



November 16th, 2023 Issue 634

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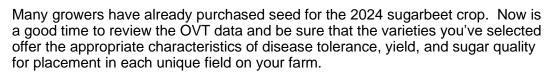
www.crystalsugar.com



2023 Official Coded Variety Performance Trial Data

The American Crystal 2023 Official Variety Trial (OVT) data for varieties approved for crop year 2024 has been published and is available on crystalsugar.com at:

https://www.crystalsugar.com/agronomy/crystal-beet-seed/official-coded-trials/



OVT trial data can be downloaded in a PDF document or an Excel file. Both have the same data sorted in 8 different ways. Color coded disease tolerance ratings can help you distinguish between the different degrees of tolerance.

OVT variety data is pre-sorted in the 2023 Variety Selector in the following ways (each on a separate page):

- Seed Company
- Rev/Ton
- Rev/Acre
- Aphanomyces Tolerance Rating
- Rhizoctonia Tolerance Rating
- Fusarium Tolerance Rating
- Cercospora Tolerance Rating
- Emergence Percent

Downloading the Excel version will allow you to create your own sorts to examine the data as well.



https://www.crystalsugar.com/agronomy/ag-gold-standards/

- Fertility
- Variety Selection
- Stand Establishment
- Weed Control
- Disease & Insect Control
- Harvest



Considerations on Variety Placement

- Past variety performance on your farm.
- Known disease presence in fields to be planted in 2024.
 - Links to general township disease presence observations & management recs:
 - Aphanomyces
 - Rhizoctonia
 - Fusarium
- Historical production characteristics by field.
 - Below average sugar and/or above average tons:
 - Consider a higher sugar variety to optimize recoverable sugar/acre.
 - Above average sugar and/or below average tons:
 - Consider a higher yielding variety to optimize recoverable sugar/acre.
- Pre-piling from designated fields, headlands, and splits:
 - Use high sugar varieties to help maximize your Pre-pile Premium
- Field distance from piling site/factory:
 - If long distance, consider higher sugar, moderate tonnage varieties to lower transportation costs.

CR+ Variety Placement Considerations

- Fields/areas not planned for Pre-pile deliveries:
 - o Take full advantage of higher Cercospora tolerance further into the growing season.
- Fields bordering previous year's beet fields.
- Fields protected from wind (higher humidity), river fields, shelter belts.
- Fields farther away that may be difficult to reach for timely fungicide applications.

Production Considerations in 2024

We look forward with optimism to next year's crop potential and general production challenges to prepare for. Each topic heading is a link to its subject material on the Crystal website.

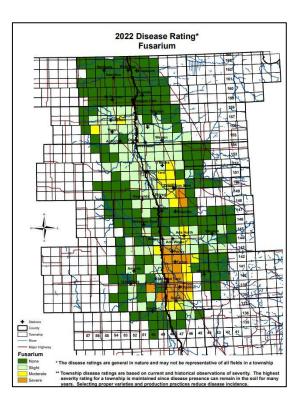
• As always, check with your pesticide supplier to make sure you have access to pesticides needed for your 2024 sugarbeet crop production.

Stand Establishment

- Rainfall remained below average for the growing season, and we may be going into next spring very
 dry. Field preparations need to conserve as much moisture as possible by not working ground too far
 ahead of the planter.
- Cover crops should also be used to protect seedling sugarbeets and limit erosion from strong spring wind events.

Weed Control

- All areas of the Red River Valley need to have a plan to control glyphosate resistant weeds.
 Particularly waterhemp, kochia, and common ragweed.
 - For waterhemp, this plan should incorporate a layered approach of soil applied herbicides, that includes a PPI/PRE herbicide application along with 2 POST Lay-by herbicide applications.
 - Kochia requires the use of PPI/PRE applied ethofumesate. For Post applications, scout and time Spin Aid treatments on small "puff ball", dime-sized kochia.
 - Treat common ragweed when it's small, <2", with Stinger/Stinger HL.



Sugarbeet Root Maggot (SBRM) - Continued High Pressure

- 2023 saw high SBRM populations again. Accordingly, populations are forecast to be high in 2024.
- The best treatment for SBRM control is using:
 - Counter insecticide At-Plant followed by POST insecticide applications.
 - Multiple POST insecticide applications may be needed for optimal control to reduce egg-laying fly populations.
 - Thimet granular POST offers great SBRM control.
 - Prepare to use <u>Mustang Maxx</u> or <u>Asana</u> as POST liquid insecticides.
 - At this moment Chlorpyrifos cannot be used. Even though the court case was successful for Chlorpyrifos, there are still numerous items that need to be addressed before Chlorpyrifos can be an allowable, labeled insecticide application.



