ratings*	
No	Variety	RWSA	RWST	Suc	CJP	Acre	Emerg	Field[1]	Nursery[2]
1	Beta BK1643N	9056	270.2	18.36	94.66	33.57	67.4	3.3	5.3
4	Beta 5534N	7994	246.9	17.28	93.43	32.51	57.0	3.7	5.4
2	Crystal 963	7987	266.9	18.33	94.14	29.89	60.1	1.9	3.2
5	HM E-17	7784	270.9	18.40	94.62	28.53	61.7	2.4	3.5
6	SX Prompt	7771	262.3	18.13	93.89	29.59	59.9	2.0	3.3
3	HM 2761Rz	7589	257.6	17.77	94.05	29.43	57.3	2.0	3.5
LSD (P=.05)		362	6.54	0.30	0.45	1.70	7.9	0.4	0.43
CV		3.0	1.7	1.1	0.3	3.7	5.1	8.1	7.1
Grand Mean		8030.5	262.48	18.04	94.13	30.59	60.6	2.6	4.03

Summary Trial Locations: Russell(Akron), Stoutenburg(Sandusky), Spero(Saginaw), Schwab(Kawkawlin)

[1] Cercospora 0-9 rating taken from Nematode variety trial at end of season, average of 3.5 fungicide applications.

[2] Cercospora 0-9 rating taken from the Cercospora Nurseries

* Lower number indicates more resistance.

Comments: These small plot replicated trials were conducted at the OVT locations in the absence of nematodes. Beta 1643N (nematode tolerant variety) provided significantly higher yields than all other varieties in the trials. This variety also has good quality and emergence but very poor Cercospora leafspot tolerance. Limited quantities of Beta 1643N will be available to growers in 2008. The current nematode tolerant variety, Beta 5534N, yielded about equal to Crystal 963 in these trials but is a low sugar variety and has very poor Cercospora tolerance.

Michigan Sugar Company

Nematode Variety Strip Trials - 2006

6 Locations Combined

Variety	RWSA	Tons/A	RWST	%Suc	%CJP
Beta 5534 N	8565	32.6	264.1	18	94.7
Beta 5833	6897	26.1	264.3	18	94.9
LSD 5%	1321	5.4	ns	ns	ns
CV %	11.5	12.5	3.1	1.9	0.9
Mean	7731	29.3	264.2	18	94.8

Conclusions: Nematodes were confirmed at some locations and suspected at the rest. The nematode resistant variety, Beta 5534N, produced significantly better.

Michigan Sugar Company
Nematode Variety Strip Trials
2006

Sebewaing #1 - 2006					
Variety	RWSA	Tons/A	RWST	%Suc	%CJP
B 5534 N	9341	32.9	284	18.6	96
B 5833	6445	23.9	270	17.9	95.5

Sebewaing #2 - 2006					
Variety	RWSA	Tons/A	RWST	%Suc	%CJP
B 5534 N	9002	32.1	280	18.8	94.9
B 5833	7039	25.9	271	18.5	94

North Street - 2006					
Variety	RWSA	Tons/A	RWST	%Suc	%CJP
B 5534 N	7566	32.3	229	16	94.1
C 271	4085	16.8	243	16.1	96.3

Bayport 2 - 2006					
Variety	RWSA	Tons/A	RWST	%Suc	%CJP
B 5534 N	8115	29.4	277	18.7	95.1
B 5833	7756	28.6	272	18.5	94.6

Reese - 2006					
Variety	RWSA	Tons/A	RWST	%Suc	%CJP
B 5534 N	9363	39.1	239	16.9	93.2
B 5833	8786	35.3	249	17.6	93.1

Bayport 1 - 2006					
Variety	RWSA	Tons/A	RWST	%Suc	%CJP
B 5534 N	8246	29.7	278	18.9	94.6
B 5833	7373	25.8	287	19.1	95.6

Michigan Sugar Company

Rhizomania Variety Strip Trial

Bebow Farms, St. Louis

2006

No.	Variety	RWSA	RWST	%Suc	%CJP	Amino	Tons/A
1	B 5833 R	5662	253.6	17.16	95.16	7.29	22.32
5	HM 7172 Rz	5655	267.5	18.13	94.88	6.70	21.14
8	HM 2763 Rz	5442	263.6	17.79	95.14	7.46	20.64
2	HM 2771 Rz	5430	277.7	18.21	96.51	5.96	19.56
7	C R442	5155	257.2	17.56	94.65	7.93	20.03
4	B 5411 R	4852	249.7	17.13	94.51	5.95	19.39
3	C 271	4105	235.7	16.17	94.67	7.37	17.39
6	B 4381 R	3590	263.6	17.90	94.82	5.05	13.61
LSD (P=.05)		853	13.0	0.74	0.94	3.36	2.84
CV		9.77	2.86	2.40	0.57	28.55	8.41
Grand Mean		4986	258.6	17.51	95.04	6.71	19.26

Notes: Rhizomania was confirmed. Strip trial replicated three times.
Truck weights were taken.

Trial quality: Good

Michigan Sugar Company

Evaluate Experimental Fungicides For Control of Cercospora Leafspot in Sugarbeets
Sylvester Farm, Akron, MI - 2006

Trial Quality: Good

No.	Treatment	Rate/A	Timing	0-9	RWSA	RWST	Tons/A	%Suc	%Purity
2	Eminent Super Tin	13 fl oz 5 oz	1st, 3rd 2nd	1.75	8396	267.4	31.4	18.6	93.6
1	Headline Super Tin	9 fl oz 5 oz	1st, 3rd 2nd	2.00	8131	266.6	30.5	18.6	93.4
3	Gem Super Tin	7 oz 5 oz	1st, 3rd 2nd	2.17	8298	270.3	30.7	18.7	93.8
4	Enable Crop Oil Super Tin	8 fl oz 1% 5 oz	1st, 3rd 1st, 3rd 2nd	2.42	7680	263.0	29.2	18.4	93.3
7	Super Tin	5 oz	1st, 2nd, 3rd	2.71	8106	269.3	30.1	18.7	93.7
6	BmJ Lastick Eminent	25 grams 1 pt 6.5 fl oz	1st, 2nd, 3rd 1st, 2nd, 3rd 1st	2.75	7615	267.2	28.5	18.6	93.7
5	BmJ Lastick	25 grams 1 pt	1st, 2nd, 3rd 1st, 2nd, 3rd	3.33	7232	261.1	27.7	18.3	93.4
8	Untreated			4.04	6177	251.1	24.6	17.8	93.0
LSD (P=.05)				0.45	1000.5	12.33	3.29	0.73	0.56
CV				14.5	11.0	4.0	9.6	3.3	0.5
Grand Mean				2.65	7693.7	264.14	29.07	18.44	93.46

Summary: Cercospora leaf spot pressure in this trial was moderate. Eminent provided marginally better leaf spot control than Headline and Gem, however all did a good job. Enable was slightly less effective. Super Tin also gave fairly good leafspot control. BmJ (Bacillus mycoides), a biological from Montana Microbial Products showed activity against leafspot. Lastick is a spreader/sticker.

Planted: Apr 20 Harvested: Nov 13

Michigan Sugar Company

Effect of PSI and GPA on Control of Cercospora Leafspot in Sugarbeets

Sylvester Farm, Akron, MI - 2006

Trial Quality: Fair - Good

No.	Gallons Per Acre	Pressure Per Sq In	CLS Rate 0-9	Tons/ Acre	% Suc	% CJP
12	25 GPA	100 PSI	1.56	31.66	18.61	94.19
11	25 GPA	75 PSI	1.88	30.73	18.16	93.67
9	20 GPA	100 PSI	1.94	33.34	18.47	94.05
10	25 GPA	50 PSI	2.00	31.18	18.80	94.83
6	15 GPA	100 PSI	2.00	31.62	18.31	94.25
8	20 GPA	75 PSI	2.19	29.47	18.80	93.41
3	10 GPA	100 PSI	2.31	30.61	18.61	94.33
5	15 GPA	75 PSI	2.38	30.23	18.60	94.57
2	10 GPA	75 PSI	2.38	29.95	18.39	93.51
7	20 GPA	50 PSI	2.63	29.50	18.40	94.40
4	15 GPA	50 PSI	2.69	31.33	18.33	93.81
1	10 GPA	50 PSI	2.75	31.31	18.13	94.27
13	Untreated		3.88	27.99	18.39	93.94
LSD 5%			0.47	ns	ns	ns
CV			13.7	8.4	3.2	0.66
Grand Mean			2.35	30.69	18.46	94.09

Summary: Decreasing PSI and/or GPI had a negative effect on leafspot control in this small plot replicated trial. In general, pressures of 75 to 100 in combination with high water volumes were needed for adequate leafspot control. As a rule, pressures below 75 and water volumes below 15 did not provide adequate control.

