



November 2024

Dear ACSC Sugarbeet Grower:

The 2024 official coded variety performance trials included 13 yield trials and 11 disease nurseries planted at a total of 19 sites by American Crystal Sugar Company (ACSC). Seven additional disease/insect nurseries were planted by third party cooperators. Thanks are extended to the dedicated Technical Services staff involved in the official trial plot care, harvest, and data analysis.

Results

Results from the Official Variety Trial sites were excellent overall. Planting dates ranged from April 21 to May 17 for non-disease yield trial sites; the Aphanomyces yield trial site at Perley was planted June 10. Stands in the trials were excellent at most locations. All thirteen yield trial sites were harvested and data used; twelve for variety approval calculations and one (Perley) for yield under Aphanomyces disease pressure. Most sites had ample to excessive soil moisture early in the growing season but were dry for the latter part of the growing season. Rhizoctonia crown and root rot was minimal in 2024. Revenue calculations in 2024 are based on a hypothetical \$54.53 payment (5-year rolling average) assuming 17.5% sugar and 1.5% SLM not considering hauling or production costs.

Fusarium ratings are from naturally infested sites at Moorhead and Sabin, MN. Rhizoctonia crown and root rot ratings are from inoculated nurseries at Crookston, MN, TSC-S and TSC-N in Moorhead, MN and Saginaw, MI (BSDF). Aphanomyces root rot ratings are from naturally infested nurseries at Perley, Glyndon (Magno), and Shakopee (KWS), MN. Cercospora leafspot ratings are from inoculated nurseries at Foxhome and Randolph (KWS), MN and Saginaw, MI (BSDF) as well as a non-inoculated nurseries at Averill, MN and Forest River, ND. Root aphid ratings are from a field nursery at Longmont, CO (Magno) with ratings pending from greenhouse assays at Moorhead (ACSC) and Shakopee, MN (KWS).

2024 harvest conditions were dry overall, despite excessive soil moisture early in the growing season. The dry soil provided some challenging conditions for keeping pinch wheels deep enough without bogging down the tractor. Sugarbeet roots lifted well.

The 2024 data have been combined with previous years' data and results are enclosed. Results for the yield trials from individual sites are available on the internet.

Conventional trials were not planted in the 2024 OVT trials. Conventional varieties approved for 2020-2024 sales are permitted to continue in 2025 sales.

These results and additional information for individual growing sites are available on the World Wide Web at www.crystalsugar.com. More detailed information will be available later in the Sugarbeet Research and Extension Reports (www.sbreb.org). Additional data including individual yield trial results and agronomic procedures are also on the ACSC website.

Attached are the following pages of information:

1. List of varieties approved for sale to ACSC growers
2. Multi-year performance of RR varieties from all sites
3. Performance of RR varieties under Aphanomyces conditions (data from 2020 and 2024)
4. Performance of conventional varieties from three sites (2017-2019)
5. Disease ratings for all nurseries (varieties tested in 2024)
6. Root Aphid rating/evaluation
7. Trial sites, disease observations and agronomic information from all trial locations
8. Seed treatments applied to seed used in the official coded variety trials

Plot Procedures

Yield trials were planted to stand at 4.5 inches. Starter fertilizer (10-34-0) was applied in-furrow (3 GPA in 6 GPA total volume) in all yield trials. Counter 20G (8.9 lb/A) was applied in a 7-inch band after planting at all yield trial sites. Plots were planted crosswise (90°) to the cooperators' normal farming operations, where possible. Plot row lengths for all official trials were maintained at 47 feet with about 40 feet harvested. Planting was performed with a 12-row SRES vacuum planter. The GPS controlled planter gave good single seed spacing which facilitated emergence counting. All seed provided by companies was primed. Seed companies had the option of treating seed with an Aphanomyces seed treatment, insecticide, and a Rhizoctonia seed treatment fungicide. Emergence counts were taken on 24 feet of each plot. Multiple seedlings were counted as a single plant if they emerged less than one inch apart. The stands in all yield trials were refined by removing doubles (multiple seedlings less than 1.5 inch apart) by hand but were not further reduced.

Roundup PowerMAX 3 with Class Act (surfactant) and full rates of fungicides were broadcast-applied using a pickup sprayer driven down the alleys. Two applications of Roundup (25 oz) were made at the 2-4 and 6-10 leaf stages. Hand weeding was used where necessary. All yield trials were treated with AZteroid in-furrow at planting (5.7 oz) and Quadris in a 7-inch band during the 6-10 leaf stage (10 oz) for Rhizoctonia control. Treatments used for Cercospora control in 2024 included Inspire XT/Manzate Max, Agri Tin/T-Methyl, Proline/Manzate Max, Manzate Max, and Priaxor/Agri Tin. Ground spraying was conducted by ACSC technical staff using 20 GPA and 75-80 psi.

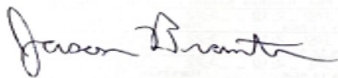
Roundup Ready varieties with commercial seed were planted in four-row plots with six replicates. The RR experimental entries were planted in two-row plots with four replicates.

All plot rows were measured for total length after approximately 3.5 feet at each end were removed at the end of August, with skips greater than 60 inches being measured for adjustment purposes. Harvest was performed with one custom six-row harvester with increased cleaning capacity. All harvested beets of each plot were used for yield determination while one sample (approximately 20 lbs) was obtained from each plot for sugar and impurity analysis. Quality analysis was performed at the ACSC Technical Services Quality Lab in Moorhead, MN.

Varieties were planted in nurseries in Minnesota, North Dakota, Michigan, and Colorado to evaluate varieties for disease and insect susceptibility. ACSC adjusts the Cercospora, Aphanomyces, Rhizoctonia and Fusarium nursery data each year to provide a consistent target for variety approval criteria.

*Before purchasing seed, please check to make sure the varieties you are buying are on the **current approved list**. In accordance with the grower contract, the cooperative has the option to refuse beets of a non-approved variety. If you have questions, please contact the ACSC Technical Services Center or your ACSC Agriculture Department.*

Sincerely,



Jason Brantner
Official Trial Manager



Alec Deschene
Beet Seed Analyst



Jon Hickel
Official Trial Supervisor



Nick Weller
Official Trial Coordinator

Attachments

Table 1.
Varieties Meeting ACSC Approval Criteria for the 2025 Sugarbeet Crop

Roundup Ready®	<u>Full Market</u>	<u>Aph Spec</u>	<u>Rhc Spec</u>	<u>Rhizomania</u>	2019 Conventional	<u>Full Market</u>	<u>Rhizomania</u>
BTS 8018	Yes	Yes		MG	Crystal R761	Yes	MG
BTS 8034	Yes	Yes		MG	Crystal 620	Yes	MG
BTS 8156	Yes	Yes		MG	Crystal 840	Yes	MG
BTS 8226	Yes	Yes	Yes	MG	Crystal 950	Yes	MG
BTS 8270	Yes	Yes	New	MG	Hilleshög HM3035Rz	Yes	SG
BTS 8328	New	New		MG	SX 8869 Cnv	Yes	MG
BTS 8359	No	New		MG	SV 48777	Yes	MG
BTS 8365	New	New	New	MG			
BTS 8927	Yes	Yes	New	MG			
Crystal 022	Yes	Yes	Yes	MG			
Crystal 130	Yes	Yes	New	MG			
Crystal 137	Yes	Yes		MG			
Crystal 138	Yes	Yes	Yes	MG			
Crystal 260	Yes	Yes	Yes	MG			
Crystal 262	Yes	Yes	Yes	MG			
Crystal 269	Yes	Yes		MG			
Crystal 360	New	New		MG			
Crystal 361	New	New	New	MG			
Crystal 364	New	New	New	MG			
Crystal 369	New	New		MG			
Crystal 793	Yes	Yes		MG			
Crystal 912	Yes	Yes	Yes	MG			
Hilleshög HIL2479	New			MG			
Hilleshög HIL2480	No		New	MG			
Hilleshög HIL2386	Yes		Yes	MG			
Hilleshög HIL2389	Yes	Yes		MG			
Hilleshög HIL9920	Yes	Yes++		MG			
Maribo MA717	Yes			MG			
SV 203	Yes	Yes++		MG			
SV 231	New		New	MG			
SX 1815	Yes			MG			
SX 1818	Yes			MG			
SX 1835	No		New	MG			

