

## **RESULTS OF AMERICAN CRYSTAL SUGAR COMPANY'S 2023 CODED OFFICIAL VARIETY TRIALS**

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American Crystal Sugar Company's coded Official Variety Trials (OVT) are designed to provide an unbiased evaluation of the genetic potential of sugarbeet variety entries under several different environments. The two-year averages of these evaluations are then used to establish a list of approved varieties which ensures the use of high quality, productive varieties to maximize returns for growers and the cooperative as a whole.

This report presents data from the 2023 American Crystal Sugar Company (ACSC) OVTs and describes the procedures and cultural practices utilized in the trials.

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### **Procedures and cultural practices**

All official trials utilize seed identified by code numbers which prevents ACSC personnel from knowing variety names when conducting trials. All entries were assigned code numbers by KayJay Ag Services. The seed then was sent to ACSC Technical Services Center at Moorhead for official testing.

Sugarbeet official variety yield trials and disease nurseries were conducted across the ACSC growing region of the Red River Valley with additional disease nurseries conducted by third party cooperators. The 2023 official coded variety performance trials included 13 yield trials and 10 disease nurseries planted at a total of 18 sites by ACSC personnel. Seven additional disease/insect nurseries were planted by third party cooperators.

Results from the Official Variety Trial sites were excellent overall. Planting dates were around ten days later than typical but stands in the trials were good at most locations. Eleven sites were used for variety approval calculations. The Averill, MN site was abandoned due to very poor stand establishment from soil crusting. Results from Humboldt were not used in approval numbers due to harvest loss. Rhizoctonia crown and root rot was minimal in 2023. Revenue calculations in 2023 are based on a hypothetical \$50.09 payment (5-year rolling average) assuming 17.5% sugar and 1.5% SLM, not considering hauling or production costs.

Aphanomyces root rot ratings are from the naturally infested nursery at Shakopee, MN (KWS). The Red River Valley sites were too dry to develop Aphanomyces disease pressure. As a result, there are no yield results under Aphanomyces conditions for 2023. Cercospora leafspot ratings are from inoculated nurseries at Foxhome and Randolph (KWS), MN and Saginaw, MI (BSDF) as well as a non-inoculated nursery at East Grand Forks, MN. Cercospora ratings from all four sites were highly correlated, but ratings from Randolph were not included in approval numbers as hail damage put an end to the plot in late July before severity of disease could increase. Rhizoctonia crown and root rot ratings are from inoculated nurseries at Crookston, MN and Saginaw, MI (BSDF). Fusarium ratings are from naturally infested sites at Moorhead and Sabin, MN. Root aphid ratings are from a greenhouse assay at Shakopee, MN (KWS). The Longmont, CO (Magno) root aphid nursery had high rainfall and soil moisture resulting in little to no root aphid pressure.

2023 harvest conditions were challenging at some locations, but roots dug well at most locations. Soil moisture levels were dry throughout most of the growing season and at the beginning of harvest, but widespread rainfall in late September made conditions more difficult at later harvested sites. Wet, heavy soil conditions at Humboldt would not allow the lifter to dig deep enough to get smaller roots present at that site leading to harvest loss.

The 2023 data have been combined with previous years' data for several tables. Bolter data is presented as the number of bolters observed at a location for each variety. Results from 2023 for the yield trials from individual sites are included in this report and available on the internet at [www.crystalsugar.com/agronomy/crystal-beet-seed/official-coded-trials/](http://www.crystalsugar.com/agronomy/crystal-beet-seed/official-coded-trials/).

Conventional trials were not planted in the 2023 OVT trials. Conventional varieties tested in 2017-2019 that were approved for 2020-2023 sales are permitted to continue in 2024 sales.

Yield trials were planted to stand at 4.5 inches. Starter fertilizer (10-34-0, 3 GPA) and AZteroid fungicide (5.7 fl oz/A) were applied in-furrow (6 GPA total volume) in all yield trials. Counter 20G (8.9 lb/A) was applied in a band after planting at all yield trial sites. Plots were planted perpendicular to the cooperators' normal farming operations, where possible. Plot row lengths for all official trials were maintained at 46 feet with about 40 feet harvested (25 feet harvested at Climax due to removal of gaps from a planter malfunction). Planting was performed with a 12-row SRES vacuum planter. The GPS controlled planter gave good single seed spacing which facilitated emergence counting. 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 applied by ACSC technical staff using a pickup sprayer driven down the alleys. Two applications of Roundup (25 and 21 oz/A, respectively) were made at the 2-4 and 6-10 leaf stages in 10 GPA using 50-60 psi. A third application of Roundup (20 oz/A) was made at Reynolds, ND and Foxhome, MN at row closure. Hand weeding was used where necessary. In addition to AZteroid at planting (see above), all yield trials were treated with Quadris in a band during the 6-10 leaf stage (10 oz/A) for Rhizoctonia control. Treatments used for Cercospora control in 2023 included Inspire XT/Manzate Max, Agri Tin/T-Methyl, Proline/Manzate Max, Manzate Max, and Priaxor/Agri Tin. Cercospora fungicides were applied in 20 GPA using 75-80 psi.

Roundup Ready (RR) entries with commercial seed available 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, Michigan, and Colorado to evaluate varieties for disease and insect susceptibility. ACSC adjusts the Aphanomyces, Cercospora, Rhizoctonia, and Fusarium nursery data each year to provide a consistent target for variety approval criteria.

## Acknowledgements

Thanks to the sugarbeet seed companies for their participation in the official variety testing program and to the grower-cooperators. Thanks are extended to the dedicated Technical Services staff (Jon Hickel, Earl Hodson, Nick Weller, Gary Hamann, Luke Mitchell, and Barry McRaith) for official trial planting, plot care, data collection, and harvest. Thanks to Nick Moritz and the Quality Lab at the Technical Services Center for quality sample analysis. Thanks to Dr. Mohamed Khan and Peter Hakk for Cercospora inoculation at Foxhome, MN, Maureen Aubol and the Northwest Research and Outreach Center for hosting a Rhizoctonia nursery, Randy Nelson for RRV disease ratings, USDA staff in Michigan for Cercospora and Rhizoctonia nursery data, Magno Seed staff for running Aphanomyces and root aphid nurseries, KWS staff for Aphanomyces and Cercospora nursery data, and KayJay Ag Services for sampling and coding all variety entries.

Table 1. Varieties Meeting ACSC Approval Criteria for the 2024 Sugarbeet Crop

<b>Roundup Ready ®</b>	<u>Full Market</u>	<u>Aph Spec</u>	<u>Rhc Spec</u>	<u>High Rzm</u>	<b>2019 Conventional</b>	<u>Full Market</u>	<u>High Rzm</u>
BTS 8018	Yes	Yes		Hi Rzm	Crystal R761	Yes	Hi Rzm
BTS 8034	Yes	Yes		Hi Rzm	Crystal 620	Yes	Hi Rzm
BTS 8156	Yes	Yes		Hi Rzm	Crystal 840	Yes	Hi Rzm
BTS 8205	New	New	New	Hi Rzm	Crystal 950	Yes	Hi Rzm
BTS 8226	New	New	New	Hi Rzm	Hilleshög HM3035Rz	Yes	Rzm
<u>BTS 8242</u>	<u>New</u>			<u>Hi Rzm</u>	SX 8869 Cnv	Yes	Hi Rzm
BTS 8270	New	New		Hi Rzm	SV 48777	Yes	Hi Rzm
BTS 8927	Yes	Yes		Hi Rzm			
Crystal 022	Yes	Yes	Yes	Hi Rzm			
Crystal 130	Yes	Yes		Hi Rzm			
Crystal 137	Yes	Yes		Hi Rzm			
Crystal 138	Yes	Yes	Yes	Hi Rzm			
Crystal 260	New	New	New	Hi Rzm			
Crystal 262	New	New	New	Hi Rzm			
Crystal 269	New	New		Hi Rzm			
Crystal 793	Yes	Yes		Hi Rzm			
Crystal 912	Yes	Yes	Yes	Hi Rzm			
Crystal 913	Yes	Yes		Hi Rzm			
Hilleshög HIL2317	Yes	Yes+		Hi Rzm			
Hilleshög HIL2366	Yes			Rzm			
Hilleshög HIL2368	Yes		Yes	Hi Rzm			
Hilleshög HIL2386	Yes		New	Hi Rzm			
Hilleshög HIL2389	Yes	Yes		Hi Rzm			
Hilleshög HIL2441	No	New	New	Hi Rzm			
Hilleshög HIL2442	New		New	Hi Rzm			
Hilleshög HIL2487 (MA942)	New	New		Hi Rzm			
Hilleshög HIL9920	Yes	Yes+		Hi Rzm			
Maribo MA717	Yes			Hi Rzm			
Maribo MA902	Yes		Yes	Hi Rzm			
Maribo MA943	New			Hi Rzm			
SV 203	Yes	Yes+		Hi Rzm			
SV 265	Yes			Hi Rzm			
SV 285	Yes	Yes+		Hi Rzm			
SX 1815	Yes			Hi Rzm			
SX 1818	Yes			Hi Rzm			
SX 1898	Yes	Yes+		Hi Rzm			

Aph Spec = variety meets Aphanomyces specialty requirements Rhc Spec = variety meets Rhizoctonia specialty requirements Hi Rzm = may perform better under severe Rhizomania.

New = newly approved

Created 11/03/2023

Roundup Ready ® is a registered trademark of Bayer Group.

Roundup Ready ® sugarbeets are subject to the ACSC RRSB Bolter Destruction Policy

++ 2nd Year of not meeting Specialty Approval of previously approved Specialty variety. According to Approval Policy, may be sold as Specialty in 2024

+ 1st Year of not meeting Specialty Approval of previously approved Specialty variety. According to Approval Policy, may be sold as Specialty in 2024

Table 2. Performance Data of RR Varieties During 2022 & 2023 Growing Seasons (All Locations Combined) Approved for Sale to ACSC Growers in 2024 +++

Variety	Yrs	Rev/Ton ++			Rev/Acre ++			Rec/Ton		Rec/Acre		Yield		Sugar		Molasses		Emergence +		Bolters ^		Cerc. *		Aphan. *		Rhizoc. *		Fusarium *		Rzm *	
Com		23	2 Yr	2Y%	23	2 Yr	2Y%	23	2 Yr	23	2 Yr	23	2 Yr	23	2 Yr	23	2 Yr	23	2 Yr	23	2 Yr	23	2 Yr	23	2 Yr	23	2 Yr	23	2 Yr		
	Number of locations →	11	20		11	20		11	20	11	20	11	20	11	20	11	20	11	20	11	20	11	20	3	6	1	4	2	5	2	4
<b>Previous Approved</b>																															
BTS 8018	2	58.94	54.16	101	1960	1704	107	348	339	11617	10637	33.4	31.5	18.43	17.99	1.01	1.06	78	77	0	0	2.4	2.2	3.9	4.0	4.1	4.0	3.2	3.1	Hi	
BTS 8034	2	55.87	50.61	94	1896	1629	102	339	327	11505	10487	34.1	32.0	18.02	17.52	1.10	1.19	81	79	0	0	2.5	2.4	3.8	3.8	4.1	4.3	2.7	2.4	Hi	
BTS 8156	1	58.84	53.96	100	1890	1650	104	348	338	11205	10308	32.3	30.5	18.44	18.01	1.04	1.12	76	79	0	0	2.5	2.5	4.0	4.1	3.9	4.1	2.8	2.6	Hi	
BTS 8927	3	60.55	56.51	105	1948	1700	107	354	346	11392	10396	32.3	30.1	18.65	18.31	0.97	1.00	82	80	2	1	4.4	4.4	3.3	3.6	4.0	4.1	3.1	3.1	Hi	
Crystal 022	2	61.98	57.27	107	1975	1712	108	358	349	11433	10405	32.0	29.8	18.88	18.46	0.97	1.03	79	76	0	1	5.0	4.8	3.7	3.8	3.8	4.0	3.4	3.3	Hi	
Crystal 130	1	60.48	55.48	103	2009	1722	108	353	343	11772	10620	33.4	31.0	18.64	18.18	0.98	1.04	79	77	1	1	2.6	2.4	4.0	3.8	3.7	3.9	3.5	3.4	Hi	
Crystal 137	1	59.31	53.76	100	1922	1656	104	350	337	11339	10360	32.5	30.6	18.52	17.99	1.04	1.13	80	77	1	1	2.6	2.6	4.2	4.2	4.0	4.1	2.8	2.6	Hi	
Crystal 138	NC	59.25	54.91	102	1983	1727	108	349	341	11687	10688	33.4	31.3	18.51	18.11	1.03	1.06	74	74	0	0	4.8	4.8	4.1	4.0	3.8	3.8	3.5	3.5	Hi	
Crystal 793	5	59.26	54.62	102	1981	1729	109	349	340	11693	10733	33.5	31.5	18.48	18.05	1.01	1.05	80	78	0	0	4.2	4.2	4.3	4.1	4.3	4.5	3.4	3.2	Hi	
Crystal 912	2	56.40	50.50	94	2025	1729	109	340	326	12240	11144	36.0	34.1	18.03	17.43	1.02	1.11	82	79	1	1	5.0	4.9	3.4	3.4	3.5	3.4	3.8	3.7	Hi	
Crystal 913	3	59.42	54.48	101	2042	1750	110	350	340	10873	9873	34.5	32.0	18.49	18.04	1.00	1.07	82	78	0	0	3.9	3.8	4.0	3.9	4.2	4.2	3.4	3.3	Hi	
Hilleshög HIL2317	3	58.66	53.75	100	1862	1617	102	348	337	11050	10118	31.9	30.0	18.38	17.89	1.01	1.04	69	72	2	1	4.8	5.0	5.2	4.6	4.4	4.6	5.8	5.7	Hi	
Hilleshög HIL2366	2	54.24	50.42	94	1751	1551	97	333	326	10784	10024	32.4	30.7	17.67	17.38	1.00	1.06	79	78	0	0	5.0	5.0	4.7	4.5	4.0	4.0	5.1	4.9	Hi	
Hilleshög HIL2368	1	59.17	54.36	101	1737	1445	91	349	339	10270	8983	29.5	26.6	18.47	18.03	1.01	1.07	69	62	0	0	4.4	4.5	5.0	4.8	3.5	3.5	4.3	4.3	Hi	
Hilleshög HIL2386	1	57.18	52.35	97	1836	1630	102	343	333	11036	10359	32.3	31.2	18.18	17.72	1.04	1.08	80	78	0	1	4.2	4.4	4.2	4.3	3.9	3.7	4.0	3.9	Hi	
Hilleshög HIL2389	1	59.20	54.03	101	1948	1677	105	349	338	11520	10475	33.1	31.0	18.46	17.97	0.99	1.06	80	78	0	0	4.5	4.6	5.4	4.6	4.5	4.2	5.5	4.9	Hi	
Hilleshög HIL9920	5	58.62	53.39	99	1878	1631	102	347	336	11132	10237	32.1	30.5	18.40	17.87	1.04	1.08	76	77	0	0	5.1	5.0	5.5	4.9	4.4	4.5	6.0	5.8	Hi	
Maribo MA717	5	57.26	51.83	96	1871	1634	103	343	331	11241	10423	32.9	31.5	18.14	17.61	0.99	1.07	79	77	0	0	5.0	5.0	4.6	4.5	4.1	4.0	4.5	4.7	Hi	
Maribo MA902	3	56.06	51.61	96	1730	1520	95	339	330	10491	9723	31.0	29.5	17.96	17.57	1.01	1.06	79	81	1	1	4.7	4.8	5.8	5.2	3.9	3.7	4.4	4.3	Hi	
SV 203	2	59.64	53.53	100	1972	1634	103	351	336	11599	10217	33.1	30.3	18.52	17.90	0.99	1.09	80	72	0	0	4.8	4.8	7.1	5.7	4.3	4.2	5.2	5.4	Hi	
SV 265	6	57.15	51.70	96	1859	1590	100	343	330	11161	10138	32.6	30.7	18.12	17.57	0.99	1.05	82	79	1	1	4.7	4.6	7.5	5.9	3.9	3.9	5.9	6.0	Hi	
SV 285	3	58.25	52.92	98	1909	1593	100	346	334	11357	10015	32.9	29.9	18.33	17.82	1.02	1.10	82	74	0	0	4.8	4.8	7.4	5.9	4.3	4.4	5.8	5.6	Hi	
SX 1815	1	59.71	54.53	101	1996	1699	107	351	340	11742	10554	33.5	31.0	18.52	18.03	0.98	1.04	81	79	0	0	4.7	4.9	6.2	5.2	4.4	4.2	5.6	5.5	Hi	
SX 1818	1	57.89	52.56	98	1958	1659	104	345	333	11698	10490	34.0	31.5	18.26	17.74	1.01	1.08	78	74	0	0	4.5	4.6	7.1	6.0	4.1	4.6	4.6	4.6	Hi	
SX 1898	3	58.17	52.56	98	1927	1612	101	346	333	11474	10174	33.2	30.5	18.32	17.76	1.02	1.10	81	73	0	0	4.9	4.8	6.7	5.5	4.1	4.1	5.5	5.4	Hi	
<b>Newly Approved</b>																															
BTS 8205	NC	59.77	54.06	101	1981	1703	107	351	338	11640	10623	33.2	31.4	18.61	18.02	1.06	1.12	77	77	0	1	4.7	4.5	3.7	3.7	3.8	3.8	3.1	3.0	Hi	
BTS 8226	NC	61.07	57.38	107	1945	1733	109	355	349	11318	10520	31.9	30.1	18.70	18.44	0.93	0.98	74	75	0	0	2.3	2.2	3.7	3.8	3.8	3.7	3.9	3.7	Hi	
BTS 8242	NC	61.38	57.15	106	1940	1690	106	356	348	11269	10295	31.7	29.6	18.83	18.47	1.02	1.06	77	77	0	0	4.5	4.4	4.2	4.4	4.1	4.0	3.7	3.7	Hi	
BTS 8270	NC	60.15	55.52	103	1966	1719	108	352	343	11519	10601	32.8	30.9	18.65	18.23	1.03	1.08	79	76	0	0	2.4	2.2	3.9	3.9	3.7	4.0	3.5	3.3	Hi	
Crystal 260	NC	58.82	54.90	102	1962	1725	108	348	341	11630	10693	33.5	31.4	18.41	18.09	1.00	1.05	78	78	0	0	2.1	2.1	3.8	3.9	3.5	3.6	3.4	3.2	Hi	
Crystal 262	NC	58.10	53.26	99	1932	1697	107	346	335	11510	10680	33.3	31.8	18.28	17.82	0.99	1.05	76	75	0	0	4.4	4.4	4.6	4.0	3.3	3.3	3.8	3.5	Hi	
Crystal 269	NC	61.98	56.47	105	1932	1699	107	358	346	11185	10417	31.3	30.2	19.01	18.44	1.11	1.14	69	69	0	0	4.4	4.5	3.6	3.6	3.9	4.1	4.1	3.7	Hi	
Hilleshög HIL2441**	NC	58.61	53.76	100	1797	1554	98	347	337	10668	9752	30.8	29.0	18.48	17.99	1.11	1.13	75	74	1	1	3.8	3.9	4.2	4.0	3.9	3.8	4.1	4.1	Hi	
Hilleshög HIL2442	NC	59.05	54.69	102	1761	1536	97	349	340	10433	9570	30.0	28.2	18.58	18.17	1.15	1.16	71	70	0	0	4.1	4.2	4.7	4.8	3.9	3.8	4.4	4.6	Hi	
Hilleshög HIL2487 (MA942)	NC	58.44	53.94	100	1794	1552	97	347	338	10641	9692	30.7	28.7	18.35	17.94	1.00	1.05	77	76	0	0	4.7	4.7	4.1	4.1	4.					

Table 3. Performance Data of RR 2023 Approved Varieties Under Aphanomyces Conditions (Relative to Susceptible Check) +++

Variety	Yrs Com	Aph Spc +	Rev/Ton++				Rev/Acre++				Rec/Ton			Rec/Acre			Sugar			Yield		Cerc.		Aphan. *		Rhizoc. *		Fusarium *		
			2023^	2022^	2020	%Mn	2023^	2022^	2020	%Mn	2023^	2022^	2020	2023^	2022^	2020	2023^	2022^	2020	2023^	2022^	2020	23	2Yr	23	2Yr	23	2Yr		
Number of locations →			0	0	3	0	0	0	3	0	0	3	0	0	3	0	0	3	0	0	3	3	6	1	4	2	5	2	3	
<b>Previous Approved</b>																														
BTS 8018	2	Yes	--	--	40.59	107	--	--	982	119	--	--	303.9	--	--	7256	--	--	16.22	--	--	23.62	2.42	2.23	3.95	3.97	4.06	4.00	3.20	3.09
BTS 8034	2	Yes	--	--	35.57	94	--	--	887	108	--	--	286.7	--	--	7046	--	--	15.53	--	--	24.32	2.54	2.41	3.80	3.84	4.09	4.29	2.72	2.44
BTS 8156	1	Yes	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.53	2.48	3.97	4.09	3.93	4.08	2.80	2.55	
BTS 8927	3	Yes	--	--	43.12	114	--	--	985	120	--	--	312.6	--	--	7070	--	--	16.58	--	--	22.44	4.38	4.40	3.26	3.63	3.98	4.06	3.08	3.10
Crystal 022	2	Yes	--	--	44.07	116	--	--	1047	127	--	--	315.8	--	--	7422	--	--	16.80	--	--	23.24	4.97	4.79	3.66	3.84	3.85	3.98	3.43	3.32
Crystal 130	1	Yes	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.60	2.35	4.00	3.78	3.69	3.88	3.55	3.38	
Crystal 137	1	Yes	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.65	2.61	4.21	4.23	4.01	4.09	2.78	2.57	
Crystal 138	NC	Yes	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.77	4.82	4.06	3.97	3.81	3.81	3.76	3.46	
Crystal 793	5	Yes	--	--	37.97	100	--	--	886	108	--	--	294.9	--	--	6732	--	--	15.80	--	--	22.43	4.20	4.15	4.31	4.07	4.35	4.54	3.40	3.22
Crystal 912	2	Yes	--	--	35.21	93	--	--	886	108	--	--	285.5	--	--	7041	--	--	15.44	--	--	24.35	5.00	4.91	3.41	3.43	3.50	3.39	3.82	3.74
Crystal 913	3	Yes	--	--	39.55	104	--	--	951	116	--	--	300.2	--	--	7129	--	--	16.06	--	--	23.53	3.91	3.82	4.05	3.92	4.19	4.21	3.37	3.25
Hilleshog HIL2317	3	No	--	--	36.66	97	--	--	741	90	--	--	290.5	--	--	5836	--	--	15.50	--	--	20.04	4.84	4.99	5.22	4.56	4.44	4.57	5.83	5.74
Hilleshog HIL2366	2	No	--	--	37.57	99	--	--	729	89	--	--	293.5	--	--	5656	--	--	15.66	--	--	19.18	5.02	5.01	4.68	4.50	3.99	3.95	5.07	4.95
Hilleshog HIL2368	1	No	--	--	40.99	108	--	--	693	84	--	--	305.2	--	--	5136	--	--	16.25	--	--	16.78	4.41	4.48	5.02	4.83	3.55	3.51	4.26	4.29
Hilleshog HIL2386	1	No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.23	4.39	4.21	4.26	3.91	3.71	3.99	3.86	
Hilleshog HIL2389	1	Yes	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.51	4.60	5.42	4.60	4.45	4.19	5.50	4.92	
Hilleshog HIL9920	5	No	--	--	35.57	94	--	--	706	86	--	--	286.5	--	--	5606	--	--	15.37	--	--	19.33	5.15	5.04	5.49	4.91	4.42	4.50	6.03	5.84
Maribo MA717	5	No	--	--	34.86	92	--	--	731	89	--	--	284.0	--	--	5834	--	--	15.24	--	--	20.22	5.04	5.05	4.61	4.50	4.10	4.01	4.53	4.70
Maribo MA902	3	No	--	--	37.28	98	--	--	652	79	--	--	292.5	--	--	5126	--	--	15.61	--	--	17.57	4.66	4.80	5.77	5.18	3.87	3.72	4.37	4.33
SV 203	2	No	--	--	37.75	100	--	--	829	101	--	--	294.1	--	--	6380	--	--	15.78	--	--	21.48	4.78	4.76	7.15	5.70	4.25	4.22	5.20	5.38
SV 265	6	No	--	--	37.96	100	--	--	839	102	--	--	294.9	--	--	6388	--	--	15.77	--	--	21.30	4.65	4.56	7.47	5.89	3.86	3.91	5.92	6.00
SV 285	3	No	--	--	38.37	101	--	--	822	100	--	--	296.3	--	--	6301	--	--	15.89	--	--	21.15	4.83	4.78	7.39	5.87	4.28	4.40	5.82	5.65
SX 1815	1	No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.74	4.91	6.15	5.22	4.35	4.24	5.60	5.46	
SX 1818	1	No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.53	4.63	7.09	5.95	4.06	4.11	4.59	4.56	
SX 1898	3	No	--	--	37.53	99	--	--	855	104	--	--	293.4	--	--	6643	--	--	15.74	--	--	22.57	4.88	4.80	6.70	5.47	4.15	4.13	5.47	5.42
<b>Newly Approved</b>																														
BTS 8205	NC	Yes	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.69	4.48	3.67	3.68	3.77	3.80	3.10	2.97	
BTS 8226	NC	Yes	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.33	2.17	3.72	3.76	3.85	3.66			
BTS 8242	NC	No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.48	4.41	4.25	4.36	4.07	4.04	3.95	3.69	
BTS 8270	NC	Yes	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.43	2.20	3.90	3.88	3.67	4.00	3.46	3.26	
Crystal 260	NC	Yes	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.15	2.10	3.84	3.86	3.46	3.58	3.38	3.22	
Crystal 262	NC	Yes	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.36	4.39	4.61	4.01	3.31	3.35	3.83	3.55	
Crystal 269	NC	Yes	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.38	4.49	3.62	3.55	3.90	4.05	4.11	3.74	
Hilleshog HIL2441**	NC	Yes	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.85	3.93	4.18	4.05	3.89	3.75	4.11	4.05	
Hilleshog HIL2442	NC	No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.10	4.24	4.73	4.78	3.90	3.80	4.43	4.55	
Hilleshog HIL2487 (MA942)	NC	Yes	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.74	4.65	4.06	4.13	4.29	4.24	4.72	4.86	
Maribo MA943	NC	No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.44	4.36	4.80	4.50	4.18	4.11	4.55	4.36	
AP SUS RR#5 (2020)			30.80	81			590	72			269.8		4984			14.75			18.00											
Mean of AP Specialty Varieties			39.44	104			946	115			299.9		7100			16.06			23.42											
Trial mean (includes AP SUS RR#5)			37.86	100			823	100			294.5		6310			15.78			21.20											

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

++ 2023 Revenue estimate based on a \$50.09 beet payment (5-yr ave) at 17.5% crop with a 1.5% loss to molasses, 2022 Revenue estimate based on a \$46.80 beet payment and 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 2023 with a 2yr rating ≤ 4.2 or previously met Aphanomyces Specialty requirement maintaining a 3 year rating ≤ 4.5

^ Lack of uniform Aphanomyces pressure at any of the OVT sites prevented collection of Aphanomyces Yield Data for 2023 and 2022

%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.

\*\* 2023 Aphanomyces ratings from Shakopee MN (res.<4.2, susc>4.8). Cercospora ratings from Saginaw MI, Foxhome MN, and East Grand Forks, MN (res.<4.4, susc>5.0). Fusarium ratings from Moorhead MN and Sabin MN (res.<3.0, susc>5.0).

Rhizoctonia ratings from Crookston MN and Saginaw MI (res.<3.8, susc>5). HI may perform better under severe Rhizomania.

\* 2022 Aphanomyces ratings from Shakopee MN, Glyndon MN, and Perley MN (res.<4.2, susc>4.8). Cercospora ratings from Randolph MN, Foxhome MN, and Saginaw MI (res.<4.4, susc>5.0). Fusarium ratings from Moorhead MN and Sabin MN (res.<3.0, susc>5.0).

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

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

Variety	Yrs	Rev/Ton ++						Rev/Acre ++						Rec/Ton		Rec/Acre		Sugar		Yield		Molasses		Emergence *		Bolters ^		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						
Com		19	8	14			19	8	14			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					3					3		3		3		3		3		3		3		3		3		3		3					
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	0	0	3.95	4.13	4.7	4.2	5.1	4.6	2.5	3.0	Hi			
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	0	0	4.98	4.85	4.4	4.3	4.9	4.6	3.0	3.6	Hi			
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	0	0	4.18	4.25	4.0	3.9	4.7	4.4	2.7	3.1	Hi			
Hilleshog 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	0	0	4.42	4.32	5.1	5.2	4.4	4.2	4.1	4.3	Rzm			
Seedex 8869 Crv	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	0	1	4.52	4.59	4.8	4.8	5.1	4.9	3.5	3.7	Hi			
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	0	0	4.10	4.33	4.9	5.0	5.0	4.7	4.3	4.4	Hi			
Crystal 950	NC	41.21	--	--	--	--	1430	--	--	--	--	309	--	10719	--	16.49	--	34.7	--	1.06	--	62	--	0	--	4.72	--	4.8	--	4.8	--	2.9	--	Hi			
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

Created 11/06/2023

+++ 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.

^ Number of bolters observed across locations.

\* 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 (res<3.0, susc>5.0).

Rhizoctonia from Moorhead MN, Crookston MN, and Saginaw MI (res<3.8, susc>5). Hi may perform better under severe Rzm.

\* 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).

