

# SUGARBEET ADVANCEMENT

Partnership  
of:



*Sugar Beet Growers  
Michigan Sugar Company  
Monitor Sugar Company  
Michigan State University  
Agribusiness*

## ACKNOWLEDGEMENTS

### ON-FARM RESEARCH AND DEMONSTRATION

The Sugarbeet Advancement Committee is pleased to provide the fifth On-Farm Sugar Beet Research and Demonstration Report. This report will be a valuable tool in helping you make production decisions that will improve profitability of your sugar beet enterprise. In spite of the driest mid-season drought on record, average yields of over 19 tons per acre were achieved. The resiliency of sugar beets under adverse growing conditions demonstrates the importance of beets in the rotation. Improved management practices such as variety selection, leaf spot control, and stand establishment are key stabilizers of sugar beet yields. Sugarbeet Advancement research and demonstration efforts have certainly played a significant role in improving yields. With continued grower and company investment in research, we expect our sugar industry profits will continue to improve.

As you study the 2001 research demonstration results, pay particular attention to the comments that follow the results. We are now starting to see the positive impacts of the newer genetics. We also can see how Sugar Beet Root Aphid has affected yields of those varieties with no resistance. Rhizoctonia Crown Rot has been a number one concern in all of the growing regions. The new fungicide, Quadris, has been very effective in minimizing this yield robbing disease. Three years of results have changed our minds on the need for cultivation. This year's results demonstrate the need for more cover crops, such as clover, to improve "soil health" and yields. We are definitely starting to find the answers to many of the producer's production problems and concerns.

The cooperation of the industry that has been developed through Sugarbeet Advancement is unique. Few areas enjoy the team effort that has developed here in Michigan. On-farm research would not occur without farmer cooperation. The willingness of the seed industry to pitch in with seed donations and labor is greatly appreciated. These include Seed Systems – Randy Hemb; Beta Seed – Dick Shaw; Hilleshog – Doug Ruppall; Crystal Seeds – Andy Bernia; and Seedex – Harold Rouget.

Most of the agriculturists from both Michigan and Monitor Sugar Companies have been great help in lining up and monitoring the trials. Mark Laethem from Laethem Equipment in Fairgrove has supplied us with accurate scales on beet carts to measure our results. Hilleshog has provided the last two years sugar analysis at no charge. We are certainly appreciative of our MSU researchers; Michigan Sugar Research Agronomists, Teresa Crook and Jim Stewart; and Monitor Sugar Research Agronomist, Lee Hubbell, for the cooperative research that was conducted.

The Sugarbeet Advancement Committee will continue to identify and prioritize industry needs and develop the research agendas. Feel free to contact any Sugarbeet Advancement Committee member, if you have any questions.

Sincerely,

Mark Helmreich  
Sugarbeet Advancement Chair

A handwritten signature in cursive script that reads "Steve Poindexter". The signature is written in black ink and is positioned above the printed name.

Steve Poindexter  
Sugar Beet Extension Agent

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*Monitor Sugar Agriculturists and Company*  
*MSU Extension Agents*  
*MSU Ag Experiment Station*  
*Bean and Beet Research Farm – Paul Horny and Dennis Fleishman*  
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*ACH Seeds Inc. – Andy Bernia*  
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*Seed Systems – Randy Hemb*  
*Seedex – Harold Rouget*  
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## PREFACE

The Data in the 2001 Sugarbeet Advancement Research and Demonstration Book can be a valuable tool for making production decisions on your farm. Producers must understand the terminology to draw correct conclusions. Most of the research demonstration trials are replicated three or four times, either in a randomized format or complete randomized block. These trials have a statistical analysis run on them. Trials, which were not randomized and/or replicated, are considered as demonstrations with no statistical analysis run. The following comments should be helpful in your understanding of the results.

Quality analysis was provided by Hilleshog and may be somewhat lower than analysis from Michigan or Monitor Sugar Companies analysis because of different laboratory procedures. Relative differences between treatments should be the same.

**TREATMENT NAME** -- Identify different named treatments in the trial.

**RWSA** -- Recoverable White Sugar Per Acre. This number is calculated by multiplying recoverable white sugar per ton by actual yield per acre. All reported numbers are rounded to the nearest pound.

**ACTUAL YIELD T/A** -- Tonnage calculated on per acre basis. Reported number is rounded to one-hundredth decimal point. Gross tons (no tare off).

**RWST** -- Recoverable White Sugar Per Ton incorporating sugar and clear juice purity. Reported number is rounded to the nearest pound. This is based on a 120-day slice (not fresh basis).

**% SUGAR** -- Percentage Sugar Content of Beet; rounded to the one-tenth decimal point.

**% CJP** -- Percentage Clear Juice Purity; rounded to the one-tenth decimal point.

**POPULATION** -- In monitoring trials, approximately 10- 20- and 30-day plant counts were taken to monitor emergence of each treatment. Results are reported on beets per 100 foot of row.

**HARVEST POPULATION** -- Beet population was taken after beet defoliation. All crowns were counted, including small beets, which may not be picked up by harvesters.

**AVERAGES** -- Use averages to compare treatments which are better or worse than average of trial.

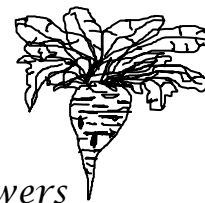
**LSD 5%** -- Least Significant Difference at the 95% confidence level in which one treatment compared to another is actually different. This calculation is used to take into account soil variation and other factors. NS indicates differences between treatments are *Not Significant*.

**C.V. %** -- Coefficient of variation is an indicator of how much variation is in the trial. If C.V.'s are 5% or less, it is considered an excellent trial; 10% or less is a good trial; 15% is fair, and etc. The less variation the more reliable the results are.

\* **1X - 2X - 3X** -- Indicates how many times a practice was done.

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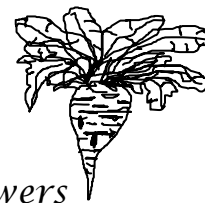
## SUGARBEET ADVANCEMENT PROGRAMS – 2001 & 2002

DATE	TIME / MEAL	LOCATION	LOCATION
01/05/01	9:00 a.m. to 3:00 p.m.	Sugarbeet Research Update for Extension Agents and Fieldmen	Bavarian Inn Restaurant, Frankenmuth
01/23/01	9:00 a.m. to 3:00 p.m. Lunch – Cost \$5.00	Soil Health Meeting	Williams Township Hall, Auburn
01/24/01	9:00 a.m. to 3:00 p.m. Lunch – Cost \$5.00	Soil Health Meeting	Huron Expo Center, Bad Axe
01/29/01	9:30 a.m. to 11:30 a.m.	Sugar Beet Weed Control Meeting	Huron Expo Center, Bad Axe
01/29/01	1:30 to 3:30 p.m.	Sugar Beet Weed Control Meeting	West Park, Sandusky
01/30/01	9:00 to 11:30 a.m.	Sugar Beet Weed Control Meeting	Brentwood Restaurant, Caro
01/30/01	1:30 to 3:30 p.m.	Sugar Beet Weed Control Meeting	Knights of Columbus Hall, Standish
01/31/01	9:00 to 11:30 a.m.	Sugar Beet Weed Control Meeting	Bavarian Inn Restaurant, Frankenmuth
01/31/01	1:30 to 3:30 p.m.	Sugar Beet Weed Control Meeting	B & W Co-Op, Breckenridge
02/20/01	8:30 a.m. to 4:00 p.m.	Beet and Bean Symposium/Trade Show	Horizons Conf. Center, State Street, Saginaw
12/07/01	Registration 9:30 to 10:00 a.m. Program 9:30 a.m. to 3:00 p.m. Lunch	Seed Week Meeting	Country View Golf Course, Ontario
12/10/01	Registration 8:00 to 8:30 a.m. Program 8:30 to 11:30 a.m. Lunch	Seed Week Meeting	Bavarian Inn Restaurant, Frankenmuth
12/11/01	Registration 8:00 to 8:30 a.m. Program 8:30 to 11:30 a.m. Lunch	Seed Week Meeting	Valley Plaza, Midland
12/12/01	Registration 8:00 to 8:30 a.m. Program 8:30 to 11:30 a.m. Lunch	Seed Week Meeting	Sportsmen's VFW Hall, Sebawaing
12/13/01	Registration 8:00 to 8:30 a.m. Program 8:30 to 11:30 a.m. Lunch	Seed Week Meeting	Ubyly Heights Country Club, Bad Axe
12/14/01	Registration 8:00 to 8:30 a.m. Program 8:30 to 11:30 a.m. Lunch	Seed Week Meeting	Shifter's Inn, Alma
07/17/01	8:00 a.m.	Leaf Spot Lowdown Session	Schindler Farms, Bay County
07/17/01	11:00 a.m.	Leaf Spot Lowdown Session	Sherwood Farm, Gratiot County
07/18/01	8:00 a.m.	Leaf Spot Lowdown Session	Lakke Ewald Farm, Tuscola County
7/18/01	11:00 a.m.	Leaf Spot Lowdown Session	Randall Sturm Farm, Huron County
7/19/01	8:00 a.m.	Leaf Spot Lowdown Session	Rick & Rob Gerstenberger Farm, Sanilac County

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## SUGARBEET ADVANCEMENT PROGRAMS – 2001 & 2002

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DATE	TIME / MEAL	LOCATION	LOCATION
7/19/01	11:00 a.m.	Leaf Spot Lowdown Session	Scott Roggenbuck Farm, Huron County
8/21/01	10:30 a.m.	Variety Trial Tour	Schindler Farm, Bay County
8/21/01	1:30 p.m.	Variety Trial Tour	Dave Helmreich Farm, Bay County
8/22/01	10:30 a.m.	Variety Trial Tour	Lakke Ewald Farm, Tuscola County
8/22/01	1:30 p.m.	Variety Trial Tour	Randall Sturm Farm, Huron County
8/23/01	10:30 a.m.	Variety Trial Tour	Rick & Rob Gerstenberger Farm, Huron County
8/23/01	1:30 p.m.	Variety Trial Tour	Scott Roggenbuck Farm, Huron County
8/28/01	8:30 a.m. to 3:30 p.m.	Beet and Bean Research Farm Tour	Saginaw County
01/11/02	9:00 a.m. to 3:00 p.m.	Sugarbeet Research Update for Extension Agents and Fieldmen	Bavarian Inn Restaurant, Frankenmuth
01/29/02	9:00 to 11:30 a.m.	Sugar Beet Weed Control Meeting	Williams Township Hall, Auburn
01/29/02	1:30 to 3:30 p.m.	Sugar Beet Weed Control Meeting	MAC/CPS - Basement, Breckenridge
01/30/02	9:00 to 11:30 a.m.	Coffee and Rolls Sugar Beet Weed Control Meeting	Brentwood Restaurant, Caro
01/30/02	1:30 to 3:30 p.m.	Sugar Beet Weed Control Meeting	Bavarian Inn Restaurant, Frankenmuth
01/31/02	9:30 a.m. to 11:30 a.m.	Coffee and Rolls Sugar Beet Weed Control Meeting	Huron Expo Center, Bad Axe
01/31/02	1:30 to 3:30 p.m.	Sugar Beet Weed Control Meeting	MSU Extension Office, Sandusky
02/26/02	8:30 a.m. to 4:00 p.m.	Beet and Bean Symposium/Trade Show	Horizons Conference Center, State Street, Saginaw



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## VARIETY TRIAL

### ON-FARM RESEARCH AND DEMONSTRATION

Cooperator: Scott Roggenbuck Farm  
Location: Huron County/Ruth  
Planting Date: 4/14/01  
Row Spacing: 30-Inches  
Previous Crop: Soybeans  
Replicated: 3 X – Row Length 925 ft.  
Seed Spacing: 4-Inches  
Soil Type: Clay Loam  
Soil pH: 6.1

Tillage: Fall Plowed; 1 X Field Cultivated  
Harvest Date: 10/29/01  
Type of Harvester: John Deere  
# of Rows Harvested: 4 # Defoliated: 4  
Harvest Speed: < 4 mph  
Herbicides: Micro-Rated 4 X  
Fertilizer: 175 lbs. of 16-29-6-1 MN; 60 lbs. N sidedressed (AA)  
Fungicide: 7/17/01 Quadris  
Organic Matter: 2.3%

TREATMENT NAME	RWSA	ACTUAL YIELD T/A	RWST	% SUGAR	CJP %	POPULATION 100 FT. ROW			
						16 Day	20 Day	30 Day	Harvest
B-5451	6113	26.49	230	16.3	93.7	112	145	187	155
Prompt	5481	26.62	205	15.2	92.5	76	141	186	175
E-38	5419	25.27	215	15.3	93.3	107	152	194	171
C-1353	5417	25.33	214	15.6	92.8	86	151	184	165
B-5736	5349	24.92	214	15.6	92.2	90	132	167	154
Spartan	5144	23.37	220	15.6	93.3	78	134	161	140
RH-5	4517	22.58	200	14.7	92.9	97	129	157	150
E-33	4375	22.48	195	14.5	92.2	100	149	182	165
C-648	4195	20.14	208	15.0	92.8	121	154	186	160
B-5400	4112	21.16	194	14.4	91.8	117	148	170	149
C-555	3830	20.46	187	14.8	91.4	120	150	168	158
Average	4905	23.53	208	15.2	92.7	101	144	176	159
LSD (5%)	757	1.45	24.9	.9	1.3	n.s. 51	n.s. 48	n.s. 40	n.s. 39
CV (%)	9.1	3.6	7.0	3.6	.9	29.9	19.4	13.3	14.3

Comments: Trial planted early under very cool conditions. Plants slow to emerge with 0 emergence at the 10 day count. Crusting was not a problem. Emergence was very good. Average harvest population of 25,000 to 30,000 plants per acre. Leaf Spot control was good. Low amount of Rhizoctonia Root Rot. Quadris has been shown to reduce Rhizoctonia Root Rot. Sugar samples taken 10/19/01 under very wet conditions. For emergence comparison only, PAT Prompt had the following populations/100 ft. row: 16 days = 96; 20 days = 142; 30 days = 176. **Trial reliability was EXCELLENT.**

Cooperating Agriculturist, Bob Corrigan, Michigan Sugar Company.

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## VARIETY TRIAL

### ON-FARM RESEARCH AND DEMONSTRATION

Cooperator: LAKKE Ewald Farms  
Location: Tuscola County  
Planting Date: 4/17/01  
Row Spacing: 22-Inches  
Previous Crop: Navy Beans  
Replicated: 3 X – Row Length 1,140 ft.  
Seed Spacing: 4.5-Inches  
Soil Type: Tappan-Londo Loams  
Soil pH: 7.6

Tillage: Fall Plowed; 1 X Field Cultivated  
Harvest Date: 10/4/01  
Type of Harvester: Arts-Way  
# of Rows Harvested: 8 # Defoliated: 8  
Harvest Speed: 3.8 mph  
Herbicides: Micro-rated 5 X  
Fertilizer: 63 lbs. 28% Pre-Plant; 75 lbs. 28% Sidedressed  
Fungicide: 7/19/01 Eminent  
Organic Matter: 2.2%

TREATMENT NAME	RWSA	ACTUAL YIELD T/A	RWST	% SUGAR	CJP %	POPULATION 100 FT. ROW			
						10 Day	20 Day	30 Day	Harvest
Prompt	5496	23.99	229	15.9	92.6	20	138	140	127
B-5736	5350	23.53	227	16.0	92.0	24	112	116	107
B-5451	5317	23.05	230	16.0	92.9	43	139	140	116
E-38	5292	22.39	237	16.2	93.1	60	143	141	128
RH-5	5129	22.97	222	14.9	93.3	45	138	139	131
E-33	4751	20.48	233	16.3	93.2	48	152	151	139
B-5400	4510	21.11	214	14.9	92.2	38	105	101	93
C-1353	4321	21.45	201	14.7	91.4	26	131	130	110
Spartan	4176	19.04	220	15.8	92.8	25	113	114	100
C-555	4075	17.85	228	15.5	92.8	41	133	132	123
C-648	3487	18.39	190	13.9	91.1	31	116	115	103
Average	4719	21.30	221	15.5	92.5	37	129	129	116
LSD (5%)	773	2.51	32	1.6	1.0	17	26	27	22
CV (%)	9.6	6.9	8.5	5.9	.7	27.7	12.0	12.5	11.1

Comments: Trial planted under cool conditions. Light crusting occurred. Emergence was fair to good. Average harvest population of 25,000 to 30,000 plants per acre. Root Aphid was easily found in field. Moderate amount of plant loss from Rhizoctonia and sugar beet Root Aphid. Leaf Spot control was considered good. Sugar samples were taken on 10/02/01. **Trial reliability rated VERY GOOD.**

Cooperating Agriculturist, Craig Rieman, Michigan Sugar Company.