Aph Spec = variety meets Aphanomyces specialty requirements
Rhc Spec = variety meets Rhizoctonia specialty requirements
MG (Multigenic) = Contains multiple genes for Rhizomania resistance
SG (Single gene) = Contains a single gene for Rhizomania resistance

Created 10/25/2024

++ 2nd Year of not meeting Specialty Approval of previously approved Specialty variety. According to Approval Policy, may be sold as Specialty in 2025
+ 1st Year of not meeting Specialty Approval of previously approved Specialty variety. According to Approval Policy, may be sold as Specialty in 2025
Roundup Ready® is a registered trademark of Bayer Group.
Roundup Ready® sugarbeets are subject to the ACSC RRSB Bolter Destruction Policy

Table 2. Performance Data of RR Varieties During 2023 & 2024 Growing Seasons (All Locations Combined) Approved for Sale to ACSC Growers in 2025 +++

Variety	Yrs Com	Rev/Ton ++			Rev/Acre ++			Rec/Ton		Rec/Acre		Yield		Sugar		Molasses		Emergence +		Cerc. *		Aphan. *		Rhizoc. *		Fusarium *		Rzm *
		24	2 Yr	2Y%	24	2 Yr	2Y%	24	2 Yr	24	2 Yr	24	2 Yr	24	2 Yr	24	2 Yr	24	2 Yr	24	2 Yr	24	2 Yr	24	2 Yr	24	2 Yr	
Number of locations →		12	23		12	23		12	23	12	23	12	23	12	23	12	23	12	23	5	8	3	4	4	6	2	4	
Previous Approved																												
BTS 8018	3	59.82	59.38	100	2101	2031	105	336	342	11803	11710	35.1	34.3	17.81	18.12	1.01	1.01	84	81	3.4	2.9	3.7	3.8	3.7	3.9	2.2	2.7	MG
BTS 8034	3	55.87	55.87	94	1978	1937	100	324	331	11477	11491	35.4	34.7	17.35	17.69	1.15	1.13	85	83	3.7	3.1	4.5	4.1	4.4	4.2	1.9	2.3	MG
BTS 8156	2	58.42	58.63	99	2015	1953	101	332	340	11437	11321	34.4	33.4	17.66	18.05	1.07	1.06	82	79	3.9	3.2	4.3	4.1	4.3	4.1	2.2	2.5	MG
BTS 8226	1	63.19	62.13	105	2146	2046	105	346	351	11762	11540	34.0	32.9	18.27	18.49	0.96	0.95	82	78	3.5	2.9	3.8	3.8	3.5	3.6	2.6	3.2	MG
BTS 8270	1	60.32	60.23	101	2064	2015	104	338	345	11565	11542	34.3	33.5	17.92	18.29	1.04	1.04	79	79	3.3	2.9	3.8	3.8	3.9	3.8	2.4	2.9	MG
BTS 8927	4	62.78	61.67	104	2124	2036	105	345	349	11680	11536	33.9	33.1	18.22	18.44	0.97	0.97	85	84	4.5	4.4	4.4	3.8	3.6	3.8	2.1	2.6	MG
Crystal 022	3	62.44	62.21	105	2044	2010	104	344	351	11253	11343	32.7	32.4	18.20	18.54	1.00	0.99	80	79	4.7	4.8	4.0	3.8	3.6	3.7	2.7	3.1	MG
Crystal 130	2	60.31	60.40	102	2077	2043	105	338	345	11615	11694	34.4	33.9	17.90	18.27	1.03	1.01	81	80	3.6	3.1	3.7	3.9	3.5	3.6	2.8	3.2	MG
Crystal 137	2	59.19	59.25	100	1998	1960	101	334	342	11272	11306	33.7	33.1	17.79	18.16	1.09	1.07	82	81	3.8	3.2	3.8	4.0	4.1	4.0	2.5	2.6	MG
Crystal 138	1	59.07	59.16	100	2024	2004	103	334	342	11424	11556	34.2	33.8	17.77	18.14	1.08	1.06	78	76	4.7	4.8	3.8	4.0	3.7	3.7	3.0	3.4	MG
Crystal 260	1	61.19	60.00	101	2124	2043	105	340	344	11808	11719	34.8	34.1	18.00	18.20	0.99	1.00	86	82	3.1	2.6	4.1	4.0	3.7	3.6	2.4	2.9	MG
Crystal 262	1	56.82	57.46	97	2055	1994	103	327	336	11821	11665	36.2	34.7	17.38	17.83	1.03	1.01	72	74	4.4	4.4	3.6	4.1	3.4	3.4	3.2	3.5	MG
Crystal 269	1	62.80	62.39	105	2139	2036	105	345	352	11768	11477	34.1	32.7	18.33	18.67	1.08	1.09	77	73	4.5	4.5	3.5	3.6	4.3	4.1	2.5	3.3	MG
Crystal 793	6	60.73	60.00	101	2092	2037	105	339	344	11657	11675	34.3	33.9	17.95	18.22	1.01	1.01	82	81	4.3	4.2	3.7	4.0	3.9	4.1	2.4	2.9	MG
Crystal 912	3	53.33	54.87	92	2035	2030	105	316	328	12049	12145	38.0	37.0	16.92	17.48	1.10	1.06	84	83	5.1	5.0	3.6	3.5	3.5	3.5	3.5	3.6	MG
Hilleshög HIL2386	2	56.84	57.01	96	1942	1889	97	327	335	11159	11098	34.1	33.2	17.45	17.82	1.09	1.07	77	78	4.9	4.6	4.5	4.4	4.3	4.1	3.1	3.6	MG
Hilleshög HIL2389	2	60.09	59.65	100	2062	2005	103	337	343	11541	11531	34.2	33.6	17.85	18.16	1.01	1.00	84	82	4.6	4.5	3.6	4.5	4.1	4.3	5.5	5.5	MG
Hilleshög HIL9920	6	58.88	58.75	99	1981	1930	99	333	340	11176	11154	33.4	32.8	17.74	18.07	1.08	1.06	76	76	5.1	5.1	4.1	4.8	4.6	4.5	6.3	6.2	MG
Maribo MA717	6	55.81	56.54	95	1978	1925	99	324	333	11477	11359	35.4	34.1	17.27	17.71	1.07	1.03	80	80	4.9	4.9	4.2	4.4	4.2	4.1	4.4	4.4	MG
SV 203	3	60.22	59.93	101	2070	2021	104	337	344	11581	11590	34.3	33.7	17.88	18.20	1.02	1.01	81	81	4.7	4.7	3.7	5.4	4.2	4.2	5.7	5.5	MG
SX 1815	2	60.37	60.04	101	2070	2033	105	338	344	11563	11653	34.2	33.9	17.90	18.21	1.02	1.00	83	82	4.7	4.7	4.0	5.1	4.3	4.3	5.5	5.6	MG
SX 1818	2	56.91	57.40	97	2004	1981	102	327	336	11521	11610	35.2	34.6	17.43	17.85	1.07	1.04	78	78	4.6	4.6	4.5	5.8	4.4	4.2	4.3	4.5	MG
Newly Approved																												
BTS 8328	NC	60.68	61.00	103	2045	2003	103	339	347	11420	11405	33.8	32.9	18.02	18.44	1.10	1.08	76	75	4.4	4.5	3.8	3.7	4.2	4.2	3.2	3.6	MG
BTS 8359**	NC	57.65	58.68	99	2009	1983	102	329	340	11490	11507	34.9	33.9	17.60	18.10	1.14	1.09	79	76	2.9	2.6	3.6	3.7	4.3	4.2	2.2	2.8	MG
BTS 8365	NC	64.51	63.88	107	2088	2034	105	350	356	11332	11337	32.3	31.8	18.46	18.77	0.94	0.95	81	78	4.2	4.2	3.9	3.7	3.6	3.6	2.1	2.8	MG
Crystal 360	NC	61.28	60.55	102	2008	1985	102	341	346	11134	11345	32.6	32.8	18.05	18.31	1.02	1.02	83	81	3.1	2.6	3.5	3.7	3.9	4.0	2.2	2.9	MG
Crystal 361	NC	61.10	61.51	103	2119	2065	106	340	349	11790	11717	34.7	33.7	18.00	18.44	1.01	0.99	80	78	3.3	2.8	3.8	3.6	3.8	3.7	2.0	2.6	MG
Crystal 364	NC	57.07	57.08	96	2081	2041	105	328	335	11951	11992	36.5	35.9	17.47	17.84	1.09	1.09	84	81	4.5	4.4	3.8	3.8	3.8	3.8	2.1	2.6	MG
Crystal 369	NC	60.59	60.73	102	2101	2043	105	338	346	11724	11653	34.6	33.7	18.04	18.44	1.13	1.11	81	80	4.0	3.9	3.5	3.7	4.7	4.4	2.3	2.7	MG
Hilleshög HIL2479	NC	60.58	60.47	102	1868	1865	96	338	346	10451	10669	31.0	30.9	17.97	18.32	1.07	1.05	77	77	4.2	4.2	4.8	4.6	4.2	3.8	4.6	4.5	MG
Hilleshög HIL2480**	NC	58.26	58.75	99	1886	1851	95	331	340	10727	10747	32.4	31.7	17.77	18.19	1.20	1.18	78	79	4.1	4.0	4.4	4.4	3.7	3.7	3.1	3.2	MG
SV 231	NC	56.57	57.45	97	2116	2040	105	326	336	12175	11929	37.2	35.5	17.38	17.86	1.07	1.04	82	80	4.8	4.8	4.4	5.3	3.7	3.7	4.6	4.4	MG
SX 1835**	NC	55.96	57.27	96	2060	2014	104	324	336	11937	11809	36.8	35.2	17.36	17.90	1.15	1.12	85	82	4.7	4.6	4.3	5.1	4.1	3.8	3.5	3.7	MG
Benchmark var. mean		59.65	59.44		2020	1940		336	342	11354	11176	33.8	32.7	17.83	18.19	1.05	1.06	84	80									