Table 5. ACSC Official Trial Disease Nurseries 2021-2023 (Varieties tested in 2023) Cercospora, Aphanomyces, Rhizoctonia & Fusarium

Code	Description	< 4.5 Cercospora > 5.0					< 4.2 Aphanomyces > 4.8					< 3.82 Rhizoctonia > 5.0					< 3.0 Fusarium > 5.0					High Rzm
		23 Mean	22 Mean	21 Mean	2 Yr Mean	3 Yr Mean	23 Mean	22 Mean	21 Mean	2 Yr Mean	3 Yr Mean	23 Mean	22 Mean	21 Mean	2 Yr Mean	3 Yr Mean	23 Mean	22 Mean	21 Mean	2 Yr Mean	3 Yr Mean	
<b>Previously Approved</b>																						
550	BTS 8018	2.42	2.03	2.31	2.23	2.25	3.95	4.00	4.52	3.97	4.16	4.06	3.93	3.83	4.00	3.94	3.20	2.98	3.22	3.09	3.13	Hi Rzm
558	BTS 8034	2.54	2.28	2.56	2.41	2.46	3.80	3.89	3.24	3.84	3.64	4.09	4.49	3.88	4.29	4.15	2.72	2.16	2.71	2.44	2.53	Hi Rzm
538	BTS 8156	2.53	2.43	2.48	2.48	2.48	3.97	4.21	3.64	4.09	3.94	3.93	4.24	3.81	4.08	3.99	2.80	2.30	2.72	2.55	2.61	Hi Rzm
528	BTS 8927	4.38	4.42	4.48	4.40	4.43	3.26	4.00	4.51	3.63	3.93	3.98	4.13	3.68	4.06	3.93	3.08	3.11	4.00	3.10	3.40	Hi Rzm
521	Crystal 022	4.97	4.60	4.97	4.79	4.85	3.66	4.03	4.79	3.84	4.16	3.85	4.10	3.53	3.98	3.83	3.43	3.22	3.50	3.32	3.38	Hi Rzm
510	Crystal 130	2.60	2.10	2.38	2.35	2.36	4.00	3.57	4.23	3.78	3.93	3.69	4.08	3.57	3.88	3.78	3.55	3.22	3.22	3.38	3.33	Hi Rzm
552	Crystal 137	2.65	2.57	2.53	2.61	2.58	4.21	4.25	3.13	4.23	3.86	4.01	4.18	3.53	4.09	3.91	2.78	2.35	2.25	2.57	2.46	Hi Rzm
502	Crystal 138	4.77	4.87	4.74	4.82	4.79	4.06	3.87	4.19	3.97	4.04	3.81	3.52	3.81	3.71	3.76	3.16	3.75	3.46	3.55	3.55	Hi Rzm
509	Crystal 793	4.20	4.10	4.13	4.15	4.15	4.31	3.82	3.74	4.07	3.96	4.35	4.73	4.36	4.54	4.48	3.40	3.03	2.80	3.22	3.08	Hi Rzm
547	Crystal 912	5.00	4.81	5.13	4.91	4.98	3.41	3.44	3.95	3.43	3.60	3.50	3.28	3.77	3.39	3.52	3.82	3.66	4.11	3.74	3.86	Hi Rzm
549	Crystal 913	3.91	3.73	4.10	3.82	3.92	4.05	3.79	4.39	3.92	4.08	4.19	4.23	3.94	4.21	4.12	3.37	3.13	3.68	3.25	3.39	Hi Rzm
553	Hilleshög HIL2317	4.84	5.13	4.57	4.99	4.85	5.22	3.91	5.01	4.56	4.71	4.44	4.71	4.76	4.57	4.64	5.83	5.65	6.06	5.74	5.85	Hi Rzm
520	Hilleshög HIL2366	5.02	5.00	5.01	5.01	5.01	4.68	4.32	5.81	4.50	4.94	3.99	3.92	3.98	3.95	3.96	5.07	4.83	4.65	4.95	4.85	Hi Rzm
511	Hilleshög HIL2368	4.41	4.56	4.66	4.48	4.54	5.02	4.63	5.25	4.83	4.97	3.55	3.46	2.92	3.51	3.31	4.26	4.33	4.44	4.29	4.34	Hi Rzm
542	Hilleshög HIL2386	4.23	4.54	4.30	4.39	4.36	4.21	4.31	5.98	4.26	4.83	3.91	3.51	4.20	3.71	3.87	3.99	3.73	4.26	3.86	3.99	Hi Rzm
522	Hilleshög HIL2389	4.51	4.69	4.85	4.60	4.68	5.42	3.78	3.86	4.60	4.35	4.45	3.92	3.99	4.19	4.12	5.50	4.34	4.75	4.92	4.86	Hi Rzm
507	Hilleshög HIL9920	5.15	4.92	4.75	5.04	4.94	5.49	4.33	4.65	4.91	4.82	4.42	4.58	4.70	4.50	4.57	6.03	5.66	5.45	5.84	5.71	Hi Rzm
504	Maribo MA717	5.04	5.05	4.68	5.05	4.92	4.61	4.39	6.75	4.50	5.25	4.10	4.31	4.01	4.11	4.53	4.87	5.11	4.70	4.84	Hi Rzm	
539	Maribo MA902	4.66	4.95	4.63	4.80	4.75	5.77	4.59	6.96	5.18	5.77	3.87	3.57	3.80	3.72	3.75	4.37	4.30	4.50	4.33	4.39	Hi Rzm
543	SV 203	4.78	4.74	4.75	4.76	4.76	7.15	4.24	4.35	5.70	5.25	4.25	4.19	4.34	4.22	4.26	5.20	5.55	5.99	5.38	5.58	Hi Rzm
503	SV 265	4.65	4.46	4.30	4.56	4.47	7.47	4.30	4.95	5.89	5.58	3.86	3.96	4.17	3.91	4.00	5.92	6.08	5.65	6.00	5.89	Hi Rzm
515	SV 285	4.83	4.72	4.78	4.78	4.78	7.39	4.35	4.48	5.87	5.41	4.28	4.53	4.26	4.40	4.36	5.82	5.47	6.26	5.65	5.85	Hi Rzm
554	SX 1815	4.74	5.07	4.78	4.91	4.86	6.15	4.28	4.19	5.22	4.88	4.35	4.12	4.40	4.24	4.29	5.60	5.32	4.82	5.46	5.25	Hi Rzm
530	SX 1818	4.53	4.72	4.86	4.63	4.71	7.09	4.82	5.56	5.95	5.82	4.06	4.16	4.41	4.11	4.21	4.59	4.54	5.26	4.56	4.80	Hi Rzm
537	SX 1898	4.88	4.72	4.76	4.80	4.79	6.70	4.25	4.97	5.47	5.31	4.15	4.12	4.34	4.13	4.20	5.47	5.38	5.67	5.42	5.51	Hi Rzm
<b>Newly Approved</b>																						
540	BTS 8205	4.69	4.27	--	4.48	--	3.67	3.69	--	3.68	--	3.77	3.82	--	3.80	--	3.10	2.85	--	2.97	--	Hi Rzm
527	BTS 8226	2.33	2.00	--	2.17	--	3.72	3.79	--	3.76	--	3.78	3.74	--	3.76	--	3.85	3.47	--	3.66	--	Hi Rzm
561	BTS 8242	4.48	4.35	--	4.41	--	4.25	4.47	--	4.36	--	4.07	4.00	--	4.04	--	3.95	3.42	--	3.69	--	Hi Rzm
533	BTS 8270	2.43	1.97	--	2.20	--	3.90	3.87	--	3.88	--	3.67	4.33	--	4.00	--	3.46	3.06	--	3.26	--	Hi Rzm
529	Crystal 260	2.15	2.05	--	2.10	--	3.84	3.89	--	3.86	--	3.46	3.70	--	3.58	--	3.38	3.06	--	3.22	--	Hi Rzm
555	Crystal 262	4.36	4.43	--	4.39	--	4.61	3.42	--	4.01	--	3.31	3.38	--	3.35	--	3.83	3.27	--	3.55	--	Hi Rzm
557	Crystal 269	4.38	4.60	--	4.49	--	3.62	3.48	--	3.55	--	3.90	4.20	--	4.05	--	4.11	3.36	--	3.74	--	Hi Rzm
541	Hilleshög HIL2441**	3.85	4.01	--	3.93	--	4.18	3.91	--	4.05	--	3.89	3.62	--	3.75	--	4.11	4.00	--	4.05	--	Hi Rzm
526	Hilleshög HIL2442	4.10	4.39	--	4.24	--	4.73	4.83	--	4.78	--	3.90	3.70	--	3.80	--	4.43	4.68	--	4.55	--	Hi Rzm
536	Hilleshög HIL2487 (MA942)	4.74	4.57	--	4.65	--	4.06	4.20	--	4.13	--	4.29	4.18	--	4.24	--	4.72	5.01	--	4.86	--	Hi Rzm
562	Maribo MA943	4.44	4.28	--	4.36	--	4.80	4.21	--	4.50	--	4.18	4.04	--	4.11	--	4.55	4.18	--	4.36	--	Hi Rzm

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

Created 11/02/2023

Green font ratings indicate specialty or good resistance.

Red font ratings indicate level of concern for some fields.

-- indicates data not available

**Table 6. Root Aphid Ratings for RR Varieties During 2021-2023 Growing Seasons (All Locations Combined)**  
**Approved for Sale to ACSC Growers in 2024**

Shakopee, MN <sup>x</sup> (1=Exc - 4=Poor)							Longmont, CO <sup>y</sup> (% Infested Plants)				
Code	Variety	1.00	1.00	1.16	1.08	1.05	67.94	--	--	--	--
713	BTS 8018	1.00	1.00	1.16	1.08	1.05	67.94	--	--	--	--
703	BTS 8034	1.32	1.00	1.28	1.14	1.20	68.72	--	--	--	--
725	BTS 8156	--	1.00	1.20	1.10	--	--	--	--	--	--
720	BTS 8205	--	--	1.12	--	--	--	--	--	--	--
731	BTS 8217	--	--	1.04	--	--	--	--	--	--	--
718	BTS 8226	--	--	1.00	--	--	--	--	--	--	--
726	BTS 8242	--	--	1.20	--	--	--	--	--	--	--
712	BTS 8270	--	--	1.08	--	--	--	--	--	--	--
728	BTS 8927	1.16	1.04	1.12	1.08	1.11	76.97	--	--	--	--
722	Crystal 022	1.00	1.00	1.04	1.02	1.01	68.23	--	--	--	--
724	Crystal 130	--	1.13	1.00	1.06	--	--	--	--	--	--
733	Crystal 137	--	1.12	1.00	1.06	--	--	--	--	--	--
734	Crystal 138	--	1.00	1.04	1.02	--	--	--	--	--	--
710	Crystal 260	--	--	1.12	--	--	--	--	--	--	--
737	Crystal 262	--	--	1.04	--	--	--	--	--	--	--
723	Crystal 269	--	--	1.04	--	--	--	--	--	--	--
721	Crystal 793	1.08	1.04	1.08	1.06	1.07	84.86	--	--	--	--
727	Crystal 912	1.24	1.00	1.04	1.02	1.09	64.72	--	--	--	--
736	Crystal 913	1.12	1.04	1.24	1.14	1.13	62.18	--	--	--	--
704	Hilleshög HIL2317	3.41	3.48	3.32	3.40	3.40	76.15	--	--	--	--
715	Hilleshög HIL2366	3.72	3.36	3.48	3.42	3.52	73.41	--	--	--	--
714	Hilleshög HIL2368	3.54	3.44	3.32	3.38	3.43	73.23	--	--	--	--
709	Hilleshög HIL2386	--	3.32	3.44	3.38	--	--	--	--	--	--
717	Hilleshög HIL2389	--	2.00	2.04	2.02	--	--	--	--	--	--
730	Hilleshög HIL2441	--	--	2.24	--	--	--	--	--	--	--
729	Hilleshög HIL2442	--	--	3.16	--	--	--	--	--	--	--
706	Hilleshög HIL2487 (MAR942)	--	--	3.24	--	--	--	--	--	--	--
701	Hilleshög HIL9920	3.58	3.48	3.24	3.36	3.43	74.56	--	--	--	--
702	Maribo MA717	3.68	3.56	3.40	3.48	3.55	68.33	--	--	--	--
735	Maribo MA902	3.75	3.36	3.32	3.34	3.48	73.70	--	--	--	--
708	Maribo MA943	--	--	2.96	--	--	--	--	--	--	--
732	SV 203	2.32	2.00	2.20	2.10	2.17	70.81	--	--	--	--
705	SV 265	3.65	3.36	3.16	3.26	3.39	70.81	--	--	--	--
711	SV 285	2.28	2.24	1.80	2.02	2.11	66.81	--	--	--	--
719	SX 1815	--	2.40	2.36	2.38	--	--	--	--	--	--
716	SX 1818	--	2.00	2.08	2.04	--	--	--	--	--	--
707	SX 1898	2.21	2.32	2.20	2.26	2.24	54.21	--	--	--	--
738	Root Aphid Res CK#3	1.36	1.00	1.08	1.04	1.15	70.65	--	--	--	--
739	Root Aphid Susc CK#4	3.48	3.48	3.52	3.50	3.49	71.31	--	--	--	--
740	Root Aphid Susc CK#6	--	3.48	3.20	3.34	--	--	--	--	--	--

Created 1/25/2024

<sup>x</sup> Greenhouse assay based on a 1-4 rating scale (1 = no aphids, 4 = very susceptible), Shakopee, MN, KWS

<sup>y</sup> Field trial based on incidence (% infested plants), Longmont, CO, Magno Seed, LLC

\* No data available due to low emergence

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

Table 7. Planting & Harvest Dates, Previous Crop and Disease Levels for 2023 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/Hlb	Todd Weber Farms	5/5	9/12	Wheat	Medium/Light	N	L	N	N	N	N	Planting errors, some gappy stands from crusting
Averill MN	Mhd/Hlb	Tang Farms	5/18	Abandon	Wheat	Medium/Light	N	N	N	N	N	N	Abandoned due to very poor stand
West of Perley MN (ND)	Mhd/Hlb	TD Hoff Partnership	5/22	9/8 & 9/11	Soybean	Heavy	L	M-V	N	N	N	N	Some cutworm and Rhizoctonia damage
Halstad MN	Mhd/Hlb	Peter Steen	5/15	10/12	Wheat	Medium	N	N	L	N	N	L-M	Excellent overall
Reynolds ND	Mhd/Hlb	Hong Farms	5/13	9/13	Wheat	Medium/Light	N	N	N	N	N	L	Some gappy stands
Climax MN	EGF/Crk	Knutson Farms	5/4	9/14	Wheat	Medium/Light	N	L	N	N	N	N	Planter gaps near ends of plots removed prior to harvest
Grand Forks ND	EGF/Crk	Drees Farming Association	5/12	9/18	Wheat	Medium/Light	N	N	N	N	L	N	Moisture stress across trial area
Scandia MN	EGF/Crk	Deboer Farms	5/14	10/9	Wheat	Medium	N	N	N	N	N	N	Hail damage even across trial area
East Grand Forks MN	EGF/Crk	Mark Holy	5/15	9/15	Fallow	Medium	N	N	N	N	N	N	On fallow ground, some light late Cercospora
Stephen MN	Dtn	Jensen Farms	5/11	10/3	Wheat	Medium/Heavy	N	N	N	N	N	N	
St Thomas ND	Dtn	Baldwin Farms	5/16	9/27	Wheat	Medium/Light	N	N	N	N	L	N	~7 inches of rainfall June 24-25
Humboldt MN	Dtn	Prosser/Kuznia Beets	5/10	9/30	Wheat	Heavy	N	L	N	N	N	N	Abandoned due to harvest loss
Bathgate ND	Dtn	Shady Bend Farm	5/16	9/29	Wheat	Medium	N	N	N	N	N	N	

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	5/23	Multiple	Wheat	Medium/Heavy	N	N	N	M-V	N	N	Moderate Fusarium
Sabin Fus-S MN	Fus Nurs	Krabbenhoff & Sons Farm	5/17	Multiple	Wheat	Medium/Light	N	N	N	V	L	N	Heavy Fusarium pressure
Mhd Rhc-E MN	Rhc Nurs	Jon Hickel	5/23	Abandon	Soybean	Heavy	N	L	N	L-M	N	N	Abandoned due to lack of Rhizoctonia severity
Mhd Rhc-W MN	Rhc Nurs	Jon Hickel	5/23	Abandon	Soybean	Heavy	N	L	N	L-M	N	N	Abandoned due to interference from Fusarium
NWROC MN	Rhc Nurs	Maureen Aubol	5/17	8/7	Soybean	Medium/Heavy	N	M	N	N	N	N	Nice range of Rhizoctonia symptoms
Saginaw MI	Rhc Nurs	Linda Hanson	5/10	8/29-9/1	--	--	N	V	N	N	N	N	Severe Rhizoctonia pressure
Shakopee MN	Aphanomyces	Patrick O'Boyle	5/10	8/29	--	--	M-V	L	N	N	N	N	Nice range of moderate Aphanomyces symptoms
Glyndon MN	Aphanomyces	Ryan Brady	5/23	Abandon	--	Light	N-L	L	N	M	N	N	Lack of soil moisture to develop Aphanomyces
West of Perley MN (ND)	Aphanomyces	TD Hoff Partnership	5/22	Abandon	Soybean	Heavy	L	M-V	N	N	N	N	Lack of soil moisture to develop Aphanomyces
Climax MN	Aphanomyces	Knutson Farms	5/17	Abandon	Wheat	Medium/Light	N	N	N	N	N	N	Lack of soil moisture to develop Aphanomyces
Longmont CO	Root Aphids	Ryan Brady	--	Abandon	--	--	--	--	--	--	--	--	Lack of root aphid pressure from excess soil moisture
Foxhome MN	Cercospora	NDSU/Kevin Etzler	5/18	Multiple	Wheat	Medium	N	N	N	N	N	N	Moderate to severe Cercospora pressure
Saginaw MI	Cercospora	Linda Hanson	4/27	Multiple	--	--	N	N	N	N	N	N	Very nice Cercospora pressure
Randolph MN	Cercospora	Patrick O'Boyle	5/3	Multiple	--	--	N	N	N	N	N	N	Five ratings through July 20 and hail damage in late July; not used for approval numbers
Averill MN	Cercospora	Tang Farms	5/18	Abandon	Wheat	Medium/Light	N	N	N	N	N	N	Abandoned due to very poor stand
East Grand Forks MN	Cercospora	Mark Holy	5/15	Multiple	Fallow	Medium	N	N	N	N	N	N	Non-inoculated trial, used for approval numbers

+ 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)

Created 10/27/2023

**Table 8. Seed Treatments Used on Varieties in Official Variety Trials in 2023**

Description	Years in Trial	Years Comm.	Fungicide Seed Treatment			Insecticide (Springtails & Maggots)	Priming (Emergence)
			(Damping-off)	(Rhizoctonia)	(Aphanomyces)		
<b>ACSC Commercial</b>							
BTS 8018	4	2	Allegiance Thiram	Kabina	Tach 35	Poncho Beta	Ultipro
BTS 8034	4	2	Allegiance Thiram	Kabina	Tach 35	Poncho Beta	Ultipro
BTS 8156	3	1	Allegiance Thiram	Kabina	Tach 35	Poncho Beta	Ultipro
BTS 8927	5	3	Allegiance Thiram	Kabina	Tach 35	Poncho Beta	Ultipro
Crystal 022	4	2	Allegiance Thiram	Kabina	Tach 45	Poncho Beta	Xbeet ®
Crystal 130	3	1	Allegiance Thiram	Kabina	Tach 45	Poncho Beta	Xbeet ®
Crystal 137	3	1	Allegiance Thiram	Kabina	Tach 45	Poncho Beta	Xbeet ®
Crystal 793	7	5	Allegiance Thiram	Kabina	Tach 45	Poncho Beta	Xbeet ®
Crystal 912	5	2	Allegiance Thiram	Kabina	Tach 45	Poncho Beta	Xbeet ®
Crystal 913	5	3	Allegiance Thiram	Kabina	Tach 45	Poncho Beta	Xbeet ®
Hilleshög HIL2317	5	3	Apron XL Maxim	Vibrance	Tach 45	Cruiser Maxx	Xbeet ®
Hilleshög HIL2366	4	2	Apron XL Maxim	Vibrance	Tach 45	Cruiser Maxx	Xbeet ®
Hilleshög HIL2368	4	1	Apron XL Maxim	Vibrance	Tach 45	Cruiser Maxx	Xbeet ®
Hilleshög HIL2386	3	1	Apron XL Maxim	Vibrance	Tach 45	Cruiser Maxx	Xbeet ®
Hilleshög HIL2389	3	1	Apron XL Maxim	Vibrance	Tach 45	Cruiser Maxx	Xbeet ®
Hilleshög HIL9920	7	5	Apron XL Maxim	Vibrance	Tach 45	Cruiser Maxx	Xbeet ®
Maribo MA717	7	5	Apron XL Maxim	Vibrance	Tach 45	Cruiser Maxx	Xbeet ®
Maribo MA902	5	3	Apron XL Maxim	Vibrance	Tach 45	Cruiser Maxx	Xbeet ®
SV 203	4	2	Apron XL Maxim	Zeltera	Int Sol	Nipslt	Xbeet ®
SV 265	8	6	Apron XL Maxim	Zeltera	Int Sol	Nipslt	Xbeet ®
SV 285	6	3	Apron XL Maxim	Zeltera	Int Sol	Nipslt	Xbeet ®
SX 1815	3	1	Apron XL Maxim	Zeltera	Int Sol	Nipslt	Xbeet ®
SX 1818	3	1	Apron XL Maxim	Zeltera	Int Sol	Nipslt	Xbeet ®
SX 1898	5	3	Apron XL Maxim	Zeltera	Int Sol	Nipslt	Xbeet ®
BTS 8337 (Check)	11	9	Allegiance Thiram	Systiva	Tach 35	Poncho Beta	Ultipro
Crystal 578RR (Check)	9	6	Allegiance Thiram	Kabina	Tach 45	Poncho Beta	Xbeet ®
BTS 8815 (Check)	6	4	Allegiance Thiram	Systiva	Tach 35	Poncho Beta	Ultipro
Crystal 803 (Check)	6	3	Allegiance Thiram	Kabina	Tach 45	Poncho Beta	Xbeet ®
BTS 8927 (Check)	5	3	Allegiance Thiram	Vibrance	Tach 35	Poncho Beta	Xbeet ®
AP CK MOD SUS RR#5	8	6	Allegiance Thiram	Systiva	Tach 35	Poncho Beta	Ultipro
AP CK MOD SUS RR#6	9	7	Allegiance Thiram	Kabina	Tach 45	Poncho Beta	Xbeet ®
RA CK SUS RR#7	9	6	Apron XL Maxim	Vibrance	Tach 45	--	Xbeet ®
<b>ACSC Experimental</b>							
BTS 8205	2	NC	Allegiance Thiram	Kabina	Tach 35	Poncho Beta	Ultipro
BTS 8217	2	NC	Allegiance Thiram	Kabina	Tach 35	Poncho Beta	Ultipro
BTS 8226	2	NC	Allegiance Thiram	Kabina	Tach 35	Poncho Beta	Ultipro
BTS 8242	2	NC	Allegiance Thiram	Kabina	Tach 35	Poncho Beta	Ultipro
BTS 8270	2	NC	Allegiance Thiram	Kabina	Tach 35	Poncho Beta	Ultipro
BTS 8303	1	NC	Allegiance Thiram	Kabina	Tach 35	Poncho Beta	Ultipro
BTS 8311	1	NC	Allegiance Thiram	Kabina	Tach 35	Poncho Beta	Ultipro
BTS 8328	1	NC	Allegiance Thiram	Kabina	Tach 35	Poncho Beta	Ultipro
BTS 8341	1	NC	Allegiance Thiram	Kabina	Tach 35	Poncho Beta	Ultipro
BTS 8349	1	NC	Allegiance Thiram	Kabina	Tach 35	Poncho Beta	Ultipro
BTS 8359	1	NC	Allegiance Thiram	Kabina	Tach 35	Poncho Beta	Ultipro
BTS 8365	1	NC	Allegiance Thiram	Kabina	Tach 35	Poncho Beta	Ultipro
Crystal 138	3	NC	Allegiance Thiram	Kabina	Tach 45	Poncho Beta	Xbeet ®
Crystal 260	2	NC	Allegiance Thiram	Kabina	Tach 45	Poncho Beta	Xbeet ®
Crystal 262	2	NC	Allegiance Thiram	Kabina	Tach 45	Poncho Beta	Xbeet ®
Crystal 269	2	NC	Allegiance Thiram	Kabina	Tach 45	Poncho Beta	Xbeet ®
Crystal 360	1	NC	Allegiance Thiram	Kabina	Tach 45	Poncho Beta	Xbeet ®
Crystal 361	1	NC	Allegiance Thiram	Kabina	Tach 45	Poncho Beta	Xbeet ®
Crystal 363	1	NC	Allegiance Thiram	Kabina	Tach 45	Poncho Beta	Xbeet ®
Crystal 364	1	NC	Allegiance Thiram	Kabina	Tach 45	Poncho Beta	Xbeet ®
Crystal 367	1	NC	Allegiance Thiram	Kabina	Tach 45	Poncho Beta	Xbeet ®
Crystal 368	1	NC	Allegiance Thiram	Kabina	Tach 45	Poncho Beta	Xbeet ®
Crystal 369	1	NC	Allegiance Thiram	Kabina	Tach 45	Poncho Beta	Xbeet ®
Crystal 371	1	NC	Allegiance Thiram	Kabina	Tach 45	Poncho Beta	Xbeet ®
Hilleshög HIL2441	2	NC	Apron XL Maxim	Vibrance	Tach 45	Cruiser Maxx	Xbeet ®
Hilleshög HIL2442	2	NC	Apron XL Maxim	Vibrance	Tach 45	Cruiser Maxx	Xbeet ®
Hilleshög HIL2477	1	NC	Apron XL Maxim	Vibrance	Tach 45	Cruiser Maxx	Xbeet ®
Hilleshög HIL2478	1	NC	Apron XL Maxim	Vibrance	Tach 45	Cruiser Maxx	Xbeet ®
Hilleshög HIL2479	1	NC	Apron XL Maxim	Vibrance	Tach 45	Cruiser Maxx	Xbeet ®
Hilleshög HIL2480	1	NC	Apron XL Maxim	Vibrance	Tach 45	Cruiser Maxx	Xbeet ®
Hilleshög HIL2487 (MA942)	2	NC	Apron XL Maxim	Vibrance	Tach 45	Cruiser Maxx	Xbeet ®
Maribo MA943	2	NC	Apron XL Maxim	Vibrance	Tach 45	Cruiser Maxx	Xbeet ®
Maribo MA945	1	NC	Apron XL Maxim	Vibrance	Tach 45	Cruiser Maxx	Xbeet ®
Maribo MA946	1	NC	Apron XL Maxim	Vibrance	Tach 45	Cruiser Maxx	Xbeet ®
SV 231	1	NC	Apron XL Maxim	Zeltera	Int Sol	Nipslt	Xbeet ®
SV 232	1	NC	Apron XL Maxim	Zeltera	Int Sol	Nipslt	Xbeet ®
SX 1835	1	NC	Apron XL Maxim	Zeltera	Int Sol	Nipslt	Xbeet ®
SX 1836	1	NC	Apron XL Maxim	Zeltera	Int Sol	Nipslt	Xbeet ®
BTS 8337 (Check)	11	9	Allegiance Thiram	Systiva	Tach 35	Poncho Beta	Ultipro
Crystal 578RR (Check)	9	6	Allegiance Thiram	Kabina	Tach 45	Poncho Beta	Xbeet ®
BTS 8815 (Check)	6	4	Allegiance Thiram	Systiva	Tach 35	Poncho Beta	Ultipro
Crystal 803 (Check)	6	3	Allegiance Thiram	Kabina	Tach 45	Poncho Beta	Xbeet ®
BTS 8927 (Check)	5	3	Allegiance Thiram	Vibrance	Tach 35	Poncho Beta	Xbeet ®
AP CK MOD SUS RR#5	8	6	Allegiance Thiram	Systiva	Tach 35	Poncho Beta	Ultipro
AP CK MOD SUS RR#6	9	7	Allegiance Thiram	Kabina	Tach 45	Poncho Beta	Xbeet ®
RA CK SUS RR#7	9	6	Apron XL Maxim	Vibrance	Tach 45	--	Xbeet ®
AP CK MOD RES RR#7	5	2	Allegiance Thiram	Kabina	Tach 45	Poncho Beta	Xbeet ®
AP CK MOD SUS RR#8	4	2	Allegiance Thiram	Kabina	Tach 45	Poncho Beta	Xbeet ®