Cercospora Leafspot (CLS)

- The proper timing of initial & subsequent CLS fungicide applications helped to proactively keep Cercospora in-check, maintain healthy leaves, and optimize variety performance.
- Cercospora could be easily found in fields but was generally at low levels and did not reach the level of severity witnessed in 2020 & 2021.
- Within the same growing area, it was observed that a higher prevalence of Cercospora infection occurred in fields that had later initial fungicide applications compared to those fields with earlier applications.
- A timely initial fungicide application is needed to delay the on-set of Cercospora infections thereby reducing end-of-season severity levels.
- Target initial fungicide applications by July 7th.
- Tank-mix and rotate fungicide modes of action for resistance management and maintain proper fungicide application intervals.
- Planting varieties with good CLS ratings can make a big difference in infection levels. However, this may not equate to fewer fungicide applications.
- Note: The Official Variety Trials use the ACSC recommended CLS fungicide program.
 - In the OVT data, cross reference variety performance against their Cercospora tolerance ratings
- CR+ varieties still require timely initial and subsequent fungicide applications to optimize varietal performance. Do so to maintain the CR+ trait's effectiveness against CLS into the future.

Consult with your Agriculturist with any questions



For prompt answers to your questions and comments, call and leave a message and Tom Astrup or one of his staff will respond as soon as possible.

Shareholders: 1-800-633-8941

2024 Sugarbeet Winter Meeting Schedule

- Sugarbeet Research and Reporting Session
 - January 9th @ Holiday Inn in Fargo, ND
- Sugarbeet Grower Seminars
 - o Fargo February 6th @ Fargo Holiday Inn
 - o Grand Forks February 13th @ Alerus Center in Grand Forks
 - o Grafton TBD
- International Sugarbeet Institute March 13th & 14th @ Alerus Center in Grand Forks, ND

2023 Crop Summary					
Station	Yield	Sugar %	SLM%	Rec Sugar/Ton	Rec Sugar/Acre
MOORHEAD	28.9	18.48	0.80	354	10,231
HITTERDAL	37.0	18.35	0.77	352	13,024
LYNCHBURG	27.4	18.52	0.86	353	9,672
KINDRED	32.1	18.51	0.76	355	11,396
AMENIA	35.6	18.40	0.75	353	12,567
PERLEY	32.0	18.98	0.78	364	11,648
FELTON	29.5	18.75	0.81	359	10,591
SABIN	31.4	17.84	0.78	341	10,707
GLYNDON	29.3	17.89	0.78	342	10,021
MOORHEAD DISTRICT	30.7	18.56	0.80	355	10,899
HILLSBORO	31.0	19.01	0.82	364	11,284
WAUKON	31.8	18.05	0.80	345	10,971
ADA WEST	30.8	18.55	0.81	355	10,934
ADA NORTH	29.2	18.96	0.81	363	10,600
MIDWAY	30.1	18.89	0.82	361	10,866
REYNOLDS	33.9	18.67	0.83	357	12,102
HILLSBORO DISTRICT	31.6	18.78	0.81	359	11,344
THEEDONG DISTRICT	31.0	10.70	0.01	333	11,544
CROOKSTON	33.6	18.44	0.79	353	11,861
NIELSVILLE	31.3	19.22	0.78	369	11,550
ELDRED	33.4	18.56	0.77	356	11,890
SCANDIA	32.7	18.64	0.79	357	11,674
WARREN	33.0	18.79	0.81	360	11,880
O'MEARA	32.6	18.67	0.82	357	11,638
CROOKSTON DISTRICT	33.7	18.53	0.78	355	11,964
CHOCKSTOIV DISTILICT	33.7	10.55	0.70	333	11,501
EGF	32.7	18.49	0.86	353	11,543
ARDOCH	31.9	18.45	0.89	351	11,197
VOSS	31.6	18.40	0.87	351	11,092
OSLO	30.9	18.83	0.86	359	11,093
ARGYLE	31.6	18.98	0.83	363	11,471
ALVARADO	32.3	18.75	0.84	358	11,563
EGF DISTRICT	32.3	18.63	0.85	356	11,499
DDANTON	20.4	40.75	0.05	250	10.776
DRAYTON	30.1	18.75	0.85	358	10,776
MCARTHUR	29.9	18.83	0.85	360	10,764
BATHGATE	31.0	17.90	0.93	339	10,509
HAMILTON	33.8	18.45	0.89	351	11,864
GRAFTON	32.5	18.09	0.92	343	11,148
HUMBOLDT	31.8	19.01	0.85	363	11,543
STEPHEN	35.3	18.88	0.82	361	12,743
ST.THOMAS	32.7	17.76	0.89	337	11,020
KENNEDY	30.7	19.16	0.81	367	11,267
DRAYTON DISTRICT	31.6	18.46	0.87	352	11,123
RRV	31.9	18.58	0.83	355	11,325