+++ 2024 Sites include Casselton, Averill, Ada, Hillsboro, Climax, Grand Forks, Scandia, Forest River, Alvarado, St Thomas, Hallock, and Bathgate

Created 10/25/2024

+++ 2023 Sites include Casselton, Perley, Halstad, Reynolds, Climax, Grand Forks, Scandia, East Grand Forks, Stephen, St. Thomas, and Bathgate

++ 2024 Revenue estimate based on a \$54.53 beet payment (5-yr ave) at 17.5% crop with a 1.5% loss to molasses and 2023 Revenue estimate based on a \$50.09 beet payment. Revenue does not consider hauling or production costs.

+ Emergence is % of planted seeds producing a 4 leaf beet.

** Does not meet Full Market Approval. Meets Aphanomyces and/or Rhizoctonia Specialty Approval.

* 2024 Cercospora from Saginaw MI, Randolph MN, Foxhome MN, Averill MN and Forest River ND (res.<4.4, susc>5.0). Aphanomyces ratings from Shakopee MN, Glyndon MN, and Perley MN (res.<4.0, susc>4.8). Rhizoctonia from Saginaw MI, Moorhead MN and Crookston MN (res.<3.8, susc>5). Fusarium from Moorhead MN and Sabin MN (res.<3.0, susc>5.0). MG indicates multigenic resistance to Rhizomania.

* 2023 Cercospora ratings from Saginaw MI, Foxhome MN, and East Grand Forks, MN (res.<4.4, susc>5.0). Aphanomyces ratings from Shakopee MN (res.<4.0, susc>4.8).

Rhizoctonia ratings from Crookston MN and Saginaw MI (res.<3.8, susc>5). Fusarium ratings from Moorhead MN and Sabin MN (res.<3.0, susc>5.0). MG indicates multigenic resistance to Rhizomania.

Table 3. Performance Data of RR 2024 Approved Varieties Under Aphanomyces Conditions +++