Table 9. 2023 Performance of Varieties - ACSC RR Official Trials 11 sites

Description *	Code	Rec/T lbs. %Bnch	Rec/A lbs. %Bnch	Rev/T + \$	Rev/A + \$	Yield T/A	Gross	Sugar% LTM	Rec	Na ppm	K ppm	AmN ppm	Bolters ++	Emerg. %				
<b>Commercial Trial</b>																		
BTS 8018	117	348.4	100	11617	106	58.94	100	1960	105	33.43	18.43	1.01	17.42	124	1485	342	0	77.8
BTS 8034	101	338.6	97	11505	105	55.87	94	1896	102	34.05	18.02	1.10	16.92	161	1652	353	0	81.1
BTS 8156	114	348.1	100	11205	102	58.84	99	1890	102	32.29	18.44	1.04	17.40	134	1610	332	0	76.1
BTS 8927	109	353.5	101	11392	104	60.55	102	1948	105	32.31	18.65	0.97	17.68	125	1423	329	2	81.8
Crystal 022	121	358.1	103	11433	104	61.98	105	1975	106	31.99	18.88	0.97	17.91	111	1443	329	0	78.5
Crystal 130	113	353.3	101	11772	107	60.48	102	2009	108	33.44	18.64	0.98	17.66	120	1486	319	1	79.5
Crystal 137	122	349.6	100	11339	103	59.31	100	1922	103	32.48	18.52	1.04	17.48	129	1621	328	1	80.3
Crystal 793	118	349.4	100	11693	106	59.26	100	1981	106	33.49	18.48	1.01	17.47	126	1502	336	0	80.2
Crystal 912	116	340.3	97	12240	111	56.40	95	2025	109	36.04	18.03	1.02	17.01	144	1429	356	1	81.6
Crystal 913	106	349.9	100	12043	110	59.42	100	2042	110	34.46	18.49	1.00	17.49	129	1477	334	0	81.6
Hilleshög HIL2317	120	347.5	99	11050	100	58.66	99	1862	100	31.88	18.38	1.01	17.37	150	1568	309	2	69.1
Hilleshög HIL2366	111	333.3	95	10784	98	54.24	92	1751	94	32.44	17.67	1.00	16.67	156	1459	334	0	79.5
Hilleshög HIL2368	119	349.1	100	10270	93	59.17	100	1737	93	29.50	18.47	1.01	17.46	138	1474	344	0	69.5
Hilleshög HIL2386	112	342.7	98	11036	100	57.18	97	1836	99	32.30	18.18	1.04	17.14	138	1511	355	0	79.5
Hilleshög HIL2389	105	349.2	100	11520	105	59.20	100	1948	105	33.00	18.46	0.99	17.47	122	1532	320	0	80.2
Hilleshög HIL9920	115	347.4	99	11132	101	58.62	99	1878	101	32.07	18.40	1.04	17.36	149	1602	323	0	76.3
Maribo MA717	110	343.0	98	11241	102	57.26	97	1871	101	32.88	18.14	0.99	17.15	139	1506	319	0	78.9
Maribo MA902	124	339.1	97	10491	95	56.06	95	1730	93	31.02	17.96	1.01	16.95	157	1473	333	1	79.1
SV 203	123	350.6	100	11599	105	59.64	101	1972	106	33.11	18.52	0.99	17.53	118	1526	320	0	80.4
SV 265	107	342.7	98	11161	101	57.15	96	1859	100	32.63	18.12	0.99	17.13	129	1530	315	1	81.9
SV 285	108	346.2	99	11357	103	58.25	98	1909	103	32.86	18.33	1.02	17.31	129	1583	325	0	82.1
SX 1815	104	350.9	100	11742	107	59.71	101	1996	107	33.51	18.52	0.98	17.54	112	1520	316	0	80.8
SX 1818	103	345.0	99	11698	106	57.89	98	1958	105	34.01	18.26	1.01	17.25	116	1575	324	0	77.8
SX 1898	102	345.9	99	11474	104	58.17	98	1927	104	33.21	18.32	1.02	17.30	128	1566	332	0	80.6
BTS 8337 (CommBench)	125	358.3	103	10624	97	62.04	105	1837	99	29.70	19.00	1.08	17.92	135	1630	356	0	76.2
Crystal 578RR (CommBench)	126	342.4	98	11075	101	57.06	96	1838	99	32.49	18.20	1.08	17.12	149	1620	351	0	78.3
BTS 8815 (CommBench)	127	343.9	98	10378	94	57.55	97	1733	93	30.25	18.29	1.10	17.19	153	1689	346	0	64.9
Crystal 803 (CommBench)	128	352.6	101	11912	108	60.25	102	2033	109	33.83	18.67	1.03	17.64	122	1529	352	4	81.9
BTS 8927 (1stYearBench)	129	358.1	103	11258	102	61.97	105	1948	105	31.43	18.88	0.97	17.91	120	1430	330	0	77.8
AP CK MOD SUS RR#5	130	343.0	98	11140	101	57.27	97	1857	100	32.54	18.23	1.08	17.15	147	1606	355	1	74.1
AP CK MOD SUS RR#6	131	355.2	102	11250	102	61.06	103	1931	104	31.73	18.77	1.01	17.76	114	1497	343	0	81.8
RA CK SUS RR#7	132	339.5	97	10286	94	56.16	95	1694	91	30.46	17.98	1.01	16.97	159	1494	327	0	78.4
<b>Experimental Trial (Comm status)</b>																		
BTS 8205	205	351.1	101	11640	106	59.77	101	1981	106	33.18	18.61	1.06	17.55	113	1537	362	0	77.1
BTS 8217	233	347.7	100	11418	104	58.72	99	1924	103	32.93	18.41	1.01	17.39	125	1581	312	0	74.4
BTS 8226	206	355.3	102	11318	103	61.07	103	1945	105	31.88	18.70	0.93	17.77	113	1392	305	0	74.3
BTS 8242	211	356.3	102	11269	102	61.38	104	1940	104	31.70	18.83	1.02	17.81	112	1485	345	0	76.7
BTS 8270	232	352.3	101	11519	105	60.15	102	1966	106	32.75	18.65	1.03	17.62	116	1528	343	0	78.8
BTS 8303	218	355.3	102	10942	99	61.06	103	1879	101	30.81	18.80	1.04	17.76	126	1603	327	0	72.4
BTS 8311	213	364.3	104	10652	97	63.90	108	1866	100	29.30	19.17	0.95	18.22	107	1452	305	0	72.1
BTS 8328	224	356.1	102	11389	104	61.32	104	1961	105	32.04	18.86	1.05	17.81	123	1576	345	0	73.2
BTS 8341	215	348.2	100	8299	75	58.87	99	1407	76	23.74	18.54	1.13	17.41	132	1581	394	0	71.0
BTS 8349	223	336.4	96	11159	101	55.22	93	1827	98	33.29	17.89	1.06	18.82	161	1604	331	0	78.4
BTS 8359	219	350.9	100	11524	105	59.72	101	1957	105	32.93	18.59	1.04	17.55	119	1549	347	0	72.3
BTS 8365	206	362.2	104	11342	103	53.25	107	1980	106	31.34	19.07	0.95	18.12	109	1442	305	0	76.2
Crystal 138	238	349.4	100	11687	106	59.25	100	1983	107	33.42	18.51	1.03	17.47	122	1497	347	0	74.4
Crystal 260	230	348.0	100	11630	106	58.82	99	1962	105	33.50	18.41	1.00	17.40	121	1511	322	0	77.9
Crystal 262	227	345.7	99	11510	105	58.10	98	1932	104	33.32	18.28	0.99	17.28	134	1423	332	0	76.3
Crystal 269	229	358.1	103	11185	102	61.98	105	1932	104	31.32	19.01	1.11	17.91	130	1614	367	0	69.3
Crystal 360	203	351.2	101	11555	105	59.82	101	1963	106	33.02	18.57	1.01	17.56	113	1517	333	0	78.0
Crystal 361	201	357.9	102	11644	106	61.91	105	2012	108	32.60	18.87	0.97	17.90	120	1415	326	0	75.5
Crystal 363	222	358.1	103	11072	101	61.96	105	1918	103	30.90	18.93	1.02	17.91	114	1543	333	0	72.7
Crystal 364	214	342.5	98	12032	109	57.10	96	2000	108	35.25	18.21	1.09	17.12	161	1633	336	0	78.7
Crystal 367	220	342.2	98	11168	102	57.01	96	1860	100	32.68	18.18	1.06	17.11	134	1652	330	0	78.9
Crystal 368	217	350.4	100	11209	102	59.54	101	1906	102	32.00	18.62	1.12	17.51	124	1585	383	0	71.9
Crystal 369	231	354.6	102	11582	105	60.87	103	1984	107	32.76	18.83	1.10	17.74	140	1607	362	0	78.1
Crystal 371	226	360.6	103	10815	98	62.75	106	1883	101	29.93	19.01	0.97	18.04	112	1431	324	0	72.5
Hilleshög HIL2441	234	347.3	99	10668	97	58.61	99	1797	97	30.78	18.48	1.11	17.37	135	1551	387	1	74.6
Hilleshög HIL2442	204	348.8	100	10433	95	59.05	100	1761	95	30.02	18.58	1.15	17.44	128	1550	423	0	70.9
Hilleshög HIL2477	237	333.1	95	10453	95	54.19	91	1696	91	31.46	17.87	1.21	16.66	177	1635	425	0	71.3
Hilleshög HIL2478	209	334.6	96	11182	102	54.65	92	1821	98	33.52	17.85	1.12	16.73	172	1610	360	0	73.6
Hilleshög HIL2479	210	353.0	101	10887	99	60.36	102	1861	100	30.87	18.67	1.03	17.64	142	1439	353	0	78.0
Hilles																		

Table 10. 2023 Performance of Varieties - ACSC RR Official Trials Casselton ND

Description *	Code	Rec/T lbs. %Bnch	Rec/A lbs. %Bnch	Rev/T + \$	Rev/A + \$	Yield T/A	Gross	Sugar% LTM	Rec	Na ppm	K ppm	AmN ppm	Bolters ++	Emerg. %				
<b>Commercial Trial</b>																		
BTS 8018	117	347.8	100	8387	101	58.74	101	1415	102	24.20	18.69	1.30	17.39	153	1637	516	0	63.7
BTS 8034	101	336.6	97	8991	109	55.92	95	1475	106	26.75	18.25	1.43	16.82	209	1855	535	0	59.2
BTS 8156	114	346.5	100	9294	112	58.36	100	1568	113	26.76	18.64	1.31	17.33	161	1824	473	0	60.6
BTS 8927	109	350.8	101	8319	101	59.70	102	1415	102	23.76	18.79	1.25	17.54	182	1550	488	0	66.7
Crystal 022	121	358.1	103	8627	104	61.97	106	1494	107	24.00	19.15	1.24	17.91	141	1668	470	0	63.7
Crystal 130	113	359.3	104	8947	108	62.36	107	1553	115	24.93	19.13	1.16	17.97	144	1632	413	0	70.5
Crystal 137	122	346.3	100	8958	108	58.30	100	1512	109	25.79	18.63	1.32	17.31	169	1829	474	0	62.2
Crystal 793	118	350.8	101	8665	105	59.69	102	1473	106	24.75	18.75	1.22	17.53	161	1633	449	0	67.4
Crystal 912	116	336.7	97	9793	118	55.30	95	1607	115	29.13	18.23	1.40	17.83	202	1652	569	0	69.7
Crystal 913	106	346.5	100	8766	106	58.36	100	1476	106	25.29	18.63	1.30	17.33	178	1637	507	0	64.7
Hilleshög HIL2317	120	338.7	98	8053	97	55.92	96	1327	95	23.82	18.22	1.29	16.93	233	1748	449	0	45.4
Hilleshög HIL2366	111	334.5	97	8452	102	54.61	94	1382	99	25.21	18.09	1.37	16.72	209	1694	533	0	64.1
Hilleshög HIL2368	119	338.5	98	7477	90	55.86	96	1233	89	22.10	18.32	1.39	16.93	195	1716	551	0	47.4
Hilleshög HIL2386	112	346.6	100	9297	112	58.38	100	1567	113	26.84	18.59	1.26	17.33	179	1644	478	0	64.9
Maribo MA717	110	349.2	101	8793	106	59.21	101	1489	107	25.18	18.69	1.23	17.46	163	1660	454	0	68.8
Maribo MA902	124	337.9	97	7934	96	55.66	95	1306	94	23.45	18.14	1.25	16.89	200	1601	470	0	68.7
SV 203	123	345.5	100	8733	106	58.05	99	1467	105	25.26	18.60	1.32	17.28	158	1856	474	0	54.3
SV 265	107	333.8	96	7797	94	54.38	93	1271	91	23.36	18.07	1.38	16.69	201	1849	505	0	60.4
SV 285	108	338.8	98	8290	100	55.95	96	1367	98	24.51	18.34	1.40	16.94	189	1885	511	0	58.7
SX 1815	104	347.8	100	8764	106	58.77	101	1482	106	25.18	18.62	1.22	17.40	154	1760	426	0	63.1
SX 1818	103	338.6	98	8385	101	55.87	96	1385	99	24.72	18.27	1.34	16.93	161	1869	484	0	46.8
SX 1898	102	330.3	95	7992	97	53.29	91	1286	92	24.24	17.92	1.41	16.51	230	1884	506	0	62.9
BTS 8337 (CommBench)	125	356.7	103	7964	96	61.53	105	1373	99	22.36	19.14	1.30	17.84	190	1726	480	0	59.7
Crystal 578RR (CommBench)	126	340.1	98	8373	101	56.36	97	1386	100	24.66	18.35	1.34	17.01	201	1832	479	0	66.4
BTS 8815 (CommBench)	127	342.0	99	8012	97	56.95	98	1335	96	23.43	18.46	1.36	17.10	203	1903	473	0	47.7
Crystal 803 (CommBench)	128	347.6	100	8736	106	58.71	101	1476	106	25.12	18.62	1.24	17.38	170	1647	458	0	70.2
BTS 8927 (1stYearBench)	129	359.3	104	7950	96	62.35	107	1380	99	22.08	19.16	1.20	17.96	155	1561	457	0	64.1
AP CK MOD SUS RR#5	130	338.7	98	8626	104	55.93	96	1424	102	25.44	18.29	1.36	16.93	211	1803	495	0	62.0
AP CK MOD SUS RR#6	131	355.9	103	8893	108	61.30	105	1532	110	24.94	19.01	1.21	17.80	151	1652	442	0	68.3
RA CK SUS RR#7	132	346.0	100	8237	100	58.19	100	1381	99	23.90	18.53	1.23	17.30	195	1616	452	0	69.5
<b>Experimental Trial (Comm status)</b>																		
BTS 8205	205	339.3	98	8810	107	56.14	96	1468	105	25.73	18.27	1.36	16.91	127	1792	486	0	56.4
BTS 8217	233	343.1	99	8820	107	57.29	98	1478	106	25.50	18.42	1.29	17.13	148	1783	430	0	67.0
BTS 8226	208	347.8	100	8670	105	58.74	101	1476	106	24.53	18.53	1.18	17.34	152	1532	413	0	60.6
BTS 8242	211	347.8	100	8133	101	58.76	101	1412	101	23.76	18.65	1.30	17.36	139	1691	462	0	61.7
BTS 8270	232	346.7	100	8511	103	58.41	100	1425	102	24.60	18.64	1.33	16.31	130	1772	462	0	62.4
BTS 8303	218	346.0	100	8585	104	58.21	100	1439	103	24.65	18.57	1.29	17.28	143	1828	418	0	57.8
BTS 8311	213	359.7	104	7792	94	62.41	107	1350	97	21.60	19.12	1.16	17.96	123	1643	377	0	59.1
BTS 8328	224	344.8	99	8374	101	57.85	99	1413	101	24.12	18.54	1.31	17.23	140	1777	446	0	57.8
BTS 8341	215	342.3	99	5986	72	57.04	98	1000	72	17.32	18.57	1.48	17.09	164	1826	554	0	56.0
BTS 8349	223	329.3	95	8278	100	53.04	91	1333	96	25.21	17.85	1.41	16.43	195	1859	483	0	53.1
BTS 8359	219	347.7	100	9022	109	58.73	101	1525	110	25.90	18.63	1.24	17.39	134	1725	405	0	58.4
BTS 8365	206	354.2	102	7976	96	60.71	104	1369	98	22.49	18.89	1.19	17.70	140	1611	405	0	59.0
Crystal 138	238	333.9	96	8524	103	54.48	93	1372	99	25.64	18.11	1.45	16.67	179	1713	549	0	51.2
Crystal 260	230	347.2	100	9395	114	58.58	100	1574	113	27.17	18.62	1.30	17.32	143	1700	456	0	64.6
Crystal 262	227	339.1	98	8294	100	56.09	96	1360	98	24.56	18.17	1.24	16.93	156	1613	432	0	68.1
Crystal 269	229	337.4	97	8690	105	55.56	95	1423	102	25.87	18.29	1.44	16.85	155	1785	526	0	48.8
Crystal 360	203	355.3	102	8804	106	61.07	105	1521	109	24.65	18.92	1.23	17.70	115	1693	414	0	67.7
Crystal 361	201	344.0	99	8501	103	57.60	99	1425	102	24.61	18.42	1.23	17.19	136	1583	437	0	62.7
Crystal 363	222	340.9	98	7734	94	56.62	97	1273	91	22.73	18.35	1.33	17.02	148	1736	467	0	48.6
Crystal 364	214	334.9	97	9690	117	54.78	94	1594	114	28.77	18.06	1.33	16.73	199	1835	427	0	69.8
Crystal 367	220	338.1	98	8265	100	55.79	96	1363	98	24.50	18.19	1.30	16.89	146	1847	420	0	67.1
Crystal 368	217	343.5	99	8642	104	57.46	98	1451	104	25.03	18.45	1.29	17.16	116	1702	459	0	48.0
Crystal 369	231	349.4	101	9080	110	59.24	101	1549	111	25.77	18.69	1.28	17.42	160	1697	431	0	60.2
Crystal 371	226	354.9	102	8015	97	60.94	104	1374	99	22.53	18.96	1.25	17.71	129	1578	453	0	55.7
Hilleshög HIL2441	234	323.8	93	8115	98	51.36	88	1301	93	24.75	17.60	1.47	16.13	184	1759	548	0	52.2
Hilleshög HIL2442	204	336.6	97	8360	101	55.30	95	1379	99	24.71	18.27	1.49	16.78	169	1860	545	0	46.6
Hilleshög HIL2477	237	326.4	94	7867	95	52.19	89	1262	91	24.11	17.84	1.57	16.26	208	1906	580	0	53.8
Hilleshög HIL2478	209	320.2	92	8886	107	50.27	86	1394	100	27.69	17.46	1.50	15.96	233	1861	525	0	58.1
Hilleshög HIL2479	210	349.9	101	7841	95	59.42	102	1327	95	22.42	18.80	1.33	17.47	160	1647	489	0	70.0
Hilleshög HIL2480	228	337.0	97	7657	93	55.42	95	1265	91	22.75	18.32	1.52	16.80	185	1821	575	0	68.4
Hilleshög HIL2487 (Maribo MA942)	225	338.0	98	8551	103	55.74	95	1422	102	24.94	18.10	1.24	16.87	134	1587	442	0	56.7
Maribo MA943	235	333.3	96	7368	89	54.29	93	1199	86	21.98	18.06	1.43	16.64	175	1747	529	0	43.6
Maribo MA945	202	329.9	95	8783	106</													

Table 11. 2023 Performance of Varieties - ACSC RR Official Trials West of Perley MN (ND)

Description *	Code	Rec/T lbs. %Bnch	Rec/A lbs. %Bnch	Rev/T + \$	Rev/A + \$	Yield %Bnch	Gross	Sugar% LTM	Rec	Na ppm	K ppm	AmN ppm	Bolters ++	Emerg. %				
<b>Commercial Trial</b>																		
BTS 8018	117	335.2	99	7952	108	54.84	98	1296	106	23.80	18.02	1.26	16.76	182	1696	458	0	76.4
BTS 8034	101	337.6	100	8156	111	55.57	99	1342	110	24.21	18.16	1.28	16.88	194	1821	436	0	79.9
BTS 8156	114	341.7	101	8153	111	56.86	101	1355	111	23.88	18.36	1.27	17.09	202	1820	431	0	75.1
<b>BTS 8927</b>	109	343.9	101	8008	109	57.54	103	1339	110	23.31	18.39	1.20	17.19	175	1626	430	0	84.3
Crystal 022	121	359.0	106	8066	109	62.25	111	1400	115	22.47	19.12	1.17	17.95	135	1670	415	0	77.7
Crystal 130	113	343.9	101	8158	111	57.54	103	1363	112	23.77	18.43	1.23	17.20	163	1706	441	1	78.3
Crystal 137	122	334.4	99	7949	108	54.59	97	1297	107	23.78	17.94	1.22	16.72	181	1853	389	0	80.2
Crystal 793	118	335.3	99	8145	110	54.86	98	1328	109	24.37	17.98	1.21	16.77	162	1659	439	0	81.0
Crystal 912	116	326.9	96	9564	130	52.23	93	1527	125	29.27	17.53	1.18	16.35	205	1609	413	0	81.6
Crystal 913	106	339.1	100	8599	117	56.03	100	1418	116	25.42	18.12	1.17	16.95	155	1659	410	0	81.7
Hilleshog HIL2317	120	335.8	99	7514	102	55.01	98	1232	101	22.33	17.05	1.26	16.79	224	1833	407	1	66.5
Hilleshog HIL2366	111	325.2	96	7870	107	51.69	92	1250	103	24.24	17.40	1.14	16.26	183	1581	397	0	76.3
Hilleshog HIL2368	119	342.4	101	6815	92	57.08	102	1134	93	19.93	18.32	1.20	17.12	193	1654	418	0	64.3
Hilleshog HIL2386	112	331.1	98	7527	102	53.56	96	1214	100	22.77	17.74	1.19	16.55	180	1664	412	0	78.7
Hilleshog HIL2389	105	343.5	101	8083	110	57.43	102	1354	111	23.51	18.37	1.19	17.18	147	1779	397	0	71.6
Hilleshog HIL9920	115	333.8	98	7213	98	54.39	97	1175	96	21.58	18.90	1.22	16.68	195	1839	383	0	74.6
Maribo MA717	110	338.2	100	7972	108	55.77	99	1315	108	23.54	18.14	1.23	16.91	176	1745	428	0	74.2
Maribo MA902	124	327.1	96	6769	92	52.31	93	1079	89	20.77	17.54	1.19	16.35	228	1612	407	0	82.9
SV 203	123	344.3	101	8055	109	57.65	103	1347	111	23.45	18.47	1.26	17.21	173	1788	440	0	76.8
SV 265	107	337.8	100	7925	107	55.62	99	1307	107	23.44	18.06	1.17	16.89	154	1745	389	0	80.5
SV 285	108	335.7	99	7788	106	54.97	98	1275	105	23.21	17.97	1.19	16.78	163	1832	373	0	85.3
<b>SX 1815</b>	104	343.7	101	8069	109	57.48	102	1349	111	23.47	18.36	1.17	17.19	143	1749	394	0	82.6
<b>SX 1818</b>	103	337.6	100	8308	113	55.57	99	1368	112	24.59	18.06	1.19	16.87	145	1793	390	0	79.4
<b>SX 1898</b>	102	344.7	102	7820	106	57.80	103	1311	108	22.70	18.47	1.23	17.24	168	1841	407	0	82.6
<b>BTS 8337 (CommBench)</b>	125	347.8	103	6901	94	58.76	105	1165	96	19.83	18.62	1.23	17.39	151	1828	412	0	75.1
Crystal 578RR (CommBench)	126	337.9	100	7560	103	55.66	99	1240	102	22.49	18.16	1.27	16.89	197	1829	426	0	77.0
<b>BTS 8815 (CommBench)</b>	127	329.4	97	7311	97	53.01	95	1149	94	21.61	17.78	1.31	16.47	200	1932	429	0	63.3
Crystal 803 (CommBench)	128	341.8	101	7906	107	56.89	101	1317	108	23.14	18.36	1.27	17.09	160	1745	463	0	76.9
BTS 8927 (1stYearBench)	129	344.1	101	7520	102	57.59	103	1258	103	21.88	18.42	1.22	17.20	168	1657	442	0	74.4
AP CK MOD SUS RR#5	130	328.2	97	6997	95	52.63	94	1119	92	21.35	17.66	1.25	16.41	199	1762	430	0	73.6
AP CK MOD SUS RR#6	131	339.5	100	6935	94	56.15	100	1145	94	20.44	18.15	1.18	16.97	146	1736	398	0	83.0
RA CK SUS RR#7	132	335.5	99	7287	99	54.92	98	1190	98	21.78	17.99	1.22	16.77	218	1655	425	0	75.3
<b>Experimental Trial (Comm status)</b>																		
BTS 8205	205	348.1	103	8256	112	58.85	105	1397	115	23.72	18.69	1.29	17.41	186	1727	459	0	75.9
BTS 8217	233	338.8	100	8022	109	55.93	100	1322	109	23.75	18.19	1.24	16.95	196	1776	413	0	68.7
<b>BTS 8226</b>	206	347.2	102	7935	108	58.57	104	1338	110	22.87	18.50	1.15	17.35	168	1573	401	0	66.9
<b>BTS 8242</b>	211	356.3	105	8109	110	61.43	110	1396	115	22.80	19.03	1.21	17.82	165	1667	427	0	73.0
<b>BTS 8270</b>	232	344.0	101	8128	111	57.56	103	1374	113	23.94	18.44	1.23	17.21	173	1683	432	0	79.4
<b>BTS 8303</b>	218	344.3	101	8102	110	57.65	103	1355	111	23.62	18.56	1.33	17.24	177	1800	471	0	70.9
<b>BTS 8311</b>	213	364.9	108	8291	112	64.11	114	1460	120	22.68	19.32	1.07	18.25	153	1633	334	0	76.5
<b>BTS 8328</b>	224	352.4	104	8758	119	60.20	107	1496	123	24.85	18.90	1.30	17.61	187	1720	463	0	76.7
<b>BTS 8341</b>	215	339.2	100	5601	76	56.07	100	926	76	16.52	18.28	1.33	16.95	178	1805	472	0	68.7
<b>BTS 8349</b>	223	335.5	99	8444	115	54.92	98	1383	114	25.14	18.02	1.25	16.76	217	1872	388	0	72.2
<b>BTS 8359</b>	219	347.0	102	8405	114	58.51	104	1416	116	24.26	18.59	1.25	17.34	167	1683	448	0	59.7
<b>BTS 8365</b>	206	353.6	104	7929	108	50.56	108	1357	111	22.47	18.80	1.12	17.68	152	1622	373	0	73.1
Crystal 138	238	345.5	102	8528	116	58.03	103	1434	118	24.66	18.49	1.23	17.26	165	1610	453	0	71.5
Crystal 260	230	346.1	102	7847	106	58.23	104	1318	108	22.69	18.44	1.13	17.31	161	1649	371	0	73.1
Crystal 262	227	334.4	99	8125	110	54.55	97	1325	109	24.32	17.87	1.16	16.71	180	1587	406	0	70.3
Crystal 269	229	351.2	104	7743	105	59.83	107	1319	108	22.09	18.85	1.29	17.57	188	1769	446	0	70.3
Crystal 360	203	347.2	102	8418	114	58.59	104	1418	116	24.27	18.65	1.29	17.37	186	1746	457	0	78.6
Crystal 361	201	359.9	106	8270	112	62.56	112	1436	118	23.01	19.14	1.15	17.99	177	1552	410	0	75.1
Crystal 363	222	360.0	106	7503	102	62.58	112	1303	107	20.87	19.15	1.17	17.98	154	1737	381	0	68.5
Crystal 364	214	327.1	96	8759	119	52.30	93	1404	115	26.74	17.70	1.34	16.36	268	1749	459	0	71.4
Crystal 367	220	335.6	99	8191	111	54.93	98	1338	110	24.43	18.01	1.24	16.76	189	1800	403	0	75.1
Crystal 368	217	340.1	100	8155	111	56.34	100	1352	111	23.93	18.27	1.29	16.98	206	1747	446	0	69.8
Crystal 369	231	345.2	102	7743	105	57.95	103	1300	107	22.46	18.50	1.24	17.26	184	1723	426	0	72.6
Crystal 371	226	354.0	104	6982	95	60.73	108	1196	98	19.71	18.80	1.10	17.70	159	1600	362	0	67.6
Hilleshog HIL2441	234	347.4	102	7518	102	58.64	105	1267	104	21.66	18.61	1.23	17.38	195	1688	422	0	71.2
Hilleshog HIL2442	204	343.8	101	7124	97	57.51	103	1190	98	20.76	18.46	1.25	17.21	187	1709	447	0	65.9
Hilleshog HIL2477	237	328.0	97	6740	91	52.58	94	1081	89	20.56	17.84	1.44	16.40	278	1732	537	0	63.8
<b>Hilleshog HIL2478</b>	209	333.8	98	7530	102	54.38	97	1227	101	22.55	17.92	1.23	16.68	211	1720	414	0	71.7
Hilleshog HIL2479	210	343.4	101	7091	96	57.39	102	1186	97	20.65	18.34	1.17	17.17	203	1667	379	0	69.0
Hilleshog HIL2480	228	346.2	102	7947	108	58.25	104	1337	110	22.97	18.68	1.37	17					