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## VARIETY TRIAL

### ON-FARM RESEARCH AND DEMONSTRATION

Cooperator: Schindler Farms	Tillage: Chisel Plowed; 1 X Danish Tine
Location: Bay County	Harvest Date: 11/5/01
Planting Date: 4/18/01	Type of Harvester: Arts-Way
Row Spacing: 22-Inches	# of Rows Harvested: 8      # Defoliated: 8
Previous Crop: Corn	Harvest Speed: 4.3 mph
Replicated: 3 X – Row Length – 1,050 ft.	Herbicides: Micro-Rated 3 X
Seed Spacing: 4.5-Inches	Fertilizer: 20 gal. 19-17-0; 50 gal. Nitrogen 28-0-0 Sidedressed
Soil Type: Tappan Loam	Fungicide: 7/31/01 – Topsin + Penncozeb;
Soil pH: 7.0	8/21/04 - Eminent
Organic Matter: 2.7%	

TREATMENT NAME	RWSA	ACTUAL YIELD T/A	RWST	% SUGAR	CJP %	POPULATION 100 FT. ROW			
						10 Day	20 Day	30 Day	Harvest
B-5451	6422	23.38	274	18.8	94.5	14	171	172	139
E-38	6020	22.42	268	18.5	94.2	18	191	195	149
E-33	5872	20.96	280	18.9	94.8	14	187	193	164
RH-5	5864	22.10	266	18.5	93.9	6	164	171	151
B-5736	5809	21.97	264	18.3	93.7	3	110	128	111
Prompt	5790	21.82	265	18.3	94.4	5	173	184	162
C-648	5774	19.94	290	19.0	94.8	9	138	142	116
B-5400	5671	21.52	263	18.2	94.6	15	163	162	136
C-555	5661	20.63	273	19.0	94.5	21	175	181	152
Spartan	5528	20.32	272	18.4	94.3	5	161	174	138
C-1353	5134	19.57	262	18.2	94.1	10	180	186	153
Average	5777	21.33	271	18.6	94.4	11	165	172	143
LSD (5%)	438	1.28	15	.5	.9	7	21	19	16
CV (%)	4.5	3.5	3.2	1.4	.6	40.0	7.6	6.5	6.6

Comments: Trial planted and emerged under good soil moisture conditions. High residue from chisel plowed corn stalks. Crusting was not a problem. Emergence was very good. Average harvest population 30,000 to 35,000 plants per acre. Low amount of Rhizoctonia Root Rot. Some Root Aphid in field. Fair Leaf Spot control. Sugar samples taken on 10/31/01. One PAT pellet emergence observation strip. For emergence comparison only, PAT Pellet Mix (E-17 + C-555 + C-1353) had the following populations/100 ft. row: 10 days = 38; 20 days = 158; 30 days = 162. **Trial reliability rated EXCELLENT.**

Cooperating Agriculturist, Bill Hartley, Monitor Sugar Company.

# SUGARBEET ADVANCEMENT

Partnership  
of:



Sugar Beet Growers  
Michigan Sugar Company  
Monitor Sugar Company  
Michigan State University  
Agribusiness

## VARIETY TRIAL

### ON-FARM RESEARCH AND DEMONSTRATION

Cooperator: Sturm Farms

Location: Huron County

Planting Date: 4/23/01

Row Spacing: 28-Inches

Previous Crop: Dry Beans

Replicated: 3 X – Row Length: 1,600 ft.

Seed Spacing: 4-Inches

Soil Type: Clay Loam

Soil pH: 7.7

Organic Matter: 2.2%

Tillage: Fall Chisel Plowed, Danish Tine 1 X

Harvest Date: 10/22/01

Type of Harvester: Red River

# of Rows Harvested: 4 # Defoliated: 4

Harvest Speed: 4.3 mph

Herbicides: Pre-emergence Pyramin; Betamix + Upbeet +  
Stinger 1X

Fertilizer: Total of 110 lbs. N from 28-0-0; Broadcast 35;  
Sidedress 75; 284 lbs. 1-7-49

Fungicide: 8/2/01 Eminent

TREATMENT NAME	RWSA	ACTUAL YIELD T/A	RWST	% SUGAR	CJP %	POPULATION 100 FT. ROW			
						16 Day	20 Day	30 Day	Harvest
B-5451	6087	25.69	237	16.5	93.5	11	97	159	145
RH-5	5332	22.48	237	16.3	93.8	12	115	159	151
B-5736	5229	23.04	227	16.5	92.2	5	75	107	119
Prompt	5201	23.56	221	15.8	92.6	5	125	187	166
E-38	5061	21.51	235	16.4	93.2	3	119	171	176
Spartan	4694	20.57	228	16.1	93.3	7	103	157	143
C-1353	4633	21.73	213	15.8	92.2	5	106	145	142
C-648	4380	19.19	226	16.3	92.8	7	98	157	138
E-33	4263	18.87	224	16.2	93.5	9	112	167	164
C-555	4202	17.91	235	16.7	93.1	4	127	186	158
B-5400	4129	19.59	210	15.6	92.4	5	88	119	110
Average	4837	21.28	227	16.2	93.0	7	106	156	146
LSD (5%)	739	1.52	n.s. 30	.9	1.2	9	43	28	20
CV (%)	9.0	4.1	7.9	3.2	.7	82	23.8	10.5	7.9

Comments: Trial had significant crusting problem. Field was crust busted between the 10 and 20 day stand count. Good emergence occurred by 30-day stand count. Some Rhizoctonia present. Average harvest population of 25,000 to 30,000 plants per acre. Leaf Spot control was good. Sugar samples were taken on 10/18/01. **Trial reliability rated EXCELLENT.**

Cooperating Agriculturist, Roger Elston, Michigan Sugar Company.

# SUGARBEET ADVANCEMENT

Partnership  
of:



Sugar Beet Growers  
Michigan Sugar Company  
Monitor Sugar Company  
Michigan State University  
Agribusiness

## VARIETY TRIAL

### ON-FARM RESEARCH AND DEMONSTRATION

Cooperator: Gerstenberger Farms  
Location: Sanilac County  
Planting Date: 4/25/01  
Row Spacing: 28-Inches  
Previous Crop: Soybeans  
Replicated: 3 X – Row Length – 1,125 ft.  
Seed Spacing: 4-Inches  
Soil Type: Parkhill Loam  
Soil pH: 6.9  
Organic Matter: 2.3%

Tillage: Chisel Plow – 2 X Field Cultivated  
Harvest Date: 11/5/01  
Type of Harvester: Arts-Way  
# of Rows Harvested: 6      # Defoliated: 6  
Harvest Speed: 4.2 mph  
Herbicides: Micro Rate 4 X  
Fertilizer: 200 lbs. 14-24-5-4 SU – 1% MN – 140# N Sidedressed  
From Anhydrous Ammonia  
Fungicide: 8/01/01 - 1 X Super Tin

TREATMENT NAME	RWSA	ACTUAL YIELD T/A	RWST	% SUGAR	CJP %	POPULATION 100 FT. ROW			
						10 Day	20 Day	30 Day	Harvest
B-5451	7741	31.80	243	16.8	93.4	33	186	190	157
Prompt	7573	32.55	233	16.6	92.8	15	235	242	200
Spartan	6988	28.10	248	16.7	93.5	49	233	244	190
E-38	6973	30.63	228	16.7	92.7	39	238	243	199
C-555	6941	27.72	250	16.9	93.3	59	236	237	191
B-5736	6901	29.49	234	16.6	92.4	21	180	187	160
C-1353	6817	29.51	231	16.1	93.0	23	205	220	179
RH-5	6374	29.22	220	16.5	92.3	50	223	228	193
E-33	6372	27.67	230	16.6	92.7	34	247	247	217
B-5400	6288	27.76	226	16.3	92.9	36	190	193	154
C-648	6107	26.96	226	16.2	92.4	44	208	209	162
Average	6825	29.22	234	16.5	92.9	37	217	222	182
LSD (5%)	1190	4.30	23	.7	.9	31	26	21	23
CV (%)	10.2	8.6	5.8	2.6	.6	49.4	7.0	5.6	7.4

Comments: Trial was planted and emerged under very good conditions. Good Leaf Spot control and low amount of Rhizoctonia Root Rot. Average harvest population of 30,000 to 35,000 plants per acre. Sugar samples taken on 10/30/01. Single strip of pelleted PAT 5451 and PAT 5736 planted for observation strip only as comparison to regular seed emergence. For emergence comparison only, PAT Pellet 5451 had the following populations/100 ft. row: 10 days = 38; 20 days = 192; 30 days = 204; while PAT Pellet 5736 had the following populations/100 ft. row: 10 days = 70; 20 days = 198; 30 days = 214. **Trial reliability rated VERY GOOD.**

Cooperating Agriculturists, Mike Leen & Reggie VanSickle, Michigan Sugar Co., and Paul Wheeler, Monitor Sugar Co.

# SUGARBEET ADVANCEMENT

Partnership  
of:



Sugar Beet Growers  
Michigan Sugar Company  
Monitor Sugar Company  
Michigan State University  
Agribusiness

## ONTARIO VARIETY TRIAL

### ON-FARM RESEARCH AND DEMONSTRATION

Cooperator: Brian and Alana Fox

Location: Kent County, Ontario

Planting Date: 4/28/01

Row Spacing: 4-Inches

Row Width: 30-Inches – Length: 2,051 ft.

Previous Crop: Soybeans

Replicated: 3 X

Fertilizer: Fall 150# MAP, 300# 0-0-60

Spring 100# NH<sub>3</sub> @ 60"

Sidedressed

Tillage: Fall Moldboard Plow; Spring Shallow Triple-K

Harvest Date: November 7, 2001

Type of Harvester: 4-Row Arts-Way 9420

# of Rows Harvested: 4 # Defoliated: 6

Harvest Speed: 3.7 mph

Herbicides: Pyramin PRE – band; postemergence banded

Fungicide: 7/12 Kocide + Manzate

Soil Type: Clay Loam

Soil pH: 7.6 – 7.9

Organic Matter: 2.5 – 3.6%

TREATMENT NAME	RWSA	CLEAN YIELD T/A	RWST	% SUGAR	CJP %	POPULATION 100 FT. ROW			
						10 Day	20 Day	30 Day	Harvest
E-17	8023	28.9	277.5	18.7	94.9	119	197	237	204
C-1353	7635	28.0	272.4	18.4	94.9	90	165	207	198
Prompt	7576	27.7	273.2	18.5	95.0	136	210	228	160
B-5736	7399	26.1	283.4	19.2	94.7	111	160	191	150
E-33	7254	25.8	283.8	19.0	95.2	90	160	215	173
B-5400	7233	25.8	280.1	18.9	95.1	98	158	196	195
C-648	7141	25.5	280.6	19.2	94.4	100	172	189	157
Average	7466	26.8	278.7	18.8	94.9	107	175	209	177
LSD (5%)	379	1.7	n.s.	n.s.	n.s.	16.8	20.6	18.6	30
CV (%)	2.9	3.6	2.2	1.7	0.5	---	---	---	9.4

Comments: Trial conducted to determine variety performance in Ontario. Weights were determined with individual truck loads. Quality samples were taken from the piler. Leaf Spot pressure was low. Root Aphid pressure was moderate. Lab analysis performed at MARL (Michigan Agricultural Research Laboratory). Note tons/A are net or clean (tare 3.627% off). **Trial reliability was EXCELLENT.**

Cooperating agriculturist, Wayne Martin, Michigan Sugar Company; Janice LeBoeuf, Vegetable Crop Specialist; and Anne Verhallen, Soil Management Specialist; Ontario Ministry of Agriculture, Food and Rural Affairs, Ridgetown College.

# SUGARBEET ADVANCEMENT

Partnership  
of:



Sugar Beet Growers  
Michigan Sugar Company  
Monitor Sugar Company  
Michigan State University  
Agribusiness

## AVERAGE OF FIVE VARIETY TRIALS

### ON-FARM RESEARCH AND DEMONSTRATION

Cooperator: Five Locations Averaged  
Location: Bay, Tuscola, Sanilac,  
East Huron, West Huron  
Planting Date: 2001  
Row Spacing: ---  
Previous Crop: ---  
Seed Type: Medium Size 3  
Replicated: 5 Locations – 3 Replications Per Location

Tillage: ---  
Harvest Date: ---  
Type of Harvester: ---  
# of Rows Harvested: --- # Defoliated: ---  
Harvest Speed: ---  
Herbicides: ---  
Fungicides: ---

TREATMENT NAME	RWSA	ACTUAL YIELD T/A	RWST	% SUGAR	CJP %	POPULATION 100 FT. ROW			
						10 Day	20 Day	30 Day	Harvest
B-5451	6336	26.08	243	16.88	93.60	43	148	170	142
Prompt	5908	25.71	231	16.36	92.98	24	162	188	166
E-38	5753	24.44	237	16.62	93.30	45	169	189	165
B-5736	5728	24.59	233	16.60	92.50	29	122	141	130
RH-5	5443	23.87	229	16.18	93.24	42	154	171	155
Spartan	5306	22.28	238	16.52	93.44	33	149	170	142
C-1353	5264	23.52	224	16.08	92.70	30	155	173	150
E-33	5127	22.09	232	16.50	93.28	41	169	188	170
B-5400	4942	22.23	221	15.88	92.78	42	139	149	128
C-555	4942	20.91	235	16.58	93.02	49	164	181	156
C-648	4789	20.92	228	16.08	92.78	42	143	162	136
Average	5413	23.33	232	16.39	93.06	38	152	171	149
LSD (5%)	469	1.28	13	.54	.54	11	16	17	12
CV (%)	6.9	4.4	4.5	2.6	.5	23.8	8.3	8.0	6.6

Comments: Five locations – each variety replicated three times per location. Two sugar samples taken from each strip. A total of six sugar samples taken per variety at each location. All trials planted and tended by growers equipment and management. Leaf Spot susceptible varieties in some locations exhibited more Leaf Spot than more tolerant varieties. Some level of Root Aphid suspected of impacting yield in all trials. Top four strong emerging varieties are E-38, Prompt, E-33 and C-555. Varieties B-5736, B-5400 and C-648 are recognized as poor/slow emergers. Varieties perform differently under different environmental conditions, such as disease, insects, moisture, and plant population. Always refer to individual trials and comments at each location. **Trial reliability rating of all trials was VERY GOOD TO EXCELLENT.**

Cooperating agriculturists, Michigan and Monitor Sugar Companies.

# SUGARBEET ADVANCEMENT

Partnership  
of:



Sugar Beet Growers  
Michigan Sugar Company  
Monitor Sugar Company  
Michigan State University  
Agribusiness

## AVERAGE OF FIVE VARIETY TRIALS RANKINGS

### ON-FARM RESEARCH AND DEMONSTRATION

Cooperator: Five Locations Ranked  
Location: Bay, Tuscola, Sanilac,  
East Huron, West Huron  
Planting Date: 2001  
Row Spacing: Varies  
Previous Crop: Varies  
Seed Type: Medium Size 3  
Replicated: 5 Locations – 3 Replications Per Location

Tillage: ---  
Harvest Date: ---  
Type of Harvester: ---  
# of Rows Harvested: --- # Defoliated: ---  
Harvest Speed: ---  
Herbicides: ---  
Fungicides: ---

TREATMENT NAME	RWSA	ACTUAL YIELD T/A	RWST	% SUGAR	CJP %	POPULATION 100 FT. ROW			
						10 Day	20 Day	30 Day	Harvest
B-5451	1	1	1	1	1	---	---	6*	7*
Prompt	2	2	7	7	7	---	---	2*	2
E-38	3	4	3	2	3	---	---	1	3
B-5736	4	3	5	3	11	---	---	9	9
RH-5	5	5	8	8	5	---	---	5	5
Spartan	6	7	2	5	2	---	---	6*	7*
C-1353	7	6	10	10	10	---	---	4	6
E-33	8	9	6	6	4	---	---	2*	1
B-5400	9*	8	11	11	8*	---	---	8	10
C-555	9*	11	4	4	6	---	---	3	4
C-648	10	10	9	9	8*	---	---	7	8
<b>* These varieties tied for this ranking</b>									

Comments: These rankings are by category and ranked 1 through 11. One is the highest ranking and 11 is lowest. All five-variety trials are averaged and the relative differences between some rankings may be very small, or not significant. Use this information as reference only of how a variety may perform given several different environmental conditions. Refer to individual trials and comment sections for more information. When selecting varieties for your farm, also consider Leaf Spot, Root Aphid and Rhizoctonia tolerances and other factors pertinent to your farm. Variety specific information can be obtained from seed companies and/or Michigan and Monitor Sugar Companies.

Cooperating agriculturists, Michigan and Monitor Sugar Companies.