Planted: April 20 Harvested: November 13

Michigan Sugar Company
Effect of GPA and PSI on Control of Cercospora Leafspot in Sugarbeets
Sylvester Farm, Akron, MI - 2006

Effect of Gallons Per Acre

Gallons Per Acre	CLS Rate 0-9	Tons/ Acre	% Suc	% CJP
10 GPA	2.48	30.62	18.38	94.0
15 GPA	2.35	31.06	18.41	94.2
20 GPA	2.25	30.77	18.56	94.0
25 GPA	1.81	31.19	18.53	94.2
LSD 5%	0.27	ns	ns	ns
CV	13.7	8.4	3.2	0.7
Mean	2.22	30.91	18.47	94.1

Effect of Spray Pressure

Pressure Per Sq Inch	CLS Rate 0-9	Tons/ Acre	% Suc	% CJP
50 PSI	2.52	30.83	18.41	94.3
75 PSI	2.20	30.09	18.49	93.8
100 PSI	1.95	31.81	18.50	94.2
LSD 5%	0.27	ns	ns	ns
CV	13.7	8.4	3.2	0.7
Mean	2.22	30.91	18.47	94.1

Michigan Sugar Company

Influence of Resistant Varieties on the BeetCast Prediction Model

Sylvester Farm, Quanicassee, MI - 2006

Treatment[1]	Variety[2]	# Applic	0-9[3]	RWSA	RWST	Tons/A	%Suc	%CJP
55/55/55	C 355	3	0.50	9047	266.1	34.07	18.42	93.84
1st Spot/55	C 355	2	0.94	9242	276.4	33.45	18.90	94.31
55/55/55	B 5451	3	1.13	9138	279.6	34.05	19.00	94.60
Scout/18 Day	C 355	3	1.19	8893	261.8	33.81	17.97	94.33
70/70	C 355	2	1.19	8483	267.0	31.81	18.50	93.80
55/55	C 355	2	1.25	8878	263.1	33.72	18.32	93.59
Delay Scout	C 355	2	1.81	8485	250.9	33.56	17.73	93.06
80/55	C 355	2	1.81	8794	267.1	32.88	18.63	93.45
55/55/55	HM 7172	3	1.94	9554	251.8	37.93	17.99	92.52
1 Spray	C 355	1	2.06	8051	258.1	31.20	17.97	93.63
70/70	B 5451	2	2.06	9396	281.7	33.34	19.04	94.86
Scout/18 Day	B 5451	3	2.13	9156	273.8	33.68	18.68	94.46
1st Spot/55	B 5451	2	2.38	9104	272.1	33.46	18.70	94.12
Untreated	C 355	0	2.44	8526	257.8	33.09	18.14	93.17
55/55	B 5451	2	2.44	9206	272.4	33.60	18.76	94.04
Scout/18 Day	HM 7172	3	2.50	8945	254.5	35.11	17.92	93.16
70/70	HM 7172	2	2.50	8998	249.4	36.13	17.68	92.90
1st Spot/55	HM 7172	2	2.56	9137	262.5	34.81	18.31	93.53
80/55	B 5451	2	2.69	8731	265.9	32.87	18.49	93.63
Delay Scout	B 5451	2	2.81	8280	261.1	32.28	18.05	93.98
55/55	HM 7172	2	2.81	9114	248.8	36.66	17.75	92.60
80/55	HM 7172	2	3.19	9013	249.8	36.10	17.87	92.47
1 Spray	B 5451	1	3.31	8569	269.3	31.81	18.46	94.29
Delay Scout	HM 7172	2	3.31	8711	247.4	35.20	17.58	92.83
1 Spray	7172	1	4.00	8549	255.0	33.56	17.89	93.33
Untreated	B 5451	0	4.56	8002	273.0	29.29	18.71	94.25
Untreated	HM 7172	0	5.00	7301	245.4	29.77	17.41	92.94
LSD 5%			0.26	788.0	10.8	2.20	0.58	0.71
%CV			7.7	6.3	2.9	4.6	2.3	0.50
Mean			2.39	8788.97	262.3	33.6	18.25	93.62

Plant: Apr 22, 2006

Harvest: Nov 4, 2006

Trial Quality: Very Good

[1] Treatments: DSV's or Scouting Treatments

[2] Varieties: Beta 5451, Crystal 355, HM 7172Rz

[3] 0-9: Cercospora rating scale, 0 = no disease, 5 = partial burndown, 9 = total burndown

Michigan Sugar Company
BeetCast - Sylvester
Treatment Effect
Averaged Over 3 Varieties

Treatment	# Applic	0-9	RWSA	RWST	Tons/A	%Suc	%CJP
55/55/55	3	1.19	9246	265.8	35.35	18.47	93.66
70/70	2	1.92	8959	266.1	33.76	18.41	93.85
Scout/18 Day	3	1.94	8998	263.4	34.20	18.19	93.98
1st Spot/55	2	1.96	9161	270.3	33.91	18.63	93.99
55/55	2	2.17	9066	261.4	34.66	18.27	93.41
80/55	2	2.56	8846	260.9	33.95	18.33	93.18
Delay Scout	2	2.65	8492	253.1	33.68	17.79	93.29
1 Spray	1	3.13	8390	260.8	32.19	18.11	93.75
Untreated	0	4.00	7943	258.7	30.72	18.08	93.45
LSD 5%		0.20	431	7.7	1.41	0.40	0.49
CV		7.7	6.3	2.9	4.6	2.3	0.50
Mean		2.39	8788.97	262.3	33.6	18.25	93.62

Variety Effect Averaged
Over 9 Treatments

Treatment	# Applic	0-9	RWSA	RWST	Tons/A	%Suc	%CJP
C 355	1.9	1.47	8711	263.2	33.07	18.29	93.69
B 5451	1.9	2.61	8842	272.1	32.71	18.65	94.25
HM 7172 Rz	1.9	3.09	8813	251.6	35.03	17.82	92.92
LSD 5%		0.11	ns	ns	0.78	0.22	0.27
CV		7.7	6.3	2.9	4.6	2.3	0.50
Mean		2.39	8788.97	262.3	33.6	18.25	93.62

Michigan Sugar Company

Cercospora Leafspot Control in Sugarbeets With BeetCast and Scouting Treatments Using Beta 5451

Sylvester Farm, Quanicassee, MI - 2006

Trial Quality: Very Good

No	Treatment[1]	Variety	#Applic	0-9[2]	RWSA	RWST	Tons/A	%Suc	%CJP
1	55/55/55	B 5451	3	1.13	9138	279.6	34.05	19.00	94.60
3	70/70	B 5451	2	2.06	9396	281.7	33.34	19.04	94.86
6	Scout/18 Day	B 5451	3	2.13	9156	273.8	33.68	18.68	94.46
5	1st Spot/55 Day	B 5451	2	2.38	9104	272.1	33.46	18.70	94.12
2	55/55	B 5451	2	2.44	9206	272.4	33.60	18.76	94.04
4	80/55	B 5451	2	2.69	8731	265.9	32.87	18.49	93.63
7	Delay Scout	B 5451	2	2.81	8280	261.1	32.28	18.05	93.98
8	1 Spray Only	B 5451	1	3.31	8569	269.3	31.81	18.46	94.29
9	Untreated	B 5451	0	4.56	8002	273.0	29.29	18.71	94.25
LSD (P=.05)				0.33	614	12.0	2.32	ns	ns
CV				8.7	4.8	3.0	4.9	2.2	0.67
Grand Mean				2.61	8842	272.1	32.71	18.65	94.25

[1] Treatments: DSV's or Scouting Treatments

Plant: Apr 22, 2006

[2] 0-9: Cercospora rating scale, 0 = no disease, 5 = partial burndown, 9 = total burndown

Harvest: Nov 4, 2006

Michigan Sugar Company

Cercospora Leafspot Control in Sugarbeets With BeetCast and Scouting Treatments Using Crystal 355

Sylvester Farm, Quanicassee, MI - 2006

Trial Quality: Very Good

No	Treatment[1]	Variety	#Applic	0-9[2]	RWSA	RWST	Tons/A	%Suc	%CJP
1	55/55/55	C 355	3	0.50	9047	266.1	34.08	18.42	93.80
5	1st Spot/55 Day	C 355	2	0.94	9242	276.4	33.45	18.90	94.30
6	Scout/18 Day	C 355	3	1.19	8893	261.8	33.81	17.97	94.30
3	70/70	C 355	2	1.19	8483	267.0	31.81	18.50	93.80
2	55/55	C 355	2	1.25	8878	263.1	33.72	18.32	93.60
7	Delay Scout	C 355	2	1.81	8412	250.9	33.56	17.73	93.10
4	80/55	C 355	2	1.81	8794	267.1	32.88	18.63	93.40
8	1 Spray Only	C 355	1	2.06	8051	258.1	31.20	17.97	93.60
9	Untreated	C 355	0	2.44	8526	257.8	33.09	18.14	93.20
LSD (P=.05)				0.37	ns	ns	2.48	ns	ns
CV				20.1	7.4	4.7	5.1	3.6	0.80
Grand Mean				1.26	8703	263.2	33.07	18.29	93.70

[1] Treatments: DSV's or Scouting Treatments

Plant: Apr 22, 2006

[2] 0-9: Cercospora rating scale, 0 = no disease, 5 = partial burndown, 9 = total burndown

Harvest: Nov 4, 2006

Michigan Sugar Company

Cercospora Leafspot Control in Sugarbeets With BeetCast and Scouting Treatments Using HM 7172Rz

Sylvester Farm, Quanicassee, MI - 2006

Trial Quality: Very Good

No	Treatment[1]	Variety	#Applic	0-9[2]	RWSA	RWST	Tons/A	%Suc	%CJP
1	55/55/55	H 7172Rz	3	1.94	9554	251.8	37.93	17.99	92.5
6	Scout/18 Day	H 7172Rz	3	2.50	8945	254.5	35.11	17.92	93.2
3	70/70	H 7172Rz	2	2.50	8998	249.4	36.13	17.68	92.9
5	1st Spot/55 Day	H 7172Rz	2	2.56	9137	262.5	34.81	18.31	93.5
2	55/55	H 7172Rz	2	2.81	9114	248.8	36.66	17.52	92.6
4	80/55	H 7172Rz	2	3.19	9013	249.8	36.10	17.87	92.5
7	Delay Scout	H 7172Rz	2	3.31	8711	247.4	35.20	17.58	92.8
8	1 Spray Only	H 7172Rz	1	4.00	8549	255.0	33.56	17.89	93.3
9	Untreated	H 7172Rz	0	5.00	7301	245.4	29.77	17.41	92.9
LSD (P=.05)				0.39	795	ns	3.13	ns	ns
CV				8.6	6.2	3.3	6.1	2.5	0.6
Grand Mean				3.09	8813	251.6	35.03	17.82	92.9

[1] Treatments: DSV's or Scouting Treatments

Plant: Apr 22, 2006

[2] 0-9: Cercospora rating scale, 0 = no disease, 5 = partial burndown, 9 = total burndown