Table 12. 2023 Performance of Varieties - ACSC RR Official Trials Halstad MN

Description *	Code	Rec/T lbs. %Bnch	Rec/A lbs. %Bnch	Rev/T + \$	Rev/A + \$	Yield T/A	Gross	Sugar% LTM	Rec	Na ppm	K ppm	AmN ppm	Bolters ++	Emerg. %
<b>Commercial Trial</b>														
BTS 8018	117	344.5	97	13869	106	57.74	95	2320	104	40.29	18.08	0.85	17.23	90
BTS 8034	101	334.5	95	13717	105	54.61	90	2242	100	40.95	17.60	0.87	16.73	124
BTS 8156	114	349.1	99	13418	103	59.18	98	2271	102	38.56	18.32	0.86	17.46	101
<b>BTS 8927</b>	109	355.7	101	13468	103	61.23	101	2317	104	37.86	18.58	0.79	17.79	93
Crystal 022	121	361.3	102	13393	102	62.98	104	2327	104	37.20	18.87	0.80	18.07	75
Crystal 130	113	359.8	102	14081	108	62.51	103	2445	109	39.14	18.80	0.81	17.99	82
Crystal 137	122	346.6	98	13141	101	58.38	96	2209	99	38.02	18.18	0.85	17.33	98
Crystal 793	118	350.2	99	13768	105	59.50	98	2337	105	39.38	18.38	0.87	17.51	91
Crystal 912	116	343.6	97	14245	109	57.46	95	2379	106	41.53	18.02	0.83	17.19	105
Crystal 913	106	349.1	99	13914	106	59.15	98	2360	106	39.80	18.32	0.87	17.45	94
Hilleshög HIL2317	120	350.4	99	12437	95	59.57	98	2113	94	35.51	18.29	0.77	17.52	97
Hilleshög HIL2366	111	324.4	92	12065	92	51.44	85	1911	85	37.20	16.96	0.74	16.22	115
Hilleshög HIL2368	119	340.7	96	11924	91	56.54	93	1977	88	35.08	17.79	0.75	17.04	97
Hilleshög HIL2386	112	327.9	93	12289	94	52.55	87	1968	88	37.48	17.26	0.86	16.40	110
Hilleshög HIL2389	105	336.2	95	12641	97	55.13	91	2074	93	37.56	17.55	0.74	16.81	101
Hilleshög HIL9920	115	345.7	98	12516	96	58.10	96	2103	94	36.23	18.05	0.76	17.29	103
Maribo MA717	110	327.0	92	12751	98	52.26	86	2035	91	39.02	17.12	0.77	16.35	105
Maribo MA902	124	330.0	93	12195	93	53.21	88	1965	88	37.03	17.26	0.76	16.50	105
SV 203	123	335.3	95	12529	96	54.86	91	2050	92	37.38	17.57	0.80	16.77	98
SV 265	107	333.2	94	12333	94	54.19	90	2003	90	37.07	17.35	0.69	16.66	91
SV 285	108	342.3	97	12722	97	57.03	94	2122	95	37.18	17.96	0.85	17.11	114
SX 1815	104	347.4	98	13601	104	58.64	97	2298	103	39.11	18.13	0.76	17.37	78
SX 1818	103	344.9	98	13266	102	57.84	96	2224	99	38.49	18.05	0.81	17.24	86
SX 1898	102	342.1	97	13219	101	56.99	94	2201	98	38.63	17.91	0.80	17.11	74
<b>BTS 8337 (CommBench)</b>	125	365.3	103	12805	98	64.22	106	2252	101	34.97	19.23	0.96	18.27	102
Crystal 578RR (CommBench)	126	346.9	98	13415	103	58.46	97	2259	101	38.70	18.22	0.87	17.35	94
<b>BTS 8815 (CommBench)</b>	127	345.2	98	12186	93	57.95	96	2047	92	35.34	18.12	0.86	17.26	106
Crystal 803 (CommBench)	128	356.7	101	13862	106	61.52	102	2387	107	38.90	18.71	0.88	17.83	102
BTS 8927 (1stYearBench)	129	358.2	101	13483	103	62.02	102	2335	104	37.56	18.71	0.80	17.91	84
AP CK MOD SUS RR#5	130	349.1	99	13425	103	59.16	98	2277	102	38.41	18.30	0.85	17.45	93
AP CK MOD SUS RR#6	131	352.1	100	12256	94	60.11	99	2093	94	34.80	18.52	0.91	17.61	96
RA CK SUS RR#7	132	319.4	90	11599	89	49.91	82	1810	81	36.38	16.74	0.77	15.97	130
<b>Experimental Trial (Comm status)</b>														
BTS 8205	205	347.2	98	13124	100	58.56	97	2217	99	37.66	18.25	0.88	17.37	79
BTS 8217	233	342.9	97	13667	105	57.20	94	2282	102	39.91	18.02	0.88	17.14	117
BTS 8226	208	360.4	102	13478	103	62.68	104	2344	105	37.43	18.75	0.74	18.01	84
<b>BTS 8242</b>	211	360.3	102	13082	100	62.66	104	2277	102	36.27	18.82	0.86	18.02	91
BTS 8270	232	358.4	101	13123	100	62.04	102	2268	101	36.68	18.76	0.84	17.92	87
BTS 8303	218	357.2	101	12992	99	61.69	102	2242	100	36.34	18.75	0.89	17.86	109
<b>BTS 8311</b>	213	364.0	103	12443	95	63.81	105	2179	97	34.16	19.03	0.84	18.19	83
BTS 8328	224	360.9	102	13304	102	62.85	104	2318	104	36.86	18.97	0.91	18.06	91
BTS 8341	215	353.9	100	9970	76	60.65	100	1711	77	28.06	18.62	0.93	17.69	101
<b>BTS 8349</b>	223	332.8	94	13241	101	54.04	89	2144	96	39.88	17.49	0.86	16.63	131
BTS 8359	219	356.2	101	13186	101	61.37	101	2266	101	37.20	18.75	0.95	17.80	111
BTS 8365	206	365.5	103	13197	101	64.27	106	2322	104	36.09	19.08	0.81	18.27	85
Crystal 138	238	350.8	99	13381	102	59.68	99	2274	102	38.21	18.45	0.91	17.54	110
Crystal 260	230	348.4	99	13499	103	58.94	97	2284	102	38.75	18.26	0.84	17.42	95
Crystal 262	227	355.6	101	13400	103	61.18	101	2305	103	37.66	18.56	0.78	17.78	99
Crystal 269	229	370.3	105	12715	97	65.78	109	2260	101	34.32	19.45	0.93	18.52	98
Crystal 360	203	341.1	96	13260	102	56.64	94	2215	99	39.06	17.97	0.92	17.05	94
Crystal 361	201	365.0	103	14044	107	64.13	106	2466	110	38.48	19.04	0.79	18.25	103
Crystal 363	222	368.3	104	13014	100	65.17	108	2303	103	35.32	19.31	0.90	18.41	94
Crystal 364	214	340.5	96	13338	102	56.44	93	2208	99	39.27	17.89	0.87	17.02	96
Crystal 367	220	345.1	98	13801	106	57.89	96	2317	104	39.98	18.16	0.89	17.27	101
Crystal 368	217	357.2	101	13479	103	61.69	102	2330	104	37.67	18.81	0.94	17.87	104
Crystal 369	231	359.5	102	13612	104	62.39	103	2365	106	37.84	18.89	0.92	17.97	107
Crystal 371	226	371.1	105	12686	97	66.04	109	2260	101	34.11	19.40	0.84	18.56	89
Hilleshög HIL2441	234	348.1	98	11988	92	58.84	97	2025	91	34.43	18.36	0.96	17.40	108
Hilleshög HIL2442	204	353.5	100	11796	90	60.51	100	2021	90	33.42	18.63	0.96	17.67	104
Hilleshög HIL2477	237	344.8	98	12136	93	57.79	95	2032	91	35.22	18.18	0.95	17.23	126
Hilleshög HIL2478	209	331.4	94	12730	97	53.60	89	2058	92	38.49	17.46	0.89	16.57	159
Hilleshög HIL2479	210	356.5	101	12763	98	61.48	102	2200	98	35.80	18.62	0.79	17.83	123
Hilleshög HIL2480	228	347.3	98	12416	95	58.58	97	2093	94	35.79	18.38	1.02	17.36	141
Hilleshög HIL2487 (Maribo MA942)	225	345.6	98	12951	99	58.06	96	2176	97	37.48	18.10	0.82	17.28	89
Maribo MA943	235	353.6	101	12609	96	61.41	101	2171	97	35.40	18.64	0.82	17.82	78
Maribo MA945	202	343.8	97	12822	98	57.50	95	2145	96	37.33	18.07	0.88	17.19	113
Maribo MA946	207	346.0	98	12576	96	58.16	96	2112	94	36.44	18.14	0.84	17.30	105
SV 231	236	337.7	96	12967	99	55.59	92	2135	95	38.44	18.77	0.87	16.90	124
SV 232	216	346.5	98	12908	99	58.34	96	2176	97	37.16	18.12	0.79	17.33	85
<b>SV 1835</b>	212	344.8	98	12922	99	57.82	96	2165	97	37.51	18.17	0.93	17.24	101
<b>SX 1836</b>	221	356.0	101	13101	100	61.29	101	2258	101	36.78	16.88	0.89	17.79	112
<b>BTS 8337 (CommBench)</b>	239	359.8	102	12362	95	62.51	103	2145	96	34.37	18.90	0.91	17.99	101
Crystal 578RR (CommBench)	240	348.6	99	13703	105	58.99	97	2321	104	39.31	18.29	0.86	17.43	100
BTS 8815 (CommBench)	241	350.7	99	12412	95	59.66	99	2111	94	35.33	18.42	0.88	17.54	106
Crystal 803 (CommBench)	242	355.0	100	13791	106	60.99	101	2368	106	38.91	18.67	0.92	17.75	108
BTS 8927 (1stYearBench)	243	357.4	101	13422	103	61.74	102	2317	104	37.54	18.70	0.83	17.87	106
AP CK MOD SUS RR#5	244	346.9	98	13134	101	58.46	97	2215	99	37.83	18.18	0.83	17.35	101
AP CK MOD SUS RR#6	245	357.1</td												

Table 13. 2023 Performance of Varieties - ACSC RR Official Trials Reynolds ND

Description *	Code	Rec/T lbs. %Bnch	Rec/A lbs. %Bnch	Rev/T + \$	Rev/A + %Bnch	Yield T/A	Gross	Sugar% LTM	Rec	Na ppm	K ppm	AmN ppm	Bolters ++	Emerg. %
<b>Commercial Trial</b>														
BTS 8018	117	360.0	102	11340	105	52.56	103	1971	106	31.28	19.13	1.13	18.00	163
BTS 8034	101	348.9	99	11587	107	59.09	98	1968	106	33.14	18.63	1.20	17.43	214
BTS B156	114	355.2	101	10531	97	61.07	101	1812	98	29.79	18.89	1.13	17.76	161
BTS 8927	109	363.7	103	11204	103	63.72	105	1963	106	30.91	19.23	1.04	18.19	159
Crystal 022	121	366.6	104	11125	103	64.63	107	1964	106	30.29	19.40	1.08	18.32	152
Crystal 130	113	357.1	101	11595	107	61.66	102	2008	108	32.42	18.91	1.07	17.84	165
Crystal 137	122	353.2	100	10981	101	60.44	100	1882	101	31.13	18.83	1.17	17.66	171
Crystal 793	118	354.9	100	11496	106	60.96	101	1972	106	32.33	18.82	1.07	17.75	148
Crystal 912	116	340.3	96	12189	112	56.42	93	2022	109	35.76	18.14	1.12	17.02	188
Crystal 913	106	356.0	101	11864	109	61.33	101	2040	110	33.38	18.91	1.10	17.81	161
Hilleshog HIL2317	120	350.2	99	10854	100	59.51	98	1847	100	30.92	18.57	1.07	17.50	192
Hilleshog HIL2366	111	336.2	95	10517	97	55.13	91	1729	93	31.12	17.95	1.15	16.80	202
Hilleshog HIL2368	119	356.6	101	9930	92	61.50	102	1711	92	27.87	18.94	1.11	17.83	162
Hilleshog HIL2386	112	354.1	100	11061	102	60.74	100	1894	102	31.25	18.85	1.13	17.72	169
Hilleshog HIL2389	105	360.2	102	11396	105	62.64	104	1982	107	31.62	19.15	1.14	18.01	156
Hilleshog HIL9920	115	358.9	102	11291	104	62.22	103	1952	105	31.44	19.07	1.12	17.95	191
Maribo MA717	110	349.4	99	11108	102	59.25	98	1883	102	31.67	18.54	1.08	17.46	181
Maribo MA902	124	347.8	98	9708	90	58.76	97	1635	88	27.91	18.54	1.14	17.40	205
SV 203	123	361.4	102	11645	107	62.99	104	2035	110	32.14	19.12	1.07	18.05	163
SV 265	107	348.6	99	11490	106	59.02	98	1942	105	33.00	18.55	1.11	17.44	187
SV 285	108	355.0	100	11369	105	61.00	101	1949	105	32.10	18.90	1.13	17.77	168
SX 1815	104	364.3	103	11901	110	63.89	106	2088	113	32.70	19.26	1.05	18.21	130
SX 1818	103	359.3	102	11622	107	62.35	103	2017	109	32.46	19.06	1.09	17.97	142
SX 1998	102	353.3	100	11434	105	60.46	100	1958	106	32.31	18.81	1.15	17.66	180
BTS 8337 (CommBench)	125	358.4	101	10215	94	62.06	103	1767	95	28.67	19.21	1.28	17.93	201
Crystal 578RR (CommBench)	126	343.7	97	11094	102	57.49	95	1855	100	32.29	18.47	1.28	17.19	207
BTS 8815 (CommBench)	127	346.8	98	9657	89	58.43	97	1625	88	27.86	18.59	1.25	17.34	208
Crystal 803 (CommBench)	128	364.1	103	12389	114	63.84	106	2172	117	34.02	19.35	1.15	18.20	167
BTS 8927 (1stYearBench)	129	363.7	103	11158	103	63.73	105	1951	105	30.67	19.31	1.12	18.19	155
AP CK MOD SUS RR#5	130	350.4	99	10819	100	59.55	99	1839	99	31.02	18.71	1.20	17.51	212
AP CK MOD SUS RR#6	131	363.6	103	11072	102	63.70	105	1940	105	30.63	19.27	1.09	18.18	139
RA CK SUS RR#7	132	345.9	98	9902	91	58.17	96	1664	90	28.70	18.45	1.15	17.30	212
<b>Experimental Trial (Comm status)</b>														
BTS 8205	205	350.8	99	11495	106	59.67	99	1969	106	32.70	18.72	1.18	17.55	109
BTS 8217	233	359.8	102	11023	102	62.49	103	1926	104	30.78	19.14	1.14	18.00	130
BTS 8226	208	348.8	99	10018	92	59.08	98	1708	92	28.89	18.55	1.11	17.44	137
BTS 8242	211	361.2	102	10926	101	62.91	104	1909	103	30.18	19.26	1.20	18.06	109
BTS 8270	232	353.6	100	10906	101	60.59	100	1878	101	30.77	18.93	1.24	17.69	135
BTS 8303	218	353.0	100	10112	93	60.35	100	1725	93	28.97	18.82	1.19	17.63	162
BTS 8311	213	370.8	105	9974	92	65.87	109	1768	95	27.17	19.63	1.08	18.55	130
BTS 8328	224	363.5	103	11002	102	63.60	105	1935	104	30.38	19.36	1.19	18.17	136
BTS 8341	215	344.7	98	7883	73	57.80	96	1307	70	23.01	18.60	1.38	17.22	163
BTS 8349	223	342.9	97	11286	104	57.27	95	1897	102	32.89	18.37	1.23	17.14	200
BTS 8359	219	355.6	101	11298	104	61.20	101	1940	105	31.83	18.94	1.15	17.79	117
BTS 8365	206	370.8	105	10911	101	65.90	109	1947	105	29.32	19.65	1.09	18.56	113
Crystal 138	238	350.1	99	11124	103	59.48	98	1882	101	31.73	18.75	1.25	17.50	130
Crystal 260	230	356.9	101	11373	105	61.59	102	1965	106	31.74	19.02	1.16	17.86	140
Crystal 262	227	343.2	97	11095	102	57.35	95	1859	100	32.32	18.30	1.14	17.16	143
Crystal 269	229	357.2	101	11077	102	61.67	102	1912	103	30.94	19.16	1.30	17.85	148
Crystal 360	203	346.8	98	11343	105	58.44	97	1923	104	32.37	18.53	1.19	17.35	139
Crystal 361	201	362.1	102	11412	105	63.17	104	1998	108	31.39	19.22	1.11	18.11	127
Crystal 363	222	359.4	102	10915	101	62.34	103	1894	102	30.38	19.15	1.18	17.97	145
Crystal 364	214	344.8	98	12310	114	57.83	96	2073	112	35.97	18.41	1.18	17.24	161
Crystal 367	220	350.5	99	11275	104	59.59	99	1919	103	32.14	18.75	1.23	17.52	137
Crystal 368	217	352.7	100	10187	94	60.28	100	1743	94	29.01	18.94	1.32	17.62	143
Crystal 369	231	351.4	99	10641	98	59.87	99	1820	98	30.38	18.75	1.18	17.58	151
Crystal 371	226	365.8	104	10267	95	64.37	106	1814	98	28.29	19.45	1.15	18.29	131
Hilleshog HIL2441	234	346.4	98	10346	95	58.33	96	1760	95	29.68	18.56	1.24	17.32	146
Hilleshog HIL2442	204	358.1	101	10850	100	61.97	102	1885	102	29.93	19.20	1.29	17.90	126
Hilleshog HIL2477	237	339.0	96	10262	95	56.04	93	1705	92	30.42	18.32	1.39	16.93	196
Hilleshog HIL2478	209	337.3	95	10971	101	55.51	92	1810	98	32.46	18.07	1.21	16.87	154
Hilleshog HIL2479	210	366.8	104	11065	102	64.66	107	1955	105	29.96	19.50	1.15	18.34	140
Hilleshog HIL2480	228	360.0	102	10060	93	62.53	103	1753	95	28.09	19.26	1.26	18.00	165
Hilleshog HIL2487 (Maribo MA942)	225	352.7	100	10104	93	60.26	100	1732	93	28.99	18.79	1.15	17.64	122
Maribo MA943	235	343.0	97	9167	85	57.28	95	1546	83	26.67	18.38	1.23	17.15	133
Maribo MA945	202	341.4	97	11319	104	56.77	94	1891	102	33.31	18.21	1.14	17.07	137
Maribo MA946	207	348.0	99	10768	99	58.83	97	1833	99	30.75	18.65	1.25	17.40	141
SV 231	236	348.1	99	11268	104	58.86	97	1907	103	32.54	18.57	1.18	17.40	138
SV 232	216	353.3	100	11142	103	60.44	100	1908	103	31.60	18.78	1.12	17.66	131
SX 1835	212	357.4	101	11612	107	61.74	102	1997	108	32.50	19.06	1.19	17.87	118
SX 1836	221	344.7	98	10785	100	57.82	96	1828	99	31.06	18.46	1.23	17.23	136
BTS 8337 (CommBench)	239	357.8	101	10331	95	51.86	102	1786	96	28.96	19.21	1.33	17.88	151
Crystal 578RR (CommBench)	240	346.5	98	11131	103	58.37	97	1881	101	32.12	18.60	1.27	17.33	165
BTS 8815 (CommBench)	241	357.0	101	9605	89	61.62	102	1659	89	26.67	19.03	1.16	17.87	132
Crystal 803 (CommBench)	242	351.7	100	12288	113	59.97	99	2093	113	35.09	18.78	1.20	17.58	118
BTS 8927 (1stYearBench)	243	359.1	102	10288	95	62.26	103	1781	96	28.77	19.10	1.14	17.96	135
AP CK MOD SUS RR#5	244	345.9	98	11176	103	58.17	96	1869	101	32.45	18.56	1.27	17.29	152

Table 14. 2023 Performance of Varieties - ACSC RR Official Trials Climax MN

Description *	Code	Rec/T lbs. %Bnch	Rec/A lbs. %Bnch	Rev/T + \$	Rev/Bnch	Rev/A + \$	%Bnch	Yield T/A	Gross	Sugar% LTM	Rec	Na ppm	K ppm	AmN ppm	Bolters ++	Emerg. %		
<b>Commercial Trial</b>																		
BTS 8018	117	352.1	102	11316	106	50.09	104	1932	108	32.13	18.60	0.99	17.61	81	1346	381	0	85.7
BTS 8034	101	338.9	98	11158	105	55.98	97	1842	103	32.95	18.09	1.14	16.95	108	1493	447	0	89.6
BTS 8156	114	346.2	100	10885	102	58.24	100	1830	102	31.44	18.45	1.14	17.31	99	1488	448	0	80.0
BTS 8927	109	342.1	99	10852	102	56.99	98	1809	101	31.70	18.17	1.06	17.11	103	1298	440	0	88.5
Crystal 022	121	350.9	102	10710	100	59.73	103	1824	102	30.51	18.53	0.99	17.54	88	1271	394	0	83.9
Crystal 130	113	349.8	101	11496	108	59.38	102	1954	109	32.83	18.46	0.98	17.48	88	1329	372	0	89.9
Crystal 137	122	346.0	100	11122	104	58.20	100	1871	105	32.16	18.45	1.15	17.30	107	1483	458	0	90.9
Crystal 793	118	338.5	98	10804	101	55.86	96	1780	100	31.99	18.00	1.07	16.93	97	1393	427	0	90.4
Crystal 912	116	338.4	98	11727	110	55.81	96	1932	108	34.70	17.99	1.07	16.92	91	1305	453	0	87.8
Crystal 913	106	345.1	100	11878	111	57.92	100	1992	111	34.45	18.25	0.99	17.26	89	1352	378	0	93.0
Hilleshog HIL2317	120	341.8	99	10619	100	56.88	98	1767	99	31.09	18.09	1.00	17.09	107	1377	373	0	78.1
Hilleshog HIL2366	111	325.3	94	10635	100	51.72	89	1696	95	32.59	17.26	1.00	16.26	106	1298	391	0	87.0
Hilleshog HIL2368	119	343.1	99	9807	92	57.30	99	1637	92	28.61	18.17	1.02	17.15	111	1294	408	0	73.7
Hilleshog HIL2386	112	345.8	100	11125	104	58.13	100	1869	105	32.20	18.36	1.07	17.29	94	1366	430	0	88.3
Hilleshog HIL2389	105	346.7	100	10958	103	58.41	101	1846	103	31.62	18.42	1.09	17.33	89	1441	434	0	90.1
Hilleshog HIL9920	115	341.7	99	10710	100	56.86	98	1783	100	31.31	18.14	1.05	17.09	94	1434	401	0	83.3
Maribo MA717	110	334.0	97	11194	105	54.45	94	1824	102	33.55	17.71	1.00	16.71	103	1337	385	0	84.4
Maribo MA902	124	338.2	98	10423	98	55.77	96	1720	96	30.77	17.93	1.02	16.91	100	1307	406	0	91.2
SV 203	123	344.8	100	11322	106	57.83	100	1897	106	32.85	18.32	1.08	17.24	92	1422	426	0	84.4
SV 265	107	340.8	99	10165	95	56.56	98	1685	94	29.87	18.11	1.07	17.04	94	1401	424	0	85.4
SV 285	108	344.7	100	11349	106	57.78	100	1903	106	32.93	18.30	1.07	17.23	93	1452	412	0	87.2
SX 1815	104	349.0	101	11579	109	59.14	102	1962	110	33.18	18.48	1.02	17.46	87	1408	388	0	90.1
SX 1818	103	352.3	102	11565	108	60.17	104	1975	111	32.82	18.61	0.99	17.62	88	1431	358	0	81.3
SX 1898	102	340.5	99	11091	104	56.47	97	1838	103	32.61	18.15	1.12	17.03	98	1433	454	0	87.2
BTS 8337 (CommBench)	125	358.5	104	10244	96	62.09	107	1774	99	28.58	19.05	1.13	17.92	87	1440	465	0	83.9
Crystal 578RR (CommBench)	126	331.8	96	10587	99	53.76	93	1712	96	31.96	17.73	1.13	16.60	122	1485	441	0	83.6
BTS 8815 (CommBench)	127	342.5	99	10465	98	57.09	98	1742	97	30.61	18.23	1.11	17.12	114	1472	425	0	69.8
Crystal 803 (CommBench)	128	348.8	101	11340	106	59.08	102	1920	107	32.51	18.56	1.12	17.44	82	1403	462	1	90.6
BTS 8927 (1stYearBench)	129	358.0	104	10536	99	61.93	107	1823	102	29.42	18.91	1.01	17.90	90	1335	396	0	89.6
AP CK MOD SUS RR#5	130	338.2	98	10709	100	55.77	96	1767	99	31.62	17.98	1.07	16.91	101	1418	414	0	80.2
AP CK MOD SUS RR#6	131	349.8	101	11199	105	59.38	102	1901	106	32.05	18.57	1.08	17.49	90	1418	430	0	90.4
RA CK SUS RR#7	132	340.2	98	10555	99	56.38	97	1750	98	31.01	18.01	1.00	17.01	100	1307	391	0	88.8
<b>Experimental Trial (Comm status)</b>																		
BTS 8205	205	348.1	101	12469	117	58.84	101	2108	118	35.90	18.54	1.14	17.41	86	1369	459	0	84.0
BTS 8217	233	342.3	99	11661	109	57.02	98	1942	109	34.08	18.27	1.16	17.11	96	1514	431	0	81.3
BTS 8226	208	354.1	103	10021	94	60.70	105	1720	96	28.27	18.70	0.99	17.71	86	1277	381	0	81.3
BTS 8242	211	350.0	101	10928	103	59.45	102	1857	104	31.21	18.61	1.11	17.51	88	1362	440	0	85.6
BTS 8270	232	353.1	102	11839	111	60.40	104	2027	113	33.55	18.74	1.08	17.67	84	1349	429	0	88.7
BTS 8303	218	351.4	102	11014	103	59.87	103	1877	105	31.41	18.67	1.11	17.57	92	1436	443	0	87.1
BTS 8311	213	354.9	103	10719	101	60.94	105	1840	103	30.31	18.81	1.06	17.76	86	1368	398	0	83.6
BTS 8328	224	346.4	100	11549	108	58.30	101	1949	109	33.30	18.45	1.13	17.33	84	1322	459	0	83.6
BTS 8341	215	340.7	99	8306	78	56.54	97	1381	77	24.31	18.30	1.26	17.03	108	1401	534	0	82.8
BTS 8349	223	326.4	94	9621	90	52.08	90	1537	86	29.52	17.42	1.10	16.32	124	1435	408	0	86.7
BTS 8359	206	350.0	101	11035	104	59.43	102	1872	105	31.63	18.53	1.03	17.51	89	1341	383	0	87.9
BTS 8365	206	355.3	103	11251	106	61.06	105	1937	108	31.74	18.79	1.01	17.78	87	1349	382	0	86.7
Crystal 138	238	351.7	102	11402	107	59.97	103	1942	109	32.39	18.64	1.07	17.58	82	1372	392	0	84.4
Crystal 260	230	349.7	101	11421	107	59.36	102	1935	108	32.73	18.49	1.00	17.49	87	1354	359	0	87.9
Crystal 262	227	341.7	99	11094	104	56.86	98	1850	103	32.41	18.16	1.07	17.09	89	1308	427	0	82.8
Crystal 269	229	352.1	102	10720	101	60.09	104	1836	103	30.45	18.75	1.14	17.62	87	1433	444	0	80.9
Crystal 360	203	346.0	100	11183	105	58.17	100	1886	106	32.33	18.34	1.04	17.30	87	1388	385	0	85.6
Crystal 361	201	350.2	101	10478	98	59.51	103	1779	100	29.98	18.62	1.11	17.52	106	1345	436	0	85.6
Crystal 363	222	356.0	102	11030	103	59.64	103	1876	105	31.49	18.62	1.09	17.54	100	1375	422	0	85.2
Crystal 368	217	344.6	100	10646	100	57.75	100	1780	100	31.05	18.46	1.24	17.22	92	1409	516	0	78.9
Crystal 369	231	344.8	100	11818	111	57.79	100	1982	111	34.35	18.50	1.27	17.23	203	1620	456	0	89.8
Crystal 371	226	349.0	101	10411	98	59.09	102	1766	99	29.76	18.52	1.08	17.45	87	1334	435	0	86.7
Hilleshog HIL2441	234	337.6	98	10859	102	55.58	96	1790	100	32.17	18.07	1.19	16.88	104	1375	498	1	89.9
Hilleshog HIL2442	204	347.0	100	10534	99	58.49	101	1775	99	30.44	18.52	1.19	17.34	91	1450	507	0	82.0
Hilleshog HIL2477	237	334.4	97	9926	93	54.59	94	1619	91	29.69	17.98	1.26	17.21	107	1509	523	0	88.3
Hilleshog HIL2478	209	329.0	95	10388	97	52.89	91	1665	93	31.71	17.64	1.20	16.44	120	1513	463	0	84.4
Hilleshog HIL2479	210	350.6	102	10693	100	59.64	103	1821	102	30.43	18.59	1.07	17.53	106	1317	433	0	85.9
Hilleshog HIL2480	228	348.2	101	9989	94	58.85	101	1687	94	28.77	18.53	1.13	17.41	100	1385	442	0	89.5
Hilleshog HIL2487 (Maribo MA942)	225	338.6	98	10092	95	55.89	96	1668	93	29.68	18.01	1.08	16.93	109	1300	429	0	87.5
Maribo MA																		

Table 15. 2023 Performance of Varieties - ACSC RR Official Trials Grand Forks ND

Description *	Code	Rec/T lbs. %Bnch	Rec/A lbs. %Bnch	Rev/T + \$	Rev/A + \$	Yield T/A	Gross	Sugar% LTM	Rec	Na ppm	K ppm	AmN ppm	Bolters ++	Emerg. %				
<b>Commercial Trial</b>																		
BTS 8018	117	378.9	99	10716	108	58.45	99	1930	107	28.39	19.82	0.88	18.94	106	1473	249	0	87.4
BTS 8034	101	367.8	97	10965	110	65.01	94	1936	107	29.84	19.38	0.99	18.39	133	1673	276	0	90.0
BTS 8156	114	373.1	98	9726	98	66.65	96	1735	96	26.13	19.58	0.92	18.66	121	1603	245	0	83.3
BTS 8927	109	387.7	102	10606	107	71.19	103	1947	108	27.37	20.27	0.88	19.39	99	1472	259	0	89.3
Crystal 022	121	380.2	100	10712	108	68.88	100	1940	107	28.17	19.87	0.86	19.01	114	1448	238	0	89.8
Crystal 130	113	384.7	101	10637	107	70.28	102	1940	107	27.72	20.16	0.93	19.23	114	1562	262	0	86.3
Crystal 137	122	378.0	99	10246	103	68.19	99	1845	102	27.20	19.81	0.91	18.90	106	1648	230	0	90.0
Crystal 793	118	379.3	100	10928	110	68.58	99	1975	109	28.86	19.88	0.92	18.96	112	1531	264	0	87.0
Crystal 912	116	373.2	98	11204	113	66.68	97	2003	111	30.03	19.47	0.81	18.66	96	1379	230	0	88.9
Crystal 913	106	378.2	99	11212	113	68.25	99	2020	112	29.70	19.82	0.90	18.92	113	1514	259	0	83.9
Hilleshog HIL2317	120	383.1	101	10275	103	69.78	101	1869	104	26.85	20.04	0.89	19.15	97	1545	241	0	81.9
Hilleshog HIL2366	111	369.2	97	10074	101	65.45	95	1783	99	27.37	19.29	0.83	18.46	122	1447	213	0	85.3
Hilleshog HIL2368	119	389.1	102	9657	97	71.64	104	1778	98	24.84	20.37	0.92	19.45	94	1519	274	0	80.8
Hilleshog HIL2386	112	373.0	98	9954	100	66.63	96	1777	98	26.68	19.63	0.98	18.65	114	1576	303	0	89.9
Hilleshog HIL2389	105	376.7	99	10934	110	57.78	98	1968	109	28.99	19.80	0.96	18.84	117	1570	285	0	87.1
Hilleshog HIL9920	115	383.3	101	10794	108	69.83	101	1964	109	28.22	20.09	0.93	19.16	123	1629	243	0	87.2
Maribo MA717	110	376.3	99	10615	107	67.64	98	1907	106	28.26	19.70	0.89	18.81	121	1495	245	0	86.4
Maribo MA902	124	379.3	100	9779	98	68.58	99	1767	98	25.82	19.88	0.92	18.96	113	1523	264	0	84.0
SV 203	123	381.9	100	11162	112	69.40	100	2028	112	29.25	20.00	0.91	19.09	95	1572	251	0	91.9
SV 265	107	380.5	100	10908	110	68.97	100	1977	110	28.65	19.85	0.82	19.03	103	1552	190	0	88.5
SV 285	108	379.3	100	11122	112	68.59	99	2008	111	29.33	19.84	0.88	18.96	99	1547	235	0	89.5
SX 1815	104	381.1	100	11469	115	69.16	100	2080	115	30.11	19.94	0.89	19.05	89	1554	243	0	94.1
SX 1818	103	378.8	99	10989	110	68.42	99	1983	110	29.03	19.87	0.93	18.94	97	1567	270	0	86.9
SX 1898	102	386.4	101	11442	115	70.81	102	2095	116	29.63	19.20	0.89	19.31	90	1556	241	0	88.0
BTS 8337 (CommBench)	125	385.2	101	9457	95	70.43	102	1725	96	24.65	20.18	0.92	19.26	110	1651	234	0	83.6
Crystal 578RR (CommBench)	126	382.1	100	9739	98	69.45	101	1771	98	25.49	20.05	0.94	19.11	122	1601	263	0	88.7
BTS 8815 (CommBench)	127	373.4	98	9443	95	66.73	97	1688	94	25.29	19.68	1.01	18.67	129	1738	278	0	73.7
Crystal 803 (CommBench)	128	383.1	101	11191	112	69.78	101	2037	113	29.20	20.10	0.94	19.16	103	1563	280	0	89.7
BTS 8927 (1stYearBench)	129	387.2	102	10430	105	71.04	103	1916	106	26.91	20.20	0.84	19.36	101	1420	240	0	89.3
AP CK MOD SUS RR#5	130	379.0	99	9924	100	68.49	99	1793	99	26.24	19.89	0.94	18.95	109	1607	261	0	83.6
AP CK MOD SUS RR#6	131	388.1	102	10673	107	71.35	103	1959	109	27.53	20.33	0.92	19.41	101	1541	269	0	88.3
RA CK SUS RR#7	132	381.7	100	9247	93	69.32	100	1674	93	24.34	20.01	0.93	19.08	113	1573	258	0	90.4
<b>Experimental Trial (Comm status)</b>																		
BTS 8205	205	385.8	101	10503	105	70.63	102	1934	107	27.01	20.26	0.95	19.31	94	1540	296	0	85.9
BTS 8217	233	379.4	100	9776	98	68.60	99	1759	97	25.97	19.80	0.84	18.95	79	1499	232	0	86.0
BTS 8226	206	382.5	100	10256	103	69.56	101	1870	104	26.79	19.97	0.84	19.12	92	1376	245	0	78.7
BTS 8242	211	379.6	100	10103	101	68.67	99	1834	102	26.57	19.97	0.98	18.98	100	1549	302	0	83.2
BTS 8270	232	385.0	101	10351	104	70.37	102	1904	105	26.66	20.19	0.94	19.25	84	1547	286	0	83.2
BTS 8303	218	387.5	102	9281	93	71.15	103	1708	95	23.77	20.26	0.88	19.38	93	1577	235	0	81.6
BTS 8311	213	390.5	103	9612	97	72.07	104	1771	98	24.58	20.36	0.85	19.51	82	1454	248	0	79.9
BTS 8328	224	379.7	100	9903	99	68.71	99	1794	99	26.00	19.92	0.95	18.96	98	1593	280	0	78.0
BTS 8341	215	374.0	98	7737	78	66.95	97	1399	77	20.36	19.75	1.03	18.71	110	1596	334	0	83.6
BTS 8349	223	367.1	96	9766	98	64.79	94	1709	95	26.80	19.32	0.99	18.33	143	1617	291	0	90.1
BTS 8359	219	367.0	96	10355	104	64.76	94	1843	102	28.00	19.37	1.01	18.36	110	1610	317	0	79.0
BTS 8365	206	388.7	102	10608	107	71.51	103	1963	109	27.07	20.36	0.91	19.45	102	1486	264	0	82.2
Crystal 138	238	381.0	100	10793	108	69.10	100	1976	109	28.00	19.95	0.87	19.07	84	1486	238	0	83.5
Crystal 260	230	380.1	100	10684	107	68.83	100	1937	107	28.16	19.90	0.90	18.99	96	1507	263	0	85.1
Crystal 262	227	375.8	99	10422	105	67.50	98	1872	104	27.74	19.67	0.89	18.77	123	1353	285	0	84.2
Crystal 269	229	391.3	103	10339	104	72.33	105	1922	106	26.19	20.51	0.94	19.57	91	1596	273	0	74.3
Crystal 360	203	385.7	101	10624	107	70.60	102	1932	107	27.74	20.19	0.92	19.27	97	1533	273	0	89.1
Crystal 361	201	378.5	99	11174	112	68.31	99	2001	111	29.66	19.82	0.89	18.92	93	1458	270	0	77.0
Crystal 363	222	375.2	98	10385	104	67.33	97	1880	104	27.40	19.75	0.97	18.77	104	1540	299	0	84.7
Crystal 364	214	376.5	99	10668	107	67.72	98	1926	107	28.18	19.77	0.93	18.83	108	1652	246	0	87.6
Crystal 367	220	362.3	95	9728	98	63.31	92	1704	94	26.91	19.10	1.01	18.09	123	1704	289	0	87.2
Crystal 368	217	375.4	99	10179	102	67.39	98	1832	101	27.03	19.87	1.10	18.76	110	1643	376	0	83.6
Crystal 369	231	384.3	101	10582	106	70.11	101	1936	107	27.37	20.21	1.00	19.21	112	1696	286	0	87.4
Crystal 371	226	389.9	102	10300	103	71.89	104	1911	106	26.22	20.36	0.88	19.48	83	1450	271	0	82.0
Hilleshog HIL2441	234	387.3	102	9851	96	71.08	103	1770	98	24.30	20.31	0.95	19.36	87	1567	284	0	83.7
Hilleshog HIL2442	204	378.8	99	8763	88	68.43	99	1602	89	22.66	20.00	1.05	18.94	101	1598	358	0	81.1
Hilleshog HIL2477	237	361.8	95	9357	94	63.16	91	1649	91	25.62	19.12	1.04	18.08	115	1644	327	0	82.4
Hilleshog HIL2478	209	370.2	97	10556	106	65.77	95	1871	104	28.60	19.50	0.99	18.51	116	1633	297	0	85.2
Hilleshog HIL2479	210	381.7	100	9716	98	69.30	100	1772	98	25.41	20.04	0.95	19.09	116	1436	312	0	91.4
Hilleshog HIL2480	228	382.4	100	9914	100	69.54	101	1792	99	26.02	20.16	1.04	19.12	110	1613	340	0	88.3
Hilleshog HIL2487 (Maribo MA942)	225	374.2																