# SUGARBEET ADVANCEMENT

Partnership  
of:



## VARIETY TRIAL \* RAINFALL DATA – NEAREST LOCATION

Sugar Beet Growers  
Michigan Sugar Company  
Monitor Sugar Company  
Michigan State University  
Agribusiness

### ON-FARM RESEARCH AND DEMONSTRATION

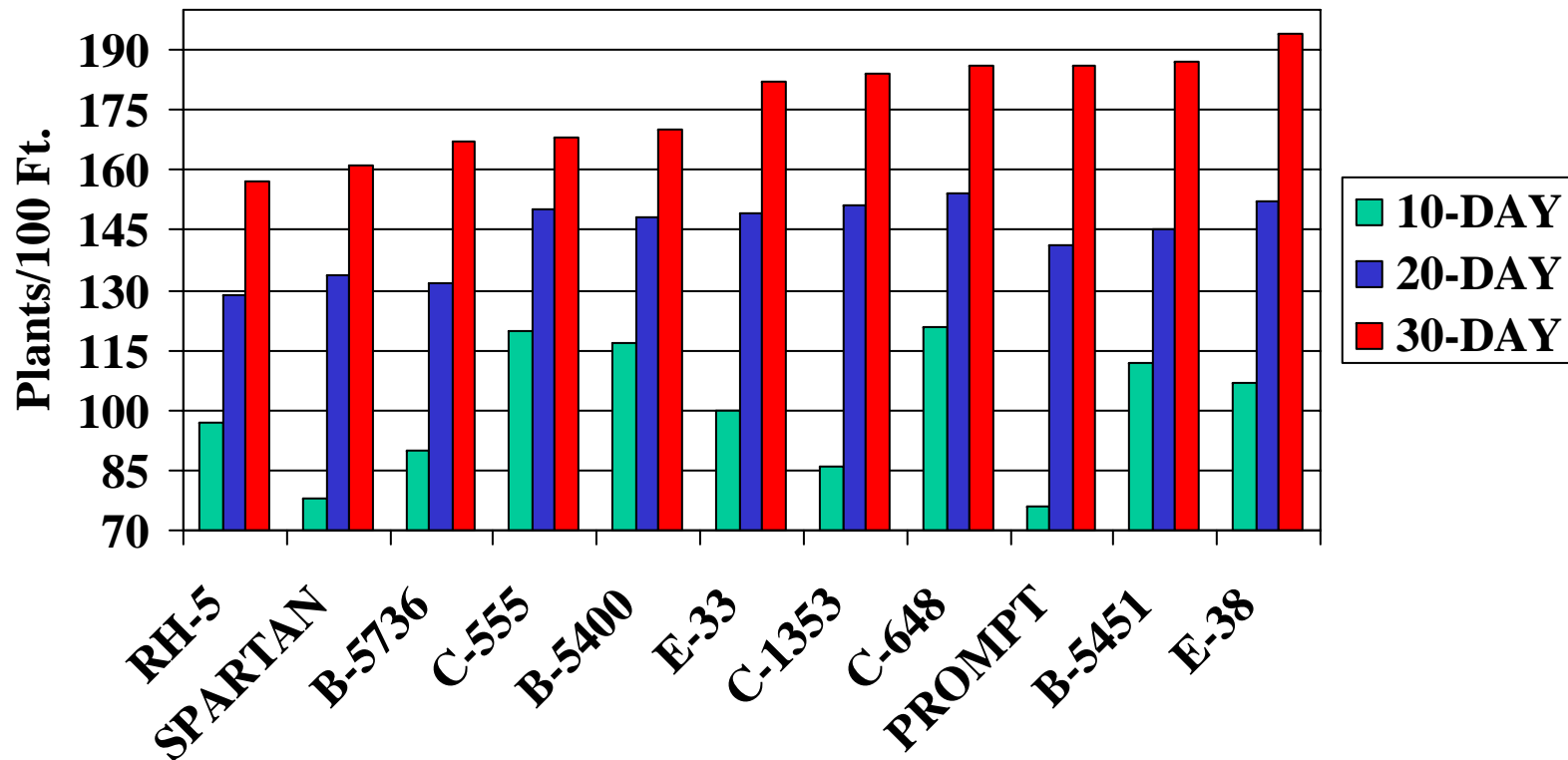
	YEAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	TOTAL RAINFAL L
Unionville Lakke Ewald	2001	1.53	1.84	2.85	.42	2.17	4.27	5.50	18.58
	2000	2.55	5.60	5.24	4.64	2.00	2.70	1.41	24.14
Ruth Scott Roggenbuck	2001	1.80	2.02	3.51	.35	1.98	5.10	5.47	20.23
	2000	2.16	6.14	5.93	4.9	3.80	3.90	1.86	28.69
Breckenridge Sherwood Farms	2001	2.20	5.87	1.74	.40	3.8	5.24	5.80	25.05
	2000	2.97	5.60	4.80	1.35	4.52	2.8	1.08	23.12
Pigeon Randy Sturm	2001	1.45	2.58	2.53	.67	3.03	6.59	5.34	22.19
	2000	3.08	9.62	2.78	5.53	3.62	3.03	1.88	29.54
Sandusky Rick and Rob Gerstenberger	2001	2.10	4.13	5.05	.71	1.82	5.34	8.13	27.28
	2000	2.51	3.75	3.14	3.69	1.79	2.34	1.90	19.12
Bay City Schindler Farms	2001	2.2	3.25	3.6	1.05	2.2	4.35	4.85	21.5
	2000	1.18	5.66	3.68	2.06	5.31	3.36	1.49	22.74

\* Rainfall data is at the nearest monitoring point to field. This data was not taken at field, so some difference may occur at the actual location.

# Variety Trial

## 10-, 20- and 30-Day Emergence

### Scott Roggenbuck Farm – Huron County



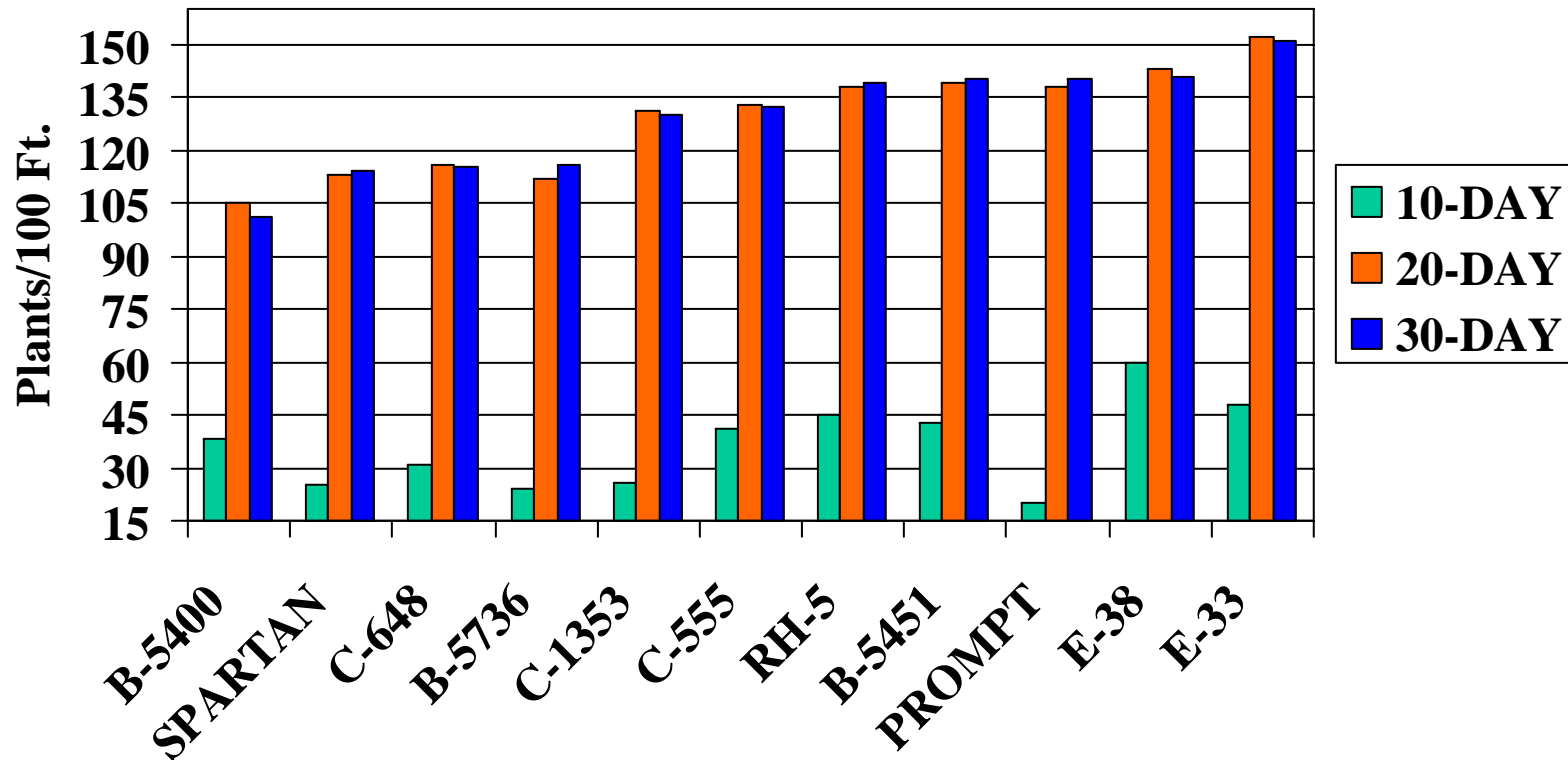
Planted April 14, 2001 – Seed Spacing 4 Inches

*Sugarbeet Advancement*

# Variety Trial

## 10-, 20- and 30-Day Emergence

### Kurt Ewald Farm – Tuscola County



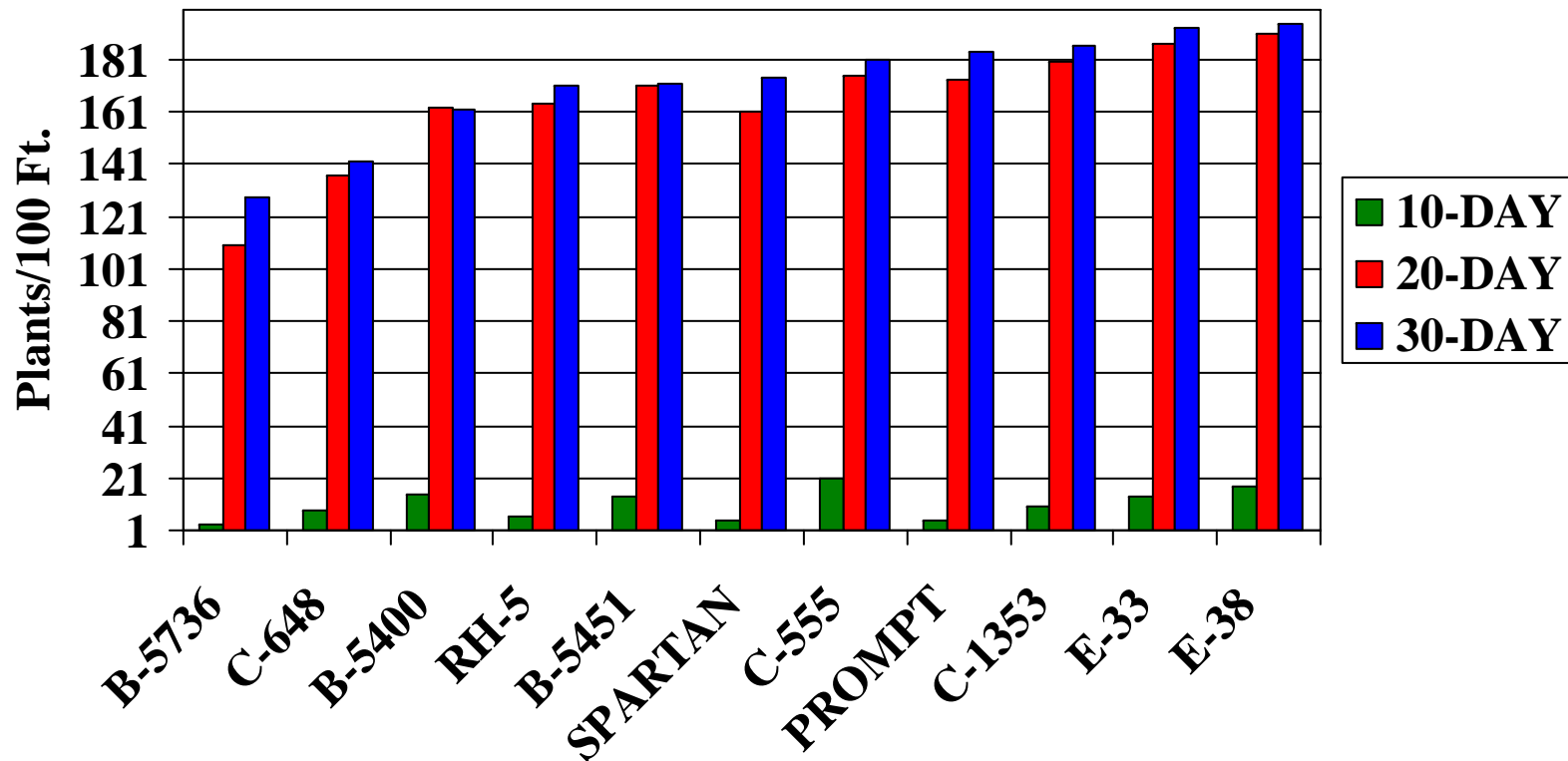
Planted April 17, 2001 – Seed Spacing 4.5 Inches

*Sugarbeet Advancement*

# Variety Trial

## 10-, 20- and 30-Day Emergence

### Schindler Farm – Bay County



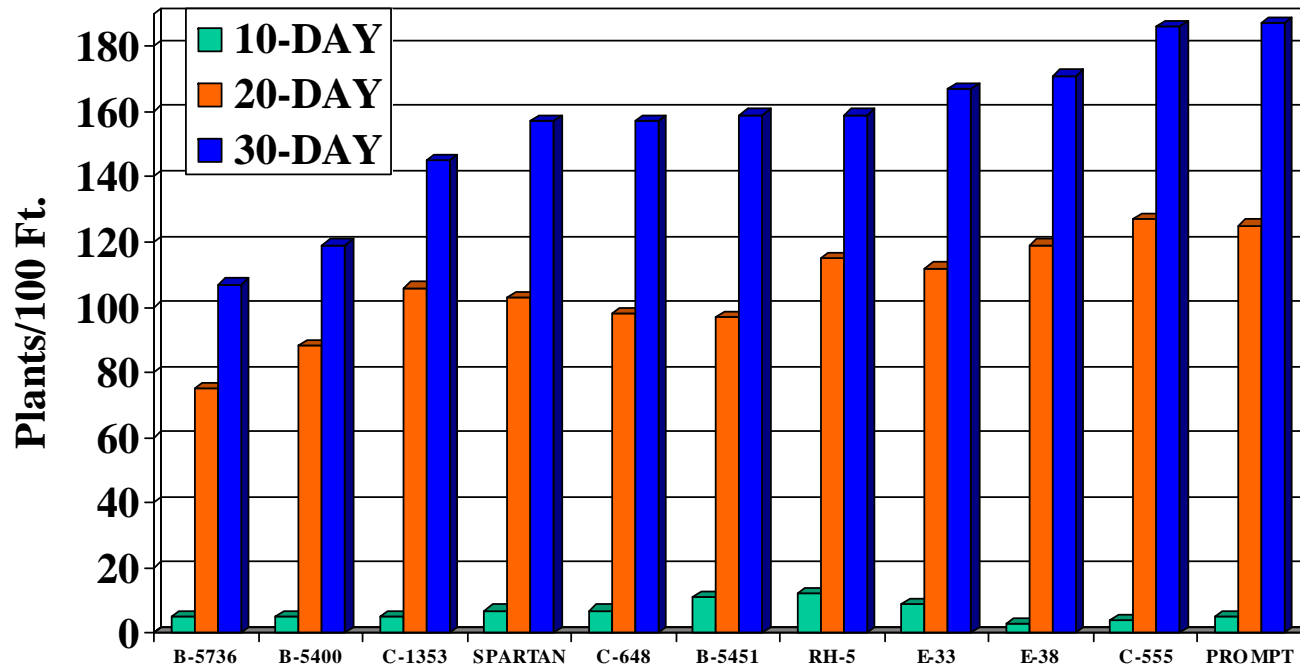
Planted April 18, 2001 – Seed Spacing 4.5 Inches

*Sugarbeet Advancement*

# Variety Trial

## 10-, 20- and 30-Day Emergence

### Randy Sturm Farm - Huron County



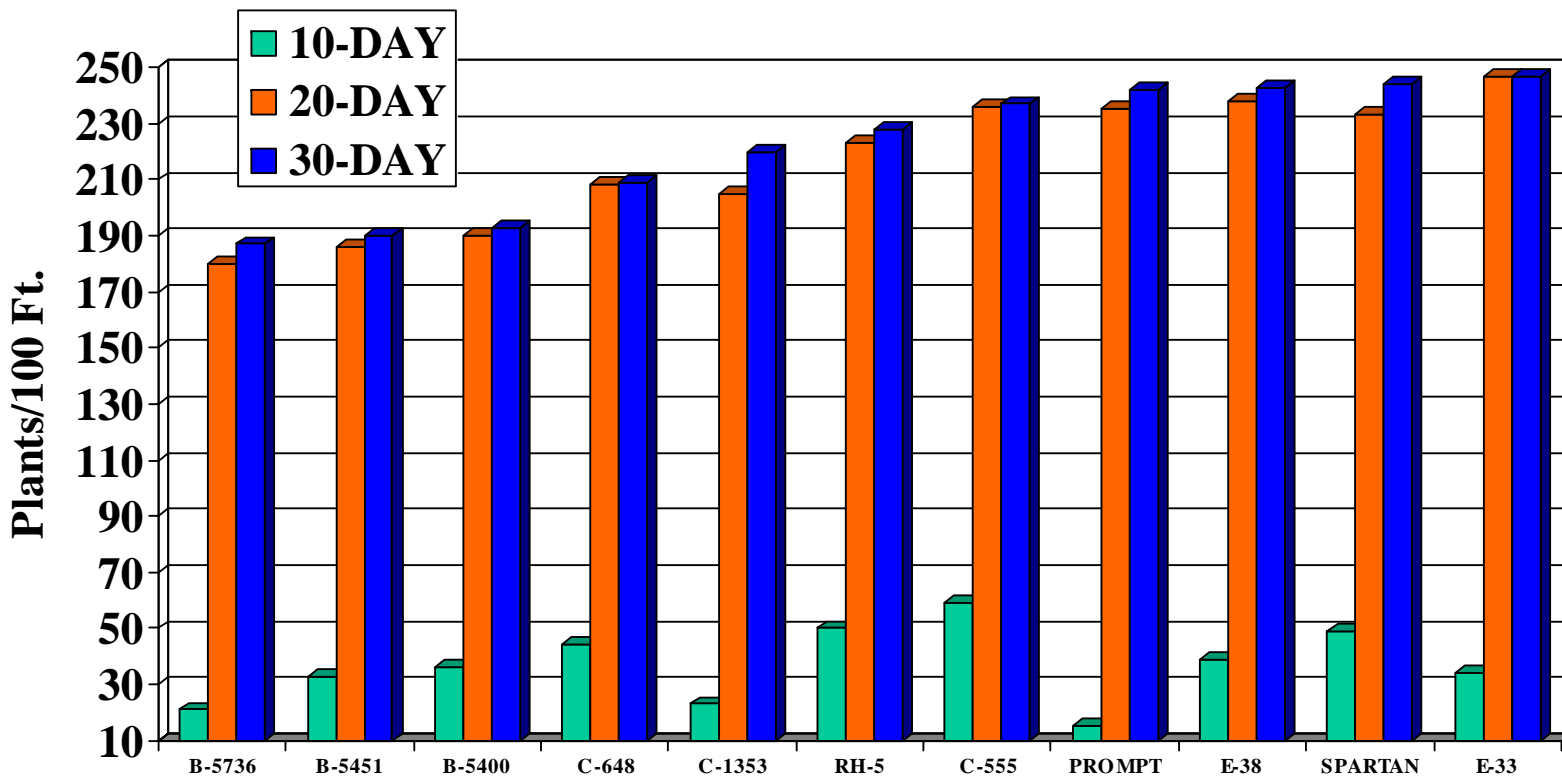
Planted April 23, 2001 – Seed Spacing 4 Inches. Field Had Heavy Crust.