Variety	Yrs		Rev/Ton++				Rev/Acre++				Rec/Ton		Rec/Acre		Sugar		Yield		Cerc. *		Aphan. *		Rhizoc. *		Fusarium *		
	Com	SpC +	2024	%Mn	2020	%Mn^	2024	%Mn	2020	%Mn^	2024	2020	2024	2020	2024	2020	24	2Yr	24	2Yr	24	2Yr	24	2Yr	24	2Yr	
	Number of locations →		1	3	1	3	1	3	1	3	1	3	1	3	1	3	5	8	3	4	4	6	2	4			
Previous Approved																											
BTS 8018	3	Yes	59.33	99	40.59	108	1396	110	982	115	334.6	303.9	7861	7256	17.81	16.22	23.43	23.62	3.35	2.89	3.73	3.84	2.19	2.70	3.68	3.87	
BTS 8034	3	Yes	59.65	99	35.57	95	1446	114	887	104	335.5	286.7	8117	7046	17.89	15.53	24.14	24.32	3.69	3.12	4.48	4.14	1.89	2.30	4.38	4.24	
BTS 8156	2	Yes	61.11	102	--	--	1379	109	--	--	339.9	--	7678	--	18.06	--	22.60	--	3.87	3.20	4.27	4.12	2.15	2.48	4.28	4.10	
BTS 8226	1	Yes	64.54	107	--	--	1409	111	--	--	350.3	--	7641	--	18.48	--	21.79	--	3.52	2.93	3.81	3.77	2.64	3.24	3.46	3.62	
BTS 8270	1	Yes	62.52	104	--	--	1371	108	--	--	344.2	--	7542	--	18.23	--	21.89	--	3.32	2.87	3.76	3.83	2.41	2.93	3.86	3.76	
BTS 8927	4	Yes	63.12	105	43.12	115	1298	102	985	115	346.0	312.6	7102	7070	18.33	16.58	20.46	22.44	4.45	4.42	4.41	3.84	2.10	2.59	3.57	3.78	
Crystal 022	3	Yes	66.63	111	44.07	117	1453	114	1047	123	356.6	315.8	7782	7422	18.81	16.80	21.85	23.24	4.66	4.82	3.95	3.81	2.75	3.09	3.63	3.74	
Crystal 130	2	Yes	58.82	98	--	--	1385	109	--	--	333.0	--	7839	--	17.72	--	23.53	--	3.56	3.08	3.72	3.86	2.76	3.15	3.54	3.61	
Crystal 137	2	Yes	61.70	103	--	--	1395	110	--	--	341.7	--	7716	--	18.18	--	22.55	--	3.81	3.23	3.79	4.00	2.50	2.64	4.09	4.05	
Crystal 138	1	Yes	64.24	107	--	--	1391	109	--	--	349.4	--	7576	--	18.50	--	21.77	--	4.73	4.75	3.84	3.95	2.98	3.37	3.68	3.75	
Crystal 260	1	Yes	60.37	101	--	--	1364	107	--	--	337.7	--	7634	--	17.94	--	22.61	--	3.13	2.64	4.08	3.96	2.38	2.88	3.70	3.58	
Crystal 262	1	Yes	52.88	88	--	--	1153	91	--	--	315.1	--	6844	--	16.85	--	21.63	--	4.36	4.36	3.57	4.09	3.22	3.52	3.39	3.35	
Crystal 269	1	Yes	61.85	103	--	--	1405	111	--	--	342.2	--	7758	--	18.14	--	22.61	--	4.54	4.46	3.50	3.56	2.54	3.33	4.30	4.10	
Crystal 793	6	Yes	61.18	102	37.97	101	1316	104	886	104	340.1	294.9	7324	6732	18.02	15.80	21.56	22.43	4.28	4.24	3.72	4.01	2.40	2.90	3.89	4.12	
Crystal 912	3	Yes	53.61	89	35.21	94	1207	95	886	104	317.3	285.5	7142	7041	16.92	15.44	22.52	24.35	5.06	5.03	3.57	3.49	3.46	3.64	3.45	3.48	
Hilleshög HIL2386	2	No	59.24	99	--	--	1024	81	--	--	334.3	--	5774	--	17.81	--	17.26	--	4.89	4.56	4.55	4.38	3.13	3.56	4.27	4.09	
Hilleshög HIL2389	2	No	60.04	100	--	--	1301	102	--	--	336.7	--	7312	--	17.86	--	21.77	--	4.57	4.54	3.56	4.49	5.49	5.49	4.08	4.27	
Hilleshög HIL9920	6	No	59.26	99	35.57	95	1174	92	706	83	334.4	286.5	6626	5606	17.75	15.37	19.80	19.33	5.07	5.11	4.11	4.80	6.28	6.15	4.57	4.50	
Maribo MA717	6	No	55.88	93	34.86	93	976	77	731	86	324.1	284.0	5649	5834	17.30	15.24	17.42	20.22	4.85	4.95	4.18	4.39	4.36	4.44	4.19	4.15	
SV 203	3	No	58.25	97	37.75	101	1195	94	829	97	331.3	294.1	6796	6380	17.65	15.78	20.48	21.48	4.66	4.72	3.71	5.43	5.74	5.47	4.16	4.21	
SX 1815	2	No	62.01	103	--	--	1353	106	--	--	342.6	--	7471	--	18.16	--	21.78	--	4.70	4.72	3.96	5.05	5.54	5.57	4.30	4.33	
SX 1818	2	No	57.76	96	--	--	1143	90	--	--	329.8	--	6523	--	17.55	--	19.79	--	4.65	4.59	4.54	5.82	4.32	4.46	4.38	4.22	
Newly Approved																											
BTS 8328	NC	Yes	60.31	100	--	--	1410	111	--	--	337.6	--	7948	--	17.91	--	23.70	--	4.43	4.48	3.83	3.67	3.19	3.61	4.19	4.16	
BTS 8359**	NC	Yes	57.12	95	--	--	1254	99	--	--	327.8	--	7206	--	17.53	--	21.94	--	2.91	2.58	3.65	3.66	2.20	2.84	4.26	4.17	
BTS 8365	NC	Yes	65.38	109	--	--	1387	109	--	--	353.0	--	7498	--	18.66	--	20.96	--	4.18	4.17	3.87	3.75	2.15	2.79	3.60	3.64	
Crystal 360	NC	Yes	60.00	100	--	--	1257	99	--	--	336.7	--	7035	--	17.90	--	20.66	--	3.05	2.61	3.52	3.69	2.24	2.88	3.94	3.99	
Crystal 361	NC	Yes	60.40	101	--	--	1262	99	--	--	337.9	--	7080	--	18.03	--	21.01	--	3.33	2.79	3.80	3.62	2.02	2.63	3.78	3.66	
Crystal 364	NC	Yes	55.79	93	--	--	1293	102	--	--	323.7	--	7556	--	17.23	--	23.38	--	4.46	4.36	3.78	3.79	2.12	2.62	3.77	3.78	
Crystal 369	NC	Yes	60.53	101	--	--	1272	100	--	--	338.3	--	7128	--	18.01	--	21.06	--	4.03	3.91	3.45	3.74	2.25	2.75	4.72	4.35	
Hilleshög HIL2479	NC	No	58.75	98	--	--	729	57	--	--	332.8	--	4074	--	17.82	--	11.93	--	4.25	4.17	4.76	4.57	4.59	4.51	4.24	3.84	
Hilleshög HIL2480**	NC	No	60.05	100	--	--	963	76	--	--	336.8	--	5435	--	18.02	--	16.33	--	4.08	4.04	4.43	4.36	3.06	3.18	3.65	3.68	
SV 231	NC	No	59.63	99	--	--	1191	94	--	--	335.5	--	6783	--	17.73	--	20.45	--	4.77	4.80	4.43	5.34	4.62	4.41	3.71	3.70	
SX 1835**	NC	No	58.83	98	--	--	1124	88	--	--	333.0	--	6430	--	17.70	--	19.45	--	4.66	4.60	4.31	5.15	3.52	3.72	4.07	3.81	
AP CK SUS RR#2			56.88	95	--	--	687	54	--	--	327.1	--	3975	--	17.45	--	12.40	--									
Trial mean (includes AP CK SUS RR#2)			60.04	100	--	--	1270	100	--	--	336.7	--	7117	--	17.89	--	21.11	--									
AP SUS RR#5			--	--	30.80	82	--	--	590	69	--	269.8	--	4984	--	14.75	--	18.00									
Trial mean (includes AP SUS RR#5)			--	--	37.55	100	--	--	853	100	--	293.4	--	6537	--	15.75	--	21.94									
Mean of specialty varieties			60.72	101	39.42	105	1354	107	946	111	338.8	304.8	7554	7199	17.98	16.28	22.29	23.41									

+++ 2024 Sites include Perley

Created 10/28/2024

+++ 2020 Data from Climax, Perley, and Grandin

++ 2024 Revenue estimate based on a \$54.53 beet payment (5-yr ave) at 17.5% crop with a 1.5% loss to molasses. 2020 Revenue estimate based on \$45.12 beet payment. Revenue does not consider hauling or production costs.

+ Yes indicates varieties that have met the current Aphanomyces Specialty requirement for 2024 with a 2 yr rating ≤ 4.0 or previously met Aphanomyces Specialty requirement maintaining a 3 year rating ≤ 4.3.

%Mn = Percent of 2024 trial mean (includes previously approved varieties and susceptible check AP SUS RR#2)

%Mn^ = Percent of 2020 trial mean (including susceptible check AP SUS RR#5)

** Does not meet Full Market Approval. Meets Aphanomyces and/or Rhizoctonia Specialty Approval.

* 2024 Cercospora from Saginaw MI, Randolph MN, Foxhome MN, Averill MN and Forest River ND (res.<4.4, susc>5.0). Aphanomyces ratings from Shakopee MN, Glyndon MN, and Perley MN (res.<4.0, susc>4.8).