Table 16. 2023 Performance of Varieties - ACSC RR Official Trials Scandia MN

Description *	Code	Rec/T lbs. %Bnch	Rec/A lbs. %Bnch	Rev/T + \$	Rev/A + \$	Gross	Sugar% LTM	Yield T/A	K ppm	AmN ppm	Bolters ++	Emerg. %
<b>Commercial Trial</b>												
BTS 8018	117	348.6	100	12422	110	59.02	100	2106	110	35.58	18.20	0.77
BTS 8034	101	347.8	100	12825	114	58.75	99	2165	113	36.88	18.22	0.84
BTS 8156	114	344.2	99	12121	107	57.62	97	2027	106	35.24	18.01	0.80
<b>BTS 8927</b>	109	346.6	99	12445	110	58.39	99	2096	110	35.90	18.08	0.75
Crystal 022	121	359.6	103	12108	107	62.45	106	2103	110	33.68	18.73	0.75
Crystal 130	113	351.2	101	12452	110	59.80	101	2120	111	35.47	18.30	0.74
Crystal 137	122	358.9	103	12330	109	62.22	105	2132	111	34.45	18.72	0.77
Crystal 793	118	353.8	101	12447	110	60.63	102	2131	111	35.16	18.48	0.79
Crystal 912	116	344.3	99	12752	113	57.67	97	2135	112	37.05	17.97	0.75
Crystal 913	106	352.3	101	12951	115	60.15	102	2209	115	36.81	18.39	0.77
Hilleshog HIL2317	120	350.1	100	11403	101	59.47	101	1937	101	32.62	18.32	0.81
Hilleshog HIL2366	111	337.7	97	11081	98	55.61	94	1821	95	32.90	17.69	0.80
Hilleshog HIL2368	119	353.6	101	11443	101	60.57	102	1957	102	32.41	18.47	0.79
Hilleshog HIL2386	112	350.0	100	12313	109	59.44	100	2094	109	35.14	18.30	0.80
Hilleshog HIL2389	105	346.4	99	11664	103	58.32	99	1965	103	33.66	18.11	0.79
Hilleshog HIL9920	115	344.0	99	11158	102	57.58	97	1927	101	33.50	18.06	0.85
Maribo MA717	110	349.6	100	11984	106	59.33	100	2031	106	34.36	18.31	0.83
Maribo MA902	124	345.6	99	11532	102	58.07	98	1936	101	33.39	18.06	0.78
SV 203	123	353.8	101	12204	108	60.62	102	2088	109	34.54	18.46	0.77
SV 265	107	348.0	100	11951	106	58.82	99	2019	106	34.40	18.20	0.80
SV 285	108	350.8	100	12116	107	59.69	101	2056	107	34.62	18.37	0.83
SX 1815	104	351.8	101	12351	109	60.00	101	2105	110	35.09	18.35	0.77
SX 1818	103	347.8	100	12629	112	58.75	99	2135	112	36.28	18.19	0.80
SX 1898	102	346.8	99	11781	104	58.44	99	1982	104	34.04	18.12	0.78
<b>BTS 8337 (CommBench)</b>	125	357.5	102	10872	96	61.79	104	1878	98	30.43	18.79	0.91
Crystal 578RR (CommBench)	126	340.6	98	11219	99	56.52	96	1862	97	32.93	17.91	0.88
<b>BTS 8815 (CommBench)</b>	127	347.6	100	10431	92	58.71	99	1760	92	30.08	18.24	0.86
Crystal 803 (CommBench)	128	350.6	100	12662	112	59.62	101	2153	113	36.08	18.35	0.82
BTS 8927 (1stYearBench)	129	357.4	102	12225	108	61.75	104	2114	106	34.20	18.57	0.71
AP CK MOD SUS RR#5	130	339.3	97	11057	98	56.12	95	1833	96	32.53	17.81	0.84
AP CK MOD SUS RR#6	131	356.9	102	11771	104	61.60	104	2029	106	33.00	18.66	0.81
RA CK SUS RR#7	132	339.3	97	11421	101	56.10	95	1889	99	33.67	17.77	0.81
<b>Experimental Trial (Comm status)</b>												
BTS 8205	205	354.2	101	12275	109	60.73	103	2116	111	34.20	18.54	0.84
BTS 8217	233	348.3	100	12936	115	58.91	100	2178	114	37.32	18.20	0.78
BTS 8226	208	353.6	101	12920	114	50.53	102	2208	115	36.57	18.43	0.75
<b>BTS 8242</b>	211	349.3	100	11892	105	59.22	100	2008	105	34.24	18.30	0.84
BTS 8270	232	356.7	102	12289	109	61.52	104	2110	110	34.62	18.65	0.81
BTS 8303	218	351.6	101	11362	101	59.93	101	1937	101	32.24	18.43	0.85
<b>BTS 8311</b>	213	361.9	104	11273	100	63.14	107	1959	102	31.33	18.89	0.79
BTS 8328	224	361.7	104	12409	110	63.05	107	2168	113	34.16	18.97	0.88
BTS 8341	215	348.8	100	8361	74	59.07	100	1426	75	23.72	17.33	0.90
<b>BTS 8349</b>	223	340.8	98	12528	111	56.59	96	2078	109	36.62	17.94	0.90
BTS 8359	219	356.4	102	12157	108	61.44	104	2090	109	34.20	18.66	0.84
BTS 8365	206	356.7	102	11767	104	61.52	104	2032	106	32.91	18.62	0.79
Crystal 138	238	347.6	100	12206	108	58.71	99	2062	108	35.07	18.15	0.78
Crystal 260	230	346.6	99	12253	108	58.38	99	2056	107	35.54	18.11	0.79
Crystal 262	227	349.2	100	12208	108	59.19	100	2071	108	34.82	18.25	0.80
Crystal 269	229	364.5	104	11334	100	63.93	108	1997	104	30.81	19.11	0.88
Crystal 360	203	352.8	101	11927	106	60.29	102	2043	107	33.56	18.46	0.83
Crystal 361	201	360.1	103	12708	112	62.56	106	2215	116	35.09	18.75	0.74
Crystal 363	222	365.4	105	11542	102	64.21	109	2029	106	31.59	19.14	0.86
Crystal 364	214	341.1	98	12579	111	56.66	96	2079	109	37.04	17.96	0.90
Crystal 367	220	342.1	98	12496	111	56.99	98	2081	109	36.54	17.96	0.85
Crystal 368	217	346.9	99	11988	106	58.47	99	2027	106	34.42	18.24	0.90
Crystal 369	231	356.0	102	12355	109	61.30	104	2130	111	34.66	18.71	0.90
Crystal 371	226	363.9	104	12000	106	63.75	108	2106	110	32.79	18.96	0.76
Hilleshog HIL2441	234	349.1	100	11348	100	59.15	100	1922	100	32.49	18.41	0.96
Hilleshog HIL2442	204	340.1	97	11320	100	56.36	95	1876	98	33.24	17.94	0.94
Hilleshog HIL2477	237	326.5	94	10920	97	52.15	88	1746	91	33.42	17.29	0.97
Hilleshog HIL2478	209	337.7	97	12306	109	55.62	94	2025	106	36.54	17.80	0.91
Hilleshog HIL2479	210	346.0	99	11859	105	58.19	98	1991	104	34.27	18.13	0.84
Hilleshog HIL2480	228	351.7	101	11996	106	59.97	101	2032	106	34.34	18.53	0.95
Hilleshog HIL2487 (Maribo MA942)	225	338.0	97	11944	106	55.72	94	1971	103	35.38	17.71	0.81
Maribo MA943	235	358.7	103	11452	101	62.13	105	1988	104	31.54	18.81	0.88
Maribo MA945	202	334.3	96	11722	104	54.57	92	1907	100	35.07	17.60	0.89
Maribo MA946	207	350.7	100	12099	107	59.66	101	2061	108	34.29	18.40	0.87
SV 231	236	339.7	97	11648	103	56.23	95	1921	100	34.34	17.86	0.87
SV 232	216	351.4	101	11476	102	59.85	101	1947	102	32.83	18.37	0.80
<b>SX 1835</b>	212	341.8	98	11923	106	56.89	96	1983	104	34.93	17.97	0.88
<b>SX 1836</b>	221	336.2	96	11390	101	55.17	93	1865	97	33.94	17.71	0.90
<b>BTS 8337 (CommBench)</b>	239	354.8	102	10330	91	50.92	103	1770	92	29.11	18.63	0.90
Crystal 578RR (CommBench)	240	340.0	97	11812	105	56.33	95	1961	103	34.66	18.45	0.85
BTS 8815 (CommBench)	241	349.8	100	10417	92	59.38	100	1776	93	29.65	18.34	0.85
Crystal 803 (CommBench)	242	351.8	101	12625	112	60.00	101	2146	112	36.15	18.47	0.88
BTS 8927 (1stYearBench)	243	354.9	102	12053	107	50.92	103	2066	108	33.99	18.50	0.76
AP CK MOD SUS RR#5	244	348.8	100	11434	101	59.05	100	1939	101	32.70	18.27	0.84
AP CK MOD SUS RR#6	245	349.8	100	11623	103	59.36	100	1976	103	33.17	18.38	0.90
RA CK SUS RR#7	246	336.9	97	11107	98	55.37	94	1827	95	32.95	17.63	0.79
AP CK MOD RES RR#7	247	345.3	99	13337	118	57.99	98	2235	117	38.54	18.14	0.88
AP CK MOD SUS RR#8	248	352.7	101	11962	106	50.26	102	2048	107	33.72	18.43	0.80
Comm Benchmark Mean		349.1		11296		59.16		1913		32.38		18.32
Comm Trial Mean		349.1		11953		59.17		2025		34.25		18.26
Coeff. of Var. (%)		2.3		5.1		4.2		5.9		4.9		2.1
Mean LSD (0.05)		7.0		541		2.19		106		1.51		0.34
Mean LSD (0.01)		9.3		712		2.89		140		1.99		0.44
Sig Lvl		**		**		**		**		**		**

2023 Data from Scandia MN

Created 10/19/2023

%Bnch = percentage of four commercial benchmark (CommBench) varieties used for approval of second year entries.

\* Statistics and trial mean are from Commercial trial including benchmark means. Experimental trial data adjusted to commercial status.

+ Revenue estimates are based on a \$50.09 beet payment at 17.5% sugar & 1.5% loss to molasses and do not consider hauling costs.

++ Number of bolters observed at location.</p

Table 17. 2023 Performance of Varieties - ACSC RR Official Trials East Grand Forks MN

Description *	Code	Rec/T lbs. %Bnch	Rec/A lbs. %Bnch	Rev/T + \$	Rev/A + \$	Yield T/A	Gross	Sugar% LTM	Rec	Na ppm	K ppm	AmN ppm	Bolters ++	Emerg. %				
<b>Commercial Trial</b>																		
BTS 8018	117	310.7	100	11474	103	47.16	99	1737	103	37.00	16.95	1.41	15.54	170	1632	599	0	85.9
BTS 8034	101	294.6	94	10608	95	42.14	89	1522	90	36.05	16.34	1.62	14.72	285	1926	639	0	90.3
BTS 8156	114	324.1	104	11424	103	51.37	108	1806	107	35.40	17.64	1.43	16.21	171	1861	553	0	85.5
BTS 8927	109	322.4	103	11013	99	50.83	107	1737	103	34.29	17.43	1.32	16.11	150	1571	548	0	90.1
Crystal 022	121	319.8	102	11588	104	50.00	105	1809	107	36.12	17.41	1.41	16.00	153	1643	598	0	84.9
Crystal 130	113	317.4	102	11804	106	49.27	103	1818	108	37.40	17.24	1.37	15.87	163	1655	562	0	86.6
Crystal 137	122	317.4	102	11174	100	49.26	103	1738	103	35.16	17.29	1.42	15.87	177	1871	544	1	83.8
Crystal 793	118	314.7	101	11540	104	48.42	102	1773	105	36.66	17.08	1.34	15.74	187	1652	534	0	86.8
Crystal 912	116	295.6	95	12005	108	42.47	89	1733	102	40.46	16.27	1.50	14.77	228	1619	645	0	88.2
Crystal 913	106	318.9	102	11704	105	49.74	104	1819	108	36.73	17.30	1.34	15.96	196	1598	542	0	91.7
Hilleshog HIL2317	120	303.4	97	10844	97	44.91	94	1611	95	35.91	16.62	1.46	15.16	226	1802	572	0	79.4
Hilleshog HIL2366	111	291.6	93	10445	94	41.21	87	1476	87	35.77	16.92	1.35	14.57	226	1614	532	0	85.2
Hilleshog HIL2368	119	300.7	96	10126	91	44.04	92	1483	88	33.79	16.49	1.46	15.03	212	1629	620	0	79.6
Hilleshog HIL2386	112	302.8	97	10651	96	44.71	94	1570	93	35.32	16.51	1.38	15.13	224	1655	549	0	85.7
Maribo MA717	110	290.6	93	10471	94	40.91	86	1461	86	36.16	15.80	1.27	14.53	241	1644	462	0	87.7
Maribo MA902	124	293.0	94	9770	88	41.64	87	1387	82	33.38	16.05	1.39	14.66	250	1596	566	0	82.2
SV 203	123	321.7	103	11292	101	50.60	106	1782	105	35.03	17.37	1.28	16.09	155	1699	489	0	84.8
SV 265	107	299.3	96	10616	95	43.62	92	1544	91	35.50	16.31	1.34	14.97	195	1723	511	0	88.6
SV 285	108	307.7	99	11161	100	46.25	97	1678	99	36.34	16.82	1.43	15.39	193	1841	550	0	88.5
SX 1815	104	317.8	102	11129	100	49.39	104	1722	102	35.18	17.30	1.40	15.90	165	1720	568	0	87.4
SX 1818	103	298.3	96	11028	99	43.30	91	1599	95	37.18	16.37	1.47	14.90	162	1832	589	0	85.6
SX 1898	102	301.7	97	10663	96	44.35	93	1564	93	35.47	16.52	1.44	15.08	198	1863	550	0	90.7
<b>BTS 8337 (CommBench)</b>	125	328.3	105	10976	99	52.69	111	1752	104	33.62	17.90	1.48	16.42	190	1749	615	0	84.4
Crystal 578RR (CommBench)	126	291.3	93	10662	96	41.11	86	1493	88	36.78	16.08	1.51	14.57	229	1808	606	0	86.8
BTS 8815 (CommBench)	127	312.4	100	11183	100	47.72	100	1713	101	35.68	17.11	1.49	15.62	228	1917	560	0	76.0
Crystal 803 (CommBench)	128	316.3	101	11696	105	48.93	103	1805	107	37.04	17.22	1.40	15.82	160	1681	587	1	87.5
BTS 8927 (1stYearBench)	129	325.8	104	10753	97	51.90	109	1711	101	32.77	17.64	1.34	16.30	164	1569	562	0	82.9
AP CK MOD SUS RR#5	130	304.1	97	11582	104	45.11	95	1703	101	38.29	16.79	1.58	21.21	217	1909	637	0	85.3
AP CK MOD SUS RR#6	131	327.8	105	11500	103	52.52	110	1836	109	35.15	17.76	1.37	16.39	156	1655	564	0	90.5
RA CK SUS RR#7	132	289.3	93	9659	87	40.49	85	1351	80	33.52	15.79	1.34	14.45	285	1593	504	0	85.9
<b>Experimental Trial (Comm status)</b>																		
BTS 8205	205	315.3	101	11181	100	48.61	102	1720	102	35.61	17.18	1.41	15.77	148	1598	560	0	75.9
BTS 8217	233	324.0	104	11536	104	51.31	108	1814	107	35.62	17.53	1.32	16.22	163	1752	447	0	82.2
BTS 8226	206	324.9	104	11323	102	51.60	108	1791	106	34.95	17.51	1.23	16.28	126	1471	472	0	80.9
BTS 8242	211	324.3	104	11410	103	51.40	108	1799	106	35.50	17.59	1.38	16.21	152	1549	556	0	81.3
BTS 8270	232	316.8	102	11111	100	49.09	103	1711	101	35.49	17.20	1.36	15.85	157	1573	523	0	86.2
BTS 8303	218	324.3	104	11138	100	51.40	108	1765	104	34.65	17.61	1.39	16.22	158	1629	529	0	82.7
BTS 8311	213	336.5	108	10359	93	55.19	116	1705	101	31.06	18.03	1.19	16.84	121	1485	437	0	67.7
BTS 8328	224	319.0	102	11324	102	49.75	104	1758	104	35.76	17.30	1.34	15.97	192	1646	476	0	83.3
BTS 8341	215	317.1	102	8982	81	49.18	103	1410	83	38.01	17.25	1.38	15.87	162	1594	533	0	73.3
BTS 8349	223	295.5	95	10712	96	42.47	89	1537	91	36.36	16.23	1.46	14.76	223	1779	526	0	85.3
BTS 8359	219	314.3	101	11589	104	48.29	101	1788	106	36.84	17.08	1.35	15.73	143	1592	515	0	79.2
BTS 8365	206	329.6	106	10589	95	53.07	111	1696	100	32.27	17.76	1.25	16.51	142	1544	463	0	84.1
Crystal 138	238	320.9	103	11741	105	50.35	106	1843	109	36.71	17.46	1.40	16.06	156	1627	538	0	80.1
Crystal 260	230	315.5	101	11055	99	48.68	102	1767	105	36.29	17.11	1.31	15.81	119	1583	505	0	83.8
Crystal 262	227	312.3	100	11944	107	47.69	100	1814	107	38.33	17.02	1.39	15.62	181	1554	548	0	82.0
Crystal 269	229	306.6	98	11245	101	45.90	96	1677	99	36.95	16.88	1.56	15.32	214	1689	624	0	81.9
Crystal 360	203	315.5	101	11440	103	48.68	102	1767	101	35.46	17.16	1.39	15.77	161	1638	527	0	85.7
Crystal 361	201	320.6	103	11036	99	50.25	106	1720	102	34.82	17.33	1.29	16.05	151	1432	512	0	75.2
Crystal 363	222	321.8	103	11021	99	50.61	106	1735	103	34.61	17.37	1.30	16.08	124	1559	500	0	81.9
Crystal 368	217	314.7	101	10871	98	48.43	102	1668	99	34.93	17.12	1.38	15.74	179	1544	535	0	83.4
Crystal 369	231	308.7	99	11611	104	46.57	98	1745	103	37.66	17.01	1.54	15.47	196	1674	612	0	87.2
Crystal 371	226	321.3	103	10312	93	50.46	106	1620	96	32.06	17.35	1.26	16.09	139	1500	474	0	72.1
Hilleshog HIL2441	234	300.5	96	10621	95	44.00	92	1554	92	35.20	16.57	1.53	15.04	179	1612	630	0	82.7
Hilleshog HIL2442	204	310.6	100	10458	94	47.16	99	1591	94	33.61	16.96	1.39	15.56	174	1533	552	0	77.8
Hilleshog HIL2477	237	292.4	94	10820	97	41.51	87	1537	91	36.91	16.22	1.60	14.61	282	1783	602	0	75.8
Hilleshog HIL2478	209	278.1	89	10786	97	37.08	78	1448	86	38.58	15.51	1.59	13.91	319	1833	569	0	80.1
Hilleshog HIL2479	210	310.3	99	10573	95	47.07	99	1598	95	34.07	16.99	1.46	15.52	210	1498	600	0	80.7
Hilleshog HIL2480	228	304.0	97	11046	99	45.09	95	1637	97	36.28	16.79	1.57	15.21	263	1627	629	0	85.8
Hilleshog HIL2487 (Maribo MA942)	225	318.9	102	10609	95	49.74	104	1652	98	33.48	17.26	1.32	15.95	155	1564	498	0	82.5
Maribo MA943	235	308.4	99	10871	98	46.51	98	1633	97	35.28	17.04	1.58	15.45	238	1710	617	0	68.9
Maribo MA945	202	302.7	99	11342	102	44.71	94	1671	99	37.47	16.60	1.43	15.16	179	1728	530	0	79.8
Maribo MA946	207	313.6	100	10775	97	48.10	101	1644	97	34.73	16.99	1.30	15.69	206	1535	468	0	79.5

Table 18. 2023 Performance of Varieties - ACSC RR Official Trials Stephen MN

Description *	Code	lbs.	Rec/T %Bnch	lbs.	Rec/A %Bnch	Rev/T + \$	%Bnch	Rev/A + \$	%Bnch	Yield T/A	Gross	Sugar% LTM	Rec	Na ppm	K ppm	AmN ppm	Bolters ++	Emerg. %
<b>Commercial Trial</b>																		
BTS 8018	117	374.3	99	13760	106	57.04	99	2461	105	36.83	19.49	0.78	18.71	106	1374	200	0	75.0
BTS 8034	101	357.8	95	13506	104	61.87	91	2328	100	37.89	18.79	0.90	17.89	161	1536	234	0	80.6
BTS B156	114	372.2	99	13489	104	66.39	98	2401	103	36.32	19.48	0.87	18.61	152	1483	225	0	70.2
BTS 8927	109	380.8	101	13534	104	69.07	102	2452	105	35.60	19.84	0.80	19.04	128	1345	214	0	76.5
Crystal 022	121	387.9	103	13783	106	71.27	105	2530	108	35.57	20.16	0.76	19.40	97	1336	199	0	79.2
Crystal 130	113	384.9	102	14227	109	70.33	104	2596	111	37.04	20.03	0.78	19.25	113	1405	190	0	73.8
Crystal 137	122	369.8	98	13492	104	65.61	97	2391	102	36.53	19.34	0.85	18.49	128	1494	217	0	76.9
Crystal 793	118	378.8	101	14485	111	68.45	101	2613	112	38.32	19.82	0.88	18.94	131	1433	250	0	79.1
Crystal 912	116	372.4	99	13917	107	66.44	98	2485	106	37.32	19.39	0.77	18.62	127	1314	202	0	79.0
Crystal 913	106	376.4	100	14363	110	57.68	100	2583	111	38.15	19.64	0.81	18.83	124	1398	215	0	81.5
Hilleshog HIL2317	120	378.2	101	13474	104	68.25	101	2431	104	35.63	19.73	0.82	18.91	119	1489	200	0	63.4
Hilleshog HIL2366	111	363.5	97	12845	99	63.65	94	2250	96	35.33	19.05	0.87	18.18	146	1433	244	0	80.3
Hilleshog HIL2368	119	375.3	100	12195	94	67.35	100	2186	94	32.56	19.60	0.84	18.76	136	1417	227	0	69.0
Hilleshog HIL2386	112	372.1	99	13228	102	66.33	98	2357	101	35.59	19.49	0.89	18.60	128	1452	255	0	75.5
Hilleshog HIL2389	105	378.8	101	13934	107	68.42	101	2514	108	36.86	19.74	0.80	18.94	102	1395	216	0	81.8
Hilleshog HIL9920	115	377.0	100	13839	106	67.87	100	2493	107	36.68	19.69	0.84	18.85	124	1510	208	0	76.4
Maribo MA717	110	379.3	101	13775	106	68.60	101	2491	107	36.30	19.82	0.85	18.97	122	1496	215	0	79.6
Maribo MA902	124	368.9	98	13211	102	65.36	97	2338	100	35.85	19.33	0.88	18.45	173	1461	230	0	80.1
SV 203	123	376.4	100	14604	112	67.69	100	2621	112	38.90	19.64	0.83	18.81	103	1395	233	0	85.4
SV 265	107	373.4	99	13989	108	66.76	99	2496	107	37.55	19.52	0.85	18.67	120	1456	229	0	82.1
SV 285	108	379.9	101	14049	108	68.78	102	2540	109	37.04	19.80	0.80	19.00	113	1450	196	0	85.5
SX 1815	104	377.7	100	14306	110	68.08	101	2577	110	37.91	19.72	0.84	18.88	111	1432	229	0	81.0
SX 1818	103	367.2	98	14207	109	64.80	96	2505	107	38.74	19.19	0.83	18.36	119	1445	218	0	79.5
SX 1898	102	378.0	100	14321	110	68.18	101	2583	111	37.89	19.68	0.78	19.08	108	1354	206	0	78.8
BTS 8337 (CommBench)	125	385.2	102	12655	97	70.43	104	2312	99	32.90	20.11	0.85	19.26	125	1528	205	0	72.7
Crystal 578RR (CommBench)	126	375.8	100	12919	99	67.49	100	2318	99	34.42	19.62	0.83	18.79	115	1478	209	0	72.8
BTS 8815 (CommBench)	127	372.5	99	12126	93	66.47	98	2161	93	32.63	19.50	0.88	18.62	136	1542	222	0	63.6
Crystal 803 (CommBench)	128	371.7	99	14305	110	66.20	98	2549	109	38.48	19.45	0.87	18.58	129	1502	224	0	80.8
BTS 8927 (1stYearBench)	129	383.1	102	13751	106	69.77	103	2502	107	35.95	19.97	0.81	19.16	113	1365	226	0	81.4
AP CK MOD SUS RR#5	130	374.2	99	13614	105	66.98	99	2437	104	36.39	19.60	0.89	18.71	123	1559	229	0	71.8
AP CK MOD SUS RR#6	131	389.2	103	14169	109	71.67	106	2608	112	36.43	20.24	0.78	19.46	106	1355	210	0	79.3
RA CK SUS RR#7	132	372.5	99	12499	96	66.46	98	2231	96	33.54	19.49	0.86	18.63	128	1479	230	0	74.7
<b>Experimental Trial (Comm status)</b>																		
BTS 8205	205	389.2	103	14788	114	71.67	106	2728	117	37.99	20.30	0.85	19.46	112	1417	233	0	75.9
BTS 8217	233	370.5	98	13475	104	65.82	97	2404	103	36.22	19.31	0.79	18.52	124	1439	177	0	69.0
BTS 8226	208	381.0	101	13845	106	69.14	102	2516	108	36.13	19.81	0.77	19.05	115	1297	200	0	73.6
BTS 8242	211	393.1	104	14559	112	72.89	108	2701	116	37.00	20.41	0.76	19.66	102	1340	190	0	81.6
BTS 8270	232	375.8	100	14248	110	67.48	100	2571	110	37.77	19.67	0.88	18.79	122	1506	232	0	74.4
BTS 8303	218	389.3	103	13462	104	71.71	106	2482	106	34.50	20.34	0.88	19.47	111	1525	227	0	71.0
BTS 8311	213	396.8	105	13067	101	74.04	109	2451	105	32.84	20.64	0.82	19.83	109	1465	198	0	71.6
BTS 8328	224	377.2	100	13306	102	67.93	100	2403	103	35.12	19.71	0.85	18.87	120	1495	210	0	73.9
BTS 8341	215	377.7	100	10488	81	68.09	101	1902	81	27.68	19.76	0.89	18.88	134	1507	236	0	71.6
BTS 8349	223	372.9	99	13696	105	66.57	98	2452	105	36.76	19.45	0.82	18.63	128	1444	195	0	81.2
BTS 8359	219	372.5	99	13253	102	66.45	98	2369	101	35.57	19.50	0.87	18.63	115	1480	227	0	73.8
BTS 8365	206	396.6	105	14189	109	73.99	109	2648	113	35.60	20.57	0.73	19.85	100	1323	172	0	69.2
Crystal 138	238	374.5	100	14618	112	67.08	99	2623	112	39.04	19.54	0.81	18.73	112	1410	204	0	73.2
Crystal 260	230	370.7	99	14599	112	65.88	97	2606	112	39.19	19.37	0.84	18.53	125	1463	207	0	75.5
Crystal 262	227	371.8	99	13809	106	66.23	98	2464	106	37.00	19.43	0.84	18.59	163	1402	211	0	78.8
Crystal 269	229	401.7	107	14111	109	75.59	112	2662	114	34.90	20.92	0.84	20.09	113	1519	201	0	62.4
Crystal 360	203	381.5	101	14069	108	69.29	102	2555	109	36.80	19.88	0.81	19.08	110	1436	203	0	73.2
Crystal 361	201	391.9	104	13986	108	72.53	107	2591	111	35.79	20.38	0.80	19.59	116	1356	209	0	74.5
Crystal 363	222	390.4	104	13388	103	72.06	107	2470	106	34.11	20.35	0.83	19.53	100	1443	219	0	71.2
Crystal 364	214	363.8	97	14118	109	63.75	94	2468	106	38.80	19.11	0.92	18.19	195	1488	243	0	77.9
Crystal 367	220	367.9	98	13342	103	65.03	96	2360	101	36.26	19.27	0.87	18.40	119	1515	219	0	78.2
Crystal 368	217	377.5	100	13727	106	68.02	101	2468	106	36.47	19.78	0.91	18.88	121	1534	249	0	72.7
Crystal 369	231	387.5	103	13556	104	71.16	105	2497	107	34.81	20.27	0.90	19.38	108	1571	233	0	75.3
Crystal 371	226	383.9	102	12886	99	70.02	104	2356	101	33.38	20.03	0.83	19.21	118	1346	229	0	63.3
Hilleshog HIL2441	234	384.1	102	12666	97	70.08	104	2307	99	32.95	20.10	0.91	19.20	125	1546	244	0	75.8
Hilleshog HIL2442	204	377.5	100	12723	98	68.03	101	2293	98	33.59	20.09	1.22	18.87	104	1557	480	0	69.4
Hilleshog HIL2477	237	360.5	96	13095	101	62.71	93	2278	98	36.22	18.94	0.92	18.02	140	1569	240	0	72.9
Hilleshog HIL2478	209	365.9	97	13032	100	64.39	95	2300	98	35.38	19.15	0.84	18.31	138	1471	203	0	70.8
Hilleshog HIL2479	210	383.9	102	13435	103	70.03	104	2464	106	34.83	20.08	0.90	19.19	143	1406	266	0	75.7
Hilleshog HIL2480	228	381.3	101	12551	97	69.22	102	2285	98	32.65	19.99	0.92	19					

