

SUGAR BEET VARIETY EVALUATION

Michigan Sugar Company

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The Michigan Sugar Company Variety Improvement Program identifies and evaluates improved sugarbeet varieties from the seed companies and introduces them into the Cooperative in an orderly system. Trials conducted at the Bean and Beet farm in 2008 are included in this report.

Cercospora Variety Trials

Average of 2 Locations - 2008

BB Farm and Pigeon

No.	Variety	Avg 3 Loc 0-9	No.	Variety	Avg 3 Loc 0-9
16	BTS 18RR26	2.28	1	Beta 5833R	3.28
15	BTS 18RR16	2.39	36	HM 9080RR	3.30
9	Crystal R442	2.45	8	SX 1233	3.30
23	Crystal RR840	2.54	3	Beta 1643N	3.39
2	Beta 5930R	2.55	37	HM 9084RR	3.40
33	HM 9050RR	2.60	46	SX 1282RR	3.40
34	HM 9051RR	2.64	14	BTS 18RR06	3.44
5	Crystal R509	2.74	4	Beta 5670R	3.57
7	HM 2788NT	2.79	21	Crystal RR808	3.66
41	HM 9131RR	2.80	26	Crystal RR877	3.68
32	HM 9042RR	2.80	25	Crystal RR898	3.74
10	HM 7172Rz	2.85	12	BTS 17RR32	3.76
42	HM 9133RR	2.93	18	BTS 18RR46	3.77
11	HM 2771Rz	2.94	6	Crystal R689	3.80
28	HM 28RR	2.94	40	HM 9130RR	3.87
45	SX 1281RR	2.94	19	BTS 18RR66	3.95
35	HM 9055RR	2.99	20	Crystal RR827	3.98
39	HM 9116RR	3.01	13	BTS 17RR62	4.01
29	HM 29RR	3.09	24	Crystal RR848	4.02
31	HM 9039RR	3.12	22	Crystal RR824	4.23
38	HM 9110RR	3.13	17	BTS 18RR36	4.37
44	SX 1260RR	3.13	LSD (P=.05)		0.66
43	HM 9151RR	3.20	CV		10.02
27	HM 27RR	3.21	Grand Mean		3.24
30	HM 9032RR	3.28			

Purpose: The Cercospora leafspot nursery is conducted to evaluate resistance in the varieties. This test is inoculated and has a susceptible variety planted every third row, between each entry, to spread the disease evenly. The rating is done on a scale of 0-9 where a lower number indicates more Cercospora resistance.

Results: This information indicates which varieties have a level of resistance which is acceptable in our growing region. In these trials, varieties with a rating of 3.275 or less meet our approval criteria for Cercospora leafspot.

**Michigan Sugar Company
Rhizoctonia Nurseries**

Average of 2 Locations - BB Farm and Blumfield - 2008

Trial Quality: Good

No.	Variety	Rhizoc Rate	No.	Variety	Rhizoc Rate
6	Crystal R689	4.69	16	BTS 18RR26	5.86
19	BTS 18RR66	4.70	4	B 5670R	5.86
26	Crystal RR877	4.71	2	B 5930R	5.86
27	HM 27RR	5.08	23	Crystal RR840	5.86
1	B 5833R	5.26	18	BTS 18RR46	5.96
31	HM 9039RR	5.28	43	HM 9151RR	5.98
29	HM 29RR	5.35	35	HM 9055RR	5.98
41	HM 9131RR	5.36	30	HM 9032RR	6.00
37	HM 9084RR	5.40	24	Crystal RR848	6.04
28	HM 28RR	5.40	13	BTS 17RR62	6.08
42	HM 9133RR	5.45	14	BTS 18RR06	6.08
32	HM 9042RR	5.49	8	SX 1233	6.10
34	HM 9051RR	5.64	12	BTS 17RR32	6.16
25	Crystal RR898	5.65	20	Crystal RR827	6.17
38	HM 9110RR	5.65	21	Crystal RR808	6.17
46	SX 1282RR	5.70	17	BTS 18RR36	6.18
45	SX 1281RR	5.74	3	B 1643N	6.18
5	Crystal R509	5.75	40	HM 9130RR	6.22
44	SX 1260RR	5.76	7	HM 2788NT	6.22
33	HM 9050RR	5.78	22	Crystal RR824	6.24
39	HM 9116RR	5.81	LSD (P=.05)		0.436
15	BTS 18RR16	5.82	CV		3.77
36	HM 9080RR	5.83	Grand Mean		5.73

Inoculated with Rhizoc strain Ag 2-2 , 1 gram per ft of row on July 18, both locations. Evaluated Blumfield on Aug 18 and BB Farm on Aug 27. Ratings conducted by Michigan Sugar Agronomists, USDA and Michigan State Univ. Scientists. Thanks to Hilleshog and Doug Ruppel for digging the trial.