Rhizoctonia from Saginaw MI, Moorhead MN and Crookston MN (res.<3.8, susc>5). Fusarium from Moorhead MN and Sabin MN (res.<3.0, susc>5.0).

* 2023 Cercospora ratings from Saginaw MI, Foxhome MN, and East Grand Forks, MN (res.<4.4, susc>5.0). Aphanomyces ratings from Shakopee MN (res.<4.0, susc>4.8).

Rhizoctonia ratings from Crookston MN and Saginaw MI (res.<3.8, susc>5). Fusarium ratings from Moorhead MN and Sabin MN (res.<3.0, susc>5.0).

Table 4. Performance Data of Conventional Varieties During 2017, 2018, 2019 Growing Seasons (All Locations Combined) +++

Variety	Yrs Com	Rev/Ton ++					Rev/Acre ++					Rec/Ton		Rec/Acre		Sugar		Yield		Molasses		Emergence *		Cerc. *		Aphan. *		Rhizoc. *		Fusarium *		Rzm *					
		19	2 Yr	2Y%	3Yr	3Y%	19	2 Yr	2Y%	3Yr	3Yr%	19	2 Yr	19	2 Yr	19	2 Yr	19	2 Yr	19	2 Yr	19	2 Yr	19	2 Yr	19	2 Yr	19	2 Yr	19	2 Yr	19	2 Yr				
Number of locations →		3	8	14			3	8	14			3	8	3	8	3	8	3	8	3	8	3	8	3	6	2	3	3	6	2	4						
Previous Approved																																					
Crystal 620	NC	41.74	47.24	97	49.48	99	1394	1631	118	1656	104	311	326	10403	11312	16.59	17.38	33.7	34.9	1.07	1.06	54	67	3.95	4.13	4.7	4.2	5.1	4.6	2.5	3.0	MG					
Crystal R761	10	38.62	43.53	89	46.06	92	1375	1582	115	1618	101	299	313	10742	11457	16.18	16.86	36.0	36.7	1.21	1.19	61	72	4.98	4.85	4.4	4.3	4.9	4.6	3.0	3.6	MG					
Crystal 840	NC	39.30	45.48	93	30.32	60	1288	1585	115	NA	--	302	320	9916	11173	16.23	17.10	33.1	35.1	1.15	1.10	52	65	4.18	4.25	4.0	3.9	4.7	4.4	2.7	3.1	MG					
Hilleshög HM3035Rz	13	43.77	49.17	101	50.89	101	1294	1379	100	1405	88	318	333	9439	9422	16.91	17.65	29.9	28.5	1.02	1.00	72	71	4.42	4.32	5.1	5.2	4.4	4.2	4.1	4.3	SG					
Seedex 8869 Cnv	NC	40.88	45.47	93	48.33	96	1374	1617	117	1658	104	307	320	10388	11418	16.40	17.00	33.9	35.8	1.02	1.00	64	74	4.52	4.59	4.8	4.8	5.1	4.9	3.5	3.7	MG					
SV 48777	NC	45.18	50.25	103	52.63	105	1452	1634	118	1656	104	323	337	10342	10954	17.08	17.78	31.8	32.5	0.94	0.93	63	73	4.10	4.33	4.9	5.0	5.0	4.7	4.3	4.4	MG					
Newly Approved																																					
Crystal 950	NC	41.21	--	--	--	--	1430	--	--	--	--	309	--	10719	--	16.49	--	34.7	--	1.06	--	62	--	4.72	--	4.8	--	4.8	--	2.9	--	MG					
Benchmark var. mean		44.35	48.87	50.20			1427	1381	1595			320	332	10330	10887	17.07	17.68	32.4	33.0	1.08	1.09	66	75														

+++ 2019 Sites include Grand Forks, Scandia, and Bathgate

+++ 2018 Sites include Casselton, Ada, Grand Forks, Scandia, and St. Thomas

+++ 2017 Sites include Casselton, Hendrum, Grand Forks, Scandia, St. Thomas, and Humboldt

++ 2019 Revenue estimate is based on a \$44.38 beet payment (5-yr ave) at 17.5% sugar and 1.5% loss to molasses. 2018 Revenue estimate is based on a \$46.40 beet payment and 2017 Revenue estimate is based on a \$48.49 beet payment.

* Emergence is % of planted seeds producing a 4 leaf beet.

* 2019 Aphanomyces ratings from Shakopee MN (res<4.4, susc>5.0). Cercospora ratings from Randolph MN, Foxhome MN & Saginaw MI (res<4.5, susc>5.0). Fusarium ratings from Moorhead MN and Sabin MN (res<3.0, susc>5.0).

Rhizoctonia from Moorhead MN, Crookston MN, and Saginaw MI (res<3.8, susc>5). MG (Multigenic) contains multiple genes for Rhizomania resistance. SG (Single gene) contains a single gene for Rhizomania resistance.

* 2018 Aphanomyces ratings from Shakopee MN, and Georgetown MN (res<4.4, susc>5.0). Cercospora ratings from Randolph MN, Foxhome MN & Saginaw MI (res<4.5, susc>5.0). Fusarium ratings from Moorhead MN (res<3.0, susc>5.0).

Rhizoctonia from Moorhead MN and Saginaw MI (res<3.8, susc>5).

Created 10/29/2024

Table 5. ACSC Official Trial Disease Nurseries 2022-2024 (Varieties tested in 2024)