Table 19. 2023 Performance of Varieties - ACSC RR Official Trials St. Thomas ND

Description *	Code	lbs.	Rec/T %Bnch	lbs.	Rec/A %Bnch	Rev/T + \$	%Bnch	Rev/A + \$	%Bnch	Yield T/A	Gross LTM	Sugar% Rec	Na ppm	K ppm	AmN ppm	Bolters ++	Emerg. %	
<b>Commercial Trial</b>																		
BTS 8018	117	328.0	99	13311	107	52.57	99	2130	107	40.57	17.16	0.76	16.40	128	1346	185	0	76.2
BTS 8034	101	317.9	96	12143	98	49.43	93	1892	95	38.15	16.69	0.80	15.89	131	1402	199	0	76.9
BTS 8156	114	323.6	98	11860	96	51.21	96	1879	94	36.65	16.95	0.77	16.18	105	1319	209	0	74.9
BTS 8927	109	340.9	103	13013	105	56.62	106	2160	108	38.17	17.72	0.67	17.05	90	1204	169	0	80.8
Crystal 022	121	340.4	103	13022	105	56.45	106	2159	108	38.20	17.72	0.70	17.02	100	1261	174	0	78.6
Crystal 130	113	329.0	100	12876	104	52.88	99	2068	103	39.20	17.17	0.73	16.44	108	1287	182	0	78.4
Crystal 137	122	328.2	99	12204	98	52.63	99	1960	98	37.16	17.20	0.79	16.41	104	1352	215	0	82.9
Crystal 793	118	329.5	100	12995	105	53.05	100	2097	105	39.31	17.24	0.77	16.47	129	1323	197	0	80.5
Crystal 912	116	324.7	98	12971	105	51.55	97	2050	103	40.11	17.01	0.77	16.24	131	1214	226	1	80.3
Crystal 913	106	331.0	100	13597	110	53.51	101	2195	110	41.14	17.30	0.75	16.55	121	1287	194	0	82.2
Hilleshög HIL2317	120	334.1	101	13173	106	54.47	102	2139	107	39.59	17.42	0.72	16.70	115	1292	172	0	72.5
Hilleshög HIL2366	111	312.1	95	11925	96	47.62	90	1818	91	38.24	16.43	0.83	15.60	187	1286	232	0	81.4
Hilleshög HIL2368	119	334.7	101	11373	92	54.67	103	1856	93	33.93	17.49	0.75	16.74	125	1295	194	0	75.2
Hilleshög HIL2386	112	319.6	97	11833	95	49.95	94	1849	93	36.99	16.80	0.82	15.98	125	1267	254	0	79.2
Hilleshög HIL2389	105	324.2	98	12809	103	51.39	97	2034	102	39.52	16.93	0.73	16.20	103	1256	192	0	81.9
Hilleshög HIL9920	115	330.2	100	12790	103	53.26	100	2061	103	38.70	17.26	0.75	16.51	138	1295	188	0	75.2
Maribo MA717	110	325.1	99	11862	95	51.66	97	1884	94	36.54	17.04	0.78	16.26	133	1271	221	0	75.8
Maribo MA902	124	313.8	95	11836	95	48.16	91	1816	91	37.67	16.49	0.80	15.69	153	1324	210	0	74.9
SV 203	123	327.5	99	12755	103	52.42	99	2043	102	39.02	17.03	0.66	16.37	88	1179	166	0	78.5
SV 265	107	324.9	98	12771	103	51.60	97	2029	102	39.35	17.04	0.71	16.24	90	1221	195	0	84.4
SV 285	108	316.6	96	12183	98	49.01	92	1887	94	38.45	16.56	0.73	15.83	107	1252	198	0	82.7
SX 1815	104	327.0	99	12899	104	52.27	98	2062	103	39.46	17.04	0.68	16.36	91	1208	177	0	81.5
SX 1818	103	317.2	96	13299	107	49.22	93	2061	103	41.95	16.64	0.78	15.86	106	1412	188	0	78.9
SX 1898	102	327.8	99	13248	107	52.50	99	2122	106	40.48	17.08	0.69	16.39	89	1245	173	0	78.4
BTS 8337 (CommBench)	125	334.2	101	11839	95	54.51	102	1934	97	35.36	17.55	0.84	16.71	128	1497	209	0	72.7
Crystal 578RR (CommBench)	126	323.5	98	12892	104	51.17	96	2038	102	39.87	17.01	0.83	16.18	130	1429	219	0	81.8
BTS 8815 (CommBench)	127	325.3	99	11503	93	51.75	97	1828	91	35.33	17.11	0.84	16.27	142	1449	213	0	66.2
Crystal 803 (CommBench)	128	337.0	102	13377	108	55.38	104	2195	110	39.78	17.60	0.75	16.85	95	1318	199	0	84.9
BTS 8927 (1stYearBench)	129	331.3	100	12730	103	53.62	101	2060	103	38.46	17.35	0.78	16.57	124	1308	212	0	74.7
AP CK MOD SUS RR#5	130	323.7	98	12758	103	51.23	96	2021	101	39.44	17.01	0.82	16.19	125	1349	234	0	73.3
AP CK MOD SUS RR#6	131	335.1	102	12929	104	54.81	103	2115	106	38.60	17.49	0.73	16.76	86	1243	207	0	83.6
RA CK SUS RR#7	132	315.4	96	10432	84	48.64	91	1608	80	33.10	16.56	0.79	15.77	142	1366	199	0	67.6
<b>Experimental Trial (Comm status)</b>																		
BTS 8205	205	329.4	100	11721	95	53.00	100	1887	94	35.68	17.32	0.84	16.48	132	1486	271	0	85.6
BTS 8217	233	318.1	96	11487	93	49.54	93	1789	89	36.05	16.72	0.80	15.92	134	1526	229	0	80.1
BTS 8226	208	341.5	103	13146	106	56.79	107	2174	109	38.67	17.75	0.68	17.07	96	1272	197	0	83.2
BTS 8242	211	331.8	101	11775	95	53.77	101	1903	95	35.78	17.30	0.69	16.60	99	1337	199	0	78.3
BTS 8270	232	331.4	100	12949	104	53.61	101	2096	105	39.09	17.33	0.76	16.58	117	1415	226	0	82.4
BTS 8303	218	334.9	101	11449	92	54.72	103	1869	94	34.30	17.50	0.75	16.75	125	1420	212	0	72.8
BTS 8311	213	343.0	104	12220	99	57.23	108	2039	102	35.74	17.85	0.69	17.15	101	1286	214	0	74.2
BTS 8328	224	336.9	102	12066	97	55.34	104	1973	99	36.15	17.61	0.76	16.85	101	1493	208	0	71.6
BTS 8341	215	333.5	101	9239	74	54.29	102	1512	76	27.48	17.46	0.79	16.67	136	1397	250	0	74.3
BTS 8349	223	316.1	96	12290	99	48.93	92	1908	95	38.79	16.56	0.74	15.82	139	1392	209	0	88.1
BTS 8359	219	328.7	100	12819	103	52.80	99	2053	103	38.99	17.20	0.76	16.44	122	1432	218	0	73.8
BTS 8365	206	349.8	106	12992	105	59.32	111	2190	110	37.41	18.16	0.68	17.49	86	1310	191	0	81.3
Crystal 138	238	333.1	101	12899	104	54.19	102	2107	105	38.61	17.38	0.73	16.65	104	1411	207	0	77.8
Crystal 260	230	320.4	97	12763	103	50.24	94	1994	100	39.82	16.75	0.73	16.02	119	1333	224	0	80.4
Crystal 262	227	332.5	101	13158	106	53.99	101	2145	107	39.16	17.29	0.68	16.61	112	1217	207	0	81.3
Crystal 269	229	345.9	105	12334	99	58.11	109	2066	103	35.82	18.12	0.81	17.31	115	1597	229	0	74.9
Crystal 360	203	332.5	101	13220	107	53.99	101	2154	108	39.44	17.33	0.71	16.62	105	1290	227	0	80.3
Crystal 361	201	348.5	106	13910	112	58.89	111	2337	117	40.16	18.00	0.68	17.42	103	1302	189	0	76.1
Crystal 363	222	336.1	102	12250	99	55.09	104	2003	100	36.56	17.50	0.70	16.80	102	1400	185	0	76.1
Crystal 368	217	347.9	105	12438	100	58.70	110	2101	105	35.82	18.22	0.82	17.40	102	1556	245	0	75.1
Crystal 369	231	351.9	107	13674	110	59.97	113	2320	116	39.08	18.44	0.82	17.62	116	1520	255	0	79.3
Crystal 371	226	341.4	103	12250	99	56.73	107	2034	102	35.92	17.78	0.70	17.07	105	1299	218	0	77.3
Hilleshög HIL2441	234	331.3	100	11328	91	53.61	101	1842	92	34.10	17.33	0.77	16.57	128	1351	249	0	74.4
Hilleshög HIL2442	204	320.1	97	11130	90	50.15	94	1746	87	34.65	16.83	0.81	16.02	152	1337	284	0	76.2
Hilleshög HIL2477	237	315.4	96	11379	92	49.70	92	1751	88	36.12	16.63	0.90	15.79	159	1433	332	0	76.2
Hilleshög HIL2478	209	318.4	96	12174	98	49.64	93	1890	95	38.45	16.78	0.84	15.94	177	1413	277	0	72.2
Hilleshög HIL2479	210	327.7	99	11931	96	52.51	99	1906	95	36.66	17.16	0.76	16.40	143	1296	243	0	81.4
Hilleshög HIL2480	228	330.2	100	12137	98	53.27	100	1959	98	36.79	17.29	0.77	16.52	119	1316	260	0	78.1
Hilleshög HIL2487 (Maribo MA942)	225	330.5	100	11715	94	53.36	100	1891	95	35.53	17.33	0.80	16.53	115	1362	276	0	81.2
Maribo MA943																		

Table 20. 2023 Performance of Varieties - ACSC RR Official Trials Bathgate ND

Description *	Code	lbs.	Rec/T %Bnch	lbs.	Rec/A %Bnch	Rev/T + %Bnch	Rev/A + %Bnch	Yield T/A	Gross LTM	Sugar% Rec	Na ppm	K ppm	AmN ppm	Bolters ++	Emerg. %
<b>Commercial Trial</b>															
BTS 8018	117	352.1	99	13500	105	60.10	98	2303	104	38.28	18.57	0.96	17.61	85	1518
BTS 8034	101	342.3	96	12819	99	57.04	93	2136	96	37.53	18.12	1.01	17.11	91	1731
BTS 8156	114	352.1	99	12242	95	60.11	98	2088	94	34.77	18.58	0.97	17.61	97	1724
BTS 8927	109	354.6	100	12795	99	60.87	100	2195	99	36.28	18.65	0.92	17.73	84	1544
Crystal 022	121	357.5	101	12785	99	61.77	101	2209	99	35.78	18.79	0.91	17.88	79	1450
Crystal 130	113	352.1	99	13145	102	60.10	98	2241	101	37.40	18.56	0.96	17.60	90	1576
Crystal 137	122	366.8	103	13080	101	64.70	106	2301	104	35.80	19.30	0.96	18.34	85	1634
Crystal 793	118	357.0	100	13345	103	61.62	101	2304	104	37.37	18.80	0.95	17.85	81	1588
Crystal 912	116	346.2	97	14216	110	58.24	95	2391	108	41.07	18.29	0.98	17.31	94	1546
Crystal 913	106	356.1	100	13605	105	61.35	100	2343	105	38.20	18.75	0.95	17.80	87	1545
Hilleshog HIL2317	120	355.9	100	13006	101	61.28	100	2233	100	36.66	18.77	0.98	17.79	109	1722
Hilleshog HIL2366	111	348.3	98	12684	98	58.91	96	2148	97	36.49	18.40	0.99	17.41	106	1586
Hilleshog HIL2368	119	363.9	102	12203	94	63.79	104	2134	96	33.64	19.12	0.93	18.19	84	1571
Hilleshog HIL2386	112	347.0	98	12139	94	58.49	96	2044	92	35.02	18.41	1.06	17.35	99	1687
Hilleshog HIL2389	105	358.7	101	13226	102	62.17	102	2285	103	36.98	18.85	0.92	17.93	101	1592
Hilleshog HIL9920	115	363.0	102	13017	101	63.51	104	2278	103	35.83	19.14	0.99	18.15	94	1715
Maribo MA717	110	354.7	100	13203	102	60.90	100	2267	102	37.23	18.73	1.00	17.73	87	1628
Maribo MA902	124	347.7	98	12327	95	58.71	96	2075	93	35.49	18.35	0.97	17.38	105	1582
SV 203	123	365.1	103	13254	103	64.16	105	2327	105	36.36	19.17	0.92	18.25	84	1566
SV 265	107	348.7	98	12743	99	59.05	97	2155	97	36.67	18.40	0.96	17.44	86	1636
SV 285	108	356.9	100	12864	100	61.58	101	2214	100	36.27	18.78	0.93	17.85	77	1580
SX 1815	104	352.9	99	13055	101	60.35	99	2234	101	37.05	18.62	0.98	17.64	97	1605
SX 1818	103	353.5	99	13424	104	60.53	99	2297	103	38.00	18.57	0.90	17.67	79	1584
SX 1998	102	353.9	100	13192	102	60.66	99	2262	102	37.19	18.67	0.98	17.69	81	1627
<b>BTS 8337 (CommBench)</b>	<b>125</b>	<b>363.5</b>	<b>102</b>	<b>12896</b>	<b>100</b>	<b>63.66</b>	<b>104</b>	<b>2260</b>	<b>102</b>	<b>35.34</b>	<b>19.16</b>	<b>0.98</b>	<b>18.18</b>	<b>94</b>	<b>1672</b>
Crystal 578RR (CommBench)	126	351.4	99	13221	102	59.87	98	2249	101	37.62	18.54	0.98	17.56	90	1666
BTS 8815 (CommBench)	127	345.9	97	11906	92	58.18	95	2003	90	34.43	18.39	1.10	17.29	107	1809
Crystal 803 (CommBench)	128	360.9	102	13647	106	62.84	103	2377	107	37.79	18.99	0.94	18.05	88	1545
BTS 8927 (1stYearBench)	129	370.7	104	13351	103	65.91	108	2378	107	35.89	19.40	0.86	18.54	73	1475
AP CK MOD SUS RR#5	130	349.1	98	12953	100	59.17	97	2195	99	37.12	18.52	1.06	17.46	119	1698
AP CK MOD SUS RR#6	131	348.8	98	12327	95	59.07	97	2085	94	35.35	18.45	1.02	17.43	92	1590
RA CK SUS RR#7	132	347.4	98	12356	96	58.63	96	2086	94	35.53	18.37	1.00	17.37	104	1628
<b>Experimental Trial (Comm status)</b>															
BTS 8205	205	352.5	99	13092	101	60.20	98	2231	100	37.69	18.60	0.97	17.62	87	1550
BTS 8217	233	359.5	101	13026	101	62.43	102	2231	100	36.82	18.96	0.98	17.98	107	1633
BTS 8226	208	364.9	103	12703	98	64.15	105	2251	101	35.15	19.15	0.91	18.24	86	1449
<b>BTS 8242</b>	<b>211</b>	<b>365.6</b>	<b>103</b>	<b>12944</b>	<b>100</b>	<b>64.36</b>	<b>105</b>	<b>2244</b>	<b>101</b>	<b>35.99</b>	<b>19.21</b>	<b>0.93</b>	<b>18.27</b>	<b>97</b>	<b>1461</b>
BTS 8270	232	353.3	99	13123	102	60.47	99	2256	102	37.17	18.60	0.93	17.66	96	1546
BTS 8303	218	370.2	104	12961	100	65.81	108	2313	104	35.08	19.46	0.96	18.50	112	1698
BTS 8311	213	363.7	102	11633	90	63.75	104	2037	92	32.65	19.13	0.94	18.18	89	1483
BTS 8328	224	376.7	106	13260	103	67.87	111	2379	107	35.45	19.84	1.00	18.83	99	1676
BTS 8341	215	352.8	99	9262	72	60.32	99	1601	72	26.21	18.72	1.08	17.64	102	1621
<b>BTS 8349</b>	<b>223</b>	<b>339.7</b>	<b>96</b>	<b>12990</b>	<b>101</b>	<b>56.17</b>	<b>92</b>	<b>2170</b>	<b>98</b>	<b>38.50</b>	<b>17.97</b>	<b>0.97</b>	<b>16.99</b>	<b>133</b>	<b>1651</b>
BTS 8359	219	358.6	101	13169	102	62.13	102	2305	104	36.76	18.99	1.07	17.92	112	1641
BTS 8365	206	363.5	102	13297	103	63.68	104	2330	105	36.76	19.08	0.91	18.17	85	1486
Crystal 138	238	352.0	99	13190	102	60.06	98	2278	103	37.52	18.56	0.96	17.59	87	1505
Crystal 260	230	343.7	97	12813	99	57.45	94	2147	97	37.72	18.19	1.00	17.19	107	1579
Crystal 262	227	347.4	98	13152	102	58.60	96	2225	100	37.76	18.34	0.97	17.37	119	1510
Crystal 269	229	362.3	102	12610	98	63.30	104	2178	98	35.70	19.15	1.03	18.11	111	1658
Crystal 360	203	353.8	100	12863	100	60.63	99	2186	98	37.14	18.64	0.94	17.69	93	1597
Crystal 361	201	358.0	101	13139	102	61.95	101	2274	102	36.83	18.86	0.96	17.90	122	1463
Crystal 363	222	371.8	105	13005	101	66.33	108	2340	105	35.38	19.59	1.00	18.59	90	1611
Crystal 364	214	364.2	102	13734	106	63.93	105	2389	107	38.16	19.22	1.00	18.21	125	1725
Crystal 367	220	350.7	99	12164	94	59.61	98	2072	93	34.92	18.54	1.00	17.53	122	1676
Crystal 368	217	352.3	99	12949	100	60.16	98	2215	100	36.68	18.64	1.02	17.62	93	1601
Crystal 369	231	360.0	101	12772	99	62.60	102	2227	100	36.06	19.06	1.06	18.00	90	1677
Crystal 371	226	370.0	104	12705	98	65.75	108	2258	102	34.38	19.38	0.90	18.48	97	1428
Hilleshog HIL2441	234	362.2	102	13179	102	63.29	104	2288	103	36.52	19.14	1.03	18.10	116	1628
Hilleshog HIL2442	204	362.2	102	11854	92	63.27	103	2051	92	33.28	19.21	1.09	18.12	100	1616
Hilleshog HIL2477	237	331.8	93	11931	92	53.67	88	1939	87	36.27	17.87	1.26	16.61	177	1758
Hilleshog HIL2478	209	356.6	100	13746	106	61.50	101	2372	107	38.63	18.85	1.03	17.82	123	1631
Hilleshog HIL2479	210	361.4	102	12537	97	63.03	103	2230	100	34.20	19.01	0.94	18.07	113	1497
Hilleshog HIL2480	228	353.4	99	12700	98	60.50	99	2166	97	35.64	18.80	1.13	17.67	119	1651
Hilleshog HIL2487 (Maribo MA942)	225	358.8	101	12305	95	62.21	102	2143	96	34.66	18.90	0.96	17.94	89	1555
Maribo MA943	235	370.0	104	12834	99	65.76	108	2271	102	34.95	19.45	0.95	18.50	94	1559
Maribo MA945	202	355.1	100	13685	106	61.04	100	2333	105	38.93	18.76	1.00	17.76	92	1713
Maribo MA946	207	357.1	100	12602	98	61.65	101	2195	99	35.32	18.86	1.01	17.85	93	1564
SV 231	236	359.1	101	13692	106	62.30	102	2358	106	38.18	18.90	0.95	17.95	104	1612
SV 232	216	358.0	101	13330	103	61.95	101	2306	104	37.72	18.84	0.94	17.90	94	1598
SV 1835	212	354.1	100	12846	99	60.74	99	2214	100	36.38	18.75	1.04	17.71	107	1677
SX 1836	221	348.8	98	13189	102	59.06	97	2244	101	37.59	18.44	0.99	17.44		

Table 21. Calculation for Approval of Sugarbeet Varieties for ACSC Market for 2024

Description	Approval	Status	Rec/Ton				Rev/Acre++				R/T + \$/A	Cercospora Rating *				
			2022	2023	2 Yr	% Bench	2022	2023	2 Yr	% Bench		2021	2022	2023	2 Yr Mean	3 Yr Mean
<b>Previously Approved (3 Yr)</b>																<b>&lt;=5.30</b>
BTS 8018	Approved	Approved	328.6	348.4	338.5	100.2	1447	1960	1704	106.0	206.3	2.31	2.03	2.42	2.23	2.25
BTS 8034	Approved	Approved	315.1	338.6	326.9	96.8	1362	1896	1629	101.4	198.2	2.56	2.28	2.54	2.41	2.46
BTS 8156	Approved	Approved	327.5	348.1	337.8	100.0	1410	1890	1650	102.7	202.7	2.48	2.43	2.53	2.48	2.48
BTS 8927	Approved	Approved	338.8	353.5	346.2	102.5	1452	1948	1700	105.8	208.3	4.48	4.42	4.38	4.40	4.43
Crystal 022	Approved	Approved	339.2	358.1	348.7	103.2	1449	1975	1712	106.6	209.8	4.97	4.60	4.97	4.79	4.85
Crystal 130	Approved	Approved	332.3	353.3	342.8	101.5	1436	2009	1723	107.2	208.7	2.38	2.10	2.60	2.35	2.36
Crystal 137	Approved	Approved	324.6	349.6	337.1	99.8	1390	1922	1656	103.1	202.9	2.53	2.57	2.65	2.61	2.58
Crystal 138	Approved	Approved	332.5	349.4	341.0	101.0	1471	1983	1727	107.5	208.4	4.74	4.87	4.77	4.82	4.79
Crystal 793	Approved	Approved	330.6	349.4	340.0	100.7	1476	1981	1729	107.6	208.3	4.13	4.10	4.20	4.15	4.15
Crystal 912	Approved	Approved	312.6	340.3	326.5	96.7	1433	2025	1729	107.6	204.3	5.13	4.81	5.00	4.91	4.98
Crystal 913	Approved	Approved	329.1	349.9	339.5	100.5	1458	2042	1750	108.9	209.4	4.10	3.73	3.91	3.82	3.92
Hilleshög HIL2317	Approved	Approved	326.8	347.5	337.2	99.8	1371	1862	1617	100.6	200.4	4.57	5.13	4.84	4.99	4.85
Hilleshög HIL2366	Approved	Approved	319.3	333.3	326.3	96.6	1351	1751	1551	96.5	193.2	5.01	5.00	5.02	5.01	5.01
Hilleshög HIL2368	Approved	Approved	329.1	349.1	339.1	100.4	1154	1737	1446	90.0	190.4	4.66	4.56	4.41	4.48	4.54
Hilleshög HIL2386	Approved	Approved	323.3	342.7	332.5	98.5	1424	1836	1630	101.4	199.9	4.30	4.54	4.23	4.39	4.36
Hilleshög HIL2389	Approved	Approved	326.8	349.2	338.0	100.1	1407	1948	1678	104.4	204.5	4.85	4.69	4.51	4.60	4.68
Hilleshög HIL9920	Approved	Approved	324.5	347.4	336.0	99.5	1383	1878	1631	101.5	201.0	4.75	4.92	5.15	5.04	4.94
Maribo MA717	Approved	Approved	318.6	343.0	330.8	98.0	1397	1871	1634	101.7	199.7	4.68	5.05	5.04	5.05	4.92
Maribo MA902	Approved	Approved	321.2	339.1	330.2	97.8	1310	1730	1520	94.6	192.4	4.63	4.95	4.66	4.80	4.75
SV 203	Approved	Approved	322.0	350.6	336.3	99.6	1296	1972	1634	101.7	201.3	4.75	4.74	4.78	4.76	4.76
SV 265	Approved	Approved	318.1	342.7	330.4	97.8	1321	1859	1590	99.0	196.8	4.30	4.46	4.65	4.56	4.47
SV 285	Approved	Approved	322.6	346.2	334.4	99.0	1276	1909	1593	99.1	198.1	4.78	4.72	4.83	4.78	4.78
SX 1815	Approved	Approved	328.4	350.9	339.7	100.6	1403	1996	1700	105.8	206.4	4.78	5.07	4.74	4.91	4.86
SX 1818	Approved	Approved	321.4	345.0	333.2	98.7	1361	1958	1660	103.3	202.0	4.86	4.72	4.53	4.63	4.71
SX 1898	Approved	Approved	320.4	345.9	333.2	98.7	1297	1927	1612	100.3	199.0	4.76	4.72	4.88	4.80	4.79
<b>Candidates for Approval (2 Yr)</b>																<b>&lt;=5.00</b>
BTS 8205	Approved	Approved	325.1	351.1	338.1	100.1	1426	1981	1704	106.0	206.1	--	4.27	4.69	4.48	--
BTS 8217	Not Approved	Approved	323.1	347.7	335.4	99.3	1373	1924	1649	102.6	201.9	--	2.25	2.27	2.26	--
BTS 8226	Approved	Approved	343.0	355.3	349.2	103.4	1521	1945	1733	107.9	211.2	--	2.00	2.33	2.17	--
BTS 8242	Approved	Approved	340.4	356.3	348.4	103.2	1441	1940	1691	105.2	208.4	--	4.35	4.48	4.41	--
BTS 8270	Approved	Approved	333.6	352.3	343.0	101.6	1472	1966	1719	107.0	208.5	--	1.97	2.43	2.20	--
Crystal 260	Approved	Approved	333.9	348.0	341.0	101.0	1488	1962	1725	107.4	208.3	--	2.05	2.15	2.10	--
Crystal 262	Approved	Approved	325.3	345.7	335.5	99.3	1463	1932	1698	105.6	205.0	--	4.43	4.36	4.39	--
Crystal 269	Approved	Approved	333.8	358.1	346.0	102.4	1466	1932	1699	105.7	208.2	--	4.60	4.38	4.49	--
Hilleshög HIL2441	Not Approved	Approved	327.0	347.3	337.2	99.8	1312	1797	1555	96.7	196.6	--	4.01	3.85	3.93	--
Hilleshög HIL2442	Approved	Approved	331.7	348.8	340.3	100.8	1312	1761	1537	95.6	196.4	--	4.39	4.10	4.24	--
Hilleshög HIL2487 (MA942)	Approved	Approved	328.8	346.8	337.8	100.0	1310	1794	1552	96.6	196.6	--	4.57	4.74	4.65	--
Maribo MA943	Approved	Approved	326.3	350.7	338.5	100.2	1333	1810	1572	97.8	198.0	--	4.28	4.44	4.36	--
<b>Benchmark Varieties</b>																
BTS 8572 (Check)	Benchmark		2021	2022	2023		2020	2022	2023							
BTS 8337 (Check)	Benchmark		336.2				1367									
Crystal 578RR (Check)	Benchmark		337.6	334.8	358.3		1408	1322	1837							
BTS 8815 (Check)	Benchmark		328.7	313.1	342.4		1524	1339	1838							
Crystal 803 (Check)	Benchmark		336.9	324.9	343.9		1461	1320	1733							
	Benchmark		331.6	352.6			1433	2033								
<b>Benchmark mean</b>			334.9	326.1	349.3	337.7	336.8	1440	1353	1860	1607	1551				

Variety approval criteria include: 1) Two years of official trial data, 2) Cercospora rating must not exceed 5.00 (1982 adjusted data), AND  
3a) R/T >= 100% of Bench OR 3b) R/T >= 97% and R/T + \$/A >= 202% of Bench. Three years of data may be considered for initial approval.