Harvest: Nov 4, 2006

Michigan Sugar Company

Influence of Resistant Varieties on the BeetCast Prediction Model

Schwab Farm - Kawkawlin, MI - 2006

No.	Treatment[1]	Variety	#Applic	0-9[2]	RWSA	RWST	Tons/A	%Suc	%CJP
2	55/55/55	C 355	3	0.25	6688	251.5	26.56	17.62	93.46
14	1st Spot/55	C 355	2	0.31	6047	253.7	23.89	17.64	93.80
17	Scout/18 Day	C 355	3	0.69	6092	250.7	24.35	17.24	94.37
8	70/70	C 355	2	0.75	6634	251.3	26.51	17.61	93.41
5	55/55	C 355	2	0.75	6876	266.0	25.84	17.97	95.08
3	55/55/55	HM 7172	3	1.19	6556	262.5	24.94	18.05	94.22
1	55/55/55	B 5451	3	1.19	6921	256.6	27.25	17.74	93.97
11	80/55	C 355	2	1.44	6621	259.3	25.54	17.86	94.19
15	1st Spot/55	HM 7172	2	1.50	6127	246.7	24.78	17.15	93.91
13	1st Spot/55	B 5451	2	1.50	6269	249.6	25.02	17.39	93.71
23	1 Spray	C 355	1	1.63	5920	260.5	24.20	17.74	94.46
20	Delayed Scout	C 355	2	1.63	6413	249.1	25.80	17.12	94.43
16	Scout/18 Day	B 5451	3	1.63	6853	245.6	28.39	16.90	94.40
9	70/70	HM 7172	2	1.63	6467	249.6	26.03	17.33	93.90
7	70/70	B 5451	2	1.63	6395	224.3	28.74	16.16	92.49
4	55/55	B 5451	2	1.88	6203	259.7	23.86	18.02	93.81
18	Scout/18 Day	HM 7172	3	2.00	6573	252.7	25.98	17.68	93.50
12	80/55	HM 7172	2	2.06	6471	252.2	25.67	17.53	93.84
6	55/55	HM 7172	2	2.19	6430	245.7	26.13	17.31	93.25
10	80/55	B 5451	2	2.25	6890	255.6	26.95	17.79	93.73
26	Untreated	C 355	0	2.29	6107	255.0	23.98	17.61	94.10
22	1 Spray	B 5451	1	2.50	5518	236.2	23.56	16.55	93.65
21	Delayed Scout	HM 7172	2	2.63	6482	244.7	26.60	17.00	93.94
19	Delayed Scout	B 5451	2	2.69	6583	262.3	25.09	17.99	94.34
24	1 Spray	HM 7172	1	2.81	6465	253.8	25.61	17.62	93.85
27	Untreated	HM 7172	0	3.56	6118	250.7	24.41	17.43	93.83
25	Untreated	B 5451	0	3.63	3150	177.2	17.78	14.08	89.13
LSD (P=.05)				0.36	665	11.9	2.78	0.67	0.78
CV				14.2	7.5	3.4	7.8	2.7	0.6
Grand Mean				1.78	6291	249.0	25.31	17.34	93.73

[1] Treatments: DSV's or Scouting Treatments

Plant: April 21

[2] 0-9: Cercospora rating scale, 0 = no disease, 5 = partial burndown, 9 = total burndown

Harvest: September 27

Michigan Sugar Company
Schwab BeetCast
Treatment Effect
Averaged Over 3 Varieties

Treatment[1]	# Applic	0-9[2]	RWSA	RWST	Tons/A	%Suc	%CJP
55/55/55	3	0.88	6722	256.9	26.25	17.80	93.88
1st Spot/55	2	1.10	6148	250.0	24.56	17.39	93.80
70/70	2	1.33	6499	241.7	27.10	17.03	93.30
Scout/18 Day	3	1.44	6506	249.7	26.24	17.27	94.10
55/55	2	1.60	6503	257.1	25.27	17.76	94.00
80/55	2	1.92	6660	255.7	26.05	17.73	93.90
Delay Scout	2	2.31	6492	252.0	25.83	17.37	94.20
1 Spray	1	2.31	5968	250.2	24.45	17.30	94.00
Untreated	0	3.16	5679	241.0	23.35	16.90	93.20
LSD 5%		0.32	435	7.5	1.71	0.42	0.57

Variety Effect Averaged
Over 9 Treatments

Treatment	# Applic	0-9	RWSA	RWST	Tons/A	%Suc	%CJP
C 355	1.9	1.08	6372	255.2	25.16	17.60	94.10
B 5451	1.9	2.10	6087	240.8	25.18	16.96	93.20
HM 7172 Rz	1.9	2.17	6387	251.2	25.46	17.47	93.80
LSD 5%		0.17	238	4.1	0.94	0.23	0.31

[1] Treatments: DSV's or Scouting Treatments

[2] 0-9: Cercospora rating scale, 0 = no disease,
5 = partial burndown, 9 = total burndown

Michigan Sugar Company

Cercospora Leafspot Control in Sugarbeets With BeetCast and Scouting Treatments Using Beta 5451

Schwab Farm, Kawkawlin, MI - 2006

Trial Quality: Good

No.	Treatment[1]	Variety	0-9[2]	RWSA	RWST	Tons/A	%Suc	%CJP
1	55/55/55	B 5451	1.19	6921	256.6	27.25	17.74	93.97
5	1st Spot/55	B 5451	1.50	6269	249.6	25.02	17.39	93.71
6	Scout/18 Day	B 5451	1.63	6853	245.6	28.39	16.90	94.40
3	70/70	B 5451	1.63	6395	224.3	28.74	16.16	92.49
2	55/55	B 5451	1.88	6203	259.7	23.86	18.02	93.81
4	80/55	B 5451	2.25	6890	255.6	26.95	17.79	93.73
8	1 Spray	B 5451	2.50	5518	236.2	23.56	16.55	93.65
7	Delay Scout	B 5451	2.69	6583	262.3	25.09	17.99	94.34
9	Untreated	B 5451	3.56	4714	224.5	21.00	17.50	89.13
LSD (P=.05)			0.44	604.9	13.9	3.14	0.69	0.88
CV			14.3	6.6	3.9	8.4	2.7	0.7
Grand Mean			2.09	6261	246.0	25.54	17.34	93.25

[1] Treatments: DSV's or Scouting Treatments

[2] 0-9: Cercospora rating scale, 0 = no disease,
5 = partial burndown, 9 = total burndown

Michigan Sugar Company

Cercospora Leafspot Control in Sugarbeets With BeetCast and Scouting Treatments Using HM 7172 Rz

Schwab Farm, Kawkawlin, MI - 2006

Trial Quality: Good

No.	Treatment[1]	Variety	0-9[2]	RWSA	RWST	Tons/A	%Suc	%CJP
1	55/55/55	HM 7172	1.19	6556	262.548	24.94	18.05	94.22
5	1st Spot/55	HM 7172	1.50	6127	246.736	24.78	17.15	93.91
3	70/70	HM 7172	1.63	6467	249.648	26.03	17.33	93.90
6	Scout/18 Day	HM 7172	2.00	6573	252.685	25.98	17.68	93.50
4	80/55	HM 7172	2.06	6471	252.25	25.67	17.53	93.84
2	55/55	HM 7172	2.19	6430	245.679	26.13	17.31	93.25
7	Delayed Scout	HM 7172	2.63	6482	244.705	26.60	17.00	93.94
8	1 Spray	HM 7172	2.81	6465	253.833	25.61	17.62	93.85
9	Untreated	HM 7172	3.56	6118	250.711	24.41	17.43	93.83
LSD (P=.05)			0.52	ns	ns	ns	ns	ns
CV			16.5	9.4	4.1	7.90	3.40	0.9
Grand Mean			2.17	6410	251.0	25.57	17.46	93.80

[1] Treatments: DSV's or Scouting Treatments

[2] 0-9: Cercospora rating scale, 0 = no disease,
5 = partial burndown, 9 = total burndown

Michigan Sugar Company

Cercospora Leafspot Control in Sugarbeets With BeetCast and Scouting Treatments Using Crystal 355

Schwab Farm, Kawkawlin, MI - 2006

Trial Quality: Good

No.	Treatment[1]	Variety	0-9[2]	RWSA	RWST	Tons/A	%Suc	%CJP
1	55/55/55	C 355	0.25	6688	251.5	26.56	17.62	93.46
5	1st Spot/55	C 355	0.31	6047	253.7	23.89	17.64	93.80
6	Scout/18 Day	C 355	0.69	6092	250.7	24.35	17.24	94.37
3	70/70	C 355	0.75	6634	251.3	26.51	17.61	93.41
2	55/55	C 355	0.75	6876	266.0	25.84	17.97	95.08
4	80/55	C 355	1.44	6621	259.3	25.54	17.86	94.19
8	1 Spray	C 355	1.63	5920	260.5	24.20	17.74	94.46
7	Delayed Scout	C 355	1.63	6413	249.1	25.80	17.12	94.43
9	Untreated	C 355	2.29	6107	255.0	23.98	17.61	94.10
LSD (P=.05)			0.51	ns	ns	ns	ns	0.87
CV			31.4	9.4	3.2	8.30	2.60	0.6
Grand Mean			1.08	6378	255.2	25.18	17.60	94.14

[1] Treatments: DSV's or Scouting Treatments

[2] 0-9: Cercospora rating scale, 0 = no disease,
5 = partial burndown, 9 = total burndown

Michigan Sugar Company

Cercospora Leafspot Control in Sugarbeets With BeetCast and Scouting Treatments

Jurek Farm, Twining, MI - 2006

Trial Quality: Good

No	Treatment[1]	Variety	#Applic	0-9[2]	RWSA	RWST	Tons/A	%Suc	%CJP
11	Scout/18 Day	B 5451	3	1.50	8393	278.2	30.18	19.12	94.07
12	Scout/18 Day	HM 7172	3	1.75	8026	261.3	30.69	18.30	93.31
1	55/55/55	B 5451	2	2.00	8090	272.3	29.84	19.03	93.32
2	55/55/55	HM 7172	2	2.25	7932	261.9	30.23	18.43	93.08
9	1st Spot/55	B 5451	2	2.63	7959	271.5	29.34	18.97	93.32
10	1st Spot/55	HM 7172	2	2.69	7546	253.4	29.81	17.95	92.88
4	55/55	HM 7172	2	3.00	7631	253.7	29.97	17.83	93.24
3	55/55	B 5451	2	3.31	8012	271.1	29.54	19.03	93.12
6	70/70	HM 7172	2	3.38	7365	264.7	27.80	18.46	93.50
5	70/70	B 5451	2	3.63	8025	279.9	28.63	19.27	93.95
14	Delayed Scout	HM 7172	2	3.69	7421	256.4	28.49	18.00	93.28
16	1 Spray	HM 7172	1	3.78	7457	255.1	29.21	17.87	93.41
8	80/55	HM 7172	2	3.88	7637	257.9	29.58	18.15	93.13
13	Delayed Scout	B 5451	2	4.06	7693	289.3	26.65	19.72	94.32
15	1 Spray	B 5451	1	4.20	7838	273.0	28.67	18.83	93.90
7	80/55	B 5451	2	4.31	7398	270.7	27.33	18.64	94.03
18	Untreated	HM 7172	0	5.88	6960	245.8	28.31	17.50	92.70
17	Untreated	B 5451	0	6.38	7392	265.3	27.87	18.63	93.18
LSD (P=.05)				0.47	617	16.17	2.02	0.85	0.88
CV				9.4	5.5	4.2	4.8	3.2	0.65
Grand Mean				3.46	7730	265.6	29.07	18.54	93.40