Crust Busted Between 10 and 20 Days. – *Sugarbeet Advancement*

# Variety Trial

## 10-, 20- and 30-Day Emergence

### Gerstenberger Farm - Sanilac County



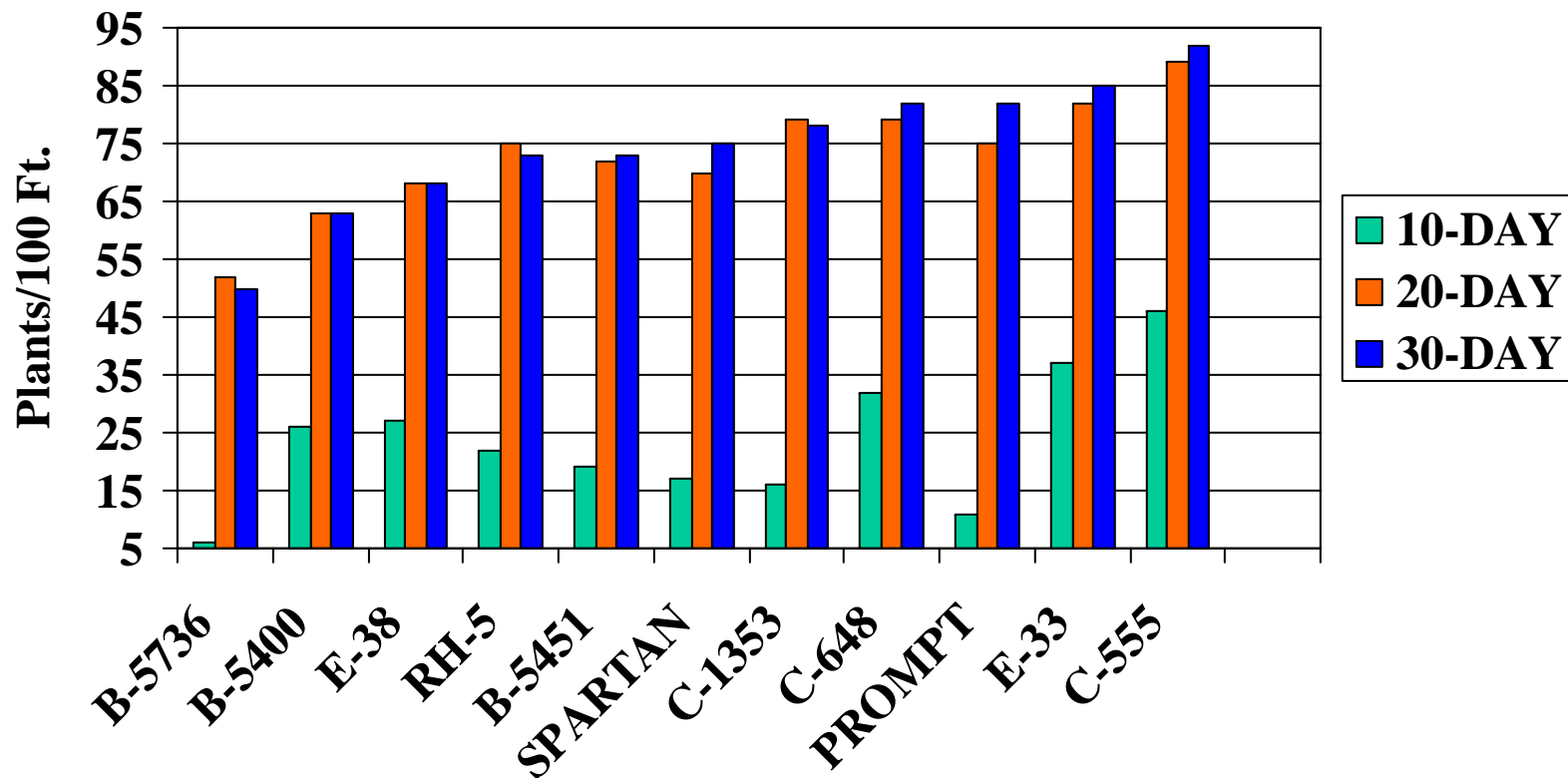
Planted April 25, 2001 – Seed Spacing 4 Inches.

No Crusting – Ideal Soil Moisture Conditions. – *Sugarbeet Advancement*

# Variety Trial

## 10-, 20- and 30-Day Emergence

### Sherwood Farm – Gratiot County

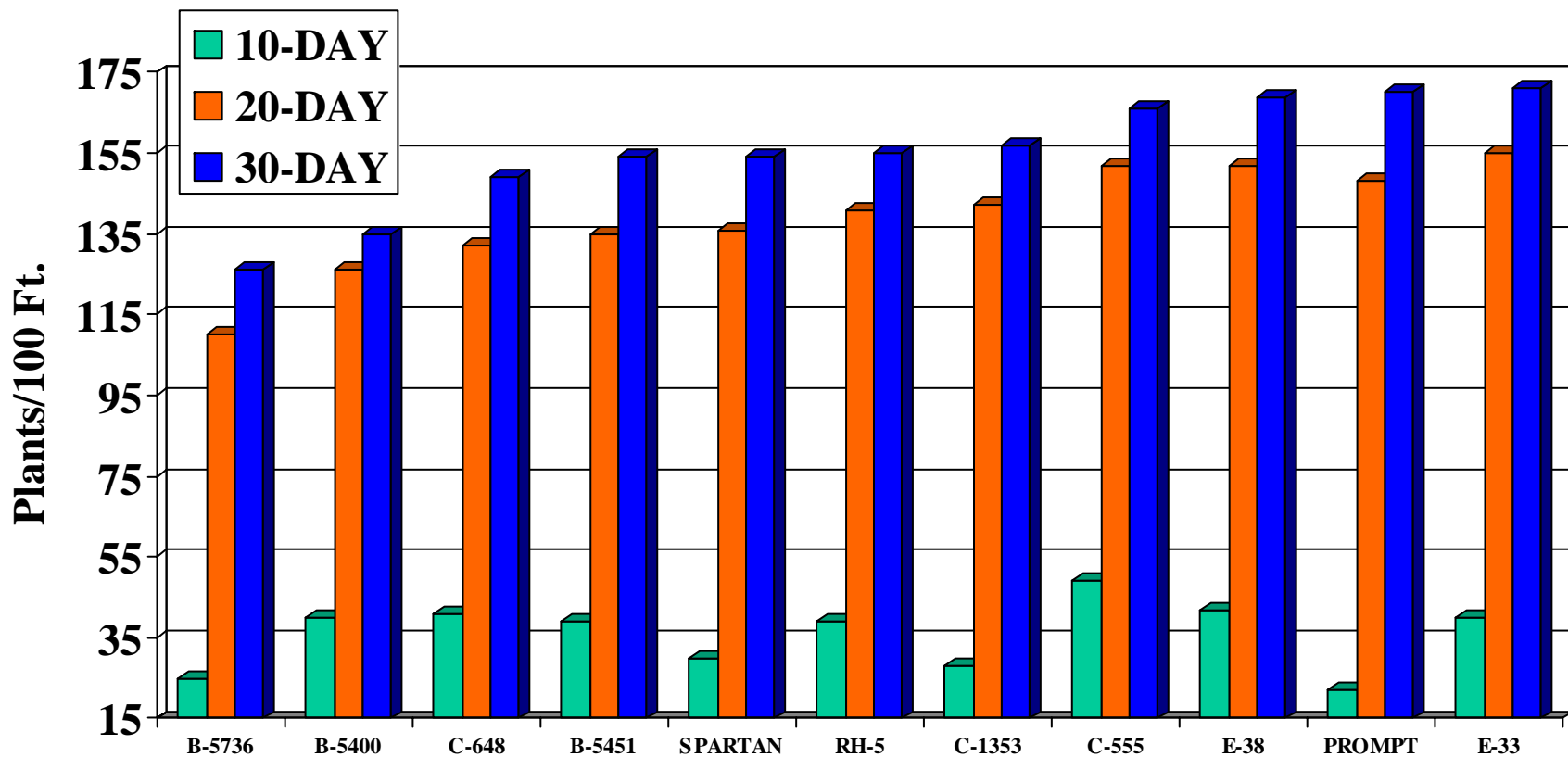


Planted April 18, 2001 – Seed Spacing 4 Inches – Heavy Crusting

TRIAL WAS NOT HARVESTED FOR YIELD - *Sugarbeet Advancement*

# Variety Trial

## 10-, 20- and 30-Day Emergence Averages



Ewald, Gerstenberger, Roggenbuck, Schindler, Sherwood and Sturm Farms

*Sugarbeet Advancement - 2001*



## EFFECT OF VARIETY AND SOIL CONDITIONS ON EMERGENCE

### Variety / % Emergence – 2001

**Table 1**

Field Emergence Conditions	(Poor Emerger) B-5736	(Average Emerger) C-648	(Excellent Emerger) E-38	Average Emergence
Ideal – Bean & Beet Farm (Warm)	73%	79%	86%	79%
Fair – Ewald Trial (Cool)	44%	43%	53%	47%
Poor – Sherwood Trial (Crusting)	17%	27%	23%	22%
<b>Average Emergence</b>	<b>45%</b>	<b>50%</b>	<b>54%</b>	<b>49%</b>

Company records indicate producers achieve approximately 50% emergence when averaged between all conditions and varieties. (Table 1.) Wide variations can occur between emergence conditions and variety. Three varieties are being compared. B-5736 is considered poor, C-648 is fair, and E-38 is an excellent emerging variety. Under ideal conditions, all approved varieties can achieve excellent stands. Under poor field conditions (i.e., crusting), poor emerging varieties will less often establish an adequate population when compared to excellent emerging varieties.

### SEED SPACING CHART

#### Variety Emergence Rating

**Table 2**

Field Emergence Conditions	Poor Emerging Variety	Average Emerging Variety	Excellent Emerging Variety
Ideal - Average 70 to 80% Emergence	4.5-Inches	4.75-Inches	5.0-Inches
Fair - Average 40 to 60% Emergence	3.5-Inches	4.0-Inches	4.2-Inches
Poor – Average 20 to 30% Emergence	3.0-Inches	3.0-Inches	3.0- Inches

Producers need to adjust seed spacing based on variety and seedbed conditions to achieve the recommended harvest stand of 150 - 175 beets per 100 feet of row for both 30- and 22-inch rows. Growers will need to adjust seed spacing as much as 25% above or below our normal 4-inch seed spacing to achieve the desired stand. Use Table 2 to help determine approximate seed spacing based on field condition and variety. Remember, on average you lose 10% of stand from 30-days after emergence to harvest. Your judgment is required to determine field emergence conditions.

*The financial penalty for thin stands far outweigh any penalty for too thick of stand.*

**Research conducted by Steve Poindexter, Sugarbeet Advancement, 2001**

# MICHIGAN SUGAR COMPANY

## MICHIGAN VARIETY TEST RESULTS

### THREE-YEAR AVERAGES (2001-00-99) FOR VARIETIES APPROVED FOR 2002 PLANTING

Variety	3 YEAR OVT AVERAGE (2001-00-99)					Leafspot Rating	Root Aphid Rhizoctonia Rating				
	RWSA	% SUGA	RWST	TON/A	% Emerg			\$(GROSS-T/H) per ACRE(b)			
Beta 5451 RA, Aph	6424	17.58	247.4	26.0	46	34.11	885	730	<b>Excellent</b>	<b>Excellent</b>	<b>Good</b>
Beta 5400	6198	17.90	253.0	24.4	47	34.82	850	704	Poor	Fair	Fair
Seedex Prompt	6159	17.73	250.0	24.6	59	34.45	849	701	Poor	<b>Excellent</b>	Fair
Beta 5736 RH	6132	17.69	247.7	24.6	46	34.36	844	697	<b>Excellent</b>	<b>Excellent</b>	<b>Good</b>
Hilleshog E17	6104	17.95	254.5	23.9	60	34.93	836	692	Poor	<b>Good</b>	Poor
Crystal 648	6088	18.05	254.6	23.9	49	35.15	838	695	<b>Good</b>	Poor	Poor
Hilleshog RH5 RH	6063	17.81	251.7	24.1	54	34.62	833	689	Fair	Poor	<b>Good</b>
Beta 5977	6037	17.76	250.7	24.0	52	34.52	830	685	Poor	Poor	Poor
Crystal 319	5978	18.03	253.3	23.6	54	35.12	828	686	<b>Good</b>	Poor	Poor
Beta 5823	5955	17.74	249.7	23.8	50	34.46	819	676	Fair	Poor	Poor
Hilleshog E33 RH	5931	18.10	256.7	23.0	57	35.26	812	674	Fair	Poor	Fair
Hilleshog E4 RA	5754	17.23	242.1	23.7	56	33.34	790	648	<b>Good</b>	<b>Excellent</b>	Poor
Hilleshog E10	5600	17.81	250.2	22.3	54	34.63	773	639	Fair	<b>Good</b>	Poor
Crystal 1353 RH	5495	17.17	241.1	22.7	52	33.22	755	619	<b>Excellent</b>	<b>Excellent</b>	<b>Excellent</b>
<b>AVERAGE 5994</b>		<b>17.75</b>	<b>250.2</b>	<b>23.9</b>	<b>53</b>						

a) \$/TON value based on \$34.50/ton with a 17.75% sugar content (with a 0.06400 sliding scale).

b) \$(GROSS-T/H)/A value based on \$6/ton trucking and harvesting (T/H).

2001  
MONITOR SUGAR COMPANY  
OFFICIAL VARIETY TRIAL<sup>(2)</sup>  
AVERAGE OF 3 YEARS

VARIETY	RWSA	% SUGAR		% <sup>(1)</sup> EMERG		LEAF- <sup>(4)</sup>		RESISTANCE		
		TON/A	TON/A	SPOT	LEAFSPOT	RHIZOCTONIA	APHIDS	APHANOMYCES		
Beta 5451	6725	17.32	26.43	41.6	2.3	Poor	Good	Excellent	Excellent	
Crystal 963	6488	17.26	26.22	40.9	3.4	Poor	Good	Excellent	Excellent	
HM E-38	6313	17.56	24.59	50.7	3.4	Poor		Excellent	Good	
SX Prompt	6205	17.30	24.74	51.4	3.1	Poor	Fair	Excellent	Excellent	
SX 1220	6163	17.57	24.14	47.9	2.3	Excellent	Fair	Excellent		
Beta 5736	6154	17.42	24.86	38.0	1.9	Excellent	Good	Excellent		
Beta 5400	6132	17.42	24.49	41.7	3.2	Poor	Fair	Fair	Good	
Beta 5823	6082	17.25	24.10	41.7	3.0	Fair				
Beta 5977	6075	17.29	24.06	43.1	3.3	Poor			Fair	
HM E-17	6055	17.44	24.32	51.0	3.4	Poor		Good	Excellent	
SX Spartan	6009	17.49	23.32	47.6	2.9	Fair		Good		
Crystal 648	5987	17.73	23.89	41.9	2.7	Good			Good	
HM RH5 <sup>(3)</sup>	5927	17.32	24.19	45.3	2.9	Fair	Good			
HM E-33 <sup>(3)</sup>	5771	17.64	22.92	50.2	3.0	Fair	Fair			
Crystal 555	5746	17.57	23.29	49.8	2.3	Excellent			Excellent	
HM E-4 <sup>(3)</sup>	5636	16.78	23.84	51.3	2.7	Good		Excellent		
Crystal 1353 <sup>(3)</sup>	5629	16.64	23.06	47.0	2.0	Excellent	Excellent	Excellent		
GM	6065	17.35	24.26	45.9	2.8					

Rows: 2 Row Length: 30' Row Width: 30"

(1) Percentage of plants before thinning compared to seeds planted.

**(2) This test is planted thick with a 1.3 inch seed spacing and thinned to give all varieties an equal stand. This is necessary because when varieties are first tested the seed quality does not compare to a commercially prepared variety.**

(3) Special Approval varieties, do not meet all standards for approval.