Created 10/31/2023

To maintain approval, the three-year Cercospora rating must not exceed 5.30 (1982 adjusted data).

++2023 Revenue estimate based on a \$50.09 beet payment (5-yr ave) at 17.5% crop with a 1.5% loss to molasses and 2022 Revenue estimate based on a \$46.80 beet payment. Revenue does not consider hauling or production costs.

\* All Cercospora ratings 2021-2023 were adjusted to 1982 basis.

**Table 22. 2023 First Year Experimental Varieties  
New Benchmark Comparison**

**Projected Calculation for Approval of Sugarbeet Varieties for ACSC Market**

Description	Likely	Rec/Ton		Rev/Acre		R/T + \$/A	CR Rating ^	
		Approval ^	%	2023	Bench	2023++	Bench	Bench
<b>Candidates for Retesting (1 Yr)</b>								
BTS 8303	On Track		355.3	101.7	1879	100.1	201.8	4.46
BTS 8311	On Track		364.3	104.3	1866	99.4	203.7	2.39
BTS 8328	On Track		356.1	101.9	1961	104.4	206.4	4.54
BTS 8341	Not On Track		348.2	99.7	1407	74.9	174.6	2.52
BTS 8349	Not On Track		336.4	96.3	1827	97.3	193.6	2.27
BTS 8359	On Track		350.9	100.5	1957	104.2	204.7	2.26
BTS 8365	On Track		362.2	103.7	1980	105.5	209.1	4.15
Crystal 360	On Track		351.2	100.5	1963	104.6	205.1	2.17
Crystal 361	On Track		357.9	102.5	2012	107.2	209.6	2.24
Crystal 363	On Track		358.1	102.5	1918	102.2	204.7	3.16
Crystal 364	On Track		342.5	98.0	2000	106.5	204.6	4.26
Crystal 367	Not On Track		342.2	98.0	1860	99.1	197.0	2.39
Crystal 368	On Track		350.4	100.3	1906	101.5	201.8	4.11
Crystal 369	On Track		354.6	101.5	1984	105.7	207.2	3.78
Crystal 371	On Track		360.6	103.2	1883	100.3	203.5	2.00
Hilleshög HIL2477	Not On Track		333.1	95.4	1696	90.3	185.7	4.29
Hilleshög HIL2478	Not On Track		334.6	95.8	1821	97.0	192.8	5.03
Hilleshög HIL2479	On Track		353.0	101.1	1861	99.1	200.2	4.09
Hilleshög HIL2480	On Track		349.4	100.0	1817	96.8	196.8	4.00
Maribo MA945	Not On Track		339.4	97.2	1848	98.4	195.6	4.62
Maribo MA946	Not On Track		347.9	99.6	1864	99.3	198.9	4.25
SV 231	On Track		346.4	99.2	1965	104.7	203.8	4.83
SV 232	Not On Track		345.4	98.9	1884	100.3	199.2	4.31
SX 1835	On Track		347.3	99.4	1968	104.8	204.2	4.55
SX 1836	Not On Track		344.6	98.6	1886	100.5	199.1	4.33
<b>Benchmarks Varieties*</b>								
Crystal 578RR (Check)			346.1	99.1	1907	101.6		
BTS 8815 (Check)			344.7	98.7	1703	90.7		
Crystal 803 (Check)			350.5	100.3	2003	106.7		
BTS 8927 (Check)			356.0	101.9	1897	101.0		
<b>Benchmark Mean</b>			349.3		1877			

Variety approval criteria include: 1) Two years of official trial data, 2) Cercospora rating must not exceed 5.00 (1982 adjusted data), AND 3a) R/T >= 100% of Bench OR 3b) R/T >= 97% and R/T + \$/A >= 202% of Bench.

Created 10/31/2023

++ 2023 Revenue estimate based on a \$50.09 beet payment (5-yr ave) at 17.5% crop with a 1.5% loss to molasses.

Revenue does not consider hauling or production cost

\* 2023 benchmark varieties for first year entries dropped BTS 8337 and added BTS 8927

^^ All Cercospora ratings from 2023 were adjusted to 1982 basis.

^ Not on Track = data is not tracking for potential approval. On Track = data is tracking for potential approval.

**Table 23. Calculation for Approval of Sugarbeet Varieties for ACSC  
Aphanomyces Specialty Market for 2024**

Description	Approval Status	Aphanomyces R					Cercospora Rating *				
		2021	2022	2023	2 Yr	3 Yr	2021	2022	2023	2 Yr	3 Yr
<b>Previously Approved (3 Yrs)</b>		<=4.50					<=5.30				
BTS 8018	Approved	4.52	4.00	3.95	3.98	4.16	2.31	2.03	2.42	2.23	2.25
BTS 8034	Approved	3.24	3.89	3.80	3.85	3.64	2.56	2.28	2.54	2.41	2.46
BTS 8156	Approved	3.64	4.21	3.97	4.09	3.94	2.48	2.43	2.53	2.48	2.48
BTS 8927	Approved	4.51	4.00	3.26	3.63	3.92	4.48	4.42	4.38	4.40	4.43
Crystal 022	Approved	4.79	4.03	3.66	3.85	4.16	4.97	4.60	4.97	4.79	4.85
Crystal 130	Approved	4.23	3.57	4.00	3.79	3.93	2.38	2.10	2.60	2.35	2.36
Crystal 137	Approved	3.13	4.25	4.21	4.23	3.86	2.53	2.57	2.65	2.61	2.58
Crystal 138	Approved	4.19	3.87	4.06	3.97	4.04	4.74	4.87	4.77	4.82	4.79
Crystal 793	Approved	3.74	3.82	4.31	4.07	3.96	4.13	4.10	4.20	4.15	4.14
Crystal 912	Approved	3.95	3.44	3.41	3.43	3.60	5.13	4.81	5.00	4.91	4.98
Crystal 913	Approved	4.39	3.79	4.05	3.92	4.08	4.10	3.73	3.91	3.82	3.91
Hilleshög HIL2317	Not Approved	5.01	3.91	5.22	4.57	4.71	4.57	5.13	4.84	4.99	4.85
Hilleshög HIL2389	Approved	3.86	3.78	5.42	4.60	4.35	4.85	4.69	4.51	4.60	4.68
Hilleshög HIL9920	Not Approved	4.65	4.33	5.49	4.91	4.82	4.75	4.92	5.15	5.04	4.94
SV 203	Not Approved	4.35	4.24	7.15	5.70	5.25	4.75	4.74	4.78	4.76	4.76
SV 285	Not Approved	4.48	4.35	7.39	5.87	5.41	4.78	4.72	4.83	4.78	4.78
SX 1898	Not Approved	4.97	4.25	6.70	5.48	5.31	4.76	4.72	4.88	4.80	4.79
<b>Candidates for Approval (2 Yrs)</b>		<=4.20					<=5.00				
BTS 8205	Approved	--	3.69	3.67	3.68	--	--	4.27	4.69	4.48	--
BTS 8217	Not Approved	--	4.07	4.35	4.21	--	--	2.25	2.27	2.26	--
BTS 8226	Approved	--	3.79	3.72	3.76	--	--	2.00	2.33	2.17	--
BTS 8242	Not Approved	--	4.47	4.25	4.36	--	--	4.35	4.48	4.42	--
BTS 8270	Approved	--	3.87	3.90	3.89	--	--	1.97	2.43	2.20	--
Crystal 260	Approved	--	3.89	3.84	3.87	--	--	2.05	2.15	2.10	--
Crystal 262	Approved	--	3.42	4.61	4.02	--	--	4.43	4.36	4.40	--
Crystal 269	Approved	--	3.48	3.62	3.55	--	--	4.60	4.38	4.49	--
Hilleshög HIL2366	Not Approved	5.81	4.32	4.68	4.50	4.94	5.01	5.00	5.02	5.01	5.01
Hilleshög HIL2368	Not Approved	5.25	4.63	5.02	4.83	4.97	4.66	4.56	4.41	4.49	4.54
Hilleshög HIL2386	Not Approved	5.98	4.31	4.21	4.26	4.83	4.30	4.54	4.23	4.39	4.36
Hilleshög HIL2441	Approved	--	3.91	4.18	4.05	--	--	4.01	3.85	3.93	--
Hilleshög HIL2442	Not Approved	--	4.83	4.73	4.78	--	--	4.39	4.10	4.25	--
Hilleshög HIL2487 (MA942)	Approved	--	4.20	4.06	4.13	--	--	4.57	4.74	4.66	--
Maribo MA717	Not Approved	6.75	4.39	4.61	4.50	5.25	4.68	5.05	5.04	5.05	4.92
Maribo MA902	Not Approved	6.96	4.59	5.77	5.18	5.77	4.63	4.95	4.66	4.81	4.75
Maribo MA943	Not Approved	--	4.21	4.80	4.51	--	--	4.28	4.44	4.36	--
SV 265	Not Approved	4.95	4.30	7.47	5.89	5.57	4.30	4.46	4.65	4.56	4.47
SX 1815	Not Approved	4.19	4.28	6.15	5.22	4.87	4.78	5.07	4.74	4.91	4.86
SX 1818	Not Approved	5.56	4.82	7.09	5.96	5.82	4.86	4.72	4.53	4.63	4.70
<b>Approval Criteria for New Varieties</b>		<b>4.20</b>					<b>5.00</b>				
<b>Criteria to Maintain Approval</b>		<b>4.50</b>					<b>5.30</b>				

Aphanomyces approval criteria include: 1) Cercospora rating two-year mean must not exceed 5.00 and 2) Aphanomyces root rating two-year mean <= 4.20.

Created 11/01/2023

Three years of data may be considered for initial approval.

To maintain Aphanomyces approval, criteria include: 1) Cercospora three-year mean must not exceed 5.30 and 2) Aphanomyces root rating three-year mean <= 4.50.

Previously approved varieties not meeting current approval standards may be sold in 2024.

\* Aphanomyces ratings adjusted to 2003 basis.

Cercospora ratings were adjusted to 1982 basis.

**Table 24. Calculation for Approval of Sugarbeet Varieties for ACSC  
Rhizoctonia Specialty Market for 2024**

Description	Approval Status	Rhizoctonia Rating*						Cercospora Rating*					
		2021	2022	2023	2 Yr Mn	3 Yr Mn	2021	2022	2023	2 Yr Mn	3 Yr Mn		
<b>Previously Approved (3 Yr)</b>													
Crystal 022	Approved	3.53	4.10	3.85	3.98	3.83	4.97	4.60	4.97	4.79	4.85		
Crystal 138	Approved	3.52	3.81	3.81	3.81	3.71	4.74	4.87	4.77	4.82	4.79		
Crystal 912	Approved	3.77	3.28	3.50	3.39	3.52	5.13	4.81	5.00	4.91	4.98		
Hilleshög HIL2368	Approved	2.92	3.46	3.55	3.51	3.31	4.66	4.56	4.41	4.49	4.54		
Maribo MA902	Approved	3.80	3.57	3.87	3.72	3.75	4.63	4.95	4.66	4.81	4.75		
<b>Candidates for Approval (2 Yr)</b>													
BTS 8018	Not Approved	3.83	3.93	4.06	4.00	3.94	2.31	2.03	2.42	2.23	2.25		
BTS 8034	Not Approved	3.88	4.49	4.09	4.29	4.15	2.56	2.28	2.54	2.41	2.46		
BTS 8156	Not Approved	3.81	4.24	3.93	4.09	3.99	2.48	2.43	2.53	2.48	2.48		
BTS 8205	Approved	--	3.82	3.77	3.80	--	--	4.27	4.69	4.48	--		
BTS 8217	Not Approved	--	4.14	3.90	4.02	--	--	2.25	2.27	2.26	--		
BTS 8226	Approved	--	3.74	3.78	3.76	--	--	2.00	2.33	2.17	--		
BTS 8242	Not Approved	--	4.00	4.07	4.04	--	--	4.35	4.48	4.42	--		
BTS 8270	Not Approved	--	4.33	3.67	4.00	--	--	1.97	2.43	2.20	--		
BTS 8927	Not Approved	3.68	4.13	3.98	4.06	3.93	4.48	4.42	4.38	4.40	4.43		
Crystal 130	Not Approved	3.57	4.08	3.69	3.89	3.78	2.38	2.10	2.60	2.35	2.36		
Crystal 137	Not Approved	3.53	4.18	4.01	4.10	3.91	2.53	2.57	2.65	2.61	2.58		
Crystal 260	Approved	--	3.70	3.46	3.58	--	--	2.05	2.15	2.10	--		
Crystal 262	Approved	--	3.38	3.31	3.35	--	--	4.43	4.36	4.40	--		
Crystal 269	Not Approved	--	4.20	3.90	4.05	--	--	4.60	4.38	4.49	--		
Crystal 793	Not Approved	4.36	4.73	4.35	4.54	4.48	4.13	4.10	4.20	4.15	4.14		
Crystal 913	Not Approved	3.94	4.23	4.19	4.21	4.12	4.10	3.73	3.91	3.82	3.91		
Hilleshög HIL2317	Not Approved	4.76	4.71	4.44	4.58	4.64	4.57	5.13	4.84	4.99	4.85		
Hilleshög HIL2366	Not Approved	3.98	3.92	3.99	3.96	3.96	5.01	5.00	5.02	5.01	5.01		
Hilleshög HIL2386	Approved	4.20	3.51	3.91	3.71	3.87	4.30	4.54	4.23	4.39	4.36		
Hilleshög HIL2389	Not Approved	3.99	3.92	4.45	4.19	4.12	4.85	4.69	4.51	4.60	4.68		
Hilleshög HIL2441	Approved	--	3.62	3.89	3.76	--	--	4.01	3.85	3.93	--		
Hilleshög HIL2442	Approved	--	3.70	3.90	3.80	--	--	4.39	4.10	4.25	--		
Hilleshög HIL2487 (MA942)	Not Approved	--	4.18	4.29	4.24	--	--	4.57	4.74	4.66	--		
Hilleshög HIL9920	Not Approved	4.70	4.58	4.42	4.50	4.57	4.75	4.92	5.15	5.04	4.94		
Maribo MA717	Not Approved	4.31	3.92	4.10	4.01	4.11	4.68	5.05	5.04	5.05	4.92		
Maribo MA943	Not Approved	--	4.04	4.18	4.11	--	--	4.28	4.44	4.36	--		
SV 203	Not Approved	4.34	4.19	4.25	4.22	4.26	4.75	4.74	4.78	4.76	4.76		
SV 265	Not Approved	4.17	3.96	3.86	3.91	4.00	4.30	4.46	4.65	4.56	4.47		
SV 285	Not Approved	4.26	4.53	4.28	4.41	4.36	4.78	4.72	4.83	4.78	4.78		
SX 1815	Not Approved	4.40	4.12	4.35	4.24	4.29	4.78	5.07	4.74	4.91	4.86		
SX 1818	Not Approved	4.41	4.16	4.06	4.11	4.21	4.86	4.72	4.53	4.63	4.70		
SX 1898	Not Approved	4.34	4.12	4.15	4.14	4.20	4.76	4.72	4.88	4.80	4.79		
<b>Approval Criteria for New Varieties</b>		<b>3.82</b>						<b>5.00</b>					
<b>Criteria to Maintain Approval</b>		<b>4.12</b>						<b>5.30</b>					

Rhizoctonia approval criteria include: 1) Cercospora rating two-year mean must not exceed 5.00 and 2) Rhizoctonia root rating two-year mean  $\leq 3.82$ .

Created 11/01/2023

Three years of data may be considered for initial approval.

To maintain Rhizoctonia approval, criteria include: 1) Cercospora three-year mean must not exceed 5.30 and 2) Rhizoctonia rating three-year mean  $\leq 4.12$ .

Previously approved varieties not meeting current approval standards may be sold in 2024.

\* Rhizoctonia ratings adjusted to 2009 basis

Cercospora ratings adjusted to 1982 basis

**Table 25. 2023 Aphanomyces Ratings for Official Trial Entries**  
 KWS (Shakopee, MN)

Chk++	Code Description	Unadju						Adjusted ++						Trial Yrs	
		Perf NA	Clim NA	Shak <sup>z</sup> 8/29	Glyn NA	Perf NA	Clim NA	Shak <sup>z</sup> 8/29	Glyn NA	2023	2 Yr	3 Yr	2022	2021	
	550 BTS 8018	--	--	3.17	--	--	--	3.95	--	3.95	3.97	4.16	4.00	4.52	4
	558 BTS 8034	--	--	3.05	--	--	--	3.80	--	3.80	3.84	3.64	3.89	3.24	4
	538 BTS 8156	--	--	3.19	--	--	--	3.97	--	3.97	4.09	3.94	4.21	3.64	3
	540 BTS 8205	--	--	2.95	--	--	--	3.67	--	3.67	3.68	--	3.69	--	2
	551 BTS 8217	--	--	3.49	--	--	--	4.35	--	4.35	4.21	--	4.07	--	2
	527 BTS 8226	--	--	2.99	--	--	--	3.72	--	3.72	3.76	--	3.79	--	2
	561 BTS 8242	--	--	3.41	--	--	--	4.25	--	4.25	4.36	--	4.47	--	2
	533 BTS 8270	--	--	3.13	--	--	--	3.90	--	3.90	3.88	--	3.87	--	2
	535 BTS 8303	--	--	2.56	--	--	--	3.19	--	3.19	--	--	--	--	1
	508 BTS 8311	--	--	3.42	--	--	--	4.26	--	4.26	--	--	--	--	1
	545 BTS 8328	--	--	2.81	--	--	--	3.50	--	3.50	--	--	--	--	1
	517 BTS 8341	--	--	4.30	--	--	--	5.36	--	5.36	--	--	--	--	1
	505 BTS 8349	--	--	3.67	--	--	--	4.57	--	4.57	--	--	--	--	1
	524 BTS 8359	--	--	2.95	--	--	--	3.67	--	3.67	--	--	--	--	1
	546 BTS 8365	--	--	2.91	--	--	--	3.62	--	3.62	--	--	--	--	1
	528 BTS 8927	--	--	2.62	--	--	--	3.26	--	3.26	3.63	3.93	4.00	4.51	5
	521 Crystal 022	--	--	2.94	--	--	--	3.66	--	3.66	3.84	4.16	4.03	4.79	4
	510 Crystal 130	--	--	3.21	--	--	--	4.00	--	4.00	3.78	3.93	3.57	4.23	3
	552 Crystal 137	--	--	3.38	--	--	--	4.21	--	4.21	4.23	3.86	4.25	3.13	3
	502 Crystal 138	--	--	3.26	--	--	--	4.06	--	4.06	3.97	4.04	3.87	4.19	3
	529 Crystal 260	--	--	3.08	--	--	--	3.84	--	3.84	3.86	--	3.89	--	2
	555 Crystal 262	--	--	3.70	--	--	--	4.61	--	4.61	4.01	--	3.42	--	2
	557 Crystal 269	--	--	2.91	--	--	--	3.62	--	3.62	3.55	--	3.48	--	2
	534 Crystal 360	--	--	3.10	--	--	--	3.86	--	3.86	--	--	--	--	1
	519 Crystal 361	--	--	2.77	--	--	--	3.45	--	3.45	--	--	--	--	1
	556 Crystal 363	--	--	3.08	--	--	--	3.84	--	3.84	--	--	--	--	1
	506 Crystal 364	--	--	3.04	--	--	--	3.79	--	3.79	--	--	--	--	1
	523 Crystal 367	--	--	3.19	--	--	--	3.97	--	3.97	--	--	--	--	1
	531 Crystal 368	--	--	2.87	--	--	--	3.57	--	3.57	--	--	--	--	1
	513 Crystal 369	--	--	3.23	--	--	--	4.02	--	4.02	--	--	--	--	1
	514 Crystal 371	--	--	2.77	--	--	--	3.45	--	3.45	--	--	--	--	1
	509 Crystal 793	--	--	3.46	--	--	--	4.31	--	4.31	4.07	3.96	3.82	3.74	7
	547 Crystal 912	--	--	2.74	--	--	--	3.41	--	3.41	3.43	3.60	3.44	3.95	5
	549 Crystal 913	--	--	3.25	--	--	--	4.05	--	4.05	3.92	4.08	3.79	4.39	5
	553 Hilleshög HIL2317	--	--	4.19	--	--	--	5.22	--	5.22	4.56	4.71	3.91	5.01	5
	520 Hilleshög HIL2366	--	--	3.76	--	--	--	4.68	--	4.68	4.50	4.94	4.32	5.81	4
	511 Hilleshög HIL2368	--	--	4.03	--	--	--	5.02	--	5.02	4.83	4.97	4.63	5.25	4
	542 Hilleshög HIL2386	--	--	3.38	--	--	--	4.21	--	4.21	4.26	4.83	4.31	5.98	3
	522 Hilleshög HIL2389	--	--	4.35	--	--	--	5.42	--	5.42	4.60	4.35	3.78	3.86	3
	541 Hilleshög HIL2441	--	--	3.36	--	--	--	4.18	--	4.18	4.05	--	3.91	--	2
	526 Hilleshög HIL2442	--	--	3.80	--	--	--	4.73	--	4.73	4.78	--	4.83	--	2
	559 Hilleshög HIL2477	--	--	4.26	--	--	--	5.31	--	5.31	--	--	--	--	1
	516 Hilleshög HIL2478	--	--	3.52	--	--	--	4.38	--	4.38	--	--	--	--	1
	512 Hilleshög HIL2479	--	--	3.52	--	--	--	4.38	--	4.38	--	--	--	--	1
	501 Hilleshög HIL2480	--	--	3.45	--	--	--	4.30	--	4.30	--	--	--	--	1
	536 Hilleshög HIL2487 (MA942)	--	--	3.26	--	--	--	4.06	--	4.06	4.13	--	4.20	--	2
	507 Hilleshög HIL9920	--	--	4.41	--	--	--	5.49	--	5.49	4.91	4.82	4.33	4.65	7
	504 Maribo MA717	--	--	3.70	--	--	--	4.61	--	4.61	4.50	5.25	4.39	6.75	7
	539 Maribo MA902	--	--	4.63	--	--	--	5.77	--	5.77	5.18	5.77	4.59	6.96	5
	562 Maribo MA943	--	--	3.85	--	--	--	4.80	--	4.80	4.50	--	4.21	--	2
	518 Maribo MA945	--	--	3.47	--	--	--	4.32	--	4.32	--	--	--	--	1
	525 Maribo MA946	--	--	3.79	--	--	--	4.72	--	4.72	--	--	--	--	1
	543 SV 203	--	--	5.74	--	--	--	7.15	--	7.15	5.70	5.25	4.24	4.35	4
	548 SV 231	--	--	5.02	--	--	--	6.25	--	6.25	--	--	--	--	1
	532 SV 232	--	--	5.12	--	--	--	6.38	--	6.38	--	--	--	--	1
	503 SV 265	--	--	6.00	--	--	--	7.47	--	7.47	5.89	5.58	4.30	4.95	8
	515 SV 285	--	--	5.93	--	--	--	7.39	--	7.39	5.87	5.41	4.35	4.48	6
	554 SX 1815	--	--	4.94	--	--	--	6.15	--	6.15	5.22	4.88	4.28	4.19	3
	530 SX 1818	--	--	5.69	--	--	--	7.09	--	7.09	5.95	5.82	4.82	5.56	3
	560 SX 1835	--	--	4.81	--	--	--	5.99	--	5.99	--	--	--	--	1
	544 SX 1836	--	--	5.41	--	--	--	6.74	--	6.74	--	--	--	--	1
	537 SX 1898	--	--	5.38	--	--	--	6.70	--	6.70	5.47	5.31	4.25	4.97	5
1	1001 AP CK#32 CRY981	--	--	3.29	--	--	--	4.10	--	4.10	3.97	4.01	3.83	4.09	15
1	1002 AP CK#43 BTS80RR32	--	--	4.15	--	--	--	5.17	--	5.17	4.98	4.97	4.79	4.94	14
1	1003 AP CK#44 SEEDVISION RR	--	--	4.54	--	--	--	5.65	--	5.65	5.59	5.11	5.53	4.14	15
1	1004 AP CK#45 CRY986	--	--	3.22	--	--	--	4.01	--	4.01	4.13	4.61	4.25	5.57	15
1	1005 AP CK#51 CRY9246	--	--	3.68	--	--	--	4.58	--	4.58	4.69	4.63	4.81	4.50	12
1	1006 AP CK#52 HILL4094RR	--	--	4.05	--	--	--	5.04	--	5.04	5.01	4.99	4.98	4.94	16
1	1007 AP CK#55 CRY5247	--	--	3.58	--	--	--	4.46	--	4.46	4.69	4.70	4.91	4.73	12
1	1008 AP CK#56 BTS8363	--	--	4.04	--	--	--	5.03	--	5.03	5.00	5.17	4.98	5.49	11
1	1009 AP CK#57 CRY5578	--	--	3.48	--	--	--	4.33	--	4.33	4.45	4.61	4.56	4.95	9
1	1010 AP CK#58 CRY5572	--	--	3.72	--	--	--	4.63	--	4.63	4.56	4.64	4.49	4.79	9
1	1011 AP CK#59 BTS8606	--	--	3.56	--	--	--	4.43	--	4.43	4.36	4.60	4.29	5.06	8
1	1012 AP CK#61 HIL9708	--	--	3.96	--	--	--	4.93	--	4.93	4.69	5.24	4.45	6.34	9
1013	Crystal 684 (Filler)	--	--	NA	--	--	--	NA	--	NA	--	--	3.81	3.60	8

12 Check Mean 3.77 4.70 4.70  
 Trial Mean 3.72 4.63 4.63  
 Coeff. of Var. (%) 13.2  
 Mean LSD (0.05) 0.62  
 Mean LSD (0.01) 0.82  
 Sig Lvl 0.01  
 Adjustment Factor 1.245

<sup>z</sup> Trial mean and statistics for Shakopee include four extra filler entries (not shown)  
 ++ Ratings adjusted to 2003 basis. (2000-2002 Aph nurseries). Ratings adjusted on the basis of checks.  
 (1=healthy, 9=severe damage).  
 Perley (Perf), Climax (Clim), and Glyndon (Glyn) not rated due to lack of Aphanomyces pressure  
 Ratings in green font indicate good resistance.  
 Ratings in red font indicate a level of concern.