[1] Treatments: DSV's or Scouting Treatments Harvest: November 7

[2] 0-9: Cercospora rating scale, 0 = no disease,
5 = partial burndown, 9 = total burndown

Michigan Sugar Company

Twining BeetCast

Jurek Farms, Twining, MI

Treatment Effect Averaged Over Varieties

No	Treatment[1]	#Applic	0-9[2]	RWSA	RWST	Tons/A	%Suc	%CJP
6	Scout/18 Day	3	1.63	8210	269.7	30.44	18.71	93.69
1	55/55/55	2	2.13	7995	267.1	30.00	18.73	93.20
5	1st Spot/55	1	2.66	7752	262.5	29.58	18.46	93.10
2	55/55	2	3.16	7822	262.4	29.76	18.43	93.18
3	70/70	2	3.50	7908	272.3	28.92	18.86	93.70
7	Delayed Scout	2	3.88	7540	272.8	27.51	18.56	93.80
8	1 Spray	1	4.00	7647	264.1	28.94	18.35	93.66
4	80/55	2	4.10	7517	264.3	28.46	18.40	93.58
9	Untreated	0	6.13	7176	255.5	28.09	18.06	92.90
LSD 5%			0.43	627	12.9	1.8	0.62	0.76

Variety Effect Averaged Over Treatments

No	Treatment		0-9	RWSA	RWST	Tons/A	%Suc	%CJP
1	B 5451		3.56	7910	274.6	28.82	19.03	93.70
2	HM 7172 Rz		3.36	7549	256.7	29.33	18.05	93.20
LSD 5%			ns	280	5.8	ns	0.28	0.34

[1] Treatments: DSV's or Scouting Treatments

[2] 0-9: Cercospora rating scale, 0 = no disease,
5 = partial burndown, 9 = total burndown

Michigan Sugar Company

Cercospora Leafspot Control in Sugarbeets With BeetCast and Scouting Treatments

Weiss Farm, Harbor Beach, MI - 2006

Trial Quality: Good

No	Treatment[1]	#Applic	0-9[2]	RWSA	RWST	Tons/A	%Suc	%CJP
1	55/55/55	3	1.63	8317	271.5	30.64	18.44	94.70
5	1st Spot/55 Day	2	1.81	7363	260.1	28.29	17.89	94.30
6	Scout/18 Day	3	2.06	7227	256.4	28.13	17.74	94.00
2	55/55	2	2.13	7413	267.7	28.01	18.25	94.60
4	80/55	2	2.19	7190	260.3	27.60	17.75	94.70
3	70/70	2	2.25	7595	265.5	28.61	18.15	94.50
7	Delay Scout	2	2.88	7325	267.2	27.40	18.26	94.50
8	1 Spray Only	1	3.00	7162	260.3	27.52	17.89	94.30
9	Untreated	0	4.25	6782	267.7	25.33	18.23	94.60
LSD (P=.05)			0.34	838	ns	2.29	ns	ns
CV			9.5	7.8	3.6	5.6	2.6	0.7
Grand Mean			2.47	7375	264.1	27.95	18.07	94.40

[1] Treatments: DSV's or Scouting Treatments

Plant: April 17

[2] 0-9: Cercospora rating scale, 0 = no disease, 5 = partial burndown, 9 = total burndown

Harvest: October 10

Michigan Sugar Company

Cercospora Leafspot Control in Sugarbeets With BeetCast and Scouting Treatments

Brown Farm, Sandusky, MI - 2006

Trial Quality: Good

No	Treatment[1]	Variety	#Applic	0-9[2]	RWSA	RWST	Tons/A	%Suc	%CJP
2	55/55/55	HM 7172	2	2.06	9709	269.8	35.98	18.58	94.05
1	55/55/55	B 5451	2	2.13	9444	275.9	34.29	18.62	94.98
12	Scout/18 Day	HM 7172	3	2.19	9334	257.9	36.21	18.08	93.32
11	Scout/18 Day	B 5451	3	2.19	8845	263.3	33.47	18.17	94.01
4	55/55	HM 7172	2	2.25	9680	270.5	35.81	18.81	93.59
3	55/55	B 5451	2	2.31	8537	263.4	32.49	18.01	94.50
8	80/55	HM 7172	2	2.50	9441	262.9	35.91	18.26	93.71
10	1st Spot/55	HM 7172	2	2.63	9672	263.1	36.75	18.28	93.70
7	80/55	B 5451	2	2.69	8667	268.7	32.14	18.35	94.49
6	70/70	HM 7172	2	2.69	9053	248.9	36.38	17.59	93.05
14	Delayed Scout	HM 7172	2	2.88	9232	266.5	34.67	18.39	93.99
9	1st Spot/55	B 5451	2	2.88	8492	260.4	32.59	18.09	93.76
13	Delayed Scout	B 5451	2	2.94	8643	270.1	31.99	18.62	93.99
5	70/70	B 5451	2	2.94	8766	273.0	31.95	18.62	94.48
16	1 Spray	HM 7172	1	3.06	9122	261.6	34.87	18.20	93.65
15	1 Spray	B 5451	1	3.19	8391	266.3	31.42	18.35	94.04
18	Untreated	HM 7172	0	4.19	8484	255.7	33.09	17.93	93.35
17	Untreated	B 5451	0	4.56	7706	262.1	29.39	18.17	93.82
LSD (P=.05)				0.33	1116.5	11.9	3.6	ns	ns
CV				8.3	8.6	3.1	7.4	2.4	0.8
Grand Mean			1.78	2.79	8956	264.5	33.9	18.3	93.92

[1] Treatments: DSV's or Scouting Treatments Harvest: October 26

[2] 0-9: Cercospora rating scale, 0 = no disease,
5 = partial burndown, 9 = total burndown

Michigan Sugar Company
Sandusky BeetCast

Treatment Effect Averaged Over 2 Varieties

Treatment[1]	# Applic	0-9[2]	RWSA	RWST	Tons/A	%Suc	%CJP
55/55/55	2	2.09	9576	272.8	35.13	18.60	94.50
Scout/18 Day	3	2.19	9090	260.6	34.84	18.13	93.70
55/55	2	2.28	9108	267.0	34.15	18.41	94.00
80/55	2	2.59	9054	265.8	34.03	18.30	94.10
1st Spot/55	2	2.75	9082	261.7	34.67	18.18	93.70
70/70	2	2.81	8909	261.0	34.16	18.11	93.80
Delay Scout	2	2.91	8938	268.3	33.33	18.50	94.00
1 Spray	1	3.13	8756	264.0	33.15	18.28	93.80
Untreated	0	4.38	8095	259.0	31.20	18.10	93.60
LSD 5%		0.33	711	9.4	2.2	0.47	0.73

Variety Effect Averaged Over 9 Treatment

Treatment	# Applic	0-9	RWSA	RWST	Tons/A	%Suc	%CJP
B 5451	1.9	2.87	8610	267.0	32.19	18.33	94.20
HM 7172 Rz	1.9	2.72	9303	261.9	35.52	18.24	93.60
LSD 5%		ns	ns	ns	2.2	ns	0.73

[1] Treatments: DSV's or Scouting Treatments

[2] 0-9: Cercospora rating scale, 0 = no disease,
5 = partial burndown, 9 = total burndown

Michigan Sugar Company

Cercospora Leafspot Control in Sugarbeets With BeetCast and Scouting Treatments.

Maxwell Farm, Hope, MI - 2006

Trial Quality: 0-9 Ratings: Good

Yield Info: Poor

No.	Treatment[1]	Variety	#Applic	0-9[2]	RWSA	RWST	Tons/A	%Suc	%CJP
1	55/55/55	B 5451	2	0.90	7192	289.6	24.63	19.19	95.78
2	55/55/55	HM 7172	2	0.90	8075	260.4	31.02	17.67	94.93
9	1st Spot/55	B 5451	2	0.93	5927	279.8	23.05	18.54	95.91
12	Scout/18 Day	HM 7172	3	1.00	7299	261.2	27.87	17.82	94.61
10	1st Spot/55	HM 7172	2	1.03	6176	265.5	23.45	18.03	94.81
4	55/55	HM 7172	2	1.07	7370	265.9	27.67	18.20	94.40
3	55/55	B 5451	2	1.07	6284	282.3	19.62	19.03	94.99
6	70/70	HM 7172	2	1.17	7705	276.8	27.83	18.50	95.50
5	70/70	B 5451	2	1.27	6386	287.3	21.77	19.34	94.97
11	Scout/18 Day	B 5451	3	1.57	6552	285.7	22.45	19.04	95.48
8	80/55	HM 7172	2	1.67	7326	265.1	26.25	17.72	95.60
16	1 Spray	HM 7172	1	1.83	7237	272.3	26.60	18.37	95.05
7	80/55	B 5451	2	1.90	4682	265.6	21.29	18.45	93.67
15	1 Spray	B 5451	1	2.17	5778	264.6	21.60	17.99	94.77
14	Delay Scout	HM 7172	2	2.17	6434	270.9	23.80	18.25	95.15
13	Delay Scout	B 5451	1	2.27	4898	278.6	17.68	18.80	94.94
18	Untreated	HM 7172	0	3.17	6110	264.2	23.20	17.85	95.06
17	Untreated	B 5451	0	3.17	4327	263.0	16.37	17.74	95.17
LSD 5%				0.35	1959.2	ns	7.13	ns	0.97
CV %				12.6	17.9	5.6	17.7	4.7	0.6
Grand Mean			1.72	1.62	6431	272.2	23.67	18.36	95.04