Cercospora, Aphanomyces, Rhizoctonia & Fusarium

Code	Description	< 4.5 Cercospora > 5.0					< 4.0 Aphanomyces > 4.8					< 3.82 Rhizoctonia > 5.0					< 3.0 Fusarium > 5.0					Rhizomania
		24 Mean	23 Mean	22 Mean	2 Yr Mean	3 Yr Mean	24 Mean	23 Mean	22 Mean	2 Yr Mean	3 Yr Mean	24 Mean	23 Mean	22 Mean	2 Yr Mean	3 Yr Mean	24 Mean	23 Mean	22 Mean	2 Yr Mean	3 Yr Mean	
Previously Approved																						
532	BTS 8018	3.35	2.42	2.03	2.89	2.60	3.73	3.95	4.00	3.84	3.89	3.68	4.06	3.93	3.87	3.89	2.19	3.20	2.98	2.70	2.79	MG
551	BTS 8034	3.69	2.54	2.28	3.12	2.84	4.48	3.80	3.89	4.14	4.06	4.38	4.09	4.49	4.24	4.32	1.89	2.72	2.16	2.30	2.25	MG
535	BTS 8156	3.87	2.53	2.43	3.20	2.94	4.27	3.97	4.21	4.12	4.15	4.28	3.93	4.24	4.10	4.15	2.15	2.80	2.30	2.48	2.42	MG
554	BTS 8226	3.52	2.33	2.00	2.93	2.62	3.81	3.72	3.79	3.77	3.77	3.46	3.78	3.74	3.62	3.66	2.64	3.85	3.47	3.24	3.32	MG
534	BTS 8270	3.32	2.43	1.97	2.87	2.57	3.76	3.90	3.87	3.83	3.84	3.86	3.67	4.33	3.76	3.95	2.41	3.46	3.06	2.93	2.98	MG
538	BTS 8927	4.45	4.38	4.42	4.42	4.42	4.41	3.26	4.00	3.84	3.89	3.57	3.98	4.13	3.78	3.89	2.10	3.08	3.11	2.59	2.76	MG
518	Crystal 022	4.66	4.97	4.60	4.82	4.75	3.95	3.66	4.03	3.81	3.88	3.63	3.85	4.10	3.74	3.86	2.75	3.43	3.22	3.09	3.13	MG
514	Crystal 130	3.56	2.60	2.10	3.08	2.76	3.72	4.00	3.57	3.86	3.76	3.54	3.69	4.08	3.61	3.77	2.76	3.55	3.22	3.15	3.17	MG
503	Crystal 137	3.81	2.65	2.57	3.23	3.01	3.79	4.21	4.25	4.00	4.08	4.09	4.01	4.18	4.05	4.09	2.50	2.78	2.35	2.64	2.54	MG
539	Crystal 138	4.73	4.77	4.87	4.75	4.79	3.84	4.06	3.87	3.95	3.92	3.68	3.81	3.81	3.75	3.77	2.98	3.76	3.16	3.37	3.30	MG
516	Crystal 260	3.13	2.15	2.05	2.64	2.44	4.08	3.84	3.89	3.96	3.94	3.70	3.46	3.70	3.58	3.62	2.38	3.38	3.06	2.88	2.94	MG
528	Crystal 262	4.36	4.36	4.43	4.36	4.38	3.57	4.61	3.42	4.09	3.86	3.39	3.31	3.38	3.35	3.36	3.22	3.33	3.27	3.52	3.44	MG
524	Crystal 269	4.54	4.38	4.60	4.46	4.51	3.50	3.62	3.48	3.56	3.53	4.30	3.90	4.20	4.10	4.13	2.54	4.11	3.36	3.33	3.34	MG
519	Crystal 793	4.28	4.20	4.10	4.24	4.19	3.72	4.31	3.82	4.01	3.95	3.89	4.35	4.73	4.12	4.32	2.40	3.40	3.03	2.90	2.95	MG
521	Crystal 912	5.06	5.00	4.81	5.03	4.96	3.57	3.41	3.44	3.49	3.48	3.45	3.50	3.28	3.48	3.41	3.46	3.82	3.66	3.64	3.65	MG
526	Hilleshög HIL2386	4.89	4.23	4.54	4.56	4.56	4.55	4.21	4.31	4.38	4.36	4.27	3.91	3.51	4.09	3.90	3.13	3.99	3.73	3.56	3.62	MG
536	Hilleshög HIL2389	4.57	4.51	4.69	4.54	4.59	3.56	5.42	3.78	4.49	4.25	4.08	4.45	3.92	4.27	4.15	5.49	5.50	4.34	5.49	5.11	MG
544	Hilleshög HIL9920	5.07	5.15	4.92	5.11	5.05	4.11	5.49	4.33	4.80	4.64	4.57	4.42	4.58	4.50	4.52	6.28	6.03	5.66	6.15	5.99	MG
517	Maribo MA717	4.85	5.04	5.05	4.95	4.98	4.18	4.61	4.39	4.39	4.39	4.19	4.10	3.92	4.15	4.07	4.36	4.53	4.87	4.44	4.59	MG
548	SV 203	4.66	4.78	4.74	4.72	4.73	3.71	7.15	4.24	5.43	5.03	4.16	4.25	4.19	4.21	4.20	5.74	5.20	5.55	5.47	5.50	MG
507	SX 1815	4.70	4.74	5.07	4.72	4.84	3.96	6.15	4.28	5.05	4.80	4.30	4.35	4.12	4.33	4.26	5.54	5.60	5.32	5.57	5.49	MG
550	SX 1818	4.65	4.53	4.72	4.59	4.64	4.54	7.09	4.82	5.82	5.48	4.38	4.06	4.16	4.22	4.20	4.32	4.59	4.54	4.46	4.48	MG
Newly Approved																						
540	BTS 8328	4.43	4.54	--	4.48	--	3.83	3.50	--	3.67	--	4.19	4.14	--	4.16	--	3.19	4.03	--	3.61	--	MG
512	BTS 8359**	2.91	2.26	--	2.58	--	3.65	3.67	--	3.66	--	4.26	4.08	--	4.17	--	2.20	3.49	--	2.84	--	MG
501	BTS 8365	4.18	4.15	--	4.17	--	3.87	3.62	--	3.75	--	3.60	3.69	--	3.64	--	2.15	3.43	--	2.79	--	MG
504	Crystal 360	3.05	2.17	--	2.61	--	3.52	3.86	--	3.69	--	3.94	4.04	--	3.99	--	2.24	3.51	--	2.88	--	MG
523	Crystal 361	3.33	2.24	--	2.79	--	3.80	3.45	--	3.62	--	3.78	3.54	--	3.66	--	2.02	3.24	--	2.63	--	MG
529	Crystal 364	4.46	4.26	--	4.36	--	3.78	3.79	--	3.79	--	3.77	3.79	--	3.78	--	2.12	3.12	--	2.62	--	MG
520	Crystal 369	4.03	3.78	--	3.91	--	3.45	4.02	--	3.74	--	4.72	3.98	--	4.35	--	2.25	3.24	--	2.75	--	MG
552	Hilleshög HIL2479	4.25	4.09	--	4.17	--	4.76	4.38	--	4.57	--	4.24	3.43	--	3.84	--	4.59	4.43	--	4.51	--	MG
537	Hilleshög HIL2480**	4.08	4.00	--	4.04	--	4.43	4.30	--	4.36	--	3.65	3.70	--	3.68	--	3.06	3.30	--	3.18	--	MG
506	SV 231	4.77	4.83	--	4.80	--	4.43	6.25	--	5.34	--	3.71	3.69	--	3.70	--	4.62	4.21	--	4.41	--	MG
522	SX 1835**	4.66	4.55	--	4.60	--	4.31	5.99	--	5.15	--	4.07	3.55	--	3.81	--	3.52	3.92	--	3.72	--	MG

Created 10/25/2024

** Does not meet full market approval. Meets Aphanomyces and/or Rhizoctonia Specialty approval.

Green font ratings indicate specialty or good resistance.

Red font ratings indicate level of concern for some fields.

-- indicates data not available

MG (Multigenic) = Contains multiple genes for Rhizomania resistance

Table 6. Root Aphid Ratings for RR Varieties During 2022-2024 Growing Seasons (All Locations Combined)