Created 10/27/2023

Table 26. 2023 Cercospora Ratings for Official Trial Entries  
 KWS (Randolph, MN) - BSDF (Saginaw, MI) - NDSU (Foxhome, MN) - AC North (East Grand Forks, MN)

Chk ++	Code Description	Unadj								Adjusted++								Trial Yrs
		Randolph Avg 4 Dates+	BSDF Avg 5 Dates+	Foxhome Avg 4 Dates+	EGF Avg 4 Dates+	Randolph Avg 4 Dates+	BSDF Avg 5 Dates+	Foxhome Avg 4 Dates+	EGF Avg 4 Dates+	2023 3 loc <sup>z</sup>	2 Yr	3 Yr	2022	2021				
	550 BTS 8018	1.81	2.02	2.97	1.34	2.80	2.41	3.33	1.53	2.42	2.23	2.25	2.03	2.31	4			
	558 BTS 8034	2.10	2.49	2.68	1.45	3.25	2.97	3.00	1.65	2.54	2.41	2.46	2.28	2.56	4			
	538 BTS 8156	2.21	2.27	2.90	1.45	3.42	2.71	3.25	1.65	2.53	2.48	2.48	2.43	2.48	3			
	540 BTS 8205	2.61	3.62	4.51	4.12	4.04	4.31	5.05	4.69	4.69	4.48	--	4.27	--	2			
	551 BTS 8217	2.06	2.19	2.35	1.37	3.19	2.61	2.63	1.56	2.27	2.26	--	2.25	--	2			
	527 BTS 8226	1.60	2.26	2.57	1.25	2.48	2.69	2.88	1.42	2.33	2.17	--	2.00	--	2			
	561 BTS 8242	2.69	3.61	4.19	3.90	4.17	4.30	4.69	4.44	4.48	4.41	--	4.35	--	2			
	533 BTS 8270	1.75	2.32	2.55	1.46	2.71	2.77	2.86	1.66	2.43	2.20	--	1.97	--	2			
	535 BTS 8303	2.72	3.35	4.63	3.69	4.21	3.99	5.19	4.20	4.46	--	--	--	--	1			
	508 BTS 8311	1.56	2.42	2.46	1.35	2.42	2.88	2.76	1.54	2.39	--	--	--	--	1			
	545 BTS 8328	2.90	3.93	4.20	3.71	4.49	4.68	4.70	4.22	4.54	--	--	--	--	1			
	517 BTS 8341	1.93	2.29	2.58	1.70	2.99	2.73	2.89	1.94	2.52	--	--	--	--	1			
	505 BTS 8349	1.92	2.14	2.37	1.40	2.97	2.55	2.65	1.59	2.27	--	--	--	--	1			
	524 BTS 8359	1.74	2.02	2.60	1.29	2.69	2.41	2.91	1.47	2.26	--	--	--	--	1			
	546 BTS 8365	2.55	3.49	3.92	3.43	3.95	4.16	4.39	3.91	4.15	--	--	--	--	1			
	528 BTS 8927	2.51	3.66	4.17	3.62	3.89	4.36	4.67	4.12	4.38	4.40	4.43	4.42	4.48	5			
	521 Crystal 022	2.84	4.24	4.58	4.16	4.40	5.05	5.13	4.74	4.97	4.79	4.85	4.60	4.97	4			
	510 Crystal 130	1.84	2.55	2.75	1.48	2.85	3.04	3.08	1.69	2.60	2.35	2.36	2.10	2.38	3			
	552 Crystal 137	2.16	2.67	2.74	1.49	3.35	3.18	3.07	1.70	2.65	2.61	2.68	2.57	2.63	3			
	502 Crystal 138	2.94	3.92	4.45	4.10	4.55	4.67	4.98	4.67	4.77	4.82	4.79	4.87	4.74	3			
	529 Crystal 260	1.73	2.04	2.24	1.32	2.68	2.43	2.51	1.50	2.15	2.10	--	2.05	--	2			
	555 Crystal 262	2.98	3.55	4.20	3.64	4.61	4.23	4.70	4.15	4.36	4.39	--	4.43	--	2			
	557 Crystal 269	2.87	3.91	3.68	3.83	4.44	4.66	4.12	4.36	4.38	4.49	--	4.60	--	2			
	534 Crystal 360	1.59	1.99	2.36	1.30	2.46	2.37	2.64	1.48	2.17	--	--	--	--	1			
	519 Crystal 361	1.53	2.01	2.55	1.29	2.37	2.40	2.86	1.47	2.24	--	--	--	--	1			
	556 Crystal 363	2.16	2.65	3.04	2.55	3.35	3.16	3.40	2.90	3.16	--	--	--	--	1			
	506 Crystal 364	3.10	3.48	4.01	3.63	4.80	4.15	4.49	4.13	4.26	--	--	--	--	1			
	523 Crystal 367	1.87	2.37	2.59	1.28	2.90	2.82	2.90	1.46	2.39	--	--	--	--	1			
	531 Crystal 368	2.39	3.39	4.06	3.28	3.70	4.04	4.55	3.74	4.11	--	--	--	--	1			
	513 Crystal 369	2.44	3.28	3.51	3.08	3.78	3.91	3.93	3.51	3.78	--	--	--	--	1			
	514 Crystal 371	1.55	1.92	2.06	1.23	2.40	2.29	2.31	1.40	2.00	--	--	--	--	1			
	509 Crystal 793	2.41	3.63	4.15	3.19	3.73	4.33	4.65	3.63	4.20	4.15	4.15	4.10	4.13	7			
	547 Crystal 912	3.11	4.29	4.44	4.32	4.82	5.11	4.97	4.92	5.00	4.91	4.98	4.81	5.13	5			
	549 Crystal 913	2.52	3.54	3.52	3.14	3.90	4.22	3.94	3.58	3.91	3.82	3.92	3.73	4.10	5			
	553 Hilleshög HIL2317	3.20	3.98	4.34	4.32	4.96	4.74	4.86	4.92	4.84	4.99	4.85	5.13	4.57	5			
	520 Hilleshög HIL2366	3.01	4.41	4.09	4.59	4.66	5.26	4.58	5.23	5.02	5.01	5.01	5.00	5.01	4			
	511 Hilleshög HIL2368	2.85	3.60	3.65	4.26	4.41	4.29	4.09	4.85	4.41	4.48	4.54	4.56	4.66	4			
	542 Hilleshög HIL2386	2.65	3.93	3.82	3.28	4.10	4.68	4.28	3.74	4.23	4.39	4.36	4.54	4.30	3			
	522 Hilleshög HIL2389	3.31	4.02	4.04	3.69	5.13	4.79	4.52	4.20	4.51	4.60	4.68	4.69	4.85	3			
	541 Hilleshög HIL2441	2.66	3.46	3.62	2.96	4.12	4.12	4.05	3.37	3.85	3.93	--	4.01	--	2			
	526 Hilleshög HIL2442	2.87	4.17	3.39	3.10	4.44	4.97	3.80	3.53	4.10	4.24	--	4.39	--	2			
	559 Hilleshög HIL2477	2.82	3.94	4.08	3.17	4.37	4.70	4.57	3.61	4.29	--	--	--	--	1			
	516 Hilleshög HIL2478	3.46	4.50	4.40	4.21	5.36	5.36	4.93	4.79	5.03	--	--	--	--	1			
	512 Hilleshög HIL2479	2.67	3.79	3.76	3.11	4.13	4.52	4.21	3.54	4.09	--	--	--	--	1			
	501 Hilleshög HIL2480	2.68	3.82	3.51	3.10	4.15	4.55	3.93	3.53	4.00	--	--	--	--	1			
	536 Hilleshög HIL2487 (MA942)	2.99	3.85	4.20	4.32	4.63	4.59	4.70	4.92	4.74	4.65	--	4.57	--	2			
	507 Hilleshög HIL9920	2.95	4.52	4.47	4.43	4.57	5.39	5.01	5.04	5.15	5.04	5.04	5.05	4.92	7			
	504 Maribo MA717	3.00	4.37	4.18	4.59	4.65	5.21	4.68	5.23	5.04	5.04	5.05	4.92	5.05	6			
	539 Maribo MA902	3.00	4.13	3.66	4.35	4.65	4.92	4.10	4.95	4.66	4.80	4.75	4.95	4.63	5			
	562 Maribo MA943	2.92	4.14	3.97	3.46	4.52	4.93	4.45	3.94	4.44	4.36	--	4.28	--	2			
	518 Maribo MA945	2.89	3.46	4.35	4.26	4.48	4.12	4.87	4.85	4.62	--	--	--	--	1			
	525 Maribo MA946	2.89	3.92	3.76	3.39	4.48	4.67	4.21	3.86	4.25	--	--	--	--	1			
	543 SV 203	3.58	4.42	4.24	3.80	5.54	5.27	4.75	4.33	4.78	4.76	4.74	4.74	4.75	4			
	548 SV 231	3.64	4.35	4.25	3.98	5.64	5.18	4.76	4.53	4.83	--	--	--	--	1			
	532 SV 232	3.02	3.63	4.21	3.41	4.68	4.33	4.71	3.88	4.31	--	--	--	--	1			
	503 SV 265	3.09	4.31	4.17	3.65	4.79	5.14	4.67	4.16	4.65	4.56	4.47	4.46	4.30	8			
	515 SV 285	3.63	4.24	4.31	4.06	5.62	5.05	4.83	4.62	4.83	4.78	4.78	4.72	4.78	6			
	554 SX 1815	3.34	4.33	4.23	3.79	5.17	5.16	4.74	4.32	4.74	4.91	4.86	5.07	4.78	3			
	530 SX 1818	3.26	3.79	4.11	3.93	5.05	4.52	4.60	4.48	4.53	4.63	4.63	4.71	4.72	4.86	3		
	560 SX 1835	3.43	4.12	3.97	3.76	5.31	4.91	4.45	4.28	4.55	--	--	--	--	1			
	544 SX 1836	3.38	3.80	4.10	3.39	5.23	4.53	4.59	3.86	4.33	--	--	--	--	1			
	537 SX 1898	3.64	4.50	4.28	3.94	5.64	5.36	4.79	4.49	4.88	4.80	4.79	4.72	4.76	5			
1	1101 CR CK#19 CRY80808	3.35	4.44	4.81	4.50	5.19	5.29	5.39	5.12	5.27	5.31	5.25	5.36	5.14	6			
1	1102 CR CK#24 HILL4012RR	3.27	4.42	4.86	5.19	5.06	5.27	5.44	5.91	5.54	5.28	5.23	5.02	5.12	18			
1	1103 CR CK#41 CRY8181RR	3.24	4.41	4.41	4.32	5.02	5.26	4.94	4.92	5.04	5.16	5.09	5.28	4.95	15			
1	1104 CR CK#44 CRY4024RR	3.45	3.55	4.62	3.90	5.34	4.23	4.17	4.44	4.27	4.27	4.17	4.22	4.07	16			
1	1105 CR CK#44 BETA80RR32	3.80	4.52	4.56	4.23	5.88	5.39	5.11	4.82	5.10	5.19	5.15	5.28	5.06	14			
1	1106 CR CK#45 HILL4448RR	3.07	4.96	4.48	5.11	4.75	5.91	5.02	5.82	5.58	5.44	5.38	5.31	5.25	12			
1	1107 CR CK#47 HILL4094RR	2.86	3.34	3.74	4.07	4.43	4.23	3.98	4.19	4.63	4.27	4.17	4.22	4.07	16			
1	1108 CR CK#48 MAR1504	2.90	4.3															

**Table 27. 2023 Fusarium Ratings for Official Trial Entries**  
 ACSC (North Moorhead, MN) - ACSC (Sabin, MN)

Chk ++	Code Description	Unadjusted				Adjusted++						Trial Yrs
		N Mhd 4Dates+	Sab 3Dates+	N Mhd 4Dates+	Sab 3Dates+	2023	2 Yr	3 Yr	2022	2021		
	550 BTS 8018	2.19	3.47	2.68	3.73	3.20	3.09	3.13	2.98	3.22	4	
	558 BTS 8034	1.85	2.95	2.26	3.17	2.72	2.44	2.53	2.16	2.71	4	
	538 BTS 8156	2.21	2.70	2.71	2.90	2.80	2.55	2.61	2.30	2.72	3	
	540 BTS 8205	2.33	3.11	2.85	3.34	3.10	2.97	--	2.85	--	2	
	551 BTS 8217	2.27	2.95	2.78	3.17	2.97	2.76	--	2.54	--	2	
	527 BTS 8226	2.97	3.79	3.64	4.07	3.85	3.66	--	3.47	--	2	
	561 BTS 8242	2.83	4.14	3.46	4.44	3.95	3.69	--	3.42	--	2	
	533 BTS 8270	2.60	3.48	3.18	3.74	3.46	3.26	--	3.06	--	2	
	535 BTS 8303	2.22	3.45	2.72	3.70	3.21	--	--	--	--	1	
	508 BTS 8311	3.09	3.76	3.78	4.04	3.91	--	--	--	--	1	
	545 BTS 8328	2.99	4.10	3.66	4.40	4.03	--	--	--	--	1	
	517 BTS 8341	3.96	3.88	4.85	4.17	4.51	--	--	--	--	1	
	505 BTS 8349	1.98	3.02	2.42	3.24	2.83	--	--	--	--	1	
	524 BTS 8359	2.53	3.61	3.10	3.88	3.49	--	--	--	--	1	
	546 BTS 8365	2.29	3.77	2.80	4.05	3.43	--	--	--	--	1	
	528 BTS 8927	2.23	3.20	2.73	3.44	3.08	3.10	3.40	3.11	4.00	5	
	521 Crystal 022	2.37	3.68	2.90	3.95	3.43	3.32	3.38	3.22	3.50	4	
	510 Crystal 130	2.63	3.61	3.22	3.88	3.55	3.38	3.33	3.22	3.22	3	
	552 Crystal 137	1.95	2.96	2.39	3.18	2.78	2.57	2.46	2.35	2.25	3	
	502 Crystal 138	2.69	3.93	3.29	4.22	3.76	3.46	3.55	3.16	3.75	3	
	529 Crystal 260	2.42	3.53	2.96	3.79	3.38	3.22	--	3.06	--	2	
	555 Crystal 262	2.68	4.08	3.28	4.38	3.83	3.55	--	3.27	--	2	
	557 Crystal 269	2.91	4.34	3.56	4.66	4.11	3.74	--	3.36	--	2	
	534 Crystal 360	2.69	3.48	3.29	3.74	3.51	--	--	--	--	1	
	519 Crystal 361	2.55	3.12	3.12	3.35	3.24	--	--	--	--	1	
	556 Crystal 363	2.88	3.67	3.53	3.94	3.73	--	--	--	--	1	
	506 Crystal 364	2.23	3.26	2.73	3.50	3.12	--	--	--	--	1	
	523 Crystal 367	2.10	2.64	2.57	2.83	2.70	--	--	--	--	1	
	531 Crystal 368	2.86	3.99	3.50	4.28	3.89	--	--	--	--	1	
	513 Crystal 369	2.26	3.46	2.77	3.71	3.24	--	--	--	--	1	
	514 Crystal 371	2.34	3.61	2.86	3.88	3.37	--	--	--	--	1	
	509 Crystal 793	2.35	3.66	2.88	3.93	3.40	3.22	3.08	3.03	2.80	7	
	547 Crystal 912	2.71	4.03	3.32	4.33	3.82	3.74	3.86	3.66	4.11	5	
	549 Crystal 913	2.40	3.55	2.94	3.81	3.37	3.25	3.39	3.13	3.68	5	
	553 Hilleshög HIL2317	5.00	5.15	6.12	5.53	5.83	5.74	5.85	5.65	6.06	5	
	520 Hilleshög HIL2366	3.90	5.00	4.77	5.37	5.07	4.95	4.85	4.83	4.65	4	
	511 Hilleshög HIL2368	3.27	4.20	4.00	4.51	4.26	4.29	4.34	4.33	4.44	4	
	542 Hilleshög HIL2386	2.91	4.11	3.56	4.41	3.99	3.86	3.99	3.73	4.26	3	
	522 Hilleshög HIL2389	4.47	5.14	5.47	5.52	5.50	4.92	4.86	4.34	4.75	3	
	541 Hilleshög HIL2441	3.30	3.89	4.04	4.18	4.11	4.05	--	4.00	--	2	
	526 Hilleshög HIL2442	3.29	4.50	4.03	4.83	4.43	4.55	--	4.68	--	2	
	559 Hilleshög HIL2477	5.09	5.64	6.23	6.06	6.14	--	--	--	--	1	
	516 Hilleshög HIL2478	3.18	4.55	3.89	4.88	4.39	--	--	--	--	1	
	512 Hilleshög HIL2479	3.41	4.37	4.17	4.69	4.43	--	--	--	--	1	
	501 Hilleshög HIL2480	2.29	3.53	2.80	3.79	3.30	--	--	--	--	1	
	536 Hilleshög HIL2487 (MA942)	3.70	4.57	4.53	4.91	4.72	4.86	--	5.01	--	2	
	507 Hilleshög HIL9920	5.26	5.23	6.44	5.62	6.03	5.84	5.71	5.66	5.45	7	
	504 Maribo MA717	3.43	4.52	4.20	4.85	4.53	4.70	4.84	4.87	5.11	7	
	539 Maribo MA902	3.22	4.46	3.94	4.79	4.37	4.33	4.39	4.30	4.50	5	
	562 Maribo MA943	3.47	4.51	4.25	4.84	4.55	4.36	--	4.18	--	2	
	518 Maribo MA945	2.08	3.14	2.55	3.37	2.96	--	--	--	--	1	
	525 Maribo MA946	2.87	3.90	3.51	4.19	3.85	--	--	--	--	1	
	543 SV 203	4.19	4.91	5.13	5.27	5.20	5.38	5.58	5.55	5.99	4	
	548 SV 231	3.53	3.81	4.32	4.09	4.21	--	--	--	--	1	
	532 SV 232	4.32	4.74	5.29	5.09	5.19	--	--	--	--	1	
	503 SV 265	4.65	5.73	5.69	6.15	5.92	6.00	5.89	6.08	5.65	8	
	515 SV 285	5.21	4.91	6.38	5.27	5.82	5.65	5.85	5.47	6.26	6	
	554 SX 1815	4.83	4.93	5.91	5.29	5.60	5.46	5.25	5.32	4.82	3	
	530 SX 1818	3.77	4.25	4.62	4.56	4.59	4.56	4.80	4.54	5.26	3	
	560 SX 1835	3.21	3.64	3.93	3.91	3.92	--	--	--	--	1	
	544 SX 1836	4.43	4.79	5.42	5.14	5.28	--	--	--	--	1	
	537 SX 1898	4.55	5.00	5.57	5.37	5.47	5.42	5.51	5.38	5.67	5	
1	1201 FS CK #12 HILL4012RR	5.67	5.95	6.94	6.39	6.66	6.52	6.42	6.38	6.23	18	
1	1202 FS CK #18 CRYST68RR	3.24	4.12	3.97	4.42	4.19	4.33	4.18	4.46	3.87	15	
1	1203 FS CK #29 CRYST875RR	3.63	4.73	4.44	5.08	4.76	4.78	4.68	4.79	4.48	16	
1	1204 FS CK #30 BT8337	2.87	3.64	3.51	3.91	3.71	3.82	3.72	3.93	3.53	11	
1	1205 FS CK #31 SXMarathon	4.21	4.75	5.15	5.10	5.13	5.07	5.29	5.01	5.72	9	
1	1206 FS CK #32 CRYST574	2.23	2.98	2.73	3.20	2.96	2.69	2.68	2.41	2.67	9	
1	1207 FS CK #33 SES375	4.41	4.76	5.40	5.11	5.25	5.34	5.58	5.43	6.05	7	
1	1208 FS CK #34 SES265	4.43	5.42	5.42	5.82	5.62	5.61	5.74	5.59	6.02	8	
1	1209 FS CK #35 SES203	4.78	4.96	5.85	5.33	5.59	5.57	5.71	5.55	5.99	4	
1	1210 FS CK #36 SES285	4.88	4.70	5.97	5.05	5.51	5.49	5.75	5.47	6.26	6	
10	Check Mean	4.04	4.60	4.94	4.94	4.94	4.94					
	Trial Mean	3.23	4.07	3.95	4.37	4.16						
	Coeff. of Var. (%)	16.0	10.6									
	Mean LSD (0.05)	0.67	0.54									
	Mean LSD (0.01)	0.88	0.71									
	Sig Lvl	0.01	0.01									
	Adj Factor			1.224	1.074							

+ Average rating based upon multiple rating dates.

++ Ratings adjusted to 2007 basis. (2005-2006 FS Nurseries). Ratings adjusted on the basis of checks.

(1= healthy, 9= severe damage)

Ratings in green font indicate good resistance.

Ratings in red font indicate a level of concern.

Created 10/27/2023

Table 28. 2023 Rhizoctonia Ratings for OVT Entries

BSDF (Saginaw, MI) - ACSC (NWROC)

Chk ++	Code Description	Unac				Adjusted ++									
		BSDF 8/29	TSC-E NA	TSC-W NA	NWROC 8/7	BSDF 8/29	TSC-E NA	TSC-W NA	NWROC 8/7	2023	2 Yr	3 Yr	2022	2021	Years
	550 BTS 8018	5.85	---	---	3.43	4.07	---	---	4.05	4.06	4.00	3.94	3.93	3.83	4
	558 BTS 8034	6.32	---	---	3.20	4.40	---	---	3.78	4.09	4.29	4.15	4.49	3.88	4
	538 BTS 8156	6.12	---	---	3.04	4.26	---	---	3.59	3.93	4.08	3.99	4.24	3.81	3
	540 BTS 8205	5.68	---	---	3.04	3.95	---	---	3.59	3.77	3.80	--	3.82	--	2
	551 BTS 8217	5.85	---	---	3.15	4.07	---	---	3.72	3.90	4.02	--	4.14	--	2
	527 BTS 8226	5.51	---	---	3.15	3.83	---	---	3.72	3.78	3.76	--	3.74	--	2
	561 BTS 8242	5.93	---	---	3.40	4.12	---	---	4.02	4.07	4.04	--	4.00	--	2
	533 BTS 8270	5.89	---	---	2.75	4.10	---	---	3.25	3.67	4.00	--	4.33	--	2
	535 BTS 8303	5.45	---	---	3.41	3.79	---	---	4.03	3.91	--	--	--	--	1
	508 BTS 8311	5.79	---	---	3.54	4.03	---	---	4.18	4.11	--	--	--	--	1
	545 BTS 8328	5.83	---	---	3.57	4.06	---	---	4.22	4.14	--	--	--	--	1
	517 BTS 8341	6.50	---	---	3.58	4.52	---	---	4.23	4.38	--	--	--	--	1
	505 BTS 8349	6.11	---	---	3.71	4.25	---	---	4.39	4.32	--	--	--	--	1
	524 BTS 8359	5.90	---	---	3.43	4.10	---	---	4.05	4.08	--	--	--	--	1
	546 BTS 8365	5.77	---	---	2.84	4.01	---	---	3.36	3.69	--	--	--	--	1
	528 BTS 8927	5.78	---	---	3.34	4.02	---	---	3.95	3.98	4.06	3.93	4.13	3.68	5
	521 Crystal 022	5.80	---	---	3.10	4.03	---	---	3.66	3.85	3.98	3.83	4.10	3.53	4
	510 Crystal 130	5.42	---	---	3.05	3.77	---	---	3.61	3.69	3.88	3.78	4.08	3.57	3
	552 Crystal 137	6.35	---	---	3.04	4.42	---	---	3.59	4.01	4.09	3.91	4.18	3.53	3
	502 Crystal 138	5.80	---	---	3.04	4.03	---	---	3.59	3.81	3.81	3.71	3.81	3.52	3
	529 Crystal 260	5.70	---	---	2.50	3.96	---	---	2.95	3.46	3.58	--	3.70	--	2
	555 Crystal 262	5.27	---	---	2.50	3.67	---	---	2.95	3.31	3.35	--	3.38	--	2
	557 Crystal 269	6.06	---	---	3.04	4.22	---	---	3.59	3.90	4.05	--	4.20	--	2
	534 Crystal 360	5.72	---	---	3.47	3.98	---	---	4.10	4.04	--	--	--	--	1
	519 Crystal 361	5.71	---	---	2.63	3.97	---	---	3.11	3.54	--	--	--	--	1
	556 Crystal 363	5.95	---	---	3.48	4.14	---	---	4.11	4.13	--	--	--	--	1
	506 Crystal 364	5.97	---	---	2.90	4.15	---	---	3.43	3.79	--	--	--	--	1
	523 Crystal 367	5.84	---	---	3.24	4.06	---	---	3.83	3.95	--	--	--	--	1
	531 Crystal 368	5.92	---	---	3.57	4.12	---	---	4.22	4.17	--	--	--	--	1
	513 Crystal 369	5.93	---	---	3.25	4.12	---	---	3.84	3.98	--	--	--	--	1
	514 Crystal 371	5.84	---	---	3.11	4.06	---	---	3.68	3.87	--	--	--	--	1
	509 Crystal 793	6.23	---	---	3.69	4.33	---	---	4.36	4.35	4.54	4.48	4.73	4.36	7
	547 Crystal 912	5.69	---	---	2.58	3.96	---	---	3.05	3.50	3.39	3.52	3.28	3.77	5
	549 Crystal 913	6.19	---	---	3.44	4.31	---	---	4.07	4.19	4.21	4.12	4.23	3.94	5
	553 Hilleshög HIL2317	6.02	---	---	3.97	4.19	---	---	4.69	4.44	4.57	4.64	4.71	4.76	5
	520 Hilleshög HIL2366	5.99	---	---	3.22	4.17	---	---	3.81	3.99	3.95	3.96	3.92	3.98	4
	511 Hilleshög HIL2368	5.94	---	---	2.51	4.13	---	---	2.97	3.55	3.51	3.31	3.46	2.92	4
	542 Hilleshög HIL2386	5.99	---	---	3.09	4.17	---	---	3.65	3.91	3.71	3.87	3.51	4.20	3
	522 Hilleshög HIL2389	6.06	---	---	3.97	4.22	---	---	4.69	4.45	4.19	4.12	3.92	3.99	3
	541 Hilleshög HIL2441	5.75	---	---	3.20	4.00	---	---	3.78	3.89	3.75	--	3.62	--	2
	526 Hilleshög HIL2442	6.03	---	---	3.05	4.19	---	---	3.61	3.90	3.80	--	3.70	--	2
	559 Hilleshög HIL2477	6.01	---	---	3.85	4.18	---	---	4.55	4.37	--	--	--	--	1
	516 Hilleshög HIL2478	5.72	---	---	2.96	3.98	---	---	3.50	3.74	--	--	--	--	1
	512 Hilleshög HIL2479	5.57	---	---	2.53	3.87	---	---	2.99	3.43	--	--	--	--	1
	501 Hilleshög HIL2480	5.77	---	---	2.87	4.01	---	---	3.39	3.70	--	--	--	--	1
	536 Hilleshög HIL2487 (MA942)	6.18	---	---	3.62	4.30	---	---	4.28	4.29	4.24	--	4.18	--	2
	507 Hilleshög HIL9920	5.95	---	---	3.98	4.14	---	---	4.70	4.42	4.50	4.57	4.58	4.70	7
	504 Maribo MA717	6.28	---	---	3.25	4.37	---	---	3.84	4.10	4.01	4.11	3.92	4.31	7
	539 Maribo MA902	5.97	---	---	3.03	4.15	---	---	3.58	3.87	3.72	3.75	3.57	3.80	5
	562 Maribo MA943	6.05	---	---	3.51	4.21	---	---	4.15	4.18	4.11	--	4.04	--	2
	518 Maribo MA945	5.62	---	---	3.57	3.91	---	---	4.22	4.06	--	--	--	--	1
	525 Maribo MA946	5.85	---	---	3.29	4.07	---	---	3.89	3.98	--	--	--	--	1
	543 SV 203	6.12	---	---	3.59	4.26	---	---	4.24	4.25	4.22	4.26	4.19	4.34	4
	548 SV 231	5.95	---	---	2.74	4.14	---	---	3.24	3.69	--	--	--	--	1
	532 SV 232	6.03	---	---	3.59	4.19	---	---	4.24	4.22	--	--	--	--	1
	503 SV 265	5.63	---	---	3.22	3.92	---	---	3.81	3.86	3.91	4.00	3.96	4.17	8
	515 SV 285	6.08	---	---	3.66	4.23	---	---	4.33	4.28	4.40	4.36	4.53	4.26	6
	554 SX 1815	6.40	---	---	3.60	4.45	---	---	4.26	4.35	4.24	4.29	4.12	4.40	3
	530 SX 1818	5.90	---	---	3.39	4.10	---	---	4.01	4.06	4.11	4.21	4.16	4.41	3
	560 SX 1835	5.51	---	---	2.77	3.83	---	---	3.27	3.55	--	--	--	--	1
	544 SX 1836	6.02	---	---	3.39	4.19	---	---	4.01	4.10	--	--	--	--	1
	537 SX 1898	5.88	---	---	3.56	4.09	---	---	4.21	4.15	4.13	4.20	4.12	4.34	5
1	1301 RH CK#35 SES36812RR	6.40	---	---	3.82	4.45	---	---	4.52	4.48	4.37	4.28	4.25	4.11	16
1	1302 RH CK#47 SES36272RR	6.32	---	---	3.82	4.40	---	---	4.52	4.46	4.54	4.39	4.63	4.09	12
1	1303 RH CK#48 HILL4094RR	5.95	---	---	3.00	4.14	---	---	3.55	3.84	3.73	3.56	3.61	3.22	16
1	1304 RH CK#49 CRY5247	6.15	---	---	3.67	4.28	---	---	4.34	4.31	4.31	4.44	4.31	4.70	12
1	1305 RH CK#51 SXWinchester	6.20	---	---	3.98	4.31	---	---	4.70	4.51	4.53	4.48	4.55	4.37	11
1	1306 RH CK#52 CRY5573	6.18	---	---	3.51	4.30	---	---	4.15	4.22	4.37	4.34	4.52	4.29	9
1	1307 RH CK#53 BTSS500	6.12	---	---	3.58	4.26	---	---	4.23	4.24	4.32	4.27	4.39	4.18	9
1	1308 RH CK#54 CRY5574	6.18	---	---	3.81	4.30	---	---	4.50	4.40	4.34	4.25	4.28	4.08	8
1	1309 RH CK#55 CRY5803	6.49	---	---	3.74	4.51	---	---	4.42	4.47	4.56	4.70	4.66	4.96	6
1	1310 RH CK#56 MAR1504	6.53	---	---	3.67	4.54	---	---	4.34	4.44	4.31	4.40	4.18	4.58	9
1	1311 RH CK#57 BTSS606	--	---	---	4.02	--	---	---	4.75	4.75	4.56	4.53	4.37	4.48	8
1	1312 RH CK#58 CRY5793	--	---	---	3.53	--	---	---	4.17	4.17	4.33	4.34	4.49	4.36	7
1	1313 Crystal 684 (Filler)	--	---	---	3.28	--	---	---	3.88	3.88	3.99	3.94	4.11	3.82	8
1	1314 Maribo MA109 (Filler)	--	---	---	2.99	--	---	---	3.53	3.53	--	--	--	--	10
12 *	Mean of Check Varieties	6.25			3.68	4.35			4.35	4.35					
	Trial Mean	5.95			3.31	4.14			3.91	4.03					
	Coeff. of Var. (%)	6.0			12.8										
	Mean LSD (0.05)	0.52			0.53										
	Mean LSD (0.01)	0.69			0.69										
	Sig Lvl	0.01			0.01										
	Adjustment Factor	0.696							1.182						

++ Ratings adjusted to 2009 basis (2007-2009) RH nurseries. Ratings adjusted on the basis of checks

\* Only 10 checks used at BSDF due to constraints of trial layout.

TSC-E and TSC-W not rated due to inadequate Rhizoctonia infection levels.

(0= healthy, 7= severe damage)

Ratings in green font indicate good resistance.

Ratings in red font indicate a level of concern.

Created 10/27/2023

Table 29. Pesticides Applied to ACSC Official Trials

<u>Herbicide Location</u>	<u>Herbicide Used</u>	<u>Spray Dates</u>	<u>Fungicide Used</u>	<u>Fungicide</u>	<u>Spray Dates</u>
Casselton	RU1, RU2	6/1, 6/22	CR1, CR2, CR3, CR4		7/5, 7/17, 7/31, 8/15
Perley	RU1, RU2	6/6, 6/23	CR1, CR2, CR3, CR4, CR5		7/6, 7/17, 7/31, 8/15, 8/28
Halstad	RU1, RU2	6/2, 6/19	CR1, CR2, CR3, CR4, CR5		7/5, 7/17, 7/31, 8/15, 8/28
Reynolds	RU1, RU2, RU3	5/30, 6/23, 7/21	CR1, CR2, CR3, CR4, CR5		7/7, 7/17, 7/31, 8/15, 8/28
Climax	RU1, RU2	5/30, 6/29	CR1, CR2, CR3, CR4, CR5		7/7, 7/17, 7/31, 8/15, 8/28
Grand Forks	RU1, RU2	6/2, 6/29	CR1, CR2, CR3, CR4, CR5		7/6, 7/17, 7/31, 8/14, 8/28
Scandia	RU1, RU2	6/1, 6/28	CR1, CR2, CR3, CR4, CR5		7/7, 7/17, 7/31, 8/15, 8/28
East Grand Forks	RU1, RU2	5/31, 7/3	CR1, CR2, CR3, CR4, CR5		7/11, 7/18, 8/1, 8/17, 8/28
Stephen	RU1, RU2	5/31, 6/26	CR1, CR2, CR3, CR4, CR5		7/10, 7/19, 8/1, 8/17, 8/30
St. Thomas	RU1, RU2	6/5, 7/6	CR1, CR2, CR3, CR4, CR5		7/10, 7/18, 8/1, 8/17, 8/30
Bathgate	RU1, RU2	5/31, 6/28	CR1, CR2, CR3, CR4, CR5		7/10, 7/18, 8/1, 8/17, 8/30

Ground applications made by beet seed personnel from Crystal Technical Services Center Created 11/28/2023

Counter 20G applied at 8.9 lbs./A at all locations.

AZteroid in-furrow (5.7 fl oz/A) was used at all locations.

Quadris (10 fl oz./A) was applied to 6-10 leaf beets at all locations

RU1 = Roundup PowerMax 3 (25 oz./A), ClassAct (2.5 gal./100 gal. of water).

RU2 = Roundup PowerMax 3 (21 oz./A), ClassAct (2.5 gal./100 gal. of water).

RU3 = Roundup PowerMax 3 (20 oz./A), ClassAct (2.5 gal./100 gal. of water).

CR1 = Inspire XT + Manzate Max

CR2 = Agritín + Incognito

CR3 = Proline + Manzate Max

CR4 = Manzate Max

CR5 = Priaxor + Agritín

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