[1] Treatments: DSV's or Scouting Treatments

Harvest: November 8

[2] 0-9: Cercospora rating scale, 0 = no disease, 5 = partial burndown, 9 = total burndown

Michigan Sugar Company

BeetCast

Maxwell Farm, Hope, MI - 2006

Treatment Effect Averaged Over Varieties

No	Treatment[1]	#Apps	0-9[2]	RWSA	RWST	Ton/A	%Suc	%CJP
1	55/55/55	2	0.90	7633	275.0	27.82	18.43	95.36
5	1st Spot/55	2	0.98	6051	272.7	23.25	18.28	95.36
2	55/55	2	1.07	6827	274.1	23.65	18.61	94.70
3	70/70	2	1.22	7046	282.1	24.80	18.92	95.24
6	Scout/18 Day	3	1.28	6926	273.4	25.16	18.43	95.05
4	80/55	2	1.78	6004	265.4	23.77	18.08	94.63
8	1 Spray	1	2.00	6508	268.5	24.10	18.18	94.91
7	Delay Scout	2	2.22	5666	274.7	20.74	18.53	95.05
9	Untreated	0	3.17	5218	263.6	19.78	17.80	95.12
LSD 5%			0.28	1407	17.6	4.9	0.95	0.74

Variety Effect Averaged Over Treatments

No	Variety		0-9	RWSA	RWST	Ton/A	%Suc	%CJP
2	HM 7172 Rz		1.56	7081	266.9	26.41	18.04	95.01
1	B 5451		1.69	5781	277.4	20.94	18.68	95.07
LSD 5%			ns	629	7.8	2.2	0.43	ns

[1] Treatments: DSV's or Scouting Treatments

[2] 0-9: Cercospora rating scale, 0 = no disease,
5 = partial burndown, 9 = total burndown

Michigan Sugar Company

Including Dual or Outlook In Micro Rates in Multiple Small Doses

Blumfield, MI - 2006

Trial Quality: Good

No.	Treatment	Rate	Timing	Tons/ Acre	%Phyto 4 Leaf	%Phyto 2-Jul	%Lambsquarter 4 Leaf	%Lambsquarter 2-Jul	%Pigweed 2-Jul
11	Betamix Micro + Outlook	1 pt	4th Micro	32.84 ab	10 g-j	0 a	98 ab	92 a	70 c-f
3	Betamix Micro + Outlook Outlook Outlook	3 oz 4 oz 1 pt	1st Micro 2, 3 Micro 4th Micro	33.07 a	20 b-f	3 a	98 ab	93 a	93 a
4	Betamix Micro + Dual Magnum	1.33 pts	1st Micro	33.28 a	30 a	8 a	100 a	93 a	93 a
7	Betamix Micro + Dual Magnum	1.33 pts	4th Micro	32.02 abc	5 jk	3 a	100 a	93 a	85 abc
8	Betamix Micro + Outlook	1 pt	1st Micro	31.54 abc	27 ab	12 a	100 a	98 a	97 a
6	Betamix Micro + Dual Magnum	1.33 pts	3rd Micro	28.25 a-d	8 hij	7 a	98 ab	93 a	67 def
1	Betamix Micro			28.34 a-d	7 ijk	3 a	98 ab	92 a	67 def
12	Betamix Micro + Dual Magnum	.67 pts	2, 4 Micro	29.18 a-d	15 e-h	7 a	98 ab	93 a	57 f
2	Betamix Micro + Dual Magnum Dual Magnum Dual Magnum	4 fl oz 5 fl oz 1.33 pts	1st Micro 2, 3 Micro 4th Micro	30.14 abc	18 c-f	7 a	100 a	92 a	90 ab
9	Betamix Micro + Outlook	1 pt	2nd Micro	28.56 a-d	13 f-i	3 a	100 a	92 a	63 def
10	Betamix Micro + Outlook	1 pt	3rd Micro	26.77 cd	23 a-d	3 a	93 ab	83 a	80 a-d
5	Betamix Micro + Dual Magnum	1.33 pts	2nd Micro	27.03 bcd	25 abc	8 a	99 ab	91 a	85 abc
13	Betamix Micro + Outlook	.5 pt	2, 4 Micro	26.35 cd	25 abc	7 a	98 ab	88 a	53 f
14	Untreated			7.14 e	0 k	0 a	0 d	23 c	20 g
LSD (P=.05)				5.96	7.7	ns	9.8	16.4	17.3
CV				14.87	31.8	96.7	7.5	13.3	16.5

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

Summary: Weed pressure was very heavy. Dual and Outlook added to Micro Rates in multiple small doses provided excellent weed control with less injury than the full rates of Dual or Outlook applied in the 1st Micro (which was needed to achieve the same level of weed control).

Planted: May 5 Harvested: October 2

Michigan Sugar Company

Weed Control in Sugarbeets With Dual and Outlook Pre Followed by Micro Rates

Deckerville, MI - 2006

Trial Quality: Good

No.	Treatment	Rate / Acre	Appl Stg	RWSA	Tons / Acre	RWST	% Phyto	%Weed Control Lambs quarter	%Weed Control R. Pig Weed
16	Dual Pre Bmix Micro	0.67 pts 8 fl oz	Pre/2lf Micro	6004 a	23.83 a	251.4 ab	5 c-f	90 a	85 a
11	Nortron Pre Bmix Micro	3.5 8 fl oz	Pre Micro	5757 a	22.93 a	251.4 ab	3 efg	93 a	85 a
10	Dual Pre Bmix Micro	1.33 pts 8 fl oz	Pre Micro	5556 a	21.84 ab	254.2 a	9 abc	89 a	85 a
13	Bmix Micro	8 fl oz	Micro	5507 a	17.47 b	254.2 a	1 fg	90 a	75 a
9	Dual Pre Bmix Micro	1 pt 8 fl oz	Pre Micro	5458 a	22.24 ab	245.8 a-e	8 a-d	84 a	83 a
8	Dual Pre Bmix Micro	0.67 pts 8 fl oz	Pre Micro	5438 a	21.30 ab	254.9 a	4 d-g	88 a	85 a
12	Outlook Pre Bmix Micro	0.5 8 fl oz	Pre Micro	5272 a	21.15 ab	249.3 abc	1 fg	85 a	80 a
17	Outlook Pre Bmix Micro	0.5 8 fl oz	Pre/2lf Micro	4985 a	19.98 ab	249.0 a-d	6 b-e	90 a	85 a
15	Outlook 2 lf	1 pt	2 lf	2482 b	9.66 c	252.0 ab	1 fg	50 b	56 b
4	Outlook Pre	0.5 pt	Pre	1617 bc	3.98 de	237.6 b-e	3 efg	31 cd	30 c
3	Dual Pre	1.33 pts	Pre	1515 bc	6.50 cd	230.5 ef	11 a	40 bcd	43 bc
14	Dual 2 lf	1.33 pts	2 lf	1207 c	4.30 de	236.7 b-e	1 fg	45 bc	40 bc
6	Outlook Pre	1 pt	Pre	1178 c	3.80 de	234.9 cde	10 ab	31 cd	35 c
5	Outlook Pre	0.75	Pre	1133 c	5.14 cde	216.0 fg	5 c-f	31 cd	31 c
2	Outlook Pre	1 pt	Pre	941 c	2.57 de	234.1 cde	6 b-e	39 bcd	36 c
7	Nortron Pre	3.5 pt	Pre	759 c	3.22 de	232.8 de	4 d-g	31 cd	31 c
1	Dual Pre	0.67 pts	Pre	660 c	2.85 de	233.6 cde	0 g	25 d	25 c
18	Untreated Check			428 c	0.92 e	206.0 g	0 g	0 e	0 d
LSD (P=.05)				1208.3	5.2	16.4	4.2	15.4	18.2
CV				27.2	30.9	4.8	68.6	19.1	23.4
Grand Mean				3111.2	11.9	240.3	4.3	57.3	55.0
Treatment Prob(F)				0	0	0	0	0	0

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

Summary: An extremely high weed pressure existed in this trial. All of the pre only treatments were completely over run by weeds and were impossible to get an accurate %phyto rating on because of the intense weed pressure. A half rate of Dual pre followed by Micro Rates with the other half rate applied in the Micro Rates was the best treatment. This treatment caused very little sugarbeet injury. A half rate of Dual followed by Micro Rates (without the 2nd half of the Dual added also worked well).