Approved for Sale to ACSC Growers in 2025

Code	Variety	Moorhead, MN ^X					Shakopee, MN ^Y					Longmont, CO ^Z				
		(1=Exc - 4=Poor)					(1=Exc - 4=Poor)					(% Infested Plants)				
		2022*	2023*	2024	2 Yr	3 Yr	2022	2023	2024	2 Yr	3 Yr	2022**	2023***	2024	2 Yr	3 Yr
711	BTS 8018	--	--	1.17	--	--	1.00	1.16	1.00	1.08	1.05	--	--	5.00	--	--
725	BTS 8034	--	--	1.00	--	--	1.00	1.28	1.00	1.14	1.09	--	--	7.86	--	--
719	BTS 8156	--	--	1.00	--	--	1.00	1.20	1.04	1.12	1.08	--	--	3.00	--	--
706	BTS 8226	--	--	1.00	--	--	--	1.00	1.04	1.02	--	--	--	2.91	--	--
718	BTS 8270	--	--	1.00	--	--	--	1.08	1.04	1.06	--	--	--	4.79	--	--
701	BTS 8328	--	--	1.00	--	--	--	--	1.00	--	--	--	--	3.71	--	--
702	BTS 8359	--	--	1.00	--	--	--	--	1.00	--	--	--	--	1.76	--	--
729	BTS 8365	--	--	1.00	--	--	--	--	1.12	--	--	--	--	1.35	--	--
714	BTS 8927	--	--	1.00	--	--	1.04	1.12	1.08	1.10	1.08	--	--	3.97	--	--
731	Crystal 022	--	--	1.00	--	--	1.00	1.04	1.00	1.02	1.01	--	--	1.92	--	--
712	Crystal 130	--	--	1.00	--	--	1.13	1.00	1.12	1.06	1.08	--	--	5.10	--	--
716	Crystal 137	--	--	1.00	--	--	1.12	1.00	1.04	1.02	1.05	--	--	6.02	--	--
733	Crystal 138	--	--	1.00	--	--	1.00	1.04	1.00	1.02	1.01	--	--	2.45	--	--
717	Crystal 260	--	--	1.00	--	--	--	1.12	1.04	1.08	--	--	--	1.04	--	--
709	Crystal 262	--	--	1.00	--	--	--	1.04	1.08	1.06	--	--	--	1.25	--	--
732	Crystal 269	--	--	1.00	--	--	--	1.04	1.04	1.04	--	--	--	8.60	--	--
705	Crystal 360	--	--	1.17	--	--	--	--	1.00	--	--	--	--	5.89	--	--
715	Crystal 361	--	--	1.00	--	--	--	--	1.04	--	--	--	--	2.16	--	--
713	Crystal 364	--	--	1.00	--	--	--	--	1.08	--	--	--	--	3.58	--	--
708	Crystal 369	--	--	1.00	--	--	--	--	1.04	--	--	--	--	7.20	--	--
727	Crystal 793	--	--	1.00	--	--	1.04	1.08	1.12	1.10	1.08	--	--	5.00	--	--
722	Crystal 912	--	--	1.00	--	--	1.00	1.04	1.04	1.04	1.03	--	--	10.92	--	--
703	Hilleshög HIL2386	--	--	1.67	--	--	3.32	3.44	3.68	3.56	3.48	--	--	9.73	--	--
724	Hilleshög HIL2389	--	--	1.67	--	--	2.00	2.04	2.04	2.04	2.03	--	--	11.03	--	--
720	Hilleshög HIL2479	--	--	1.00	--	--	--	--	PE	--	--	--	--	1.52	--	--
723	Hilleshög HIL2480	--	--	1.00	--	--	--	--	1.20	--	--	--	--	3.33	--	--
710	Hilleshög HIL9920	--	--	2.17	--	--	3.48	3.24	2.52	2.88	3.08	--	--	0.00	--	--
730	Maribo MA717	--	--	1.67	--	--	3.56	3.40	3.12	3.26	3.36	--	--	5.86	--	--
704	SV 203	--	--	1.33	--	--	2.00	2.20	2.08	2.14	2.09	--	--	3.31	--	--
726	SV 231	--	--	1.67	--	--	--	--	2.04	--	--	--	--	0.00	--	--
707	SX 1815	--	--	1.00	--	--	2.40	2.36	1.76	2.06	2.17	--	--	3.01	--	--
721	SX 1818	--	--	1.33	--	--	2.00	2.08	1.44	1.76	1.84	--	--	3.75	--	--
728	SX 1835	--	--	1.83	--	--	--	--	1.64	--	--	--	--	2.78	--	--
734	Root Aphid Res CK#3	--	--	1.00	--	--	1.00	1.08	1.00	1.04	1.03	--	--	5.27	--	--
735	Root Aphid Susc CK#6	--	--	2.33	--	--	3.48	3.20	2.48	2.84	3.05	--	--	4.20	--	--
736	Root Aphid Susc CK#8	--	--	2.17	--	--	--	--	3.76	--	--	--	--	3.75	--	--
	Trial Mean			1.23					1.48					4.25		
	Sus. Check Mean			2.25					3.12					2.25		
	Mean LSD (0.05)			0.46					0.36					ns		

^X Greenhouse assay based on a 1-4 rating scale (1 = no aphids, 4 = very susceptible), Moorhead, MN, ACSC

Created 11/27/2024

^Y Greenhouse assay based on a 1-4 rating scale (1 = no aphids, 4 = very susceptible), Shakopee, MN, KWS

^Z Field trial based on incidence (% infested plants), Longmont, CO, Magno Seed, LLC

* Greenhouse assay not conducted

** No data available due to low emergence

*** No data available due to wet conditions and low root aphid levels

PE = not evaluated due to poor emergence

Table 7. Planting & Harvest Dates, Previous Crop and Disease Levels for 2024 ACSC Official Trial Sites *

Yield Trials Location	District / Trial Type	Cooperator	Planting Date	Harvest Date	Preceding Crop	Soil Type	Diseases Present @						Comments
							Aph	Rhc	Rzm	Fus	Maggot	Rt Aphid	
Casselton ND	Mhd	Todd Weber Farms	5/6	10/8	Wheat	Medium/Light	N	L	N	N	N	N	Excellent overall
Averill MN	Mhd	Tang Farms	5/5	9/11	Wheat	Medium/Light	N	N	N	N	N	N	Range 4 dropped due to water damage
Perley MN	Mhd/Aph	TD Hoff Partnership	6/10	10/7	Corn	Heavy	M-V	N	N	N	N	N	Moderate to heavy Aphanomyces pressure
Ada MN	Hill	Corey Jacobson	5/5	10/4	Wheat	Light	N	N	N	N	N	N	Very good overall
Hillsboro ND	Hill	Hong Farms	4/21	9/12	Wheat	Medium	N	N	N	N	N	L	Some gappy stands, rows around grower's spray tracks not used
Climax MN	Crk	Knutson Farms	4/24	9/13	Wheat	Medium/Light	N	L	N	N	N	N	Some gappy stands
Grand Forks ND	EGF	Drees Farming Association	5/13	9/19	Wheat	Medium/Light	N	N	N	N	N	N	Excellent overall
Scandia MN	Crk	Deboer Farms	5/11	10/1	Wheat	Medium	N	N	N	N	N	N	Excellent overall
Forest River ND	EGF	Blair Farm & Seed	4/22	9/20	Wheat	Medium/Light	N	N	N	N	N	L	Very good overall
Alvarado MN	EGF	Iverson Farms	4/23	9/30	Wheat	Medium/Heavy	N	N	N	N	N	N	Some gappy stands
St Thomas ND	Dtn	Baldwin Farms	5/16	9/23	Wheat	Light	N	N	N	N	L-M	N	Very good overall, minor Verticillium wilt present
Hallock MN	Dtn	Prosser/Kuznia Beets	5/17	9/28	Wheat	Heavy	N	N	N	N	N	N	Excellent uniformity but smaller roots
Bathgate ND	Dtn	Landis McDonald	5/17	9/27	Wheat	Medium	N	N	N	N	N	N	Some gappy stands, excellent canopy uniformity