(4) A lower number shows more resistance.

# Michigan Sugar Company

Plant To Stand Trials – 2001

Entry No.	Variety	RWSA	TON/A	RWST	%Suc	%CJP	%Emerg
13	SX Prompt	6661	27.26	244.6	17.05	93.75	69
9	Hilleshog E17	6547	26.44	249.8	17.32	93.94	68
12	Hilleshog RH5	6219	24.58	249.8	17.21	94.28	62
5	Beta 5736	6159	25.13	245.8	17.22	93.51	57
11	Hilleshog E33	6136	24.25	256	17.63	94.24	64
2	Crystal 648	6091	24.53	249.7	17.33	93.92	57
6	Beta 5400	5937	24.42	242.2	16.88	93.81	55
3	Crystal 1353	5923	23.85	241.3	16.85	93.69	62
1	Crystal 319	5920	23.68	251.8	17.4	94.11	66
4	Beta 5977	5902	23.93	247	17.15	93.93	59
10	Hilleshog E4	5723	24.33	235.4	16.47	93.72	62
8	Hilleshog E10	5632	22.91	246.4	17.14	93.85	60
7	Beta 5823	5427	22.72	238.7	16.78	93.44	54
LSD (P=.05)		511	1.58	7.2	0.39	0.44	6
CV		6.57	5.01	2.29	1.77	0.36	7.6
Grand Mean		6021	24.46	246.1	17.11	93.86	61
Treatment Prob(F)		0.0016	0.0001	0.0001	0.0001	0.0074	0.0001

2001  
MONITOR SUGAR COMPANY

SPACE PLANT<sup>(2)</sup>

AVERAGE OF TWO YEARS

VARIETY	RWSA	% SUGAR	RWST	TON/A	% PURITY	BEETS/ 100' AT HARVEST	% <sup>(1)</sup> EMERG	LEAF- SPOT
HM E-17	5583	16.87	237.6	23.71	92.95	112	49.9	3.1
SX Prompt	5413	16.32	225.3	24.23	92.19	116	52.1	3.1
HM E-33	5398	16.89	238.1	22.88	92.97	115	51.7	2.8
ACH 555	5287	16.92	236.7	22.53	92.64	111	50.5	2.2
HM RH5	5224	16.21	224.5	23.49	92.31	101	44.9	2.7
HM E-38	5166	16.56	230.4	22.69	92.47	103	50.3	3.2
Beta 5400	5117	16.73	234.5	21.89	92.79	94	48.1	2.9
SX Spartan	4954	16.49	230.0	21.84	92.58	99	48.3	2.9
Beta 5977	4915	16.08	222.4	22.20	92.33	97	45.8	3.1
Beta 5736	4847	16.25	222.7	21.82	91.88	86	40.3	1.9
ACH 1353	4578	15.57	211.7	22.03	91.68	92	45.3	1.9
GM	5135	16.44	228.5	22.66	92.43	102	47.9	2.7

Rows: 4    Row Length: 30'    Row Width: 30"    Replications: 6

(1) Percentage of plants compared to seeds planted.

(2) Seed spacing 4.75 inches.

# SUGARBEET ADVANCEMENT

Partnership  
of:



Sugar Beet Growers  
Michigan Sugar Company  
Monitor Sugar Company  
Michigan State University  
Agribusiness

## LEAF SPOT TRIAL

### ON-FARM RESEARCH AND DEMONSTRATION

Cooperator: Baxter Farms  
Location: Gratiot County  
Planting Date: 4/26/01  
Row Spacing: 30-Inches  
Previous Crop: Dry Beans  
Fertilizer: 225 lbs. of 13-13-13 Starter  
                  260 lbs. of Urea Broadcast  
Replicated: 3 X – 4 Sugar Samples  
                  Per Replication  
Variety: B-5736

Tillage: Fall Chisel Plowed, Field Cultivated 2 X  
Harvest Date: ---  
Type of Harvester: ---  
# of Rows Harvested: ---   # Defoliated: ---  
Harvest Speed: ---  
Herbicides: Pre Pyramin – Post Betamix + Stinger  
Fungicide: Quadris – Eminent – None, Spray Date 8/14/01  
Seed Spacing: 4.5-Inches  
Soil Type: Clay Loam

TREATMENT NAME	RWSA	ACTUAL YIELD T/A	RWST	% SUGAR	CJP %	POPULATION 100 FT. ROW			
						10 Day	20 Day	30 Day	Harvest
Eminent	---	---	219	16.5	91.9	---	---	---	---
Quadris	---	---	210	15.8	91.6	---	---	---	---
No Spray	---	---	208	15.8	91.2	---	---	---	---
Average	---	---	212	16.0	91.6	---	---	---	---
LSD (5%)	---	---	n.s. 29	.6	n.s. 2.1	---	---	---	---
CV (%)	---	---	6.0	1.7	1.0	---	---	---	---

Comments: Trial was conducted to look at the effectiveness of fungicides Eminent and Quadris compared to no spray. Only one application of Eminent and one of Quadris was applied. A total of 12 sugar samples were taken per treatment. Eminent seemed to significantly improve sugar content above the Quadris or Check treatments. Visual observation indicated very little difference in incidence of Leaf Spot. Tonnage yield was not taken.

Cooperating Agriculturist, Wayne Davis, Monitor Sugar Company.

# SUGARBEET ADVANCEMENT

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## RHIZOCTONIA TRIAL

### ON-FARM RESEARCH AND DEMONSTRATION

Cooperator: Reif Farms  
Location: Saginaw County  
Planting Date: 4/18/01  
Row Spacing: 30-Inches  
Previous Crop: Corn  
Variety: See Below  
Replicated: 4 X  
Seed Spacing: 4.8-Inches  
Soil Type: Clay Loam  
Soil pH: 7.1  
Organic Matter: 2.4%

Tillage: Fall Plowed; 1 X Field Cultivated  
Harvest Date: 10/8/01  
Type of Harvester: Arts-Way  
# of Rows Harvested: 6      # Defoliated: 6  
Harvest Speed: ---  
Herbicides: 1 Pt. Nortron – 10” Band; Post Spray  
                  Betamix + Stinger 3X  
Fertilizer: 10 gal. 10-34-0; 1 Qt. Mn; 10 gal. 28-0-0;  
                  120 lbs. N sidedressed  
Fungicide: No

TREATMENT NAME	RWSA	ACTUAL YIELD T/A	RWST	% SUGAR	CJP %	POPULATION 100 FT. ROW			
						10 Day	20 Day	30 Day	Harvest
E-33	3852	16.49	234	16.2	93.7	68	119	125	117
C-555 + B-5736 50% Mix	3762	16.56	227	15.6	93.6	38	102	109	99
C-555	3659	17.14	214	15.5	92.7	70	137	140	132
B-5736	3430	15.66	220	15.5	93.0	19	79	97	80
Average	3676	16.46	224	16	93.3	49	109	118	107
LSD (5%)	362	1.42	18	.4	n.s. 1.7	24	25	24	20
CV (%)	6.2	5.4	5.1	1.7	1.1	30.6	14.6	12.9	11.8

Comments: Trial was conducted to look at the effects of different Rhizoctonia levels of resistance in varieties and the effect of mixing varieties. B-5736 rated high, E-33 moderate and C-555 little Rhizoctonia resistance. Field had moderate crusting problem that affected emergence. Leaf Spot control was good. Some Rhizoctonia present, but not at high levels. Sugar samples taken on October 4<sup>th</sup>. Fifty percent mix variety performed as well or slightly better than C-555 or B-5736 alone, but not significantly better. Suspect Root Aphid present at some level. Emergence had a greater impact than Rhizoctonia resistance on yield and quality.

Cooperating Agriculturist, Dave Ganton, Monitor Sugar Company.

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## RHIZOCTONIA TRIAL

### ON-FARM RESEARCH AND DEMONSTRATION

Cooperator: Meylan Farms  
Location: Bay County  
Planting Date: 4/19/01  
Row Spacing: 30-Inches  
Previous Crop: Dry Beans  
Variety: See Below  
Replicated: 3 X  
Seed Spacing: 4-Inches  
Soil Type: Loam

Tillage: Fall Chisel Plowed – 1 X Field Cultivated  
Harvest Date: 10/10/01  
Type of Harvester: Arts-Way  
# of Rows Harvested: 6 # Defoliated: 6  
Harvest Speed: 3.7 mph  
Herbicides: Nortron + Lorsban 10-inch band – 2 X Micro Rate  
Fertilizer: 200 lbs. 0-0-10 Fall; 25 gals. of 28% Preplant;  
20 gals. 10-25-1 – 2 quarts Mg + Sulphur  
Fungicide: 8/13/01 - Eminent

TREATMENT NAME	RWSA	ACTUAL YIELD T/A	RWST	% SUGAR	CJP %	POPULATION 100 FT. ROW			
						10 Day	20 Day	30 Day	Harvest
E-33	3913	18.42	207	15.0	91.5	25	163	180	160
B-5736	3894	20.22	193	14.3	90.1	6	93	141	120
C-555	3778	18.42	205	15.1	91.0	24	148	171	143
C-555 + B-5736 50% Mix	3752	19.11	196	14.3	90.9	15	127	164	135
Average	3834	19.16	201	14.7	90.9	17	133	164	139
LSD (5%)	n.s. 522	n.s. 1.85	n.s. 23	n.s. .9	1.3	11	29	30	20
CV (%)	6.8	4.82	5.7	3.2	.7	38.1	13.6	11.4	9.2

Comments: Trial was conducted to look at the effects of different Rhizoctonia levels of resistance in varieties and the effect of mixing varieties. B-5736 rated high, E-33 moderate and C-555 little Rhizoctonia resistance. Low amount of Rhizoctonia in field. Good Leaf Spot control. Sugar samples taken on October 10<sup>th</sup>. No significant impact of yield between any treatment. Only significant difference is between emergence.

Cooperating Agriculturist, Tom Schlatter, Monitor Sugar Company.



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## QUADRIS TRIAL

### ON-FARM RESEARCH AND DEMONSTRATION

Cooperator: Dave Helmreich  
Location: Bay County  
Planting Date: 4/17/01  
Row Spacing: 30-Inches  
Previous Crop: **CORN**  
Variety: C-555  
Replicated: 4 X  
Seed Spacing: 4.5-Inches  
Soil Type: Loam  
Soil pH: 7.3  
Organic Matter: 2.7%  
Leaf Spot Fungicide:  
1<sup>st</sup> Application Quadris;  
2<sup>nd</sup> Application Topsin + Penncozeb

Tillage: Chisel Plowed; 1 X Field Cultivated  
Harvest Date: 11/3/01  
Type of Harvester: Parma  
# of Rows Harvested: 6 # Defoliated: 6  
Harvest Speed: 4.5 mph  
Herbicides: Micro-rated 2 X; Post Spray Progress +  
Stinger + Upbeet 1X  
Fertilizer: 145 lbs. 9-41-0; 4% Mg; 110 lbs. N Broadcast and  
Sidedressed; 180 K<sub>2</sub>O Broadcast  
Fungicide: Quadris: Early Application 6-8 leaf stage –  
10.5 oz./acre – 10-inch band;  
Quadris: Late Application prior to row closure –  
9.2 oz./acre broadcast

TREATMENT NAME	RWSA	ACTUAL YIELD T/A	RWST	% SUGAR	CJP %	DISEASED PLANTS PER 100 METERS
Early + Late Application	5251 c	20.2 b	260 a	17.8 a	94.5 a	3 b
Early Application	5092 bc	19.6 b	256 a	17.7 a	94.0 a	5 b
Late Application	4754 ab	18.5 a	257 a	17.7 a	94.1 a	36 a
Check	4692 a	18.9 a	248 a	17.4 a	93.7 a	42 a
Average	4947	19.3	255	17.7	94.1	22

Comments: Results followed by the same letter are not significantly different. Trial was conducted to look at the effects of Quadris applications for control of Rhizoctonia Crown Rot. Rhizoctonia pressure was moderate. Leaf Spot control was excellent. Significant differences occurred between RWSA, tonnage and diseased plants in treated versus untreated Check. Sugar samples taken on October 10<sup>th</sup>. Quadris looks promising for control of Rhizoctonia Crown Rot. Quadris costs approximately \$20 per application. Early applications are more effective than late applications. Yield of Rhizoctonia resistant variety (C-1353) in adjacent trial (same field) was 23.5 tons per acre and 4,966 lbs. of RWSA.

Cooperating Agriculturist, John Leach, Lee Hubbell, Research Agronomist, Monitor Sugar Company; John Halloin, ARS USDA; and David Johnson, MSU Dept. of Plant Pathology.

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## QUADRIS TRIAL

### ON-FARM RESEARCH AND DEMONSTRATION

Cooperator: Dave Helmreich

Location: Bay County

Planting Date: 4/17/01

Row Spacing: 30-Inches

Previous Crop: **SOYBEANS**

Variety: C-555

Replicated: 4 X

Seed Spacing: 4.5-Inches

Soil Type: Loam

Soil pH: 6.4

Organic Matter: 2.3%

Leaf Spot Fungicide:

1<sup>st</sup> Application Quadris

2<sup>nd</sup> Application Topsin + Penncozeb

Tillage: Chisel Plowed; 1 X Field Cultivated

Harvest Date: 10/31/01

Type of Harvester: Parma

# of Rows Harvested: 6 # Defoliated: 6

Harvest Speed: 4.5 mph

Herbicides: Micro-rated 2 X; Post Spray Progress +  
Stinger + Upbeet 1X

Fertilizer: 145 lbs. 9-41-0; 4% Mg; 110 lbs. N Broadcast and  
Sidedressed; 180 K<sub>2</sub>O Broadcast

Fungicide: Quadris: Early Application 6-8 leaf stage –  
10.5 oz./acre – 10-inch band;

Quadris: Late Application prior to row closure –  
9.2 oz./acre broadcast

TREATMENT NAME	RWSA	ACTUAL YIELD T/A	RWST	% SUGAR	CJP %	DISEASED PLANTS PER 100 METER
Early + Late Application	5706 b	22.5 c	255 a	17.6 a	93.3 a	6 b
Early Application	5115 b	20.7 c	247 a	17.3 a	93.0 a	10 b
Late Application	3961 a	17.0 b	234 a	17.2 a	92.6 a	90 b
Check	3338 a	14.2 a	234 a	17.3 a	92.4 a	121 a
Average	4530	18.6	243	17.4	92.8	57

Comments: Results followed by the same letter are not significantly different. Trial was conducted to look at the effects of Quadris applications for control of Rhizoctonia Crown Rot. Rhizoctonia pressure was heavy. Leaf Spot control was excellent. Significant differences occurred between RWSA, tonnage and diseased plants in treated versus untreated Check. Sugar samples taken on October 10<sup>th</sup>. Quadris looks promising for control of Rhizoctonia Crown Rot. Quadris costs approximately \$20 per application. Early applications are more effective than late applications. Yield of Rhizoctonia resistant variety (C-1353) in adjacent trial (same field) was 22.6 tons per acre and 5,010 lbs. of RWSA.

Cooperating Agriculturist, John Leach, Lee Hubbell, Research Agronomist, Monitor Sugar Company; John Halloin, ARS USDA; and David Johnson, MSU Dept. of Plant Pathology.

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## QUADRIS TRIAL

### ON-FARM RESEARCH AND DEMONSTRATION

Cooperator: Gary and Gene Meylan  
Location: Bay County  
Planting Date: 4/19/01  
Row Spacing: 30-Inches  
Previous Crop: Dry Beans  
Variety: Spartan  
Replicated: 4 X  
Seed Spacing: 4-Inches  
Soil Type: Loam  
Soil pH: 6.9  
Organic Matter: 2.3%

Tillage: Fall Chisel Plowed – 1 X Field Cultivated  
Harvest Date: 10/10/01  
Type of Harvester: Arts-Way  
# of Rows Harvested: 6 # Defoliated: 6  
Harvest Speed: 3.7 mph  
Herbicides: Nortron + Lorsban 10-Inch Band – 2 X Micro Rate  
Fertilizer: 200 lbs. 0-0-60 Fall Applied; 25 gals. 28% N Preplant;  
Planter 20 gals. 10-25-0; 2 quarts Mg; + Sulphur  
Sidedressed 25 gals.  
Fungicide: Quadris: Early Application 6-8 leaf stage –  
10.5 oz./acre – 10-inch band  
Quadris: Late Application prior to row closure –  
9.2 oz./acre broadcast  
No other Leaf Spot fungicide applied

TREATMENT NAME	RWSA	ACTUAL YIELD T/A	RWST	% SUGAR	CJP %	DISEASED PLANTS PER 100 METERS
Early + Late Application	3708 b	16.9 a	219 b	15.6 b	92.6 b	1
Late Application	3461 ab	16.9 a	205 ab	15.0 ab	91.7 ab	11
Early Application	3388 ab	16.3 a	208 ab	15.1 ab	92.1 ab	2
Check	2957 a	15.5 a	191 a	14.6 a	91.1 a	18
Average	3379	16.4	206	15.1	91.9	8

Comments: Trial was conducted to look at effects of Quadris applications for control of Rhizoctonia Crown Root Rot. Rhizoctonia pressure was low. Leaf Spot control was only fair. Significant differences occurred between early and late applications of Quadris and Check treatments for RWSA, RWST, % Sugar, and CJP. Results followed by the same letter not significantly different. Sugar samples taken on 10/1/01. Average harvest stand between all treatments – 147 beets/100 ft. of row. Significant reduction of diseased plants occurred with early and early plus late treatments when compared to Check. Quadris looks promising for control of Rhizoctonia Crown Rot. Quadris cost approximately \$20 per application.