Soil Type: Sandy Loam pH 8, OM 2.2% 38 Planted: May 3 Harv: Oct 16

Michigan Sugar Company

Weed Control In Roundup Ready Sugarbeets (Monsanto Trial)

Gilford, MI - 2006

Trial Validity: Good

No	Treatment	Rate/Acre	Leaf Stage	Tons/ Acre	Percent Weed Control				
					% Phyto	Avg 3 Weeds	Pig-Weed	Lambs-quarter	W. Mustard
9	Roundup	3 qts	2, 4, 6	28.06 a	0.0 b	100 a	100 a	100 a	100 a
	Ammon. Sulf.	17 lb/100 gal	2, 4, 6						
	Outlook	8 fl oz	2						
2	Roundup	3 qts	2, 4, 6	27.34 a	0.0 b	100 a	100 a	100 a	100 a
	Ammon. Sulf.	17 lb/100 gal	2, 4, 6						
	Betamix	3 pts	2						
	Betamix	4.5 pts	4						
7	Roundup	3 qts	2, 4, 6	27.31 a	0.0 b	100 a	100 a	100 a	100 a
	Ammon. Sulf.	17 lb/100 gal	2, 4, 6						
	Dual Magnum	.5 qt/A	6						
1	Roundup	3 qts	2, 4, 6	27.22 a	0.0 b	100 a	100 a	100 a	100 a
	Ammon. Sulf.	17 lb/100 gal	2, 4, 6						
8	Roundup	3 qts	2, 4, 6	26.83 a	1.3 b	100 a	100 a	100 a	100 a
	Ammon. Sulf.	17 lb/100 gal	2, 4, 6						
	Stinger	2 fl oz	fl oz/a						
10	Roundup	3 qts	2, 4, 6	26.29 a	0.0 b	99 a	100 a	100 a	98 a
	Ammon. Sulf.	17 lb/100 gal	2, 4, 6						
	Select	8 fl oz	2						
4	Roundup	3 qts	2, 4, 6	26.03 a	2.5 b	100 a	100 a	100 a	100 a
	Ammon. Sulf.	17 lb/100 gal	2, 4, 6						
	Progress	2.25 pt	2						
	Progress	3.5 pt	4						
6	Roundup	3 qts	2, 4, 6	25.76 a	0.0 b	100 a	100 a	100 a	100 a
	Ammon. Sulf.	17 lb/100 gal	2, 4, 6						
	Gem	7 oz	4						
3	Roundup	3 qts	2, 4, 6	25.56 a	2.5 b	100 a	100 a	100 a	100 a
	Ammon. Sulf.	17 lb/100 gal	2, 4, 6						
	Betanex	3 pts	2						
	Betanex	4.5 pts	4						
5	Roundup	3 qts	2, 4, 6	24.72 a	10.0 a	100 a	100 a	100 a	100 a
	Ammon. Sulf.	17 lb/100 gal	2, 4, 6						
	UpBeet	2.5 oz	2, 4	(UpBeet Overdosed by 10X)					
11	Progress	2.25 / 3.5 pt	2, 4	19.85 b	8.8 a	68 b	70 b	65 b	70 b
	UpBeet	.5 oz	2, 4						
	Stinger	2 / 4 fl oz	2, 4						
	Induce	0.25%	2, 4						
12	Untreated			7.82 c	0.0 b	0 c	0 c	0 c	0 c
LSD (P=.05)				3.43	4.2	3.7	6.8	5.4	7.3
CV				9.74	140.7	2.9	5.3	4.2	5.7
Grand Mean				24.40	2.1	89.0	89.2	88.8	89.0

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

Roundup provided excellent weed control in this trial. There were no problems tank mixing Roundup with any of the herbicides or fungicides. The UpBeet rate was accidentally overdosed in this trial.

Planted: May 4

Harvested: October 3

Michigan Sugar Company

Weed Control In Roundup Ready Sugarbeets (Monsanto Trial)

Deckerville, MI - 2006

Trial Validity: Good

Trt No.	Treatment Name	Rate/Acre	Leaf Stg	Tons/ Acre	Sugar %	%Phyto	Lambs-quarter	Pig-weed	Kochia
1	Roundup	3 qts	2,4,6	27.17 a	16.58 a	0.0 c	100 a	100 a	100 a
	Ammon. Sulf.	17 lb/100 gal	2,4,6						
7	Roundup	3 qts	2,4,6	25.65 ab	16.50 a	1.3 bc	100 a	100 a	100 a
	Ammon. Sulf.	17 lb/100 gal	2,4,6						
	Dual Magnum	0.5 qt/a	6						
9	Roundup	3 qts	2,4,6	25.28 ab	16.17 ab	2.5 bc	100 a	100 a	100 a
	Ammon. Sulf.	17 lb/100 gal	2,4,6						
	Outlook	18 fl oz/a	2						
8	Roundup	3 qts	2,4,6	24.85 ab	16.23 ab	6.3 b	100 a	100 a	100 a
	Ammon. Sulf.	17 lb/100 gal	2,4,6						
	Stinger	2 fl oz/a	2						
10	Roundup	3 qts	2,4,6	24.28 ab	16.25 ab	3.8 bc	100 a	100 a	100 a
	Ammon. Sulf.	17 lb/100 gal	2,4,6						
	Select	8 fl oz/a	2						
5	Roundup	3 qts	2,4,6	24.18 ab	16.50 a	12.5 a	100 a	100 a	100 a
	Ammon. Sulf.	17 lb/100 gal	2,4,6						
	UpBeet	2.5 oz	2,4	(UpBeet 10X overdose)					
4	Roundup	3 qts	2,4,6	23.90 ab	16.24 ab	3.8 bc	100 a	100 a	100 a
	Ammon. Sulf.	17 lb/100 gal	2,4,6						
	Progress	2.25 / 3.5 pts	2, 4						
6	Roundup	3 qts	2,4,6	23.61 ab	16.56 a	1.3 bc	100 a	100 a	100 a
	Ammon. Sulf.	17 lb/100 gal	2,4,6						
	Gem	7 oz	4						
3	Roundup	3 qts	2,4,6	23.47 b	15.87 ab	2.5 bc	100 a	100 a	100 a
	Ammon. Sulf.	17 lb/100 gal	2,4,6						
	Betanex	3 / 4.5 pts	2, 4						
2	Roundup	3 qts	2,4,6	23.31 b	15.71 b	3.8 bc	100 a	100 a	100 a
	Ammon. Sulf.	17 lb/100 gal	2,4,6						
	Betamix	3 / 4.5 pts	2, 4						
11	Progress	2.25 / 3.5 pt	2, 4	6.90 c	15.56 b	6.3 b	60 b	65 b	30 b
	UpBeet	.5 oz	2, 4						
	Stinger	2 / 4 fl oz	2, 4						
	Induce	0.25%	2, 4						
12	Untreated			3.08 d	15.58 b	0.0 c	0 c	0 c	0 c
LSD (P=.05)				3.64	0.75	6.24	3.40	2.41	3.40
CV				11.84	3.23	118.62	2.67	1.88	2.75
Grand Mean				21.31	16.15	3.65	88.33	88.75	85.83

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

Roundup provided excellent weed control in this trial. There were no problems tank mixing Roundup with any of the herbicides or fungicides. The UpBeet rate was accidentally overdosed in this trial.

Planted: May 3 Harvested: October 16

Michigan Sugar Company

Timing of Roundup Applications in Roundup Ready Sugarbeets

Blumfield, MI - 2006

Trial Quality: Good

No.	Treatment	Rate	Leaf Stage	% Weed Control			%Phyto	RWSA	RWST	Tons/A
				Lambs	Pigwe	Velvet				
2	Roundup + Amm Sulf	22 fl oz/A 17 lb/100 gal	4, 10	98 a	94 a	95 a	0 a	8250 a	210.9 a	39.14 a
1	Roundup + Amm Sulf	11 fl oz/A 17 lb/100 gal	Cot, 4, 10	97 a	95 a	98 a	0 a	7918 ab	215.2 a	36.78 ab
4	Roundup + Amm Sulf	22 fl oz/A 17 lb/100 gal	10	91 b	94 a	84 b	0 a	7295 ab	212.0 a	34.30 ab
3	Roundup + Amm Sulf	22 fl oz/A 17 lb/100 gal	4	80 c	68 b	83 b	0 a	6642 b	213.2 a	31.27 b
6	Untreated			0 d	0 c	0 c	0 a	3347 c	216.5 a	15.46 c
LSD (P=.05)				5.3	10.4	5.5	0.0	1396.0	ns	6.30
CV				4.7	9.6	5.0	0.0	13.5	4.9	13.00
Grand Mean				73.2	70.0	71.8	0.0	6690	213.6	31.40
Treatment Prob(F)				0.0001	0.0001	0.0001	1	0.0001	0.9388	0.0001

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

Trial Investigator: C. Guza

Summary: Two normal rates of Roundup or three low rates of Roundup provided excellent weed control without causing crop injury. A single application rate, either early or late did not provide adequate weed control and had a tendency to lose yield. A single application late appeared to be better than a single application early.

Planted: May 4
Harvested: October 2

Michigan Sugar Company

Evaluate Different MSO's for Weed Control and Sugarbeet Injury

Blumfield, MI - 2006

Trial Validity: Good

No	Treatment	Rate	%Lamb-squarter	%Phyto 6-Jun	%Phyto 18-Jul	RWSA	RWST	Tons/A
9	Betamix Micro Z64 MSO	8 fl oz 1.5%	92	18	4	5038	245.2	20.40
7	Betamix Micro Helena MSO + Transactive	8 fl oz 1% 1%	92	19	4	4239	225.9	18.80
5	Betamix Micro Destiny MSO	8 fl oz 1.5%	91	13	1	4553	231.3	19.70
4	Betamix Micro Super Spread MSO	8 fl oz 1.5%	89	11	0	5425	249.5	21.80
3	Betamix Micro MES 100	8 fl oz 1.5%	89	11	0	5060	239.5	21.00
2	Betamix Micro Loveland MSO	8 fl oz 1.5%	88	10	3	4657	243.2	19.10
1	Betamix Micro Helena MSO	8 fl oz 1.5%	87	13	2	4511	233.6	19.40
6	Betamix Micro Cannon MSO	8 fl oz 1.5%	86	11	3	4759	237.6	20.00
8	Betamix Micro Dyne-Amic	8 fl oz 2qt/100 gal	84	9	0	4327	243.2	18.40
10	Untreated		0	0	0	699	233.6	1.80
LSD (P=.05)			6.4	5.1	ns	1036.7	ns	5.10
CV			5.5	31.0	250.0	27.8	4.5	25.34
Grand Mean			79.8	11.4	1.4	2560	238.3	13.88

Summary: The objective of this trial was to evaluate the common MSO's for use in the Micro-Rates. There did not appear to be much difference in the products like Helena, Loveland or Destiny. We also took a look at Dyne-Amic, an MSO which also has other ingredients. It was a little less active - less weed control and less crop injury. Z-64, an MSO used in the RRV caused the most crop injury and gave the best weed control. Adding Transactive to an MSO increased both crop injury and weed control.