Rating Scale: 0 = No Symptoms, 1 = Minor lesions, 2 = Shallow lesions (2-5% rot)
3 = Deep dry rot (5-25% rot), 4 = Up to 50% rot, 5 = Up to 75% rot, 6 = Almost all rotted beets with a few green leaves, 7 = Completely rotted or missing beets

Michigan Sugar Company
 Official Variety Trial - 2008
 Average of 6 Locations
 including B&B Farm

ID#	Variety	RWSA	RWST	Tons/A	% Suc	% CJP	Emerg %	CLS
20	Crystal RR827	9225	262.1	34.82	17.89	94.49	63.8	4.0
13	BTS 17RR62	8977	261.0	34.03	17.68	94.93	62.7	4.0
22	Crystal RR824	8901	259.3	33.88	17.59	94.90	62.7	4.2
21	Crystal RR808	8864	265.8	33.02	18.07	94.70	69.7	3.7
12	BTS 17RR32	8787	256.9	33.85	17.44	94.89	70.8	3.8
3	Beta 1643N	8735	250.0	34.59	17.12	94.47	56.0	3.4
19	BTS 18RR66	8569	233.8	36.43	16.11	94.51	49.4	4.0
36	HM 9080RR	8406	248.0	33.68	16.97	94.56	61.0	3.3
26	Crystal RR877	8389	232.8	35.75	16.12	94.25	67.5	3.7
15	BTS 18RR16	8345	246.6	33.41	16.91	94.50	54.6	2.4
18	BTS 18RR46	8342	245.0	33.56	16.76	94.61	71.7	3.8
38	HM 9110RR	8342	250.7	32.98	17.20	94.46	59.8	3.1
14	BTS 18RR06	8334	255.2	32.32	17.27	95.06	67.6	3.4
17	BTS 18RR36	8249	253.7	32.08	17.35	94.54	70.4	4.4
29	HM29RR	8241	246.6	33.25	16.90	94.50	64.3	3.1
30	HM 9032RR	8226	240.3	33.95	16.62	94.20	64.4	3.3
44	SX 1260RR	8207	245.3	33.18	16.83	94.55	68.9	3.1
27	HM 27RR	8204	250.3	32.66	17.20	94.39	67.6	3.2
23	Crystal RR840	8204	252.8	32.17	17.34	94.42	43.8	2.5
46	SX 1282 RR	8201	244.5	33.30	16.79	94.50	67.1	3.4
28	HM 28RR	8191	243.4	33.39	16.73	94.42	71.2	2.9
42	HM 9133RR	8177	250.2	32.44	17.21	94.33	66.6	2.9
39	HM 9116RR	8175	251.4	32.21	17.24	94.46	60.7	3.0
41	HM 9131RR	8167	253.1	32.04	17.39	94.35	69.4	2.8
31	HM 9039RR	8150	249.3	32.59	17.13	94.35	72.3	3.1
4	Beta 5670R	8122	245.5	32.78	17.03	93.94	74.5	3.6
43	HM 9151RR	8110	239.8	33.58	16.64	93.96	67.8	3.2
6	Crystal R689	8104	237.3	33.79	16.35	94.40	72.2	3.8
35	HM 9055RR	8073	250.3	32.01	17.17	94.43	63.9	3.0
24	Crystal RR848	8054	254.0	31.42	17.32	94.66	69.4	4.0
45	SX 1281RR	8045	253.4	31.48	17.29	94.68	65.2	2.9
16	BTS 18RR26	8037	256.7	31.00	17.63	94.31	64.3	2.3
34	HM 9051RR	8036	257.8	30.96	17.55	94.72	56.7	2.6
33	HM 9050RR	8021	254.5	31.24	17.48	94.27	65.3	2.6
5	Crystal R509	8003	250.7	31.68	17.22	94.30	59.7	2.7
25	Crystal RR898	7930	255.0	30.74	17.34	94.83	75.1	3.7
32	HM 9042RR	7913	251.8	31.11	17.36	94.12	62.1	2.8
37	HM 9084RR	7909	239.9	32.78	16.59	94.22	62.7	3.4
8	SX 1233	7837	254.8	30.57	17.39	92.27	64.5	3.3
9	Crystal R442	7755	247.7	30.97	17.12	94.09	64.2	2.5
1	Beta 5833R	7749	247.3	31.08	16.85	94.85	58.6	3.3
2	Beta 5930R	7727	255.0	30.13	17.61	94.06	58.5	2.6
40	HM 9130RR	7689	240.7	31.73	16.46	94.71	56.8	3.9
10	HM 7172Rz	7453	244.1	30.38	16.95	93.91	68.4	2.9
11	HM 2771Rz	7258	254.2	28.28	17.27	94.87	69.5	2.9
7	HM 2788NT	7155	217.8	32.50	15.32	93.71	69.4	2.8
LSD (P=.05)		352.0	6.74	1.19	0.38	0.97	3.51	0.66
CV		3.8	2.39	3.24	1.96	0.91	4.80	10.02
Grand Mean		8164.9	249.04	32.52	17.08	94.41	64.62	3.24

Michigan Sugar Company Research

Rhizoctonia Nursery: Successful trials were conducted at the Bean & Beet Farm and at Blumfield.

Purpose: The Rhizoctonia Nursery is conducted to evaluate resistance in the varieties. The test is inoculated. Knowledge of varietal differences is important to help the growers select the best varieties for their conditions.

Results: There are a few varieties containing a level of tolerance to Rhizoctonia and many that have very little or no tolerance to the disease. This trial produced good results to use in evaluating those differences.

Official Variety Trial: This trial was planted at eight locations and six were usable for the variety approval process including the location at the Bean & Beet Farm.

Purpose: To evaluate the production differences in varieties. Tons per acre, sugar content, and purity are measured and used to figure Recoverable Sugar per Acre.

Results: Rhizomania resistance is relatively new and varieties with resistance to Roundup will be planted for the first time in 2008. The varieties with these new genetic traits may be lacking in some other areas. These trials exposed the differences and shortcomings. Some varieties are low in Recoverable Sugar per Ton or are less resistant to Cercospora than we would like for Michigan. From these variety trials we have the information needed to approve the best varieties to be sold and the growers have the information they need to select the best for their farm.