Cooperating Agriculturist, Tom Schlatter, Lee Hubbell, Research Agronomist, Monitor Sugar Company; John Halloin, ARS USDA; and David Johnson, MSU Dept. of Plant Pathology.

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## PELLETED SEED TREATMENT TRIAL

### ON-FARM RESEARCH AND DEMONSTRATION

Cooperator: Herford Farms  
Location: Huron County  
Planting Date: 4/19/01  
Row Spacing: 22-Inches  
Previous Crop: Dry Beans  
Variety: 2M Pellet E-17, B-5736  
Replicated: 3 X – Row Length 1,250 ft.  
Seed Spacing: 4.8-Inches  
Soil Type: Loam  
Soil pH: 7.5  
Organic Matter: 2.3%

Tillage: Chisel Plowed; 1 X Danish Tine  
Harvest Date: 11/09/01  
Type of Harvester: Arts-Way  
# of Rows Harvested: 6 # Defoliated: 6  
Harvest Speed: 4 mph  
Herbicides: 2 lbs. Pyramin Pre-Emerge; Post Spray  
Betamix + Upbeet + Stinger 1 X  
Fertilizer: 4.5 gal. 9-18-3; 140 lbs. N 28%; 150 lbs. 0-0-60  
Broadcast  
Fungicide: 1 X Eminent

TREATMENT NAME	RWSA	ACTUAL YIELD T/A	RWST	% SUGAR	CJP %	POPULATION 100 FT. ROW			
						10 Day	20 Day	30 Day	Harvest
Film Coat E-17	5060	22.98	220	14.8	93.4	2	123	129	118
PAT Pellet E-17	4856	22.05	220	15.1	92.9	3	122	132	122
Film Coat B-5736	4802	23.05	208	15.5	91.4	0	90	103	97
Early Harvest In Pellet B-5736	4728	22.89	207	15.4	92.0	9	78	88	82
Early Harvest On Seed Pellet B-5736	4597	22.25	207	15.4	91.4	7	78	85	82
Early Harvest On Seed Pellet E-17	4574	21.71	211	14.5	92.5	8	105	114	106
Early Harvest In Pellet E-17	4518	21.90	206	15.2	92.5	7	117	122	117
PAT Pellet B-5736	4423	22.17	199	15.2	90.6	12	68	73	71
Average	4694	22.37	210	15.1	92.1	6	98	106	99
LSD (5%)	n.s. 688	n.s. 1.7	n.s. 28	n.s. 1.1	1.5	6	29	30	28
CV (%)	8.4	4.24	7.7	4.2	.9	52	17	16	15.9

Comments: Early Harvest Talc Seed Treatment contains plant hormonal components in a nutrient base to stimulate plant growth. This product is marketed by Griffin, LLC. Research was conducted to measure the impact of this product on early season plant growth and final yield. The product was utilized two ways: 1) on the seed, then a pellet coating applied over the top; 2) mixed with the pellet material while making pellets. All pelleted treatments are PAT treated. Film coated seed is not PAT treated. Did not see any significant early season growth or yield difference between early harvest and Check treatment. Field was crust busted 11 days after planting. Crust busting may have been more injurious to further advanced PAT treatment compared to standard film coat treatment. Sugar samples were taken on 10/03/01. Harvest population averaged 20,000 to 25,000 plants per acre. E-17 is a better emerging variety than B-5736. **Trial reliability rated EXCELLENT.** Pelleting process was from Seed Systems.

Cooperating Agriculturist, Roger Elston, Michigan Sugar Company.

# SUGARBEET ADVANCEMENT

Partnership  
of:



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Michigan Sugar Company  
Monitor Sugar Company  
Michigan State University  
Agribusiness*

**ASTEC PELLET  
EMERGENCE COMPARISON  
Trial Was Not Harvested**

**ON-FARM RESEARCH AND DEMONSTRATION**

Cooperator: Bean & Beet Research Farm  
Location: Saginaw County  
Planting Date: 4/30/01  
Row Spacing: 28-Inches

Previous Crop: Soybeans  
Variety: E-38 4M Pellet  
Replicated: 4 X

TREATMENT NAME	POPULATION - 50 FT. ROW		
	10 Day	20 Day	30 Day
Mega Pellet	53	93	100
Ultra Pellet	57	94	101
LSD (5%)	9.3	15	16.5
CV (%)	7.6	7.1	7.3

Comments: Trial was conducted to look at the effects of E-38 Mega Pellet versus Ultra Pellet on emergence. Seed was from the same seed lot. Ideal emergence conditions. There was no significant difference between treatments. Pelleting process was from Astec Pelleting Company.

Cooperators, Paul Horny, Bean & Beet Farm Manager, and Dennis Fleishman, Assistant Farm Manager.

Cooperator: Norm Corrian  
Location: Bay County  
Planting Date: 4/13/01  
Row Spacing: 30-Inches  
Previous Crop: Soybeans

Variety: E-38 4M Pellet  
Replicated: 4 X  
Tillage: Fall Chisel Plowed – Spring Harrow  
Herbicides: Betamix, Stinger, Upbeet  
Seed Spacing: 4.5-Inches

TREATMENT NAME	POPULATION - 100 FT. ROW		
	10 Day	20 Day	30 Day
Mega Pellet	0	136	132
Ultra Pellet	0	141	111

Comments: Trial was conducted to look at the effects of E-38 Mega Pellet versus Ultra Pellet on emergence. Seed was from the same seed lot. Trial indicates speed of emergence and final emergence between the two treatments was not different. The 30-day emergence indicates stand loss occurred from environmental factors. This stand loss was not caused by the pellet treatment. Pelleting process was from Astec Pelleting Company.

Cooperating agriculturist, John Leach, Monitor Sugar Company.

# SUGARBEET ADVANCEMENT

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of:



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Michigan Sugar Company  
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## TACHIGAREN TRIAL

### ON-FARM RESEARCH AND DEMONSTRATION

Cooperator: Stoutenburg Farms  
Location: Sanilac County  
Planting Date: 4/29/01  
Row Spacing: 28-Inches  
Previous Crop: Navy Beans  
Replicated: 3 X – Row Length – 1,100 ft.  
Seed Spacing: 3.3-Inches  
Soil Type: Parkhill Clay Loam  
Soil pH: 6.1  
Organic Matter: 4.2%

Tillage: Fall V-Ripped; 2 X Field Cultivated  
Harvest Date: 11/09/01  
Type of Harvester: Arts-Way  
# of Rows Harvested: 6 # Defoliated: 6  
Harvest Speed: 4.5 mph  
Herbicides: Micro-Rated 4 X  
Fertilizer: 12 gal. 10-34-0; 1.5 qt. Mg; 1 qt. Boron;  
90 lbs. N Pre-Plant Anhydrous Ammonia  
Fungicide: 9/01/01 - 1 X Eminent

TREATMENT NAME	RWSA	ACTUAL YIELD T/A	RWST	% SUGAR	CJP %	POPULATION 100 FT. ROW			
						10 Day	20 Day	30 Day	Harvest
B-5736 TACH-20	7535	30.80	245	17.5	92.3	78	199	245	154
C-555 TACH-20	7514	30.52	246	17.2	92.3	42	204	296	198
B-5736 TACH-45	7391	29.89	247	17.4	92.9	35	133	236	153
C-555 Encrusted	7241	29.54	246	17.4	93.0	68	232	277	202
B-5736 Encrusted	7162	28.74	249	17.4	92.8	26	143	200	130
C-555 TACH-45	6987	29.14	239	17.3	92.3	48	184	290	212
C-555 PAT	6987	29.12	240	17.4	92.4	40	214	289	188
B-5736 PAT	6876	28.63	240	17.2	92.5	30	136	222	134
Average	7212	29.55	244	17.3	92.6	46	181	257	172
LSD (5%)	n.s. 936	1.96	n.s. 23	n.s. .9	n.s 1.2	48	73	41	24
CV (%)	7.4	3.8	5.4	3.1	.8	60	23	9	8.1

Comments: Trial was conducted to look at the effect of Tachigaren at two different rates (45 gram and 20 gram) on two varieties. Variety C-555 is Aphanomyces tolerant and B-5736 is not. This field was selected for the trial because of previous history of seedling disease and emergence problems. Trial was planted under very dry conditions. No rainfall occurred for three weeks after planting. Best 30 day emergence occurred with Tachigaren 20 gram rate for both varieties, but only significantly different for B-5736. Highest sugar per acre occurred with the 20-gram rate for both varieties, but not significantly better between any treatment. PAT treated seed emerged as well or better than standard encrusted treatment under very, very dry conditions. All pelleted seed treatments were PAT pelleted. Further research of 20-gram rate for Michigan conditions may need to be explored. Pelleting process was from Seed Systems.

Cooperating Agriculturists, Mike Leen and Reggie Van Sickle, Michigan Sugar Company.

# SUGARBEET ADVANCEMENT

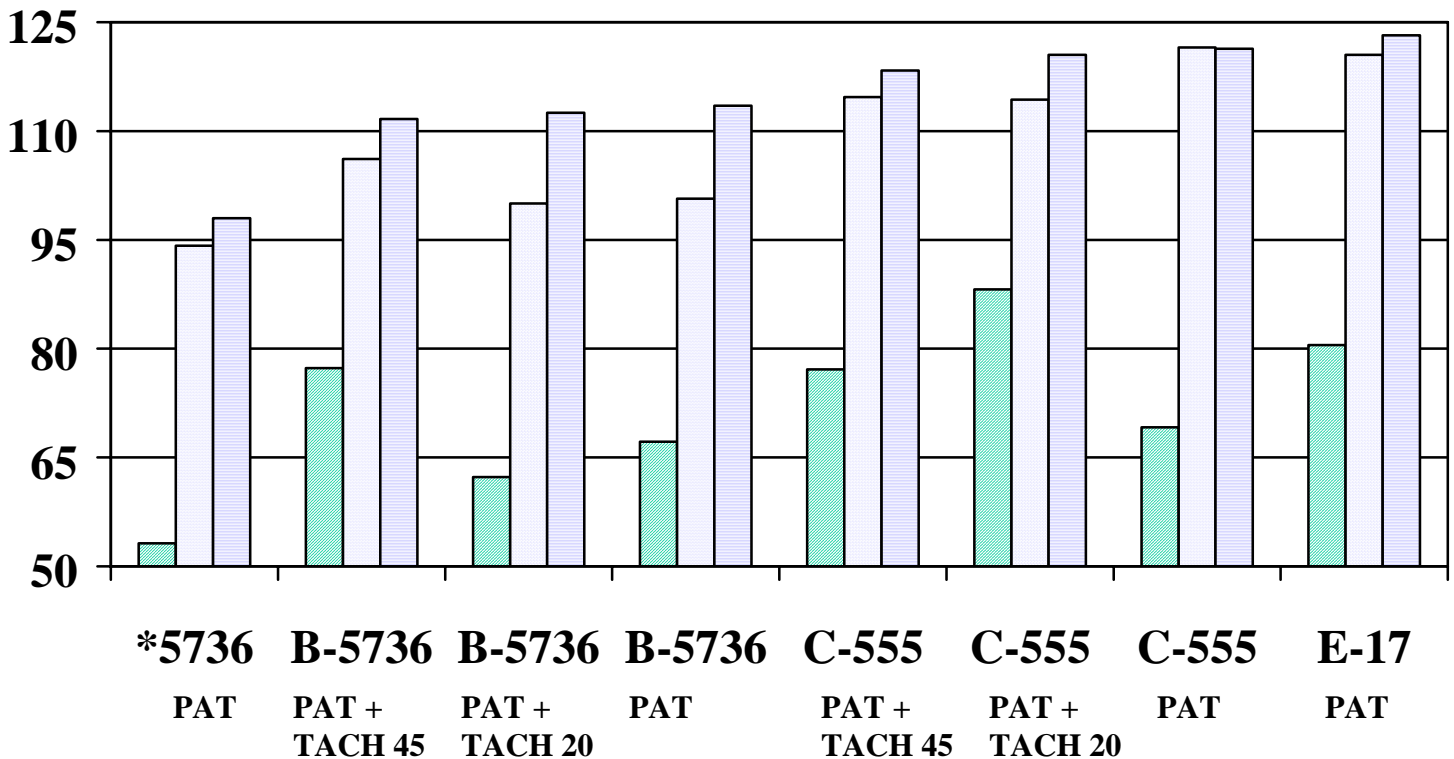
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## TACHIGAREN TRIAL 10-, 20-, AND 30-DAY EMERGENCE MARTY LEWIS FARM

■ 10-DAY ■ 20-DAY ■ 30-DAY



Planted April 30, 2001 – Seed Spacing 4.0-Inches  
\* Not From The Same Seedlot As Other B-5736 Treatments

Comments: Trial was conducted to look at the effects of 45-gram rate of Tachigaren versus a low rate (20 gram) and NO TACH on control of Aphanomyces Seedling Disease. Field was selected by indication of Aphanomyces test for high probability of disease pressure. Seedling disease did not develop. A difference in emergence of varieties was seen, but no difference in Tachigaren treatments.

Cooperating agriculturist, Mike Leen, Michigan Sugar Company.

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## CULTIVATION TRIAL

### ON-FARM RESEARCH AND DEMONSTRATION

Cooperator: Larry Starkey	Tillage: Fall Plowed, 1 X Field Cultivated
Location: Tuscola County	Harvest Date: 10/2/01
Planting Date: 4/19/01	Type of Harvester: ---
Row Spacing: 30-Inches	# of Rows Harvested: 6      # Defoliated: 6
Previous Crop: Corn	Harvest Speed: ---
Variety: E-17 Roundup Ready PAT Pellet	Herbicides: 1 quart of Roundup Ultra on May 30 <sup>th</sup> and June 28 <sup>th</sup>
Replicated: 3 X	Fertilizer: Total 180 lbs. N, 90 lbs. Spring Broadcast, 90 lbs. Sidedressed
Seed Spacing: 3.9-Inches	Fungicide: 7/27/01 – Super Tin
Soil Type: Tappen Loam	8/21/01 - Eminent

TREATMENT NAME	RWSA	ACTUAL YIELD T/A	RWST	% SUGAR	CJP %
Over Cultivation	4858	23.61	206	15.1	91.8
No Cultivation	4653	22.17	210	15.1	91.9
Grower Special	4550	22.77	200	14.9	91.7
Early Cultivation	4327	21.69	199	15.0	91.6
Late Cultivation	4266	22.12	193	14.8	91.1
Average	4531	22.47	202	15.0	91.6
LSD (5%)	395	1.62	10	n.s. .5	.7
CV (%)	4.6	3.8	2.7	1.8	.4

Comments: Comments: A total of three trials this year were conducted to evaluate the effects of cultivation on sugar beet yield. The variety was E-17 Roundup Ready. No weeds present. The over cultivation treatment soil was purposely thrown into the crowns of the beets. Cultivation dates:

- 1) Grower Special – 3 cultivations, same timings, grower.
- 2) Early Cultivation – 4 to 6 leaf stage.
- 3) Late Cultivation – Prior to row closure.
- 4) Over Cultivation – 3 cultivations with last cultivation (Soil Thrown In Crown).
- 5) No cultivation (NONE).

Average harvest population – 183 beets/100 ft. row. **Trial reliability VERY GOOD.**

Cooperator: This was one of three Roundup Ready cultivation trials conducted in cooperation with Syngenta Seed/Hilleshog, Doug Ruppal. Pelleting from Seed Systems.



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## CULTIVATION TRIAL

### ON-FARM RESEARCH AND DEMONSTRATION

Cooperator: Darrin Lutz	Tillage: Fall Plow – Spring Secondary
Location: Huron County	Harvest Date: 11/6/01
Planting Date: 4/27/01	Type of Harvester: ---
Row Spacing: 30-Inches	# of Rows Harvested: 4      # Defoliated: 6
Previous Crop: Dry Beans	Harvest Speed: 4 mph
Variety: E-17 Roundup Ready PAT Pellet	Herbicides: 1 quart Roundup Ultra May 31 <sup>st</sup> and June 22 <sup>nd</sup>
Replicated: 3 X	Fertilizer: 300 lbs. 8-10-10 Startup; 50 gals. 28-0-0 on 4/20/01
Seed Spacing: 3.9-Inches	Fungicide: ---
Soil Type: Kilmanah Loam	

TREATMENT NAME	RWSA	ACTUAL YIELD T/A	RWST	% SUGAR	CJP %
Grower Special	5338	24.83	215	16.1	90.9
Over Cultivation	5336	24.62	216	16.1	91.0
1 X Late Cultivation	5204	24.35	213	16.2	90.9
No Cultivation	5118	23.63	216	16.4	90.3
1 X Early Cultivation	5061	23.57	215	16.0	90.8
Average	5211	24.20	215	16.2	90.8
LSD (5%)	n.s. 345	n.s. 1.39	n.s. 13	n.s..52	n.s..5
CV (%)	3.5	3.1	3.3	1.7	.3

Comments: A total of three trials this year were conducted to evaluate the effects of cultivation on sugar beet yield. The variety was E-17 Roundup Ready. No significant difference occurred between treatments. No weeds present. The over cultivation treatment soil was purposely thrown into the crowns of the beets.