Planted: May 5 Harvested: October 2

Michigan Sugar Company
Pre-Herbicide Weed Control Trial
Blumfield - 2006

Trial Quality: Ratings - Good
Yield: Poor

Trt No.	Treatment Name	Rate/Acre	Growth Stage	Tons/A	Early %Phyto	Late %Phyto	Cheal %Cont
5	Pyramin	4.7 lb/a	Pre	15.87 a	8 b	0 a	74 a
	Dual Magnum	0.66 pt/a	Pre				
3	Nortron	3 pt/a	Pre	15.47 a	8 b	0 a	70 a
	Pyramin	4.7 lb/a	Pre				
1	Nortron	4 pt/a	Pre	13.52 ab	4 c	0 a	65 a
4	Nortron	3 pt/a	Pre	11.79 bc	6 bc	0 a	66 a
	Dual Magnum	0.66 pt/a	Pre				
7	Dual Magnum	1.33 pt/a	Pre	10.51 bcd	11 a	0 a	46 b
2	Pyramin	6.2 lb/a	Pre	9.24 cd	4 c	0 a	48 b
6	Dual Magnum	0.66 pt/a	Pre	7.84 d	5 bc	0 a	28 c
8	Untreated			1.10 e	0 d	0 a	0 d
LSD (P=.05)				3.46	3.68	0	12.95
CV				22.07	44.44	0	17.78
Grand Mean				10.67	5.63	0	49.53

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

Trial Investigator: C. Guza

Summary: A combination of Dual at 2/3 pints/A plus Nortron or Pyramin provided relatively good weed control without causing excessive sugarbeet injury. 1 1/3 pint of Dual pre cause noticeable injury. Dual alone did not provide adequate weed control. Weed pressure was extremely heavy in this trial (Untreated Check yielded only 1.1 Tons/Acre).

Planted: May 5 Harvested: October 2

Michigan Sugar Company

Increasing the Rate of Betamix in the Micro-Rates

Blumfield, MI - 2006

Trial Quality: Good

No	Treatment	Rate	Micro Timing	% Weed Control Lambsquarter early		% Weed Control Lambsquarter mid		% Weed Control Pigweed mid		%Sugarbeet Injury early		%Sugarbeet Injury mid	
7	Bmix Micro	8 oz	1	100	a	93	a	84	a	18	abc	0	a
	Bmix Micro	16 oz	2, 3, 4										
9	Bmix Micro	8 oz	1	100	a	94	a	76	a	20	ab	5	a
	Bmix Micro	12 oz	2										
	Bmix Micro	22 oz	3, 4										
10	Bmix Micro	8 oz	1	100	a	90	ab	78	a	21	a	5	a
	Bmix Micro	16 oz	2										
	Bmix Micro	22 oz	3, 4										
4	Bmix Micro	8 oz	1	99	ab	91	ab	79	a	14	bcd	0	a
	Bmix Micro	12 oz	2, 3, 4										
5	Bmix Micro	8 oz	1, 2, 3	99	ab	93	a	80	a	15	a-d	0	a
	Bmix Micro	16 oz	4										
6	Bmix Micro	8 oz	1, 2	98	ab	95	a	81	a	15	a-d	0	a
	Bmix Micro	16 oz	3, 4										
3	Bmix Micro	8 oz	1, 2	96	abc	94	a	78	a	13	cd	0	a
	Bmix Micro	12 oz	3, 4										
8	Bmix Micro	8 oz	1	96	abc	96	a	79	a	15	a-d	0	a
	Bmix Micro	12 oz	2										
	Bmix Micro	16 oz	3, 4										
2	Bmix Micro	8 oz	1, 2, 3	95	bc	94	a	75	a	14	bcd	1	a
	Bmix Micro	12 oz	4										
1	Bmix Micro	8 oz	1, 2, 3, 4	93	c	91	ab	71	a	9	d	0	a
11	Betamix Split	2 pt/A	1st	93	c	75	b	73	a	20	a	3	a
	Betamix Split	3 pt/A	2nd										
	with UpBeet+Stinger and (Nortron+Induce in 2nd split)												
12	Untreated			0	d	28	c	25	b	0	e	0	a
LSD (P=.05)				4.8		17.3		21.8		6.7		ns	
CV				3.7		13.9		20.6		32.2		386.2	
Grand Mean				89.0		86.0		73.1		14.5		1.2	

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

Summary: The 8 oz Micro Rate provided good weed control in this trial. However, weed control was improved by increasing the rate to 16 oz, either in the 2nd or 3rd Micro Rate application. Injury was increased somewhat but was temporary. Increasing the Betamix rate to 22 oz did not improve weed control over the 16 oz rate and sugarbeet injury was still visible at mid season. The early ratings were taken just after the last micro rate application and the mid ratings were taken in early July. Yields were quite variable and did not provide useful information.

Planted: May 5 Harvested: October 2

Michigan Sugar Company
Priming 7172
Average of 4 Locations

Trt No.	Treatment Name	*Beets/ 100 Feet	RWSA	RWST	Tons	Sugar %	Purity %
4	Syngenta Check	196.8	6649	255.5	26.98	17.52	94.47
3	GTG Prime	194.0	6477	257.1	26.46	17.54	94.71
1	Syngenta Prime	191.5	6303	252.6	26.13	17.40	94.17
5	Astec Steep	184.1	6297	257.8	25.66	17.66	94.40
2	Astec Prime	159.5	6084	252.6	25.47	17.25	94.19
LSD (P=.05)		18.2	550.1	ns	ns	ns	ns
CV		6.4	5.61	2.0	3.84	2.09	0.49
Grand Mean		185.2	6362	255.1	26.14	17.47	94.39

Conclusion: The only treatment that is significantly less on Beets/100 feet and RWSA is Astec Prime.

* The Beets/100 feet average does not include the Wegener location.

Michigan Sugar Company

Priming 7172

Bebow - 2006

Trt No.	Treatment Name	Beets/100 ft Days After Planting 9	13	40	RWSA	RWST	Tons	Sugar %	Purity %
3	GTG Prime	204	223	228	6246	229.7	27.20	15.82	94.63
5	Astec Steep	192	215	240	5982	229.3	26.10	15.85	94.44
4	Syngenta Check	177	214	246	6224	233.8	26.63	16.07	94.65
1	Syngenta Prime	177	211	227	6130	228.9	26.80	15.82	94.45
2	Astec Prime	127	196	200	5615	229.2	24.57	15.88	94.29
LSD (P=.05)		36	17	16	ns	ns	ns	ns	ns
CV		17.0	6.7	6.0	8.7	3.7	9.3	2.9	0.6
Grand Mean		176	212	228	6039	230.2	26.26	15.89	94.49

Trial Quality: Fair
Planting Date: April 26
Harvest Date: September 22
Plot Size: 4 row X 35 ft

Reps: 6
Row Spacing: 30 inch
Amistar: 8 leaf stage
Cercospora Sprays: 3

Conclusion: The GTG Priming treatment tended to have better emergence than the other priming treatments, however, most of the differences were not significant. Only the Astec priming treatment was significantly lower than the others, both emergence and yield.

Michigan Sugar Company

Priming 7172

2006

Brian Schwab - Kawkawlin, MI

No.	Treatment	Beets/ 100 Feet	RWSA	RWST	Tons	Sugar %	Purity %
3	GTG Prime	182.0	6146	240.6	25.54	16.45	94.81
4	Syngenta Check	176.5	5909	230.5	25.66	16.11	93.86
5	Astec Steep	157.5	6313	240.0	26.34	16.74	93.80
1	Syngenta Prime	154.0	5443	222.5	24.51	15.89	92.87
2	Astec Prime	152.0	5843	230.5	25.36	16.47	92.78
LSD (P=.05)		25.7	648.2	ns	2.16	ns	ns
CV		10.16	6.94	6.11	5.38	4.22	0.94
Grand Mean		164.4	5931	232.8	25.48	16.33	93.62

Trial Quality: Good
Planting Date: April 21
Harvest Date: September 27
Plot Size: 4 row X 35 ft

Reps: 6
Row Spacing: 30 inch
Amistar: 8 leaf stage
Cercospora Sprays: 3

Conclusion: The GTG priming treatment had better emergence and yield than the Syngenta and Astec priming treatments.

Michigan Sugar Company

Priming 7172

2006

Stoutenburg Farms - Sandusky, MI

No.	Treatment	Beets/ 100 Feet	RWSA	RWST	Tons	Sugar %	Purity %
1	Syngenta Prime	206.7	9055	271.3	33.39	18.46	94.65
3	GTG Prime	203.8	9044	268.8	33.65	18.36	94.47
4	Syngenta Check	193.8	8932	268.8	33.24	18.39	94.39
5	Astec Steep	177.5	8686	270.6	32.13	18.51	94.36
2	Astec Prime	145.8	8175	256.8	31.97	17.07	94.17
LSD (P=.05)		36.5	637.7	13.6	ns	1.04	ns
CV		16.34	6.01	4.20	5.19	4.77	0.72
Grand Mean		185.5	8778	267.3	32.87	18.16	94.41

Trial Quality: Very Good
Planting Date: April 26
Harvest Date: October 10
Plot Size: 4 row X 35 ft

Reps: 6
Row Spacing: 30 inch
Amistar: 8 leaf stage
Cercospora Sprays: 3

Summary: The Syngenta and GTG Priming treatments tended to have the highest emergence and yield, while the Astec treatments were significantly inferior.

Michigan Sugar Company

Priming 7172

Russell Farm, Akron, MI - 2006

Trial Quality: Counts: Good
Yield: Fair-Poor

Trt No.	Treatment Name	Beets/ 100 Feet	RWSA	RWST	Tons	Sugar %	Purity %
1	Syngenta Prime	178.2	4582	287.8	19.83	19.42	94.69
4	Syngenta Check	170.8	5532	289.0	22.37	19.49	94.99
3	GTG Prime	162.0	4473	289.3	19.44	19.51	94.91
5	Astec Steep	161.3	4205	291.2	18.05	19.55	95.01
2	Astec Prime	140.0	4704	294.0	19.98	19.57	95.50
LSD (P=.05)		16.9	1037	ns	ns	ns	ns
CV		8.7	17.9	2.2	19.08	1.5	0.8
Grand Mean		162.5	4699	290.3	19.93	19.51	95.02

Planted: April 20
Harvested: November 1

Summary: The Syngenta Priming treatment had the highest emergence in this trial Astec Priming had the lowest. The yield data was quite variable and only the Astec Astec Steeping treatment yielded significantly lower than the other treatments.