Disease Trials Location	District / Trial Type	Cooperator	Planting Date	Rating Date	Preceding Crop	Soil Type	Diseases Present @						Comments
							Aph	Rhc	Rzm	Fus	Maggot	Rt Aphid	
Moorhead Fus-N MN	Fus Nurs	Nelson Farms	5/14	Multiple	Wheat	Medium/Heavy	N	N	N	M	N	N	Moderate Fusarium pressure
Sabin Fus-S MN	Fus Nurs	Krabbenhoft & Sons Farm	5/9	Multiple	Wheat	Medium/Light	N	N	N	M	L	N	Moderate Fusarium pressure
Mhd Rhc-N MN	Rhc Nurs	Jon Hicel, ACSC	6/17	Multiple	Soybean	Heavy	N	L	N	L	N	N	Light Rhizoctonia pressure
Mhd Rhc-S MN	Rhc Nurs	Jon Hicel, ACSC	6/17	Multiple	Soybean	Heavy	N	V	N	L	N	N	Heavy Rhizoctonia pressure
NWROC MN	Rhc Nurs	Maureen Aubol, U of MN	5/11	8/8	Soybean	Medium/Heavy	N	M	N	N	N	N	Moderate Rhizoctonia pressure
Saginaw MI	Rhc Nurs	Linda Hanson, USDA & BSDF	5/2	8/9-8/12	--	--	L	V	N	N	N	N	Severe Rhizoctonia pressure
Shakopee MN	Aphanomyces	Patrick O'Boyle, KWS	5/13	8/22	--	--	M-V	L	N	N	N	N	Nice range of moderate Aphanomyces symptoms
Glyndon MN	Aphanomyces	Ryan Brady, Magno Seed	5/29	8/27	--	Light	M	L	N	M	N	N	Moderate Aphanomyces pressure
Perley MN	Aphanomyces	TD Hoff Partnership	6/10	8/28	Corn	Heavy	V	N	N	N	N	N	Heavy Aphanomyces pressure
Blanchard ND	Aphanomyces	Rust Farms	5/13	Abandon	Wheat	Medium	M	V	N	N	N	N	Significant interference from Rhizoctonia presence
Climax MN	Aphanomyces	Knutson Farms	4/24	Abandon	Wheat	Medium/Light	L	N	N	N	N	N	Lack of soil moisture to develop Aphanomyces
Shakopee MN	Root Aphid	Patrick O'Boyle, KWS	--	--	--	--							Greenhouse trial
Moorhead MN TSC	Root Aphid	ACSC	--	--	--	--							Growth chamber trial
Longmont CO	Root Aphid	Ryan Brady, Magno Seed	5/14	9/25	--	--	NA	NA	NA	NA	NA	L-M	Low to moderate root aphid pressure
Foxhome MN	Cercospora	NDSU/Kevin Etzler	5/14	Multiple	Wheat	Medium	N	N	N	N	N	N	Moderate to severe Cercospora pressure, inoculated
Saginaw MI	Cercospora	Linda Hanson, USDA & BSDF	4/25	Multiple	--	--	N	N	N	N	N	N	Very nice Cercospora pressure, inoculated
Randolph MN	Cercospora	Patrick O'Boyle, KWS	5/6	Multiple	--	--	N	N	N	N	N	N	Severe Cercospora pressure, inoculated
Averill MN	Cercospora	Tang Farms	5/5	Abandon	Wheat	Medium/Light	N	N	N	N	N	N	Severe Cercospora pressure, non-inoculated
Forest River ND	Cercospora	Blair Farm & Seed	4/22	Multiple	Wheat	Medium/Light	N	N	N	N	N	N	Moderate Cercospora pressure, non-inoculated

Created 10/03/2024

* Fertilizer applied in accordance with cooperative recommendations.

@ Disease notes for Aphanomyces, Rhizoctonia, Rhizomania, Fusarium, Root Maggot and Root Aphids were based upon visual evaluations (N=none, L=light, M=moderate, V=severe, NA=not observed)

Table 8. Seed Treatments Used on Approved Varieties in Official Variety Trials in 2024

Description	Years in Trial	Years Comm.	Fungicide Seed Treatment			Insecticide (Springtails & Maggots)	Priming (Emergence)
			(Damping-off)	(Rhizoctonia)	(Aphanomyces)		
Previous Approved							
BTS 8018	5	3	Allegiance/Thiram	Kabina	Tach 35	Poncho Beta	Ultipro
BTS 8034	5	3	Allegiance/Thiram	Kabina	Tach 35	Poncho Beta	Ultipro
BTS 8156	4	2	Allegiance/Thiram	Kabina	Tach 35	Poncho Beta	Ultipro
BTS 8226	3	1	Allegiance/Thiram	Kabina	Tach 35	Poncho Beta	Ultipro
BTS 8270	3	1	Allegiance/Thiram	Kabina	Tach 35	Poncho Beta	Ultipro
BTS 8927	6	4	Allegiance/Thiram	Kabina	Tach 35	Poncho Beta	Ultipro
Crystal 022	5	3	Allegiance/Thiram	Kabina	Tach 45	Poncho Beta	Xbeet ®
Crystal 130	4	2	Allegiance/Thiram	Kabina	Tach 45	Poncho Beta	Xbeet ®
Crystal 137	4	2	Allegiance/Thiram	Kabina	Tach 45	Poncho Beta	Xbeet ®
Crystal 138	4	1	Allegiance/Thiram	Kabina	Tach 45	Poncho Beta	Xbeet ®
Crystal 260	3	1	Allegiance/Thiram	Kabina	Tach 45	Poncho Beta	Xbeet ®
Crystal 262	3	1	Allegiance/Thiram	Kabina	Tach 45	Poncho Beta	Xbeet ®
Crystal 269	3	1	Allegiance/Thiram	Kabina	Tach 45	Poncho Beta	Xbeet ®
Crystal 793	8	6	Allegiance/Thiram	Kabina	Tach 45	Poncho Beta	Xbeet ®
Crystal 912	6	3	Allegiance/Thiram	Kabina	Tach 45	Poncho Beta	Xbeet ®
Hilleshög HIL2386	4	2	Apron XL/Thiram/Maxim	Vibrance	Tach 45	Cruiser	Xbeet ®
Hilleshög HIL2389	4	2	Apron XL/Thiram/Maxim	Vibrance	Tach 45	Cruiser	Xbeet ®
Hilleshög HIL9920	8	6	Apron XL/Thiram/Maxim	Vibrance	Tach 45	Cruiser	Xbeet ®
Maribo MA717	8	6	Apron XL/Thiram/Maxim	Vibrance	Tach 45	Cruiser	Xbeet ®
SV 203	5	3	Apron XL/Thiram	Zeltera	Int Sol	NipsIt	Xbeet ®
SX 1815	4	2	Apron XL/Thiram	Zeltera	Int Sol	NipsIt	Xbeet ®
SX 1818	4	2	Apron XL/Thiram	Zeltera	Int Sol	NipsIt	Xbeet ®
Newly Approved							
BTS 8328	2	NC	Allegiance/Thiram	Kabina	Tach 35	Poncho Beta	Ultipro
BTS 8359**	2	NC	Allegiance/Thiram	Kabina	Tach 35	Poncho Beta	Ultipro
BTS 8365	2	NC	Allegiance/Thiram	Kabina	Tach 35	Poncho Beta	Ultipro
Crystal 360	2	NC	Allegiance/Thiram	Kabina	Tach 45	Poncho Beta	Xbeet ®
Crystal 361	2	NC	Allegiance/Thiram	Kabina	Tach 45	Poncho Beta	Xbeet ®
Crystal 364	2	NC	Allegiance/Thiram	Kabina	Tach 45	Poncho Beta	Xbeet ®
Crystal 369	2	NC	Allegiance/Thiram	Kabina	Tach 45	Poncho Beta	Xbeet ®
Hilleshög HIL2479	2	NC	Apron XL/Thiram/Maxim	Vibrance	Tach 45	Cruiser	Xbeet ®
Hilleshög HIL2480**	2	NC	Apron XL/Thiram/Maxim	Vibrance	Tach 45	Cruiser	Xbeet ®
SV 231	2	NC	Apron XL/Thiram	Zeltera	Int Sol	NipsIt	Xbeet ®
SX 1835**	2	NC	Apron XL/Thiram	Zeltera	Int Sol	NipsIt	Xbeet ®

** Does not meet Full Market Approval. Meets Aphanomyces and/or Rhizoctonia Specialty Approval.