- Cultivation dates:
- 1) Grower Special – 3 cultivations, similar time as grower.
  - 2) Early Cultivation – 4 to 6 leaf stage.
  - 3) Late Cultivation – Prior to row closure.
  - 4) Over Cultivation – 3 cultivations with last cultivation (Soil Thrown In Crown).
  - 5) No cultivation (NONE).

**Trial reliability VERY GOOD.**

Cooperator: This was one of three Roundup Ready cultivation trials conducted in cooperation with Syngenta Seed/Hilleshog, Doug Ruppal. Pelleting from Seed Systems.

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## CULTIVATION TRIAL

### ON-FARM RESEARCH AND DEMONSTRATION

Cooperator: Gary and Wayne Fisher  
Location: Gratiot County  
Planting Date: 4/30/01  
Row Spacing: 30-Inches  
Previous Crop: Corn  
Fertilizer: 25 N Starter –  
                  102 N Sidedressed  
Variety: E-17 Roundup Ready PAT Pellet  
Replicated: 3 X – Row Length - 300 ft.

Tillage: Fall Chisel Plow  
Harvest Date: 11/8/01  
Type of Harvester: Arts-Way  
# of Rows Harvested: 4      # Defoliated: 6  
Harvest Speed: 4 mph  
Herbicides: 1 quart of Roundup Ultra on May 30<sup>th</sup> and June 28<sup>th</sup>  
Fungicide: None  
Seed Spacing: 3.9-Inches

TREATMENT NAME	RWSA	ACTUAL YIELD T/A	RWST	% SUGAR	CJP %
1 X Early Cultivation	5381	20.93	256	17.9	93.8
Over Cultivation	5324	20.83	255	17.9	93.8
1 X Late Cultivation	5264	20.83	252	17.8	93.4
No Cultivation	5215	21.67	240	17.5	93.0
Grower Special	5132	21.03	243	17.6	92.8
Average	5263	21.06	250	17.7	93.3
LSD (5%)	n.s. 731	n.s. 2.32	n.s. 17.5	n.s. .5	n.s. 1.2
CV (%)	7.4	5.8	3.7	1.6	.7

Comments: Comments: A total of three trials this year were conducted to evaluate the effects of cultivation on sugar beet yield. The variety was E-17 Roundup Ready. No significant difference occurred between treatments. No weeds present. The over cultivation treatment soil was purposely thrown into the crowns of the beets. Cultivation dates: 1) Grower Special – 3 cultivations, similar time as grower.  
2) Early Cultivation – 4 to 6 leaf stage.  
3) Late Cultivation – Prior to row closure.  
4) Over Cultivation – 3 cultivations with last cultivation (Soil Thrown In Crown).  
5) No cultivation (NONE).

**Trial reliability VERY GOOD.**

Cooperator: This was one of three Roundup Ready cultivation trials conducted in cooperation with Syngenta Seed/Hilleshog, Doug Ruppel. Pelleting from Seed Systems.

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## AVERAGE OF THREE CULTIVATION TRIALS - 2001

### ON-FARM RESEARCH AND DEMONSTRATION

Cooperator: Fisher – Starkey - Lutz  
Location: Gratiot – Tuscola - Huron  
Planting Date: 2001  
Row Spacing: ---  
Previous Crop: ---  
Fertilizer: ---  
Variety: E-17 Roundup Ready

Tillage: ---  
Harvest Date: ---  
Type of Harvester: ---  
Harvest Speed: ---  
Herbicides: Roundup Ultra  
Fungicide: ---  
Replicated: Three Locations – Total of Nine Replications

TREATMENT NAME	RWSA	ACTUAL YIELD T/A	RWST	% SUGAR	CJP %
Over Cultivation	5173	23.02	225	16.4	92.2
Grower Special	5006	22.88	219	16.2	91.8
No Cultivation	4995	22.49	222	16.3	91.7
1 X Early Cultivation	4923	22.06	223	16.3	92.1
1 X Late Cultivation	4911	22.43	219	16.3	91.8
Average	5002	22.58	222	16.3	91.9
LSD (5%)	n.s. 300	n.s. 1.01	n.s. 11	n.s. .28	n.s. .7
CV (%)	3.2	2.4	2.7	.9	.4

Comments: No significant difference between any treatment. Low amount of Rhizoctonia Root Rot in all trials.

Cooperator, Doug Ruppel, Syngenta Seed/Hilleshog

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## AVERAGE OF THREE CULTIVATION TRIALS YEAR 2000

### ON-FARM RESEARCH AND DEMONSTRATION

Cooperator: Lutz – Starkey - Grekowicz      Tillage: ---  
 Location: Huron – Tuscola - Huron          Harvest Date: ---  
 Planting Date: ---                                      # of Rows Harvested: ---  
 Row Spacing: ---                                      Herbicides: ---  
 Previous Crop: ---                                      Fungicide: ---  
 Fertilizer: ---  
 Variety: E-17 - RR  
 Replicated: Three locations – Total of 9 Replications

TREATMENT NAME	RWSA	ACTUAL YIELD T/A	RWST	% SUGAR	CJP %
1 X – Early Cultivation	5655	23.41	239	17.0	93.7
No Cultivation	5457	22.72	236	16.9	92.7
1X – Late Cultivation	5387	22.66	233	16.7	92.5
Grower Special – 3 Cultivations	5354	22.44	239	17.0	93.0
Over Cultivation	5246	21.91	236	16.8	92.7
Average	5420	22.63	237	16.9	92.8
LSD (5%)	400	1.18	n.s. (9.9)	n.s. (0.4)	0.9
CV (%)	3.9	2.8	2.2	1.2	0.5

Comments: Significant difference of RWSA between over cultivation and 1X early cultivation. Early cultivation and no cultivation treatments trended slightly higher in tonnage. Yields tended to trend lower as cultivation frequency increased, and if soil is thrown into the crown. Overall, trial indicates little, if any, response to cultivation on yield. Least amount of dead or dying Rhizoctonia plants occurred in the one time early and no cultivation trials. All trials received significant rains after planting settled and tightened the soil.

Trials conducted in cooperation with Syngenta Seed/Hilleshog, Doug Ruppel.

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**AVERAGE OF SIX  
CULTIVATION TRIALS -  
2000 and 2001 (2 Years)**

**ON-FARM RESEARCH AND DEMONSTRATION**

Cooperator: ---	Tillage: ---
Location: Six Locations (Two Years)	Harvest Date: ---
Planting Date: ---	Type of Harvester: ---
Row Spacing: ---	Variety: E-17 Roundup Ready
Previous Crop: ---	Replicated: Six Locations – Total of 18 Replications
Fertilizer: ---	

TREATMENT NAME	RWSA	ACTUAL YIELD T/A	RWST	% SUGAR	CJP %
1 X Early Cultivation	5289	22.74	231	16.7	92.9
No Cultivation	5226	22.60	229	16.6	92.2
Over Cultivation	5210	22.47	231	16.6	92.5
Grower Special	5180	22.66	229	16.6	92.4
1 X Late Cultivation	5149	22.55	226	16.5	92.2
Average	5211	22.60	229	16.6	92.4
LSD (5%)	n.s. 468	n.s. 1.79	n.s. 6.51	n.s. .33	n.s. .9
CV (%)	3.2	2.9	1.0	.7	.3

Comments: This information covers two years and six locations. Data suggests no significant difference between cultivation treatments. The need for cultivation may not be as great as previously thought.

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## AVERAGE OF THREE CULTIVATION TRIALS - 1999

### ON-FARM RESEARCH AND DEMONSTRATION

Cooperator: Meylan - Fisher - Uebler  
Location: Bay - Gratiot - Saginaw  
Planting Date: 4/29/99 and 5/01/99  
Variety: RH3 - RR  
Previous Crop: ---  
Fertilizer: ---  
Replicated: Three Locations -  
Total of 9 Replications

Tillage: ---  
Harvest Date: ---  
Type of Harvester: ---  
# of Rows Harvested: --- # Defoliated: ---  
Harvest Speed: ---  
Herbicides: ---

TREATMENT NAME	RWSA	ACTUAL YIELD T/A	RWST	% SUGAR	CJP %
Late Cultivation 1 X	5645	26.4	213	16.1	90.9
No Cultivation	5614	26.0	216	16.0	91.3
Early Cultivation 1 X	5547	26.2	213	16.0	90.6
Grower Special - 3 Cultivations	5523	25.9	213	16.0	90.7
AVERAGE	5582	26.1	214	16.0	90.9
LSD (5%)	NS	NS	NS	NS	NS

Comments: No significant difference in any category. Overall, cultivation of beets did help improve yield or decrease yield. Main reason to cultivate is for weed control. In the absence of weeds, cultivations may not be necessary under normal growing conditions.

Trials conducted in cooperation with Syngenta Seed/Hilleshog, Doug Ruppel.

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**AVERAGE OF NINE  
CULTIVATION TRIALS –  
1999 – 2000 – 2001 (3 Years)**

## ON-FARM RESEARCH AND DEMONSTRATION

Cooperator: ---  
Location: Nine Locations (3 Years)  
Planting Date: ---  
Row Spacing: ---  
Previous Crop: ---  
Fertilizer: ---  
Variety: 1999 RH-3 Roundup Ready  
2000 & 2001 E-17 Roundup Ready  
Replicated: Nine Locations – Total of 27 Replications

Tillage:  
Harvest Date:  
Herbicides: Roundup Ultra  
Fungicide: ---  
Row Length: 300 ft.

TREATMENT NAME	RWSA	ACTUAL YIELD T/A	RWST	% SUGAR	CJP %
1 X Early Cultivation	5375	23.89	225	16.4	92.1
No Cultivation	5355	23.74	224	16.4	91.9
1 X Late Cultivation	5314	23.83	222	16.4	91.7
Grower Special	5292	23.74	223	16.4	91.8
Average	5335	23.80	224	16.4	91.9
LSD (5%)	n.s. 198	n.s. .80	n.s. 4.26	n.s. .2	n.s. .8
CV (%)	1.9	1.7	1.0	.7	.4

Comments: Combined over multiple years, locations and environments produced no significant differences in yield and quality of beets harvested. Possible slight advantage of one time early cultivation under crusting or compress soil conditions. One time late cultivation (prior to row closure) may slightly increase Rhizoctonia incidence under certain conditions and/or if significant Rhizoctonia pressure exists. Michigan sugar beet yields averaged between two and four cultivations per year. With the introduction of Roundup resistant beet varieties and micro-rate herbicide programs coupled with excellent weed control, research indicates little or no need to cultivate sugar beets.

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## NITROGEN TRIAL

### ON-FARM RESEARCH AND DEMONSTRATION

Cooperator: Yoder Farms	Tillage: Chisel Plowed; 1 X Field Cultivated
Location: Huron County	Harvest Date: 10/19/01
Planting Date: 4/13/01	Type of Harvester: Arts-Way
Row Spacing: 20-Inches	# of Rows Harvested: 8      # Defoliated: 8
Previous Crop: Navy Beans	Harvest Speed: 4 mph
Variety: E-17 PAT Pellet	Herbicides: 1 X 1.75 lbs. Pyramin – 8” Band; Post Spray
Replicated: 3 X – Row Length: 1,155 ft.	1 pt. Betamix + .16 oz. Upbeet + .08 oz. Stinger
Seed Spacing: 4.7-Inches	+ 7” Band; 1 qt. Crop completer Gold
Soil Type: Sandy Loam	Fertilizer: 360 lbs. 8-7-33 28% N Sidedressed According to
	Treatments
	Fungicide: Eminent 7/20/01

TREATMENT NAME	RWSA	ACTUAL YIELD T/A	RWST	% SUGAR	CJP %	POPULATION 100 FT. ROW			
						10 Day	20 Day	30 Day	Harvest
90 lbs.	5991	25.71	233	16.2	93.7	---	---	---	---
150 lbs.	5754	26.95	214	15.5	92.6	---	---	---	---
120 lbs.	5499	25.41	217	15.7	93.1	---	---	---	---
Average	5748	26.02	221	15.8	93.1	---	---	---	---
LSD (5%)	n.s. 850	n.s. 2.57	n.s. 24	.6	.5	---	---	---	---
CV (%)	6.5	4.4	4.8	1.6	.2	---	---	---	---

Comments: Treatments are total N/acre, including starter and sidedress. Manure applied Spring of 2000. Excellent stands and good Leaf Spot control. Field under extreme drought stress during summer. No visual differences between treatments. Significant difference in % sugar and % Clear Juice Purity between lowest nitrogen treatment compared to higher treatments. Slight trend for higher tonnage yield with 150 lbs./acre rate of nitrogen compared to 90 lb. rate. Trend for higher recoverable white sugar per acre with 90 lb. rate because of higher % sugar and Clear Juice Purity. **Three strips of 30 lb. rate of nitrogen harvested outside of trial yielded as follows: 26.72 tons/acre, 16.3% sugar, 93.5% CJP, 230 pounds of RWST and 6,138 pounds of RWSA.** Sugar samples taken on 10/18/01. Soil nitrate test taken early spring gave 20 lb. nitrogen credit. MSU recommendation from nitrate test for 22-ton crop was 90 lbs./acre actual N. Over applications of nitrogen lowers sugar content and purity, which greatly affects RWSA. **Trial reliability rated EXCELLENT.**

Cooperating Agriculturist, Roger Elston, Michigan Sugar Company.



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## NITROGEN TRIAL

### ON-FARM RESEARCH AND DEMONSTRATION

Cooperator: Warren Reithal  
Location: Huron County  
Planting Date: 4/14/01  
Row Spacing: 28-Inches  
Previous Crop: Navy Beans  
Variety: C-1353  
Replicated: 3 X – Row Length: 900 ft.  
Seed Spacing: 4.5-Inches  
Soil Type: Loam

Tillage: Fall Plowed; 1 X Field Cultivated  
Harvest Date: 11/07/01  
Type of Harvester: John Deere  
# of Rows Harvested: 12 # Defoliated: 4  
Harvest Speed: 3.5 mph  
Herbicides: 1.8 lbs. Pyramin – 7” Band; Post Spray 1 pt.  
Betamix + ½ oz. Upbeet + 1 oz. Stinger 1X  
Fertilizer: 4 gals. 6-24-6; 28-0-0 Sidedressed According to  
treatment; 1,200 lbs. 3-14-45 Fertilizer for 4 Years  
Fungicide: 7/17/01 Eminent; 8/21/01 Eminent

TREATMENT NAME	RWSA	ACTUAL YIELD T/A	RWST	% SUGAR	CJP %	POPULATION 100 FT. ROW			
						10 Day	20 Day	30 Day	Harvest
150	6682	26.82	249	17.1	93.8	---	---	---	174
120	6657	26.90	248	17.3	93.5	---	---	---	174
180	6332	27.60	229	16.3	93.3	---	---	---	174
Average	6861	27.11	242	16.9	93.5	---	---	---	174
LSD (5%)	n.s. 638	n.s. 1.83	12	.6	n.s. .6	---	---	---	---
CV (%)	4.3	3.0	2.1	1.7	.3	---	---	---	---

Comments: Field had no manure applied. Trial was conducted to look at the effects of nitrogen on yield and quality of sugar beets. High rate of nitrogen significantly lower % sugar by 1% and RWST when compared to lowest nitrogen rate. High rate of nitrogen did slightly improved tonnage, but not significantly. High rates of nitrogen tended to suppress RWSA versus the low rates. Early spring nitrate test gave a 20 lb. nitrogen credit. MSU recommendation from nitrate test for 22-ton crop was 90 lbs. of applied nitrogen. **Trial reliability rated EXCELLENT.** Nitrogen applications above 120 lbs. N per acre showed no positive economical effect in this trial.

Cooperating Agriculturist, Jeff Elston, Michigan Sugar Company.

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## FOLIAR FEED TRIAL

### ON-FARM RESEARCH AND DEMONSTRATION

Cooperator: Two B Farm, Inc. (Bushey)  
Location: Huron County  
Planting Date: 4/04/01  
Row Spacing: 22-Inches  
Previous Crop: Corn  
Variety: Hilleshog E-17  
Replicated: 4 X – Row Length: 988 ft.  
Seed Spacing: 5-Inches  
Soil Type: Clay Loam  
Soil pH: 7.8; Organic Matter 3.5%

Tillage: ---  
Harvest Date: 11/02/01  
Type of Harvester: Red River  
# of Rows Harvested: 8 # Defoliated: 8  
Harvest Speed: 3.8 mph  
Herbicides: Micro Rate 4 X; ½ pt. Roundup Before Emergence;  
0.5 pts. Betamix + 1 oz. Stinger  
+ 1/8 oz. Upbeet + 1.2 pts/A MSO  
Fertilizer: Fall 750 lbs. Gypsum; Spring 135 lbs./A Nitrogen  
Split; AG Spectrum on Seed; 12.8 oz./A Grozyme; 3.5  
gals./A Clean Start, 4 lbs./Kickoff  
Fungicide: 7/17/01 Eminent; 8/03/01 Benlate + Penncozeb

TREATMENT NAME	RWSA	ACTUAL YIELD T/A	RWST	% SUGAR	CJP %	POPULATION 100 FT. ROW HARVEST WEIGHT/ BEET		APPLICA-TION DATE(S)
Bianary CQ	8295	28.6	291	19.9	94.2	144	1.6	6/09/01
Untreated	8078	28.5	284	19.3	94.6	140	1.8	---
SoluBor + 28% N	8077	28.2	287	19.5	94.4	133	1.8	6/09, 7/11, 8/09/01
CCG/CCII	7858	27.5	286	19.5	94.3	135	1.8	6/09, 7/11, 8/09/01
TechMag + 28% N	7748	27.4	284	19.4	94.1	125	1.9	6/09, 7/11/01
C-N-B	7718	27.3	283	19.3	94.4	131	1.8	6/09, 7/11/01
CCG/CCII/Biozyme	7384	25.9	285	19.4	94.5	124	1.8	6/09, 7/11, 8/09/01
Average	7880	27.6	286	19.5	94.3	133	1.8	---
LSD (5%)	n.s. 616	n.s. 2.1	n.s. 14.9	n.s. 0.8	n.s. 0.8	n.s. 30	n.s. 0.5	---
CV (%)	5.0	5.1	3.5	2.8	0.6	15.0	18.3	--

Comments: Treatment Code: CCG – Crop Completer Gold; CCII – Crop Completer II. Trial was conducted to determine impact of foliar feed applications. Weights were determined with a scaled cart. Quality samples dropped from harvester. Root Aphid pressure and Rhizoctonia pressure was low. **Trial reliability rated EXCELLENT.** Lab analysis performed at MARL (Michigan Agricultural Research Laboratory). Note tons/A are net or clean (tare 7.396% off). All treatments applied at labeled rates. Field was not cultivated. Harvest population and average beet weight determined from quality samples. Cooperating agriculturist, Roger Elston, Michigan Sugar Company. Thanks to the Cooperative Elevator Company for product.