Michigan Sugar Company

Priming 7172

Wegener, Bay City, MI - 2006

Trial Quality: Fair - Good

No.	Treatment	Beets/ 100 Feet
3	GTG Prime	143.2
1	Syngenta Prime	138.7
4	Syngenta Check	136.0
5	Astec Steep	133.5
2	Astec Prime	95.7
LSD (P=.05)		34.8
CV		22.3
Grand Mean		129.4

Plant: May 1
Harvested: September 19

Summary: The GTG and Syngenta Priming Treatments performed about equally in this trial. However, the Astec Priming treatment had significantly lower emergence. Yield data was extremely variable and did not provide usable data.

Michigan Sugar Company
XBEET Sugarbeet Priming Trial
5 Trial Average - 2006

Trial Quality: Good

No	Treatment	Count Date Intervals				RWSA	RWST	Tons/A	%Suc	%CJP
		Early	Mid-1	Mid-2	Final					
2	XBEET	62	133	153	158	6803	262.8	25.42	17.91	94.63
1	PAT	13	58	89	105	5798	258.5	22.00	17.76	94.33
3	Non-Primed	3	31	68	87	4961	250.8	19.40	17.37	94.00
LSD 5%		32.0	25.3	30.1	23.5	1680	ns	4.50	ns	ns
CV		71.0	19.8	16.8	13.8	10.4	4.1	7.60	3.20	0.40
Grand Mean		26.1	73.9	103.2	116.5	7143	267.0	26.80	18.20	94.70

Summary: The speed of emergence and final stand was superior with XBEET in these trials. The XBEET treatment also outyielded the PAT and non primed treatment. There was a trend toward improved quality in the XBEET treatments. At most sites a crust developed and the non-primed and PAT treatments were affected more by the crust than was XBEET. In general, rainfall was above normal in the spring and normal to above normal for the growing season.

Michigan Sugar Company

XBEET Sugarbeet Priming Trial

Sandusky, M. Lean 2006

Trial Quality: Good

No	Treatment	Beets/100 ft at Days After Planting				
		7	9	14	16	22
2	XBEET	7	88	134	140	196
1	PAT	7	136	180	182	213
LSD 5%		8.4	34.8	26.9	35.7	26.7
CV		55.1	13.8	7.6	9.9	5.8
Grand Mean		6.8	112.0	157.1	160.9	204.4

Plot Size: Strip Trial
Reps: 6
Variety: Crystal 963

Summary: The speed of emergence was superior with XBEET in this trial. Yields were not obtained.

Michigan Sugar Company
XBEET Sugarbeet Priming Trial
Schwab 2006

No	Treatment	Beets/100 ft at Days After Planting				
		8	10	12	14	17
2	XBEET	26	122	164	174	172
1	PAT	0	40	71	102	109
3	Non-Primed	0	4	34	67	74
LSD 5%		12.1	19.7	20.1	25.1	26.1
CV		106.2	27.8	17.5	17.1	17.1
Grand Mean		8.9	55.2	89.6	117.3	118.4

Planted: Apr 21, 2006
Harvested: Sep 26, 2006
Plot Size: 4 Rows X 40 ft
Reps: 6
Variety: Crystal 963

Summary: The speed of emergence and final stand was superior with XBEET in this trial. The seedbed was favorable for planting. Rainfall was above normal in the spring and near normal for the growing season. Yields were extremely variable and did not provide reliable data.

Michigan Sugar Company

XBEET Sugarbeet Priming Trial

Russell 2006

No	Treatment	Beets/100 ft at Days After Planting				
		8	11	13	16	25
2	XBEET	17	64	95	113	122
1	PAT	0	1	14	39	51
3	Non-Primed	0	1	8	33	42
LSD 5%		7.0	17.7	19.4	23.7	19.8
CV		94.3	62.1	38.3	29.9	21.5
Grand Mean		5.8	22.1	39.3	61.6	71.7

Planted: Apr 19, 2006
Harvested: Sep 30, 2006
Plot Size: 4 Rows X 40 ft
Reps: 6
Variety: Crystal 963

Summary: The speed of emergence and final stand was superior with XBEET in this trial. The seedbed was favorable for planting. Rainfall was above normal in the spring and near normal for the growing season. Yields were extremely variable and did not provide reliable data. A crust developed after planting which affected emergence.

Michigan Sugar Company
XBEET Sugarbeet Priming Trial
Stoutenburg 2006

Trial Quality: Good

No	Treatment	Beets/100 ft at Days After Planting					RWSA	RWST	Tons/A	%Suc	%CJP
		9	12	14	16	21					
2	XBEET	118	152	179	185	188	9539	277.2	34.36	19.02	94.12
1	PAT	49	94	143	148	154	8878	274.6	32.33	18.88	94.06
3	Non-Primed	10	59	118	132	142	8350	264.0	31.56	18.38	93.55
LSD 5%		26.7	33.2	22.7	21.5	26.9	914.3	ns	1.36	ns	ns
CV		30.9	22.4	10.6	9.5	11.4	7.0	4.8	2.84	3.92	0.49
Grand Mean		59.2	101.6	146.7	154.9	161.2	8922.3	271.94	32.75	18.76	93.91

Planted: Apr 26, 2006
Harvested: Oct. 25, 2006
Plot Size: 4 Rows X 40 ft
Reps: 6
Variety: Crystal 963

Summary: The speed of emergence and final stand was superior with XBEET in this trial. The XBEET treatment also outyielded the PAT and non primed treatment. There was a trend toward higher sugar and purity with XBEET compared to the non-primed treatment. Emergence conditions were challenging in 2006 with cold soils and crusting and the non-primed treatment appeared to suffer from these conditions.

Michigan Sugar Company

XBEET Sugarbeet Priming Trial

Schutte Farm, Cass City, MI - 2006

Trial Quality: Very Good

No.	Treatment	Beets/100 ft at Days after Planting 7	10	12	14	20	32	RWSA	RWST	Tons/ Acre	% Suc	% CJP
1	XBEET	0	20	56	71	94	102	8554	286.3	29.83	19.22	95.20
2	PAT	0	1	18	35	60	71	6462	260.7	24.78	17.98	94.14
3	Check	0	0	3	12	26	39	4830	242.0	19.96	16.92	93.71
LSD (P=.05)		0	12.9	13.9	12.1	32.3	32.1	1157	15.8	3.01	1.01	1.17
CV		0	81.4	23.9	13.4	23.7	20.0	7.72	2.66	5.34	2.47	0.55
Grand Mean		0	7.0	25.7	39.3	60.0	70.7	6616	263.0	24.86	18.04	94.35

Trial Investigator: Cory Guza
Fieldman: Roger Elston
Planted: Apr 21
Harvested: Nov 15
Variety: 963
Soil Type: Loam
Previous Crop: Dry Beans

Summary: The speed of emergence and final stand was superior with XBEET in this replicated strip trial. XBEET also improved sugarbeet yields and quality compared to PAT and the non-primed treatment.

Michigan Sugar Company
XBEET Sugarbeet Priming Trial
BB Farm - 2006

Trial Quality: Good

No	Treatment	Beets/100 ft at Days After Planting						RWSA	RWST	Tons/A	%Suc	%CJP
		9	12	16	20	27	34					
2	XBEET	65	146	155	162	135	130	6420	265.6	24.09	17.70	95.80
1	PAT	1	43	75	94	101	106	6002	271.8	22.11	18.07	95.83
3	Non-Primed	0	6	31	59	84	97	5253	263.6	20.01	17.65	95.56
LSD 5%		6.1	13.6	16.0	25.6	24.8	23.5	815.3	ns	2.92	ns	ns
CV		21.9	16.3	14.3	19.0	18.1	16.4	10.8	5.5	10.30	4.98	0.56
Grand Mean		21.8	64.8	87.1	104.7	106.6	111.0	5892	267.0	22.07	17.81	95.73

Planted: Apr 11, 2006
Harvested: Sep 20, 2006
Plot Size: 4 Rows X 40 ft
Reps: 6
Variety: Crystal 963

Soil Type: Silty Clay
Organic Matter: 3%
pH: 7.9
Seed Spacing: 4.5 inches
Previous Crop: Corn (Chisel Plowed)

Summary: The speed of emergence and final stand was superior with XBEET in this trial. The XBEET treatment also outyielded the PAT and non primed treatment. The % Sucrose and % Clear Juice Purity were not affected. The soil was slightly wet at planting and a crust developed and the non primed and PAT treatments were affected by the crust. The seedbed was quite trashy. Rainfall was above normal in the spring and normal to above normal for the growing season.

Michigan Sugar Company

Priming Trial 963

2006

Bebow Farms - St. Louis, MI

No.	Treatment	Beets/ 100 Feet	RWSA	RWST	Tons	Sugar %	Purity %
1	PAT 2006	101.2	5897	229.6	25.58	15.77	94.77
2	PAT 2005	96.3	5416	229.0	23.67	15.87	94.30
3	Check	93.8	5780	228.7	25.28	15.84	94.33
LSD (P=.05)		13.3	ns	ns	ns	ns	ns
CV		10.64	9.02	2.59	9.72	2.01	0.51
Grand Mean		97.1	5697	229.1	24.84	15.83	94.46

Trial Quality: Good
Planting Date: April 26
Harvest Date: September 22
Plot Size: 4 row X 35 ft

Reps: 6
Row Spacing: 30 inch
Amistar: 8 leaf stage
Cercospora Sprays: 3

Summary: There were not significant differences between the carryover pellets (2005) and the 2006 pellets.

Michigan Sugar Company
Priming Trial 963
Spero Farm, Albee, MI - 2006

Trial Quality: Good

Trt No.	Treatment Name	Beets/100' at Days after Planting	
		19	28
3	Crystal 963 Non-Primed	107	174
1	Crystal 963 PAT 2006	96	148
2	Crystal 963 PAT 2005	94	160
LSD (P=.05)		ns	22
CV		29.0	10.5
Grand Mean		99	161

Planted: April 27

Summary: 2005 and 2006 PAT Treatments were evaluated to see if year old pellets emerged properly. From this trial it appears that 1 year storage did not affect the germination and emergence of PAT pellets.