# SUGARBEET ADVANCEMENT

Partnership  
of:



Sugar Beet Growers  
Michigan Sugar Company  
Monitor Sugar Company  
Michigan State University  
Agribusiness

## FOLIAR FEED TRIAL

### ON-FARM RESEARCH AND DEMONSTRATION

Cooperator: LAKKE Ewald Farms  
Location: Tuscola County  
Planting Date: 4/09/01  
Row Spacing: 22-Inches  
Previous Crop: Dry Edible Beans  
Variety: Hilleshog E-17  
Replicated: 4 X – Row Length: 2,134 ft.  
Seed Spacing: 4.6-Inches  
Soil Type: Clay Loam  
Soil pH: 7.7, Organic Matter: 2.4%

Tillage: ---  
Harvest Date: 10/29/01  
Type of Harvester: Artsway  
# of Rows Harvested: 8 # Defoliated: 8  
Harvest Speed: 4.3 mph  
Herbicides: Micro Rate 5 X; 0.5 pts. Betamix + 1 oz. Stinger  
+ 1/8 oz. Upbeet + 1.2 pts/A MSO  
Fertilizer: Spring 60 lbs. N as 28% N Preplant; 80 lbs. N  
(28% N) Sidedressed  
Fungicide: 7/21/01 Eminent; 8/24/01 Super Tin

TREATMENT NAME	RWSA	ACTUAL YIELD T/A	RWST	% SUGAR	CJP %	POPULATION		APPLICA-TION DATE(S)
						HARVEST BEET	100 FT. ROW WEIGHT/ BEET	
SoluBor + 28% N	7490	28.4	264	18.3	93.8	116	2.2	6/08, 7/10, 8/08/01
Untreated	7397	28.0	265	18.2	94.2	131	2.0	---
C-N-B	7268	27.4	265	18.3	94.0	105	2.3	6/08, 7/10/01
CCG/CCII	7165	27.7	259	17.9	93.9	114	2.3	6/08, 7/10, 8/08/01
Bianary CQ	7079	27.3	260	18.1	93.7	106	2.4	6/08/01
TechMag + 28% N	7024	27.1	259	18.1	93.5	126	1.9	6/08, 7/10/01
CCG/CCII/Biozyme	7017	27.7	253	17.8	93.3	105	2.4	6/08, 7/10, 8/08/01
Average	7206	27.6	260.6	18.1	93.8	115	2.2	---
LSD (5%)	n.s. 494	n.s. 1.5	n.s. 8.2	n.s. 0.4	n.s. 0.7	n.s. 37	n.s. 0.7	---
CV (%)	4.6	3.6	2.1	1.5	0.5	21.5	20.4	---

Comments: Treatment Code: CCG – Crop Completer Gold; CCII – Crop Completer II. Trial was conducted to determine impact of foliar feed applications. Weights were determined with individual truck loads. Quality samples dropped from harvester. Root Aphid pressure and Rhizoctonia pressure was low. **Trial reliability rated EXCELLENT.** Lab analysis performed at MARL (Michigan Agricultural Research Laboratory). Note tons/A are net or clean (tare 3.81% off). All treatments applied at labeled rates. Field was cultivated twice. Harvest population and average beet weight determined from quality samples.

Cooperating agriculturist, Tim Muz, Michigan Sugar Company. Thanks to the Cooperative Elevator Company for product.

# SUGARBEET ADVANCEMENT

Partnership  
of:



Sugar Beet Growers  
Michigan Sugar Company  
Monitor Sugar Company  
Michigan State University  
Agribusiness

## COVER CROP TRIAL

### ON-FARM RESEARCH AND DEMONSTRATION

Cooperator: Bean and Beet Research Farm Tillage: Fall Plow 1 X Danish Tine  
 Location: Saginaw Harvest Date: 11/1/01  
 Planting Date: 4/16/01 Type of Harvester: Farm Hand  
 Row Spacing: 28-Inches # of Rows Harvested: 2 # Defoliated: 4  
 Previous Crop: Wheat-Clover-Radish Harvest Speed: 3 mph  
 Fertilizer: 120 lbs. N From Urea Herbicides: Pyramin + Nortron  
 Variety: E-17 PAT, 2M Pellet Fungicide: 7/26/01 – Benlate + Manzate  
 Replicated: 4 X – Row Length – 200 ft. 8/15/01 – Super Tin  
 Seed Spacing: 5.3-Inches

TREATMENT NAME	RWSA	ACTUAL YIELD T/A	RWST	% SUGAR	CJP %	POPULATION 100 FT. ROW			
						10 Day	20 Day	30 Day	Harvest
Clover	6774	25.84	262	18.1	94.0	---	---	149	137
Wheat Stubble	5782	22.17	261	18.1	94.2	---	---	117	119
Oil Seed Radish	5373	21.13	255	17.8	94.0	---	---	125	114
Average	5976	23.05	259	18.0	94.1	---	---	130	123
LSD (5%)	356	1.95	n.s. 14	n.s. .8	n.s. 4	---	---	12	17
CV (%)	3.4	4.9	3.1	2.5	.3	---	---	5.1	8.1

Comments: Trial was conducted to look at the effect of previous cover crop on emergence, yield and quality of sugar beets. Wheat field was spring frost seeded to Michigan Mammoth Clover in strips. Wheat field harvested in July. Oil seed radish strips seeded in August directly into wheat stubble with 50 lbs. of N. Other wheat strips volunteer wheat was allowed to grow. Trial set up in a complete randomized block. All treatments fall plowed in early November. Clover stand was excellent and 12-to 14-inches tall. Radish stand was only fair. Clover treatments plowed easier than other treatments. Field worked in spring with Triple K. Rainfall occurred shortly after sugar beet planting caused light crusting. Significantly better emergence occurred in clover strips because of softer crust. Sugar beets in clover strips look thriftier than wheat stubble or radish strips. Significant increases in tonnage and RWSA in clover strips. **Trial reliability rated EXCELLENT.**

Cooperators, Paul Horny, Bean & Beet Farm Manager, and Dennis Fleishman, Assistant Farm Manager.

# SUGARBEET ADVANCEMENT

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## SUGAR BEET CYST / TEMIK TRIAL

Sugar Beet Growers  
Michigan Sugar Company  
Monitor Sugar Company  
Michigan State University  
Agribusiness

### ON-FARM RESEARCH AND DEMONSTRATION

Cooperator: Dave Helmreich  
Location: Bay County  
Planting Date: 4/17/01  
Row Spacing: 30-Inches  
Previous Crop: **CORN**  
Variety: C-555 and C-1353  
Replicated: 4 X  
Seed Spacing: 4.5-Inches  
Soil Type: Loam  
Temik: 19 to 20 lbs./Acre

Tillage: Chisel Plowed; 1 X Field Cultivated  
Harvest Date: 11/03/01  
Type of Harvester: Parma  
# of Rows Harvested: 6 # Defoliated: 6  
Harvest Speed: 4.5 mph  
Herbicides: Micro-rated 2 X; Post Spray Progress +  
Stinger + Upbeet 1 X  
Fertilizer: 145 lbs. 9-41-0; 4% Mg; 110 lbs. N Broadcast and  
Sidedressed; 300 lbs. 180 K<sub>2</sub>O  
Fungicide: 1<sup>st</sup> Application Quadris  
2<sup>nd</sup> Application Topsin + Penncozeb

TREATMENT NAME	RWSA	ACTUAL YIELD T/A	RWST	% SUGAR	CJP %	POPULATION 100 FT. ROW				100M/ROW MEAN OF DISEASED PLANTS
						10 Day	20 Day	30 Day	Harvest	
C-555 Check Corn Previous Crop	5302 a	21.19 ab	250 a	17.55 a	93.1 a	11 a	116 ab	115a	87 a	18.1 ab
C-555 Temik Corn Previous Crop	5233 a	20.71 ab	254 a	17.46 a	93.3 a	20 b	140 b	139 a	103 a	31.5 a
C-1353 Temik Corn Previous Crop	4966 ab	23.53 b	212 b	15.96 b	91.7 ab	8 a	132 ab	128 a	106 a	10.7 b
C-1353 Check Corn Previous Crop	4216 b	20.32 a	208 b	15.90 b	91.5 b	10 a	107 a	111 a	86 a	10.9 b
Average	4929	21.43	231	16.72	92.4	12	123	123	96	---

Comments: Results followed by the same letter are not significantly different. Results followed by the same letter are not significantly different. This field has a known Sugar Beet Cyst Nematode infestation and Rhizoctonia Crown Root Rot problem. This trial was established to see the effects of Temik on control of cyst nematode. Significantly higher tonnage occurred with C-1353 using Temik. Temik seems to produce a higher incidence of Rhizoctonia Root Rot and stand loss in susceptible varieties (C-555) compared to Rhizoctonia resistant variety C-1353. Higher incidence of Rhizoctonia in C-555 may negate the beneficial effect of Temik nematode control. Cost of Temik application is approximately \$60/acre.

**Trial reliability rated GOOD.**

Cooperating Agriculturist, John Leach, Monitor Sugar Company; Dr. John Halloin, ARS USDA; and David Johnson, MSU Dept. of Plant Pathology.

# SUGARBEET ADVANCEMENT

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## SUGAR BEET CYST / TEMIK TRIAL

### ON-FARM RESEARCH AND DEMONSTRATION

Cooperator: Dave Helmreich  
Location: Bay County  
Planting Date: 4/17/01  
Row Spacing: 30-Inches  
Previous Crop: **SOYBEANS**  
Variety: C-555 and C-1353  
Replicated: 4 X  
Seed Spacing: 4.5-Inches  
Soil Type: Loam  
Temik: 19 to 20 lbs./Acre

Tillage: Chisel Plowed; 1 X Field Cultivated  
Harvest Date: 11/03/01  
Type of Harvester: Parma  
# of Rows Harvested: 6 # Defoliated: 6  
Harvest Speed: 4.5 mph  
Herbicides: Micro-rated 2 X; Post Spray Progress +  
Stinger + Upbeet 1 X  
Fertilizer: 145 lbs. 9-41-0; 4% Mg; 110 lbs. N Broadcast and  
Sidedressed; 300 lbs. 180 K<sub>2</sub>O  
Fungicide: 1<sup>st</sup> Application Quadris  
2<sup>nd</sup> Application Topsin + Penncozeb

TREATMENT NAME	RWSA	ACTUAL YIELD T/A	RWST	% SUGAR	CJP %	POPULATION 100 FT. ROW				100M/ROW MEAN OF DISEASED PLANTS
						10 Day	20 Day	30 Day	Harvest	
C-1353 Temik Soys Previous Crop	5010 b	22.6 b	221 a	15.7 a	91.8 a	25 a	128 a	119 a	84 a	27.5 a
C-1353 Check Soys Previous Crop	4764 b	22.4 b	212 a	15.7 a	92.0 a	25 a	120 a	119 a	98 a	26.4 b
C-555 Check Soys Previous Crop	3947 a	18.3 a	220 a	16.2 a	91.5 a	26 a	130 a	127 a	86 a	78.5 a
C-555 Temik Soys Previous Crop	3735 a	16.8 a	221 a	15.6 a	91.5 a	31 a	147 a	136 a	73 a	88.4 a
Average	4364	20.0	219	15.8 a	91.7	26	131	125	85	---

Comments: This field has a known sugar beet cyst nematode infestation and Rhizoctonia Crown Root Rot problem. This trial was established to see the effects of Temik on control of cyst nematode. No significant difference from Temik on yield of either variety. There is a significant difference in yield between varieties. Very heavy levels of Rhizoctonia Crown Rot occurred. A trend for higher incidence Rhizoctonia and stand loss occurred with susceptible variety C-555 with the use of Temik. C-1353 is a Rhizoctonia resistant variety. Cost of Temik is approximately \$60/acre.

**Trial reliability rated GOOD.**

Cooperating Agriculturist, John Leach, Monitor Sugar Company.

# AGRICULTURAL ENGINEERING INFORMATION SERIES

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18.47

August 2001

## Seedbed Tillage and Planter Effects on Sugarbeet Emergence and Stand Uniformity—2001<sup>1</sup>

Sugar beet plots were established at the Saginaw Bean and Beet Research Farm to evaluate the effects of seedbed tillage, planter selection and seed treatment on plant emergence and stand, uniformity of beet spacing and size, sugar content and yield. All plots were fall moldboard plowed. While fall seedbed tillage was planned, the soil was too dry, and then snow covered and wet. Seedbed tillage was first done in late February.

Four seedbed tillage treatments were compared: 1) a **stale seedbed**, 2) a **single, shallow (1-2 inch) pass** with a **danish-tine field cultivator**, and 3) a single pass with a **spike-tooth/rolling harrow** finishing tool. A fourth tillage treatment included spring tillage with a **field cultivator (c-shank)** followed by a **danish-tine field cultivator**. Sugar beets were planted with a **John Deere 7300** general purpose vacuum planter and an **Accord plate-type beet planter**. The beets were planted on April 30 using the variety E-17 with a #3 fasonated or 4M pelleted seed treatment. The target seed spacing was 5 1/8 inches.

Stand establishment goals included early season emergence and growth, a high plant population and an even spacing between plants in the row. Spring seedbed tillage was within a few hours of planting to conserve soil moisture. Shallow tillage with the

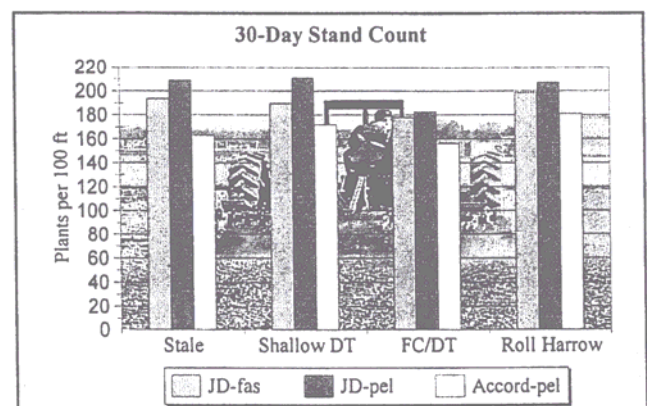
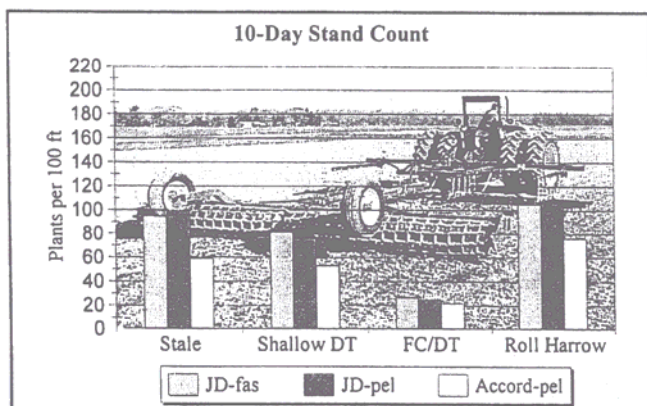
danish tine was at a depth of 1-2 inches to break the surface crust and level the surface yet avoid excessive drying of the seedbed. Spring field cultivation was at a depth of 4 inches with two passes of the danish-tine with a rolling harrow to level and firm the seedbed.

### Emergence

Rapid emergence minimizes the risk of crusted soil and diminished stands. The seedbed was favorable when the beets were planted, but dry for several days following. The 10-day emergence rate indicates that the most favorable seed environment tended to follow the least spring seedbed tillage. The most rapid emergence occurred following a single pass of a spike-tooth/rolling harrow or in a stale seedbed. The slowest emergence followed a pass with the field cultivator followed by a danish-tine/rolling harrow to firm and level the seedbed. The Deere planter provided more rapid emergence than the Accord. The Accord was designed for a more intensively tilled seedbed than we provided.

### Plant Spacing Uniformity

The Accord planter provided the best plant spacing uniformity in all seedbeds. The best spacing uniformity for the Deere planter was in the stale seedbed and where the spike-tooth/roller harrow was used.



<sup>1</sup> Timothy M. Harrigan, Agricultural Engineering Dept., Michigan State University, East Lansing MI, Paul Horny and Dennis Fleischman, Crop and Soil Sciences, Saginaw Bean and Beet Farm.

